

# SCOTTISH HOSPITALS INQUIRY

**Hearing Commencing 9 May 2022**

**Bundle 3 – Governance**

**Volume 1 (of 3)**

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## Table of Contents

1. A36878607 - Gateway Review Guidance – August 2000	Page 4
2. A32405341 - Grant Thornton Report	Page 30
3. A37292599 - The Reprovision of the Royal Hospital for Sick Children – NHS Lothian amended 9 May 2006	Page 95
4. A37215538 - HDL (2006) 58 – Letter from the Interim Director of Finance, Finance Directorate to Chief Executives dated 23 October 2006, “A Policy on Design Quality for NHSSCOTLAND”	Page 113
5. A35838181 - Scottish Executive’s Interim Guidance for NHSScotland Provision of Single Room Accommodation dated 15 December 2006	Page 152
6. A36878572 - BAM HFS Framework Agreement – January 2008	Page 154
7. A33887882 - Minutes of the Lothian NHS Board, Finance and Performance Review Committee Meeting dated 13 February 2008	Page 242
8. A37292592 - Notes of the SEAT meeting of the Joint Directors of Planning and Directors of Finance dated 28 April 2008	Page 246
9. A36878592 - Gateway Review 1	Page 249
10. A36878594 - Gateway Review 1 Action Plan	Page 263
11. A36878570 - HFS Framework Q+A – July 2008	Page 265
12. A37379697 - Outline Business Case approved by the NHS Lothian Board, Reprovision of Royal Hospital for Sick Children, Edinburgh created 12 August 2008. (public version)	Page 272
13. A36878590 - Clinical Design Structure Document – August 2009	Page 571
14. A36878565 - Project Overview Document – October 2009	Page 572



15. A36878575 - Letter from Jackie Sansbury to Davis Langdon –19 November 2009	Page 575
16. A33887885 - Minutes of NHS Lothian Board Meeting dated 26 November 2008 at pages 484, 485 and 508 to 510	Page 576
17. A36878587 - RHSC Briefing Programme – 2010	Page 581
18. A36878578 - RHSC Clinical Design Task Group Membership	Page 582
19. A36878602 - Technical Brief 5 & 6	Page 583
20. A34872870 - Gateway Review 2, 10 March 2010	Page 797
21. A36878600 - Gateway Review 2 – Action Plan	Page 813
22. A36345240 - Chief Executive Letter 19 (2010) “A Policy on Design Assurance for NHSScotland 2010 Revision” – 2 June 2010	Page 815
23. A36878634 - BAM Construction Stage 3 NEC3 Contract	Page 860
24. A33276977 - Comprehensive Spending Review – Revenue Financed Investment, Scottish Futures Trust	Page 1,075
25. A33277018 - Revenue Financing Opportunities for Infrastructure Investment, Scottish Futures Trust	Page 1,077
26. A33277525 - Draft Scottish Futures Trust Letter – Date Unknown	Page 1,093
27. A35067972 - Email – Steering Group Dashboard Report – 12 November 2010	Page 1,102
i) A34872870 - Attachment – Steering Group Dashboard Report – 12 November 2010	Page 1,104
28. A35289719 - Email chain – Mike Baxter and Peter Reekie – 19-23 November 2010	Page 1,107
i) A35289719 - Attachment – Sick Kids NPD document	Page 1,111
29. A35069334 - Email chain – Mike Baxter and Norman Kinnear – 23 November 2010	Page 1,115
i) A35069334 - Attachment – FMQ briefing	Page 1,120

Centre of Expertise: Programme and Project Management  
An authorised full-service OGC Gateway™ provider



# OGC Gateway Review™

## A Guide to Gateway Review in the Scottish Government

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# CONTENTS

<b>A.</b>	<b>GATEWAY REVIEW IN THE SCOTTISH GOVERNMENT</b> .....	<b>3</b>
	Background .....	3
	The Centre of Expertise for Programme and Project Management (CoE-PPM) .....	3
	The CoE-PPM Team .....	3
	Contact the CoE-PPM .....	4
	Further Guidance .....	4
<b>B.</b>	<b>GATEWAY REVIEW EXPLAINED</b> .....	<b>5</b>
	What is a Gateway Review? .....	5
	What are the Benefits of a Gateway Review? .....	5
	Who does it apply to? .....	5
	What does it apply to? .....	5
<b>C.</b>	<b>THE INDIVIDUAL GATEWAYS</b> .....	<b>6</b>
	Gateway 1 (Business Justification) .....	6
	Gateway 2 (Delivery Strategy) .....	6
	Gateway 3 (Investment Decision) .....	6
	Gateway 4 (Readiness for Service) .....	6
	Gateway 5 (Operations Review and Benefits Realisation) .....	6
	Gateway 0 (Zero) (Strategic Assessment) .....	6
	Intermediate Gateway Reviews .....	7
	Combined Gateway Reviews .....	7
	Healthcheck Reviews .....	7
<b>D.</b>	<b>THE GATEWAY REVIEW PROCESS</b> .....	<b>8</b>
	How does the Gateway process start? .....	8
	Programme / Project Risk and Complexity Assessment .....	9
	The Assessment Meeting .....	9
	The Planning Meeting .....	10
	Undertaking the Review .....	10
	The Gateway Review Report and Delivery Confidence Assessment .....	11
	Distribution of the Report .....	12
	Review Feedback Process .....	13
	Timing of Subsequent Reviews .....	13
	Freedom of Information (FOI) request for Gateway Review Reports .....	13
<b>E.</b>	<b>THE GATEWAY REVIEW TEAM</b> .....	<b>14</b>
	Team Membership .....	14
	Review Team Costs .....	14
	Becoming a Review Team Member .....	15
	How do I apply? .....	15
<b>F.</b>	<b>ANNEXES</b> .....	<b>16</b>
	Annex 1 - Relationship to Other Types of Review .....	16
	Annex 2 - Definitions of Programme / Project Risk .....	17
	Annex 3 - The Gateway Review Team Code of Conduct .....	18
	Annex 4 - Gateway Roles and Responsibilities .....	19

## **A. GATEWAY REVIEW IN THE SCOTTISH GOVERNMENT**

### **Background**

The Gateway Review process emerged from the Treasury / Cabinet Office review of Civil Procurement in Central Government in 1999 (the Gershon Report) which recommended a common process for the strategic management of large, novel or complex projects at critical stages in the life-cycle. The Office of Government Commerce (OGC) developed Gateway Review and remains responsible for further development and promotion of the process and principles and also protection of the trademarked Gateway 'brand'.

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### **The Centre of Expertise for Programme and Project Management (CoE-PPM)**

The Scottish Government Centre of Expertise for Programme and Project Management (CoE-PPM) was formed in September 2003 in response to a UK Government initiative that each Government Department should have a Centre of Expertise tasked with improving programme and project management within their organisation. In establishing its CoE-PPM the Scottish Government also tasked it with managing the OGC Gateway Review™ process.

The key people within the SG in relation to Gateway Review are:

- Stella Manzie, Director General for Finance and Corporate Services is the Scottish Government's Strategic Board Champion for Gateway Review;
- Alastair Wyllie, Head of Construction Advice and Policy Division, is the Scottish Government's Gateway Review Director; and
- Charlie Fisher, Head of the CoE-PPM Team.

The SG CoE-PPM was formally accredited as an authorised full-service OGC Gateway™ provider in January 2009, and is thus regarded by OGC as the sole authorised Gateway Review 'Hub' for Scotland. OGC Gateway™ is a Trade Mark of the Office of Government Commerce, and is used by the Scottish Government Gateway Hub with the permission of the Office of Government Commerce.

The CoE-PPM also leads for the Scottish Government in improving Programme and Project Management and supporting the development of a PPM profession. This UK initiative, led by OGC, was initiated in 2008 and will seek to ensure that Government Departments have a pool of professional programme and project managers available to delivery key public sector projects, thereby addressing a dependency on external resources.

### **The CoE-PPM Team**

Charlie Fisher heads-up the CoE-PPM Team. The Team's primary role is to manage the delivery of the Scottish Government's OGC Gateway Review™ programme.

The CoE-PPM Team also consists of 2 Programme and Project Support Managers, a Programme and Project Capability Manager and 3 Operational Delivery Support Officers.

The Programme and Project Support Managers engage with programmes and projects from various areas of the Scottish Government, Agencies, NDPBs, Health and Police Sectors. They agree and plan the Gateway Review process for each programme or project. The Operational Delivery Support Officers arrange the logistical arrangements that support the delivery of reviews.

The Programme and Project Support Managers also maintain the quality of the review process, ensuring alignment with OGC's Gateway Review™ Brand Principles.

The Programme and Project Capability Manager leads on initiatives that will improve programme and project management capability across the SG.

## **Contact the CoE-PPM**

The Team is based at Victoria Quay, Area 3-G(N) and can be contacted via its mailbox at [CoE@scotland.gsi.gov.uk](mailto:CoE@scotland.gsi.gov.uk).

## **Further Guidance**

Further guidance, including Gateway Review Key Document Templates, can be found at the CoE-PPM SG Internet website at

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

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## **B. GATEWAY REVIEW EXPLAINED**

### **What is a Gateway Review?**

It is a short, focused review of a programme or project. It's conducted on behalf of the project's Senior Responsible Owner (SRO). The reviews occur at key decision points in the project's lifecycle and are carried out by a team of experienced practitioners, independent of the Programme or Project Team.

### **What are the Benefits of a Gateway Review?**

It is based on well proven techniques that lead to more effective delivery of benefits together with more predictable costs and outcomes. The process provides assurance and support for the SRO in discharging their responsibilities by:

- identifying if adequate skills, business resources and experience are deployed on the programme or project;
- ascertaining if all the stakeholders fully understand the programme or project status and the issues involved;
- identifying any problems early to allow rectification (either immediately or prior to the next review);
- identifying if the risks and associated mitigation and contingency are being managed;
- indicating if the programme or project can progress to the next stage of development or implementation;
- identifying if more realistic time and cost targets can be achieved;
- identifying if a governance structure is in place and whether all those involved are clear about their roles & responsibilities;
- improving knowledge, management and delivery skills among staff through participation in Review Teams; and
- providing advice and guidance to Programme and Project Teams by fellow practitioners.

### **Who does it apply to?**

The Scottish Government Gateway Review process applies to all organisations covered by the terms of the Scottish Public Finance Manual.

### **What does it apply to?**

Gateway Review applies to all Mission Critical and/or High Risk projects that have a budget of £5 million in value or over (anything which meets the definition of Mission Critical being automatically considered as High Risk). Gateway Review should also be considered for Mission Critical and/or High Risk projects that are non capital / acquisition or have a budget of less than £5 million in value.

Although originally devised for Procurement, ICT and Construction projects, the process is also applied to non-procurement projects and programmes; business change initiatives and policy delivery.

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## C. THE INDIVIDUAL GATEWAYS

Gateway Reviews are carried out in advance of the key decision points within a programme or project's lifecycle. The key decision points within a **project** and the associated Gateways are:

### Gateway 1 (Business Justification)

This first Project Review comes after the Strategic Business Case has been prepared. It focuses on the project's business justification prior to the key decision on approval for development proposal.

[http://www.ogc.gov.uk/documents/NEW\\_BOOK\\_1\\_APRIL.pdf](http://www.ogc.gov.uk/documents/NEW_BOOK_1_APRIL.pdf)

### Gateway 2 (Delivery Strategy)

This Review investigates the Outline Business Case and the delivery strategy before any formal approaches are made to prospective suppliers or delivery partners. The Review may be repeated in long or complex procurement situations.

[http://www.ogc.gov.uk/documents/BOOK\\_2\\_APRIL.pdf](http://www.ogc.gov.uk/documents/BOOK_2_APRIL.pdf)

### Gateway 3 (Investment Decision)

This Review investigates the Full Business Case and the governance arrangements for the investment decision. The Review takes place before a work order is placed with a supplier and funding and resources committed.

[http://www.ogc.gov.uk/documents/BOOK\\_3\\_APRIL.pdf](http://www.ogc.gov.uk/documents/BOOK_3_APRIL.pdf)

### Gateway 4 (Readiness for Service)

This Review focuses on the readiness of the organisation to go live with the necessary business changes, and the arrangements for management of the operational services.

[http://www.ogc.gov.uk/documents/NEW\\_BOOK\\_4\\_APRIL.pdf](http://www.ogc.gov.uk/documents/NEW_BOOK_4_APRIL.pdf)

### Gateway 5 (Operations Review and Benefits Realisation)

This Review confirms that the desired benefits of the project are being achieved, and the business changes are operating smoothly. The Review is repeated at regular intervals during the lifetime of the new service/facility.

[http://www.ogc.gov.uk/documents/FINAL\\_BOOK\\_5.pdf](http://www.ogc.gov.uk/documents/FINAL_BOOK_5.pdf)

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There is one OGC Gateway specifically designed for applying to **Programmes**:

### Gateway 0 (Zero) (Strategic Assessment)

This is a programme-only review that investigates the direction and planned outcomes of the programme, together with the progress of its constituent projects. It is repeated over the life of the programme at key decision points.

The Scottish Government applies Gateway 0 to the delivery of programmes but it can also be helpful to apply this review to non acquisition / policy delivery projects.

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## Intermediate Gateway Reviews

Intermediate Gateway Reviews can be conducted between two 'Full' Gateway Reviews e.g. between Gateways 2 and 3.

The SRO, in discussion with the CoE-PPM and the Review Team Leader (if necessary) can consider whether an interim review would add value. Things that may determine whether an interim review would be helpful are e.g. the length of time to the next full review or other important decision points that will occur before the next review and on which the SRO would want independent assurance before committing to a course of action.

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## Combined Gateway Reviews

Combined Gateway Reviews (e.g. a combined Gateway Review 1 and 2) are not usually recommended but can be conducted when a project has reached the point in its lifecycle where the latter Gateway would be the most appropriate but where there are issues worthy of analysis that would normally have been dealt with at a prior Gateway Review. Combined reviews are not intended as a mechanism to skip individual reviews.

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## Healthcheck Reviews

Healthcheck Reviews are similar to Gateway Reviews and are offered by the CoE-PPM where a programme or project:

- may have already started and progressed past the opportunity for say a Gateway 1 before engagement with the Gateway Review process, but be some way off the next appropriate Gateway; or,
- has passed beyond the point a Gateway 3 would be conducted; or,
- the programme or project risk level may not be felt sufficient to warrant a full Gateway, but it is felt there would be value from some form of project review being undertaken.

Healthcheck Reviews generally use the same principles and processes as Gateway Reviews although there is normally more flexibility regarding the remit and scope of the review and subsequent report.

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## Further Guidance

Guidance on the relationship of Gateway Review to other types of Review activity can be found at: [Annex 1 - Relationship to Other Types of Review](#)



## D. THE GATEWAY REVIEW PROCESS

### How does the Gateway process start?

There are two main ways in which the potential need for a Gateway Review of a project or programme is identified:

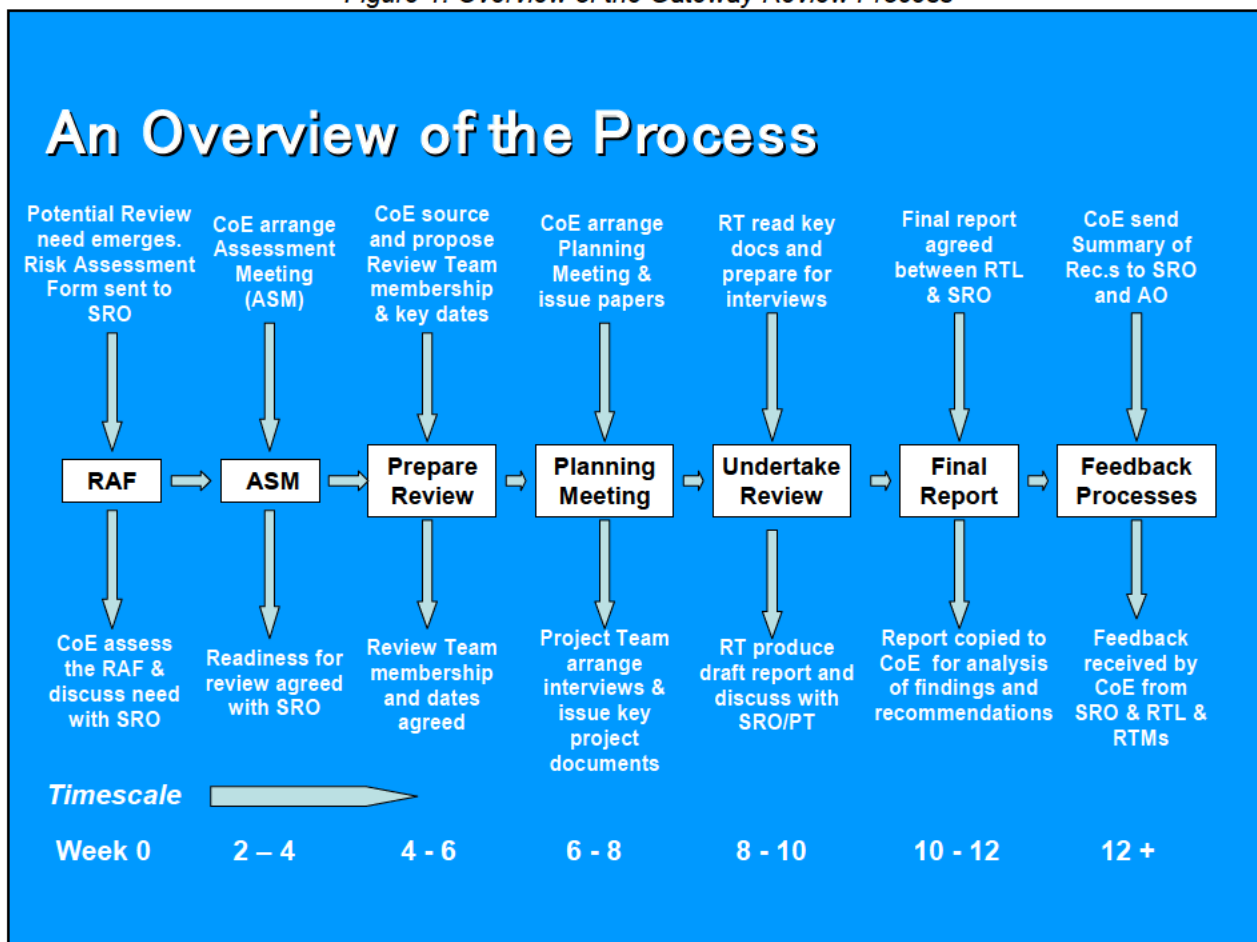
- the CoE-PPM will agree with the senior management of a particular sector a potential list of programmes and projects that should then be assessed on a case by case basis whether they are suitable for the application of a Gateway Review; or,
- a SRO can also put their programme or project forward for assessment by contacting the CoE-PPM direct.

The Gateway Process then involves the following steps:

- Programme / Project Risk and Complexity Assessment;
- The Assessment Meeting;
- Planning the Review;
- Undertaking the Review;
- Reporting; and
- Feedback.

Figure 1 below provides an overview of the process and general timescales for each step.

Figure 1: Overview of the Gateway Review Process



These steps are covered in greater detail in the following sections of this guidance.

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## Programme / Project Risk and Complexity Assessment

When a new programme or project is identified the first step for the SRO is to review their programme or project against a Gateway Risk Assessment Form (RAF) . The RAF provides a standard set of criteria against which the SRO can assess the degree of risk associated with their programme or project.

The outcome of the RAF indicates whether the programme or project is Low, Medium or High Risk. If the project is High Risk (or deemed Mission Critical) and has a budget of £5 million or over the CoE-PPM must be contacted in order to consider whether a Gateway Review should be arranged. The RAF only provides a guideline; where a programme or project is on the boundary between Medium and High Risk or may be particularly critical or sensitive, the SRO and CoE-PPM may agree a different risk rating.

Further guidance on the definition of Programme / Project Risk can be found at [Annex 2 - Definitions of Programme / Project Risk](#)

Note that the [online Risk Assessment Form](#) is accessible to SCOTS (SG Intranet) users only - an alternative Word document template version is also available for use and can be provided by contacting the [SG Centre of Expertise](#).

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## The Assessment Meeting

Following the receipt and analysis of the RAF, the CoE-PPM will then arrange an Assessment Meeting with the SRO and relevant members of their team. The Assessment Meeting allows the CoE-PPM and the SRO to:

- review and agree the risk level associated with the programme or project;
- determine what stage the programme or project is at;
- assess which (if any) review would be most appropriate;
- establish whether the programme or project is ready for review;
- identify the required skill-set and experiences for the Gateway Review Team
- identify provisional dates for the Planning Meeting and the Review; and
- consider other potential support options if review is **not** suitable.

If a full OGC Gateway Review is not considered appropriate due to issues on timing or risk and complexity, the CoE-PPM may suggest a Healthcheck Review is conducted instead.

A Gateway Review can usually be arranged within (8-10 weeks) of the Assessment Meeting. The CoE-PPM need this time to put together options for the Review Team membership, agree the membership with the SRO, and then determine mutually convenient dates for the Planning Meeting and the Review itself. Once determined the CoE-PPM sends out calendar requests and Gateway administration support documentation.

Prior to the Planning Meeting the CoE-PPM provide the Review Team with the note of the Assessment Meeting (if not already done so as part of the Review Team recruitment process) and any relevant background information about the programme/project, e.g. a web link to a project website or other background paper.

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## The Planning Meeting

The Planning Meeting is normally held no less than 2 weeks before the Review. This meeting is facilitated by a representative from the CoE-PPM and can take up to 3 hours in duration. The Planning Meeting provides the opportunity for the review team to acquaint themselves with each other and the project, finalise the list of stakeholders they wish to meet, identify their documentation requirements and confirm the review logistics.

The first part of the meeting (normally lasting 45 minutes), which only the CoE-PPM and the Review Team attend, is often the first time the Review Team members will have met each other if it is a new Review. This part of the meeting allows the Review Team members to agree a Code of Conduct (see [Annex 3 - The Gateway Review Team Code of Conduct](#)) of how they will approach the review, agree an appropriate working pattern for the review days and discuss any initial issues emerging from pre-reading.

The Review Team are then joined by the Programme/Project Team for the rest of the meeting. The remainder of the Planning Meeting will normally include:

- the Review Team Leader presenting the Code of Conduct for agreement;
- the Review Team Leader or CoE-PPM representative providing an overview of the Gateway Review process (if necessary) ;
- the Programme/Project Team providing the Review Team with a briefing of the programme/project's background and its current position and main issues;
- the aims and purpose of the proposed Gateway are reviewed and the appropriate Gateway (i.e. 0, 1-5) is confirmed;
- identification of key stakeholders, from both within and out-with the programme or project structure, whom the Review Team would wish to interview;
- identification of key project documentation which the Review Team would wish to read before the Review; and,
- confirmation of any necessary administrative and logistical issues concerning Review location, hotel accommodation, catering requirements and equipment (e.g. projector/conference phones).

Following the Planning Meeting the RTL assumes responsibility for the remainder of the Gateway Review administrative process in liaison with the programme/project team, e.g. confirming the interview schedule, although any major issues should be raised with the CoE-PPM as necessary. The CoE-PPM will make final checks before the Review with the RTL and programme/project team to ensure documents are received and no issues remain.

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## Undertaking the Review

The Gateway Review usually follows within 2-3 weeks of the Planning Meeting and is normally carried out over 3 days (4 days may be allocated for very major or critical programmes or projects). For a 3 day Review the first two days of the review are usually taken up with interviews and gathering evidence and the third day for drafting the report.

The Review Team begin by reviewing the key project documentation and preparing for the interviews with the key stakeholders (and relevant Programme or Project Team members). The SRO and the Programme or Project Manager (PM) are usually the first two stakeholders to be interviewed. The Review Team compare their findings with best practice and experience of other programmes or projects to create a short report that

offers recommendations to the SRO designed to increase the programme or project's opportunities for success.

The Review Team will discuss 'Emerging Findings' at the end of each review day with the SRO (and, other key members of their team if they so wish). It is essential that an open and honest agenda and dialogue is maintained throughout the Gateway Review process. 'Emerging Findings' meetings are intended to enable the Review Team to share their early thoughts on the way the review is progressing and offers the SRO the opportunity to correct any misinterpretations or 'off track' thinking and to ensure there are no surprises within the Review Team's draft Gateway Report.

A Gateway Review can only be a snap-shot of the programme or project as it is at the point at which the review takes place. As such, recommendations are based on the evidence presented and on the interviews that take place. The review process is intended to be supportive and forward looking and will take future plans into account but only as future intentions, rather than actualities.

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## **The Gateway Review Report and Delivery Confidence Assessment**

The Gateway Review Report uses a Scottish Government template that records the:

- Programme or Project Background;
- Purpose and Conduct of the Review;
- Gateway Review Conclusion and Delivery Confidence Assessment;
- Findings and Recommendations;
- Previous Gateway Review Recommendations;
- Next Gateway Review;
- Distribution of the Gateway Review Report;
- An appendix covering the purpose of the Gateway Review;
- An appendix listing the Review Team membership and list of interviewees; and
- An appendix containing a Summary of Recommendations.

The 'Gateway Review Conclusion' section of the report is where the Review Team provide a Delivery Confidence Assessment (DCA) statement. DCA has been introduced by Office of Government Commerce into the Gateway Reporting process to provide a better means by which the Review Team can make a statement outlining their view of the likelihood of the project/programme delivering successfully. The DCA uses a RAG style indicator to provide an overall report status and Table 1 below details the definitions associated with the DCA outcome.

**Table 1: Delivery Confidence Assessment**

Colour	Criteria Description
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
Green / Amber	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.

Previously, the report recommendations contained a RAG status but these are now categorised as:

**Critical (Do Now)** – To increase the likelihood of a successful outcome it is of the greatest importance that the programme / project should take action immediately.

**Essential (Do By)** – To increase the likelihood of a successful outcome the programme/project should take action in the near future. Whenever possible Essential recommendations should be linked to project milestones e.g. before contract signature and/or a specified timeframe e.g. within the next three months.

**Recommended** – The programme/project should benefit from the uptake of this recommendation. If possible Recommended recommendations should be linked to project milestones e.g. before contract signature and/or a specified timeframe e.g. within the next three months.

## Distribution of the Report

A draft review report is usually provided to the SRO on the afternoon of the last day of the Gateway Review. After the SRO has had a chance to read the report the Review Team and the SRO should discuss its contents. Over the following week the SRO and RTL will agree any drafting amendments before the RTL sends the 'final' report to the SRO and copies this to the CoE-PPM.

The CoE-PPM then sends an extract of the summary of report recommendations and the Delivery Confidence Assessment statement to the SRO and relevant organisational/SG Accounting Officer - the latter action is to provide a 'line of sight' to senior management. The SRO should maintain an official record of how Gateway Review recommendations have been implemented or setting out reasons for not implementing any recommendation.



This will be considered at the Planning Meeting of the next review to provide the Review Team with an update on the actions taken.

The SRO is responsible for implementing recommendations, taking remedial action and for further circulation of the report as necessary. The SRO also is responsible for considering any Freedom of Information Request for the Gateway Report - advice should be taken from the CoE-PPM in any such case.

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## **Review Feedback Process**

Following the Review, the Gateway Review Director issues a Feedback Questionnaire to the SRO and the Review Team Leader and Members. This feedback process helps ensure that the Gateway Review process achieves and maintains a high standard of quality and where necessary improvements to the process can be identified.

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## **Timing of Subsequent Reviews**

A Gateway Report should include a suggested timescale for undertaking the next review. The CoE-PPM will contact the SRO around 3-4 months before this suggested next review date to enquire about the readiness of the programme or project for a review and whether the programme or project scope and/or risk profile has changed significantly since the last Review. If there has been significant change, the CoE-PPM may request an updated Risk Assessment Form is completed and a further Assessment Meeting is held to re-consider the nature of the Gateway Review support required.

Once the need for a repeat review and its timing is agreed, the CoE-PPM contacts the Review Team to "re-engage" them for this subsequent review and another Planning Meeting. A representative from the CoE-PPM will still attend the meeting, unless agreed otherwise by the RTL and SRO.

The repeat review Planning Meeting should require less time than the 3 hour duration of the initial Planning Meeting, given that the attendees should now be familiar with the Gateway Review process and how the Planning Meeting operates. The main difference from the first Planning Meeting is that the programme or project team are expected to provide an update on the actions taken on the recommendations from the previous review report.

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## **Freedom of Information (FOI) request for Gateway Review Reports**

The release and distribution of a Gateway Review Report is a matter for the programme or project's Senior Responsible Owner to ultimately decide upon. Advice should be sought in any case from the CoE-PPM.

In-depth guidance on FOI can be found on the [SG FOI Intranet site](#).

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## **Further guidance**

Further guidance about the Process in relation to specific 'Roles and Responsibilities' can be found at [Annex 4 - Gateway Roles and Responsibilities](#).

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## **E. THE GATEWAY REVIEW TEAM**

### **Team Membership**

The Review Team is made up of experienced practitioners, totally independent of the Programme or Project Team, who use their knowledge, skills and experience from a variety of backgrounds to identify the key issues that need to be addressed to help the programme or project to succeed.

The Review Team usually consists of an external Review Team Leader (accredited by OGC) supported by two or three Review Team Members drawn from various areas of the Scottish Government, its Agencies, NDPBs and other delivery sectors (such as the Scottish Health, Education and Police sectors). The Review Team Leader will be at a peer level to the SRO. The Review Team Members will have knowledge, experience and status commensurate with the programme or project they are reviewing.

The CoE-PPM aim to keep the same team together to carry out subsequent reviews across the lifecycle of the programme or project. However, there may be changes or additions to teams if the focus of the programme or project changes during its lifecycle.

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### **Review Team Costs**

Normal arrangements for civil servant Review Team Members are that they should claim any appropriate Travel & Subsistence (T&S) from their "home" cost centre. However, where the RTM's cost centre cannot meet such costs, or where the RTM requires overnight accommodation to fulfil their commitments to the review then such costs may be met by the project under review.

Review Teams are led by an external Review Team Leader and the Scottish Government's Strategic Board have agreed that the cost of this external resource must be met by the project under review. In some instances a review team may also have an external resource as a Review Team Member. Requirements for this will be discussed with the SRO – but again, the cost of external resource must be met by the project under review.

External Review Team resources are sourced by the CoE-PPM from a specific SG Framework Agreement to support the SG Gateway Review programme. This Framework Agreement has set fixed price day-rates agreed with our suppliers for up to three levels of consultancy support. The day rate includes the cost of travel to a Review but excludes overnight accommodation and subsistence costs plus any additional travel costs incurred during the review – e.g. to a secondary review location. Note that the re-charge of subsistence costs by External Advisers is restricted to standard SG T&S rates.

The CoE-PPM will normally undertake the issue of SEAS Purchase Orders and formal contract award letters for the engagement of External Advisers, plus the subsequent checking of submitted invoices and payment processing on SEAS. For organisations not on SEAS, invoices will be checked for accuracy and then forwarded onto the programme or project team for direct payment.

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## Becoming a Review Team Member

### *What skill-set do I need?*

Within the Scottish Government you'll be Head of Branch or above (typically C Band or SCS ). If you are working in an Agency, NDPB or other type of public organisation you are probably a Director or Head of a specific operation or delivery function. You'll have good management experience of operational delivery, programme management or project management. Alternatively, you may be a professional adviser working in Construction, ICT, Procurement or Finance, in which case your professional technical skills and experience will be important.

The CoE-PPM encourage applications for Review Team membership from a wide variety of organisations and managerial and professional backgrounds.

### *What commitment am I making?*

The initial commitment required from Reviewers is to participate in a 1 day workshop at which the Gateway Review process is explained in detail with opportunities to role-play the different elements of the process.

Trained Reviewers are appointed to an appropriate programme or project after the CoE-PPM check with them, and the project that they are being invited to review, that there are no conflicts of interest. Reviewers work as a team (typically 3 in a team) and must be independent of the project being reviewed.

In general, Reviewers are asked to set aside 4 days per review. This allows time for background reading, attending a ½ day Planning Meeting and then conducting the review itself (normally 3 days). There are 5 Gateways that a typical project could go through in advance of key decision points of the project's lifecycle. Depending on the project under review it may pass through a couple of Gateways within a 12 month period. Programmes are subject to Gate 0, and again may be subject to more than one review within a 12 month period.

Gateway Review participation should be recognised as an opportunity to gain further experience of programme and project management disciplines and should be reflected in performance and development appraisal reviews.

If you are approached to take part in a review, please ensure that you are able to meet the obligation being placed upon you. You should also notify the CoE-PPM if you change post, location, leave the service etc. in order to keep the Reviewer database up to date.

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## How do I apply?

The [Gateway Reviewer Application Form](#) provides more details on the type of skills and experience required. This form can be downloaded from the CoE-PPM Intranet site or by requesting a form from the CoE-PPM - please contact the CoE-PPM at our mailbox at [CoE@scotland.gsi.gov.uk](mailto:CoE@scotland.gsi.gov.uk).

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## F. ANNEXES

### Annex 1 - Relationship to Other Types of Review

A Gateway Review should be held before key decision points in the lifecycle of a project. The Review Team is made up of independent experienced practitioners (from a variety of backgrounds) who bring their knowledge and skills to bear to identify the key issues that need to be addressed for the project to increase its prospects of having a successful delivery. Each review is conducted on a confidential basis for the SRO and ownership of the report rests with the SRO. Reviews take place throughout the project with the aim of assisting the Project (or Programme) Team to improve delivery.

#### How does a Gateway Review differ from:

##### **Audit Review**

Internal Audit (Audit Services) provides an independent and objective assurance to Accountable Officers on the efficiency and effectiveness of risk management, control, and governance arrangements within their portfolio of responsibilities. Detailed findings from individual Audit Reviews are issued, in the form of a formal report, to the senior manager of the relevant business area (usually, but not always, at Branch Head level). The report contains an action plan of agreed recommendations with target dates for their full implementation.

##### **Peer Group Review**

In the Scottish Government a Peer Group Review process has been developed for ICT projects to complement the Gateway Review process. ICT Peer Group Reviews are carried out by members of the ICT functional specialism. The CoE-PPM will direct Medium Risk ICT projects to the ICT Peer Group Review. The ICT Peer Group Review is administered through SG Information Services and Information Systems (ISIS).

##### **Self Assessment Review**

Low Risk projects should have a Self Assessment Review carried out by the Project Manager, presented to the SRO and Project Board (or other decision making authority) and maintained as part of the official record. This may be no more than expected Project Management reporting. In the Scottish Government a Self Assessment Review process is being considered by the CoE-PPM to aid Project Managers of Low Risk projects.

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## Annex 2 - Definitions of Programme / Project Risk

A **Mission Critical** Programme or Project is one that, regardless of size, value or complexity, delivers:

- outputs that directly support the delivery of a major policy outcome; or
- an internal business change that supports the administration of the Scottish Government or a major public sector organisation e.g. an Agency or major funded body.

A **High Risk** Programme or Project is one that typically displays some or all of the following characteristics:

- a novel or untested approach to delivery;
- lack of experience of similar project delivery;
- a complex matrix of project interdependencies;
- a significant impact on the public and other organisations;
- a business criticality and/or political sensitivity; or
- a significant resource commitment.

A **Medium Risk** Programme or Project is one that typically displays some or all of the following characteristics:

- a previously tested approach to delivery;
- a structured delivery team with some relevant experience;
- a well defined project with clear and uncomplicated boundaries;
- some impact on the public and other organisations;
- an important but non-critical business support function and/or some political sensitivity; or
- some degree of resource commitment.

A **Low Risk** Programme or Project is one that typically displays some or all of the following characteristics:

- a routine and well-tested approach to delivery;
  - an experienced delivery team;
  - clear project boundaries with little or no interdependency on other projects;
  - minimal external impact on the public and other organisations; or
  - limited resource requirements.
-

### **Annex 3 - The Gateway Review Team Code of Conduct**

The Code of Conduct is agreed between the Review Team at the start of the Planning Meeting; it is written down and discussed with the Programme or Project Team when they join the Planning Meeting.

It is a 'Statement of Principles' which the Review Team specifies to ensure a consistent professional approach in interactions with all individuals they will encounter throughout the review, along with their dealings and attitude to the review.

An example Code of Conduct may quote the following 'Statement of Principles':

"We will:

- endeavour to Add Value;
  - be Open & Honest, Constructive and Positive;
  - demonstrate a Collaborative Approach;
  - hold Confidential Interviews and Discussions;
  - deliver a Confidential Report;
  - respect each other, the Interviewees and the Project Team;
  - engage a 2 Way Learning Process; and
  - agree an appropriate working pattern for the review days".
-

## **Annex 4 - Gateway Roles and Responsibilities**

This section of the guidance covers what the roles and responsibilities are of those involved in the Gateway Review process:

**Senior Responsible Owner (SRO)**  
**Programme / Project Manager**  
**Programme / Project Team**  
**Review Team Leader (RTL)**  
**Review Team Member (RTM)**  
**Gateway Review Director (GRD)**  
**Centre of Expertise for Programme and Project Management.**

---

### **Senior Responsible Owner (SRO)**

#### **Gateway Review Responsibilities:**

##### *Start Up:*

- arrange for the completion of the Risk Assessment Form (RAF);
- commission the review by contacting the CoE-PPM to discuss needs; and
- show support for the review throughout the process.

##### *Assessment Meeting:*

- attend the Assessment Meeting(s) with the CoE-PPM, the Gateway Review Director (GRD) (if appropriate) and the Programme or Project Manager;
- discuss the level of risk indicated by the RAF and help determine the appropriate support (e.g. Gateway Review, Healthcheck, Peer Group Review, etc);
- agree with the CoE-PPM the skills profile of the proposed Review Team Members;
- agree potential dates for the appropriate support; and following the Assessment Meeting

##### *Planning Meeting:*

- liaise with the Review Team Leader (RTL) prior to the Planning Meeting to introduce each other or to touch base prior to a subsequent Planning Meeting;
- review the Gateway Review support documents prior to attending the Planning Meeting;
- attend the Planning Meeting(s) and provide a synopsis of the project to the Review Team (supported by the Programme or Project Manager);
- for subsequent Planning Meetings provide an update on any actions taken (or not taken) on previous recommendations given by the Review Team; and
- ensure all key project documentation and/or any necessary information is made available to the Review Team (following the Planning Meeting).

##### *Undertaking the Review:*

- ensure good working relations between the Review Team and the Programme or Project Team;
- take part in review interviews (usually the first interview); and
- be available to the Review Team throughout the review but in particular at the end of each review day to discuss 'Emerging Findings'.

**Reporting:**

- take receipt of the draft report;
- meet the Review Team to discuss the content of the draft report;
- take receipt of the final report from the RTL within 1 week following the review;
- circulate the report to relevant parties(\*);
- take receipt of the Gateway Review Recommendations summary from the Gateway Review Director (GRD);
- retain the summary as an official record of how Gateway Review recommendations have been implemented;
- take receipt of a Feedback Questionnaire from the GRD; and
- provide feedback on the Gateway Review process to the GRD following receipt of the feedback sheet.

\* The outcome of Gateway Reviews of Mission Critical and High Risk projects should be reported to Accountable Officers, who should in turn inform the relevant Minister/s if a review identifies serious deficiencies or difficulties (including probable failure to meet the planned budget) within the project, so that decisions can be taken as to whether these are readily capable of resolution or if the project should be suspended or cancelled.

SROs must **not** however rely on Gateway Reviews to indicate if their project or programme is in difficulty; the Gateway Report represents a “snapshot” at a point in time and is only one of a number of sources of information which helps SROs to evaluate performance e.g. regular monitoring reports from Project Managers. Responsibility for consulting Ministers if there are serious concerns about the planned budget or viability of a project lies with Accountable Officers and SROs, not with a Review Team.

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**Programme / Project Manager****Gateway Review Responsibilities:****Start Up:**

- assist the SRO to complete the RAF (if requested); and
- agree the date and logistics of the Assessment Meeting with the CoE-PPM.

**Assessment Meeting:**

- attend the Assessment Meeting(s);
- discuss the level of risk indicated by the RAF and help determine the appropriate support (e.g. Gateway Review, Healthcheck, Peer Group Review);
- help agree potential dates for the appropriate support;
- following the Assessment Meeting discuss with the SRO the proposed Review Team prior to the SRO agreeing membership with the CoE-PPM; and
- provide the CoE-PPM with any requested key documents prior to the Planning Meeting.

**Planning Meeting:**

- agree the date and logistics of the Planning Meeting with the CoE-PPM;
- consider in advance of the Planning Meeting who the likely Review interviewees may be and inform them of the review period when known;
- brief their Project Team on the remit of the review (prior to the Planning Meeting);
- review the Gateway Review support documents prior to attending the Planning Meeting;

- attend the Planning Meeting(s) and support the SRO with the programme or project synopsis to the Review Team;
- assist the SRO in informing the Review Team on the actions taken on recommendations made at previous reviews (when attending subsequent Planning Meetings); and
- provide the Review Team with the additional documentation requested at the Planning Meeting (following the Planning Meeting).

*Undertaking the Review:*

- be available to the Review Team throughout the review;
  - inform the agreed interviewees of the review period as soon as dates are known with a view to agreeing their date and time of interview;
  - timetable stakeholder interviews for the Review Team;
  - provide each interviewee with a copy of the supporting Gateway guidance notes;
  - build time into the review / interview timetable for the Review Team to discuss 'Emerging Findings' with the SRO at the end of each review day;
  - build time into the review / interview timetable for the Review Team to hand over the draft report to the SRO in the last afternoon of the review;
  - build time into the review / interview timetable for the Review Team to meet the SRO to discuss the report (after the SRO has had a chance to read it) in the last afternoon of the review;
  - organise the domestic arrangements for the review (e.g. car parking (if possible), refreshments & lunches for the Review Team, a room for interviews (set up informally if possible), a room for the Review Team to work in, entry to the building for a Review Team Member if a non-SG security pass holder, provide any requested IT equipment, etc.);
  - ensure all interviewees are present for their allocated interview time;
  - take part in review interviews; and
  - be available to the Review Team throughout the review and to the SRO at the end of each review day to discuss 'Emerging Findings' with the Review Team (if invited).
- .....

## ***Programme / Project Team***

### **Gateway Review Responsibilities:**

*Assessment Meeting:*

- attend the Assessment Meeting/s (if requested); and
- assist the PrgM / PM to provide any key documentation requested by the CoE-PPM prior to the Planning Meeting.

*Planning Meeting:*

- be briefed by the PrgM / PM on the remit of the review (prior to the Planning Meeting);
- attend the Planning Meeting/s (if requested); and
- assist the PrgM / PM to provide the Review Team with additional key documentation and/or any necessary information (following the Planning Meeting).

*Undertaking the Review:*

- assist the PrgM / PM with the timetabling of review interviews;
- assist the PrgM / PM with organising the domestic arrangements for the review;

- assist the PrgM / PM with managing the interviewees in particular ensuring they reach the Review Team for their allocated interview time; and
  - take part in review interviews (if requested).
- 

## ***Review Team Leader (RTL)***

### **Gateway Review Responsibilities:**

#### *Start Up:*

- review a copy of the Assessment Meeting note and any other key background documentation sent by the CoE-PPM prior to the Planning Meeting.

#### *Planning Meeting:*

- contact the Review Team Members (RTMs) prior to the Planning Meeting to introduce each other and to ensure their preparedness (or to touch base prior to a subsequent Planning Meeting);
- liaise with the SRO prior to the Planning Meeting to introduce each other or to touch base prior to a subsequent Planning Meeting;
- attend the Planning Meeting and take responsibility for the remainder of the Gateway Review process thereafter;
- develop a Code of Conduct with the other Review Team Members at the start of the Planning Meeting(s) and relay this to the Programme or Project Team when they join the Planning Meeting;
- consider with the CoE-PPM the remit of the Review and confirm the appropriate Gate to be carried out (if appropriate), discussing this with the Project Team when they join the Planning Meeting(s);
- provide an overview of the Gateway process to the Programme or Project Team during the Planning Meeting and explain the remit of the review the programme or project is about to go through; and
- ensure that the set 'Review Dates' are still achievable.

#### *Undertaking the Review:*

- read the project documentation prior to the review;
- contact the other RTMs prior to the review to ensure their readiness;
- prepare for, then carry out, the review interviews;
- offer all interviewees a briefing on the Gateway process
- discuss 'Emerging Findings' with the SRO at the end of each review day;
- offer pragmatic recommendations to the Programme or Project Team;
- ensure an overall report Delivery Confidence Assessment is entered into the review report;
- decide on the recommendations to be made prior to producing the review report (and their associated status); and
- propose (in the review report) when the next review should take place and what Gateway is appropriate.

#### *Reporting:*

- deliver the draft report to the SRO on the final day of the Review and provide the SRO time to consider before discussing the draft Report with the SRO;
- discuss and agree any final drafting changes with the SRO;
- ensure that the SRO and CoE-PPM receive a final copy of the report within 1 week after the review;

- take receipt of a Feedback Questionnaire from the GRD following receipt of the final report at the CoE-PPM;
- provide feedback on the Gateway Review process to the GRD following receipt of the feedback sheet; and
- destroy all project and report documentation in their possession following each Gateway.

#### Participation Note

If the SRO or a Project Team Member seeks advice from a RTL following a review it may invalidate the RTL's independence for successive Gateways for that particular programme or project. RTLs should not take advantage of their position to proffer advice or assistance to SROs and Programme or Project Teams. The RTL may however direct the SRO or Project Team to the CoE-PPM. The CoE-PPM may be able to offer assistance or direct the SRO or project team to someone who could help.

#### Freedom of Information (FOI) Note

Gateway Reviewers are required to dispose of the Gateway Review Report (drafts and final versions) and all supporting programme or project documents immediately following the delivery of the final Report to the SRO (for each Gateway undertaken).

If a Gateway Reviewer receives a request for information from a Gateway Report (either verbally or in writing) they should advise that "Gateway information is not generally published or disclosed and that it is for the SRO to decide how, when and with whom they share the information" and **refer the 'requester' to the SRO of the relevant programme or project.**

The SRO should decide on access to the Gateway Report on a case-by-case basis, taking into account all public interest arguments.

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### ***Review Team Member (RTM)***

#### **Gateway Review Responsibilities:**

##### *Start Up:*

- review a copy of the Assessment Meeting note and any key project documentation sent by the CoE-PPM prior to the Planning Meeting.

##### *Planning:*

- attend the Planning Meeting(s);
- develop a Code of Conduct with the other Review Team Members at the start of the Planning Meeting(s);

##### *Undertaking the Review:*

- read the key programme or project documentation sent prior to the review;
- liaise with the RTL prior to the review to confirm readiness;
- prepare for, then carry out, review interviews;
- assist the RTL when discussing 'Emerging Findings' with the SRO at the end of each review day;
- assist the RTL in the compilation of findings, recommendations, conclusions and overall Delivery Confidence Assessment;
- assist the RTL in the drafting of the review report; and
- assist the RTL to determine when the next review should take place and what the next Gateway should be.



**Reporting:**

- assist the RTL when discussing the draft report with the SRO;
- take receipt of a Feedback Questionnaire from the Gateway Review Director following receipt of the final report at the CoE-PPM;
- provide feedback on the Gateway Review process to the GRD; and
- destroy all project documentation in their possession following each Gateway.

**Participation Note**

If the SRO or a Programme or Project Team staff member seeks advice from a RTM following a review it may invalidate the RTM's independence for successive Gateways for that particular programme or project. RTMs should not take advantage of their position to proffer advice or assistance to SROs and Programme or Project Teams. The RTM may however direct the SRO or Project Team to the CoE-PPM. The CoE-PPM may be able to offer assistance or direct the SRO or project team to someone who could help.

**Freedom of Information (FOI) Note**

Gateway Reviewers are required to dispose of the Gateway Review Report (drafts and final versions) and all supporting programme or project documents immediately following the delivery of the final Report to the SRO (for each Gateway undertaken).

If a Gateway Reviewer receives a request for information from a Gateway Report (either verbally or in writing) they should advise that "Gateway information is not generally published or disclosed and that it is for the SRO to decide how, when and with whom they share the information" and **refer the 'requester' to the SRO of the relevant programme or project.**

The SRO should decide on access to the Gateway Report on a case-by-case basis, taking into account all public interest arguments.

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**Gateway Review Director (GRD)****Gateway Review Responsibilities:**

The GRD will:

- assist SROs (along with the CoE-PPM) to evaluate the scale of risk associated with their programme or project following receipt of the Risk Assessment Form;
- agree which programmes or projects should be supported by Gateway Review;
- attend 'Mission Critical' Programme or Project Assessment Meeting(s) (if appropriate);
- receive a copy of each final Gateway Report;
- forward a Gateway Review Recommendations summary to the SRO following the review; and request feedback from the SRO and Review Team following the review.

**Start Up:**

- discuss the programme or project needs with the CoE-PPM; and
- agree if the programme or project could be supported by Gateway.

**Assessment Meeting (if appropriate):**

- attend Assessment Meeting(s) with the CoE-PPM, the SRO and the PrgM / PM (if appropriate);

- agree the appropriate level of support (e.g. Gateway Review, Peer Group Review) with the CoE-PPM;
- agree with the SRO and CoE-PPM the profile of the Review Team membership; and
- help the CoE-PPM define a Review Team to propose to the SRO.

*Reporting:*

- receive a copy of the final report;
- receive a Gateway Review Recommendations summary from the CoE-PPM following receipt of the final report
- issue the Gateway Review Recommendations summary to the SRO and the AO;
- receive a Feedback Questionnaire from the CoE-PPM following the review
- issue the Feedback Questionnaire to the SRO and Review Team;
- receive and review the feedback provided on the Gateway Review process from the SRO and the Review Team following receipt of returned feedback sheets; and
- forward copies of returned feedback sheets to the CoE-PPM for their review.

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## **Centre of Expertise for Programme and Project Management**

### **Gateway Review Responsibilities:**

*Start Up:*

- receive the RAF from the SRO;
- discuss the programme or project needs with the SRO and GRD; and
- if the GRD agrees the programme or project could be supported by Gateway agree the date and logistics of the Assessment Meeting with the Project Manager.

*Assessment Meeting:*

- arrange and attend the Assessment Meeting(s) with the GRD (if appropriate), the SRO and the PrgM / PM;
- discuss the level of risk indicated by the RAF and help determine the appropriate support (e.g. Gateway Review, Peer Group Review);
- present the proposed support to GRD for agreement;
- obtain project information from the PrgM / PM to agree the profile of the proposed Review Team Membership;
- agree potential dates for the appropriate support;
- produce a note of the Assessment Meeting;
- check with the PrgM / PM about any available key project documentation for issue to the Review Team prior to the Planning Meeting (including any relevant interdependent documents); and
- agree the Review Team membership with the SRO following the Assessment Meeting.

*Planning Meeting:*

- agree the date and logistics of the Planning Meeting with the PrgM / PM;
- propose, before setting, Review Dates with the Project Team and the Review Team;
- provide the Review Team with a copy of the Assessment Meeting note and any key project documentation (supplied by the Programme or Project Team) prior to the Planning Meeting;
- provide the Programme or Project Team and Review Team with supporting Gateway Review documents;

- arrange and facilitate the Planning Meeting; for subsequent Planning Meetings the CoE-PPM may ask the RTL to facilitate; and
- provide the PrgM / PM with Gateway Review administrative support guidance documents and support and advice prior to the review commencing.

*Undertaking the Review:*

- check that the key documents requested by the Review Team at the Planning Meeting are sent to the Review Team sufficiently in advance of the review; and
- be available to support the Review Team and the Programme and Project Team throughout the review period.

*Reporting:*

- take receipt of a final copy of the Gateway Review report (from the RTL) within 2 weeks following the review
  - check that the correct template format has been used;
  - identify any possible project follow-up support actions
  - note the indicative timings for the next proposed Gateway;
  - forward a copy of the final report to the GRD for review following receipt;
  - prepare the Summary of Recommendations and Feedback Questionnaires for the GRD to issue to the SRO and the AO following receipt of the final report; and
  - receive and review copies of the feedback provided on the Gateway Review process from the SRO and the Review Team.
-

## NHS Lothian Internal Audit Report

Report for the Audit and Risk Committee 31 July 2020 and the  
NHS Lothian Board 12 August 2020

Governance and Internal Controls: Royal Hospital for Children  
and Young People, and Department of Clinical Neurosciences  
Edinburgh

## Contents

	<b>Page</b>
1. Introduction	2
2. Overall summary	3
3. Contextual factors	9
4. Key events	12
5. Further observations not within NHS Lothian's influence	31
6. Recommendations	35

<b>Appendices</b>	<b>Page</b>
1. Internal Audit scope and limitations	42
2. Project Timeline	45
3. Environmental Matrix	46
4. NHS Lothian project and governance arrangements	54
5. Advisers and other parties involved, external to NHS Lothian	59

This report is confidential and is intended for use by the management and directors of NHS Lothian only. It forms part of our continuing dialogue with you, in our capacity as internal auditors. It should not be made available, in whole or in part, to any third party without our prior written consent. We do not accept responsibility for any reliance that third parties may place upon this report. Any third party relying on this report does so entirely at its own risk. We accept no liability to any third party for any loss or damage suffered or costs incurred, arising out of or in connection with the use of this report, however such loss or damage is caused. See further limitations of scope as set out on page 44 of this report.

It is the responsibility solely of NHS Lothian's management and directors to ensure there are adequate arrangements in place in relation to risk management, governance, control, and value for money.

## 1. Introduction

1. This report sets out our observations arising from our review of the governance and internal controls over the RHCYP project. Our internal audit scope (**Appendix 1**) was agreed in October 2019 following discussions at the Finance and Resources Committee and the NHS Lothian Board.
2. The scope of work was planned in two phases. Phase one, and a potential later phase depending on the work undertaken. As our internal audit work commenced, it was identified that phase one and phase two were in part linked.
3. This report covers:
  - Understanding the key events timeline.
  - Roles and responsibilities of the parties involved, linked to the key event timeline and decisions.
  - Respective controls including governance and assurance.
4. We reviewed documentation retained by NHS Lothian. Documentation included: project board minutes, project steering board minutes (from 2015 onwards), Finance and Resources committee minutes, Board minutes; workstream notes, retained email correspondence; reports and status updates, procurement documentation and settlement agreement.
5. To support our understanding of events and the documentation, we met with several individuals internal to NHS Lothian. In addition, we also spoke with Scottish Futures Trust, MacRoberts UK LLP, Mott MacDonald Limited, and Arcadius. This was to support our understanding only.

### Previous reports into the RHCYP project

6. In scoping our work, we recognised previous reports commissioned. We sought not to duplicate previous work. This report builds on the work commissioned by Scottish Government, reported in August 2019, and is focused on seeking to understand why events occurred to compliment the “what happened”, which has been articulated.
7. Following the public inquiry announcement, it is intended that our work will support NHS Lothian in preparing for the inquiry.

### Non-Profit Distribution (NPD) model and definition of Project Co

8. The project was delivered using the Non-Profit Distribution (NPD) model. Project Co is the Special Purpose Vehicle (SPV) established to deliver the project. The SPV is Integrated Health Solutions Lothian (IHSL) who are a separate corporate entity, set up to deliver the design, construction, and operation of the facility for the concession period. NHS Lothian’s contract is with IHSL. IHSL have senior debtor holders (EIB and M&G) and junior debt equity interests (Dalmore and Macquarie). The supply chain includes Multiplex (contractor appointed by IHSL to design and construct, supported by other parties including Wallace Whittle as mechanical engineers) and BYES (service provider appointed to deliver hard facilities management post completion).
9. For ease of reference we have referred to Project Co throughout or Multiplex where specifically that is appropriate.

## 2. Overall summary

### Scope of work

10. In our capacity as internal auditors, we were commissioned to review the key events within the Royal Hospital for Children and Young People (RHCYP) and Department of Clinical Neurosciences (DCN) project. Throughout the report we refer to the project as RHCYP. Whilst run as a single project, using the NPD model our review focused on the reasons for the material ventilation issues which delayed the opening of the RHCYP.
11. This report builds on the themes identified in the Scottish Government commissioned review of governance and internal controls (August 2019) and the Auditor General for Scotland's Section 22 Report (December 2019).
12. Our recommendations will support NHS Lothian in strengthening its control environment over capital projects. The RHCYP project spanned a decade so we recognise the controls at the beginning of the project have been developed and enhanced.
13. In addition, the report will support NHS Lothian's planning for the public inquiry as it has identified wider considerations beyond the environmental matrix.
14. To date the focus has been on the environmental matrix. This is the matrix used on the project to set out mechanical and ventilation requirements, alongside other design factors, for all spaces in the new hospital. An error existed over critical care ventilation (and the other four bedded rooms within the hospital) within the versions of the matrix developed first by NHS Lothian (2012) which continued into the versions created by Project Co (2014 onwards).
15. All projects require decisions to be taken which balance risk, delivery, quality, and financial implications. Factors influencing the RHCYP project over the past decade included financial affordability, the site of the hospital, clinical services now and the future, the timescale to deliver a new hospital, alongside external factors beyond the direct control of NHS Lothian. There is currently a suite of guidelines on building a hospital, which may contradict and/or be subject to interpretation, coupled with a lack of clarity over what guidelines are fundamental requirements and must be built into the design specification.

### Ventilation

16. Ventilation is important to control infections and is designed considering the functional and clinical use of the space. SHTM 03-01 is the guidance outlining ventilation requirements within a hospital.
17. The error in the RHCYP was an air change rate delivered for the critical care department which did not comply with SHTM 03-01 guidelines. Later in the project, an air change rate of four air changes per hour was accepted in single rooms and the four bedded rooms, which also did not comply with SHTM 03-01.
18. SHTM 03-01 states, amongst other things, the air change rate in critical care should be 10 air changes per hour. SHTM 03-01 is guidance. However, the need to comply with SHTM 03-01 was within the contract and therefore a contractual requirement of the RHCYP project. The settlement agreement signed by NHS Lothian (February 2019) derogated the responsibility for Project Co to comply with SHTM 03-01 and agreed an air change rate of 4 changes per hour within critical care. This is accepted by NHS Lothian to be an error.
19. The settlement in February 2019 cemented the error contractually. However, the lack of clarity and understanding of requirements over ventilation in critical care, including four bedded rooms, existed in the RHCYP project since 2010/11.
20. SHTM 03-01 guidance includes other aspects of ventilation. Ventilation also includes air pressure, which can be positive, balanced, or negative depending on usage of the room. Required temperature ranges are set out, for example between 18 degrees to a maximum of 28 degrees. Lastly, the ventilation solution designed can be mechanical, natural or a combination of both and this alongside other factors influence the energy consumption of the building. Within the RHCYP project air changes, air pressure and air temperature were all factors which contributed to non-compliance with the SHTM 03-01.

### Responsibilities – NHS Lothian and Project Co

21. NHS Lothian, the client, set the requirements for the new hospital. These are set out within the Board Construction Requirements of the contract. These requirements consider the use of the clinical space, including space for equipment, and are defined using the concept of operational functionality. NHS Lothian therefore approve the designs created by Project Co which will deliver operational functionality.
22. Project Co are responsible for designing and building the hospital, to meet the Board Construction Requirements. IHSL document the way in which they intend to design and build the hospital to meet the Board Construction Requirements in a set of Project Co Proposals.
23. In practical terms, given the nature of the project and its importance, NHS Lothian, and technical advisers, reviewed design elements beyond operational functionality. This is evidenced through the review comments on the environmental matrix. This may have resulted in confusion or a blurring of responsibility between NHS Lothian and Project Co.
24. The contract, through derogations and change control procedures, allow for inconsistencies when identified to be addressed between both parties. Where any party does identify inconsistency or design not aligned to requirements (within or beyond operational functionality) then it should be identified through the processes established within the contract.
25. However, the inconsistency of interpretation over four bedded rooms and further inconsistency between the Board Construction Requirements, Project Co proposals, and reviewable design data was never identified.
26. The Independent Tester validated requirements back to agreed reviewable design data, including the environmental matrix, where the inconsistency was built in. As what was delivered agreed to the reviewable design data and in the knowledge of the matters to be resolved following the February 2019 settlement agreement, the Independent Tester certified the building complete.

### Early inconsistency in the project which was built into the later design

27. Between 2011 and 2014, our view is that NHS Lothian's requirements were ambiguous and may have been applied inconsistently or remained open to interpretation. This led to unintended contradictions and lack of clarity over what NHS Lothian required.
28. In this period there was no contractual obligation between NHS Lothian and Project Co. However, the lack of clarity here may have contributed to ongoing differing views between NHS Lothian and Project Co throughout the project.
29. Examples of this lack of clarity include:
  - Four bedded rooms being classified as generic rooms by NHS Lothian, although the three situated in critical care department would require differing ventilation.
  - Advice on mechanical and natural ventilation to give a maximum temperature range of 25 degrees, not the 28 degrees allowable in the SHTM 03-01, and the consequences of this on the design of ventilation in the RHCYP.
  - The inclusion of the draft environmental matrix within Volume three of the tender documentation.
  - The language used within the tender documents, including in the Board Construction Requirements, referring to the environmental matrix.
30. The final unresolved ambiguity is the Board Construction Requirements section within the contract. This sets out NHS Lothian's requirements and we believe, a potentially incorrect reference to the environmental matrix is included. This reference may confuse ownership of the matrix from Project Co to fall under some NHS Lothian responsibility. Although it is emphasised as internal auditors, we are not legal experts or contract specialists.
31. The contract and subsequent positions between both parties is legally and technically complex. This is evidenced in the differing views of experts commissioned to look at the ventilation pressure designed in the four bedded rooms (NHS Lothian's expert and Project Co expert). It is also evidenced by the differing opinions expressed by the two separate QC opinions obtained by NHS Lothian and IHSL, respectively. Views expressed include questions over the contractual status of the matrix, what was designed within reference design, the application of guidance within STHM 2025 (which was superseded with SHTM 03-01), Health Building Notices (HBN), RDS, and other guidance referenced.



### Overall conclusion

32. NHS capital projects by their nature are complex. The RHCYP project spanned twelve years and encountered a complex series of circumstances. Alongside ventilation there were other difficulties and layers of issues during the life of the project that together created unique challenges for NHS Lothian. By 2018/19 significant matters were being considered and resolution sought in parallel to each other, not just ventilation.
33. Our review identified a collective failure from the parties involved. It is not possible to identify one single event which resulted in the errors as there were several contributing events.
34. Additionally, there were a series of factors external to NHS Lothian which influenced and shaped the project which were not within the direct control of NHS Lothian. These factors contributed to the complexity.
35. Ultimately the matters identified were of a very technical nature. The contract sets out that Project Co are responsible for designing and constructing the RHCYP to meet NHS Lothian's Board Construction Requirements. NHS Lothian are contractually responsible for approving design and construction matters only to the extent that they relate to operational functionality.
36. However, NHS Lothian and the technical advisers have a professional obligation where there is identified non-compliance to identify and highlight this for Project Co's attention. Significant dialogue between NHS Lothian and the technical advisers was identified with Project Co over reviewable design data. As many areas of non-compliance were identified, it is difficult to understand why the inconsistencies and lack of clarity set out within this report were not identified and/or acted upon. This includes critical care but also the differing interpretations which were unresolved.

### NHS Lothian's arrangements

37. Our review identified three principal factors, alongside missed opportunities, where further questions were not asked by the NHS Lothian project team and the technical advisers.

### Four bedded rooms

38. A determining factor in the project was the decision, taken in 2010, to have twenty, four bedded rooms. The SHTM 03-01 guidelines do not recognise four bedded rooms as a room type. The option, from a ventilation perspective, would be either single rooms or general wards. In both cases, 6 air changes per hour would be required with differing pressure regimes.
39. In error, it was assumed at an early stage of the project that the four bedded rooms would require the same mechanical and engineering solution and were classed as "generic rooms". However, three of these rooms were designed within critical care and therefore required different ventilation to achieve 10 air changes per hour. This was missed from the outset of the project and remained unidentified until June 2019.

### Temperature

40. Clinical groups were engaged throughout the RHCYP project. From the outset, clinicians wanted the temperature capped at 25 degrees. The temperature range in the SHTM guidance allows for a maximum of 28 degrees. The decision by the clinicians was influenced by legacy issues within the Royal Infirmary Edinburgh.
41. In seeking to cap temperature, this informed a certain mechanical and natural ventilation solution. Based on a study undertaken by Hulley and Kirkwood in 2012 (mechanical and engineering advisers at the point of creating a reference design) it was agreed that a mechanical and natural ventilation system could be introduced which would deliver 4 air changes per hour. The SHTM 03-01 guidance sets out 6 air changes per hour, as referenced in the report produced by Hulley and Kirkwood. From the outset 4 air changes per hour was then captured in the environmental matrix and ultimately what Project Co delivered in February 2019 when the building was handed over.
42. The inclusion of 4 air changes per hour in the reference design produced by NHS Lothian instead of the required 6 air changes per hour was never raised for further consideration by the project team at this stage of the project, from what we can evidence.

### Sharing the environmental matrix

43. An environmental matrix was produced by Hulley and Kirkwood (2012) for inclusion in the tender documents to support reference design. This matrix incorrectly showed in the detail against critical care 4 air changes per hour, not the 10 air changes per guidance. Although the cover worksheet referenced the need to comply with critical care 10 air changes, this was not in the matrix itself.
44. The draft environmental matrix was included alongside the Board Construction Requirements in Volume three of the tender documents and certain language within the tender documents imply, in error, that the environmental matrix is an NHS Lothian matrix and that bidders need to comply with the matrix.
45. Project Co are responsible for the environmental matrix and they took responsibility at preferred bidder stage for the matrix (September 2014), including making certain changes to the earlier version. Our understanding is that Project Co are responsible for the matrix, as linked to room data sheets, which is a Project Co deliverable in the contract. However, there may be potential ambiguity in the contract. The earlier errors in 2012 remained unidentified, with further errors made, for example, the inclusion of ensembles in the critical care rooms and the insertion of the word “isolation” in the critical care guidance note.

### Missed opportunities

46. Our review noted missed opportunities to identify the error, which was subsequently built into the RHCYP project. These included:
  - NHS Lothian and Project Co did not identify the lack of clarity on requirements for four bedded rooms and that this was not explicit in the Board Construction Requirements.
  - The decision to include the matrix alongside the Board Construction Requirements in the tender documents. In addition, the apparent absence of a review of the matrix, and no documented quality check over the accuracy of the matrix.
  - One bidder submitted a revised environmental matrix with the correct air changes identified for critical care which did not raise questions on the matrix submitted by Project Co.
  - The inclusion of ensembles within critical care by Project Co in the environmental matrix in September 2014 was not identified until 2016. Although ensembles were flagged as incorrect, it was not identified that air changes were incorrect.
  - The change by Project Co in their environmental matrix (2015) which added in the word “isolation” to the critical care air changes per hour guidance note in the first tab of the environmental matrix. This was not identified and demonstrates that Project Co were planning 10 air changes per hour only in the critical care isolation rooms.
  - Numerous review comments on the environmental matrix between 2014 and 2017, although none related to critical care. Whilst NHS Lothian and the technical advisers were not responsible for checking on a line by line basis, we understand there was a professional obligation where an error or potential non-compliance was identified for this to be raised.
  - Reviewable design data was moved to a category B (approved to progress) despite reservations by the NHS Lothian project team and technical advisers on ventilation compliance (pressure) and other non-compliance in design compared to Board Construction Requirements.
  - Air pressure was considered from 2016 to 2018. When air changes were discussed, it was in relation to achieving the desired pressure and was not discussed for critical care.
  - The clinical risk assessments completed by NHS Lothian in 2017 only considered air pressure and although three were completed for the critical care rooms, differing requirements for critical care were not identified.
  - The Independent Tester did not identify the non-compliance with the guidance within critical care.
  - Settlement signed in 2019 did not identify three of the four bedded rooms were within critical care and derogated in error the air change rate to 4 per hour. The settlement, also in error, derogated the single rooms in critical care to 4 air changes per hour.

47. These opportunities were not identified by the clinical director for the project, the Project Director, the project team, the technical advisers, those parties involved in reference design, Project Co including Multiplex, and the Independent Tester. Collectively the error was missed by all parties.

#### External contributory factors

48. In addition to the above, external to NHS Lothian were direct and indirect events which influenced decision making.

#### Delivery through an NPD model

49. Scottish Government announced in 2010 that the project would be delivered and funded through the Non-Profit Distribution Model (NPD). This model was new to Acute NHS Hospitals and as such un-tested, albeit the predecessor model (PPP) was not new.
50. Therefore, the project team and governance arrangements already established for the capital project, which commenced in 2007, were retrofitted into the NPD model. Between 2007 and 2010, NHS Lothian had invested in design work on the new hospital and significant consultation with clinical groups. This resulted in financial and time costs to NHS Lothian. Alongside this, the change in funding announcement delayed the project for at least twelve months at the time.
51. Recognising the delay in the project delivery timeline, the costs incurred on design, and the clinical engagement undertaken to date, it was decided that elements of the design within a reference design were to be shared within the procurement exercise. This decision was taken on the advice of Scottish Futures Trust and Scottish Government and noted in minutes as being helpful in reducing the procurement timeline.
52. Sharing a reference design is an option within the NPD model. However, with hindsight, this created potential ambiguity over design requirements by NHS Lothian, including how the environmental matrix was shared compared with Project Co's understanding of their responsibility to design and construct the hospital.

#### Financial standing of Project Co

53. The procurement for a supplier took place in March 2013 and resulted in a preferred bidder being appointed (Brookfield Multiplex). Then the funders were sought and appointed. The project agreement (contract) was signed between NHS Lothian and IHSL (Project Co) in February 2015. Decisions over this time period, fully supported by Scottish Futures Trust and Scottish Government, sought to minimise any risk to NHS Lothian as a result of the potential economic impact of the referendum and the general economic climate on funders and those interested in the project.
54. There were two key external events, in respect of Project Co, which necessitated certain decision making by NHS Lothian to either avoid additional costs to them and/or significant delays in the project which was already behind agreed timescales. We believe these to also have influenced decision making.
- In February 2015 when the contract was signed, Project Co's Proposals (i.e. their design to meet the Board Construction Requirements) was not agreed by both parties. Accordingly, the parties agreed that many elements of the developing design would be classified as Reviewable Design Data. Reviewable Design Data is a further articulation, including additional detail on how Project Co will deliver the Board Construction Requirements. This was substantial. However, Project Co wanted the contract signed so they could start receiving money, and Scottish Government and Scottish Futures Trust were keen to not delay the project further whilst this got agreed. We understand it is usual to not have Project Co's Proposals fully agreed at contract stage. However, post February 2015, this did result in significant back and forward discussions between NHS Lothian and Project Co and extensive time in following the change control processes set out in the contract. The pressure regime was one aspect of Reviewable Design Data not agreed in February 2015.
  - Prior to the settlement in 2019, there was an increasing risk to the existence of Project Co due to a lack of cash flow between IHSL and Multiplex. This was recognised by NHS Lothian and Scottish Government and considered within the risks of agreeing a financial settlement. It was felt that without a settlement being reached, the viability of Project Co was under threat. This would have indefinitely stopped the project whilst a new project Co and associated funders were sought.

## Recommendations

55. Our review focused on NHS Lothian's arrangements and documents we reviewed which were retained by NHS Lothian. During our review we noted certain wider observations which may be further explored during the public inquiry.
56. Our recommendations are focused on actions NHS Lothian can take now going forward to strength the control environment. Some of the points we identified were at a point in time, and the environment has already been amended. We acknowledge these recommendations may need to be taken forward in partnership with the NHS Scotland centre of excellence which is being developed.

### Overall management commentary:

The Executive team welcomes the report and is committed to implementing its recommendations. We would like to acknowledge the extent of analysis that the Chief Internal Auditor has undertaken, particularly the review of complex and significant documentation over a 12-year period. This will assist the Board's preparations for the Public Inquiry.

This overview sets out some of the issues the Board will require to consider in preparation for the Inquiry. Inevitably the audit could only examine documentation held by the Board and it will be for the Public Inquiry to consider the relevant documents from other parties. This is particularly relevant to the key findings in the Audit that there was a collective failure by all parties to identify that 3 of the 4 bedded rooms were in critical care and SHTM03-01 applied. By the time the Settlement Agreement was signed in February 2019 the Hospital had already been designed and built with critical care ventilation to provide 10ACH in the isolation rooms and 4ACH in the 4 bedded and single rooms within critical care.

### 3. Contextual factors

57. During our review we identified contextual factors which shaped the project. The RHCYP project spans nearly twelve years. The project by its nature is complex. Alongside the complexities that come with building a new hospital, there were specific factors unique to NHS Lothian.
58. The factors summarised below contributed to the project timeline and decisions taken. Whilst not contributing to the root cause, they did shape and influence the project and are relevant considerations.

#### Early decision making

59. The need for a new children's hospital was first discussed in 2006. An option appraisal exercise was concluded, with the preferred site being adjacent to the Royal Infirmary Edinburgh (RIE). This decision followed guidance which recommended children's hospitals are co-located with an adult acute hospital. Once the preferred site was approved, the project developed through outline business case (OBC) and early capital design work in the period 2008 to 2010.

#### The site

60. The RIE is a Public Finance Initiative (PFI) hospital. This was an older, non-standard contract with an underlying ground lease which needed amending. The RIE was designed, built, financed, and maintained by Consort. Complex negotiations took place between NHS Lothian and Consort between 2010 to 2015. Negotiations focused on, but were not limited to, access to the land, the site of the RHCYP, drainage, and car parking. This was legally complex, and NHS Lothian were supported by the legal advisers, MacRoberts UK LLP.
61. Resolving the matters with Consort took significant focus by the NHS Lothian RHCYP project board particularly between 2011 and 2013. These discussions ran alongside the procurement exercise being undertaken.
62. Legal matters were resolved in an agreed settlement between NHS Lothian and Consort in 2014/15 (SA6 agreement) to allow the new hospital development to commence.
63. NHS Lothian, as evidenced in the project board documentation, had a difficult contractual relationship with Consort due to legacy RIE matters.
64. Given the relationship between both parties and the complexity of the matters being agreed, the focus of the project board including Senior Responsible Officer (SRO) and Director of Finance was on this contractual matter.

#### First Acute Hospital Non- Profit Distribution (NPD) and the change of funding arrangement

65. The RHCYP was initially to be delivered through Scottish Government capital funding. However, in 2010, the Scottish Government introduced a policy change and announced that the RHCYP would be funded instead as a Non- Profit Distribution (NPD) model.
66. The RHCYP was the first acute children's hospital to be built in Scotland, and NHS hospital under the NPD model. This funding model was new to NHS Lothian. NHS Lothian were actively supported by Scottish Futures Trust in understanding the procurement and governance arrangements and received their guidance and hands on support between 2010 and 2015.
67. NHS Lothian were not consulted on the change in funding model in advance of the decision being taken. Scottish Government representatives confirmed they could not identify a risk assessment being completed at the time.
68. Between 2006 to 2010, NHS Lothian commissioned design work on the new hospital, appointed a framework of advisers, and constructed a project team to oversee the delivery of the new hospital.
69. The change in approach required a new business case to be submitted and signed off by the Scottish Government in 2011 and did delay the planned timeline for delivering a new RHCYP by circa 18 months.
70. In 2010/11, NHS Lothian undertook a new procurement exercise for technical, legal, and financial advisers. The contract in place with principal design consultants (BAM) was stopped, and discussions took place, involving legal advice, over the aspects of the early design work BAM completed. This focused on what design work was the property of NHS Lothian and for NHS Lothian future use.

71. The RHCYP project board structure set up previously by NHS Lothian remained for the new project, as did the NHS Lothian team including the externally appointed programme director, to oversee the project.
72. By the time of the procurement commencing in 2012/13, NHS Lothian's initial timelines for the new hospital had already been pushed back by three years. In the period 2008 to 2010, there had been financial costs incurred to date and clinical time involved, when the project was to be capital funded. There was a desire, by the project team, fully supported by Scottish Government and Scottish Futures Trust, that this work was not lost. A decision was taken by the NHS Lothian project board that this work could inform the reference design to be shared within the procurement.
73. No assessment was completed by NHS Lothian on whether this early work was still applicable, particularly given the Department of Clinical Neurosciences (DCN) was then built back in, when funded through the NPD model.
74. In addition, although work had been progressed to create all the documents shared with bidders in the tender process, a substantial amount of additional work was undertaken through a series of contractors, overseen by the technical adviser appointed by NHS Lothian. The resultant reference design was shared within the tender documents. Further detail on this is set out in Section 4 key findings.

#### **Department of Clinical Neurosciences (DCN)**

75. In early considerations, the Department of Clinical Neurosciences (DCN) was to be co-located next to the new RHCYP. This was subsequently reconsidered by NHS Lothian and the Scottish Government and was determined to be run as a separate project on a different site. Therefore, this was not included in the capital OBC submitted. However, when the funding of the RHCYP changed, it was decided that DCN would in fact be co-located with the new children's hospital. This was finally decided in 2010/11. This resulted in the DCN and RHCYP projects being run as one project overseen by the same project team.

#### **External factors outside of NHS Lothian's control and influence**

76. Based on our review we noted certain factors, external to NHS Lothian, that influenced the decisions taken by NHS Lothian. These included:
  - The need to issue the tender in 2012/13 and complete the procurement phase. The project was already behind planned timescales and any delays in procurement would push the project back further.
  - There was a downturn in the economy at the time the tender was being advertised through the Official Journal of the European Union (OJEU). This created a concern for Scottish Futures Trust and Scottish Government that any extended timeline for procurement, alongside the economic outlook, would result in a reduction in potential bidders. There was a risk the economy would also impact interest from funders.
  - The desire in 2012/13, expressed by Scottish Future's Trust and Scottish Government, to re-look at the competitive dialogue timeline and make that as short as possible. This was linked to the interests of funders and a concern on number of bidders and timeline to complete the new hospital.
  - The need to keep to the planned financial close timetable agreed due to potential risks on funding leading up to and post the Scottish Independence Referendum.

#### **Project Co financial position during the project**

77. Out with the control of NHS Lothian is the underlying financial viability of the Project Co over the life of the project. Under the NPD model, Project Co consisted of IHSL and a series of funders who financially backed the project. At key points in time we can evidence in documentation the financial position of Project Co influencing decisions and project direction:
  - NHS Lothian signed the Project Agreement (the contract) in 2015 as approved by the Finance and Resources Committee and the NHS Lothian Board. At this point in time, several matters were not agreed between both parties related to reviewable design data. However, IHSL and Multiplex, the builders, were keen to start the construction work. Up until this point IHSL and Multiplex had invested heavily in design and contract discussions so were keen to be on site so payments could be received. This was needed to support the cash flow of Multiplex.



- Leading up to the settlement (February 2019), given the ongoing discussions and disputes between IHSL and NHS Lothian, it was noted that there was a risk through a lack of cash flow that IHSL were no longer financially sustainable and would in effect collapse. If this happened, potentially a new Project Co and alternative funders would be required further delaying the project. This influenced NHS Lothian (with Scottish Government approval) to agree to the £11.2 million financial settlement.

### **NHS Lothian contextual matters**

78. The RHCYP project started in 2006. From 2006 the landscape of the NHS in Scotland has changed. In addition, guidelines and best practice for new hospitals continues to be issued, including for example revised guidance on infection control. The design of the RHCYP was modelled using forecasted patient data and forecasted clinical needs with the aim of having a flexible space which can meet future service demands.
79. An external Project Director was appointed, pre-dating the NPD decision. A project team was created, and this project team remained in place over the life of the project, albeit individual roles changed.
80. NHS Lothian recognised from the outset that they required additional skills to deliver the project and appointed financial, legal, and technical advisers. The technical adviser role, undertaken by MML, was key to the project and the timeline of key events.
81. The Project Director and the Clinical Project Director were full-time project roles. Others, including the SRO, were involved in the project alongside fulfilling their wider NHS Lothian roles and responsibilities. Clinical groups were brought in to support the early design work alongside an ongoing engagement and sign off role and remit. Skills were brought into the project from within NHS Lothian for their clinical knowledge and experience.

### **Ventilation matters**

82. From our review of the guidelines, including SHTM 03-01 and Health Building Notices (HBN) relevant to ventilation, we would note there are several key components to ventilation of a new hospital.
  - Temperature. The ability to control temperature and the ability for that temperature to operate within a range, varying depending on what the clinical function of the space is used for.
  - Natural and/or mechanical ventilation and how these operate together.
  - Air change rates per hour.
  - Air pressure, including how air is extracted between rooms and corridors. Depending on clinical use pressure can be positive, balanced, or negative.
  - Energy consumption and environmental factors.
83. These do not operate in isolation. For example, to achieve a certain temperature would require a mechanical engineering solution which may only drive a certain air rate change per hour, based on an assumption that pressure between the room and the ensuite would need to be positive. There are 1700 rooms in the RHCYP with different clinical usage and therefore specific ventilation requirements.
84. The error within the RHCYP was on air change rates. Within the key timeline of events, air change rates were discussed, relative to pressure, but were never contentious. Air pressure was the dispute from 2015 onwards alongside a focus on temperature control.

## 4. Key events

85. Our internal audit work identified key points in time and/or decisions which we believe are important to the RHCYP project in respect of ventilation. These are set out in this section of the report, and where possible aligned to the project timeline.

### Procurement through to preferred bidder stage (2011 to 2014) <sup>1</sup>

#### The twenty, four bedded rooms designed in the RHCYP

86. The initial design work (2008 to 2010) for RHCYP was for the hospital to be all single rooms.
87. In 2010 the Clinical groups involved in the project determined the design should include four bedded rooms. This would allow patients with similar clinical needs to be treated together, recognising the social and wellbeing benefits for the children. This was also decided to best fit a financially affordable workforce model for the new hospital.
88. A Chief Executives Letter (CEL 1999) required all new hospitals to be designed as single rooms. Therefore, four bedded rooms were a variation on this requirement. A request was submitted by NHS Lothian to the Scottish Government Chief Medical Officer for approval. Approval was granted in 2011 for the inclusion of twenty, four bedded rooms in the RHCYP. Of the twenty, four bedded rooms, three of these rooms were planned within the critical care department.
89. At this stage, and then throughout the project, it was not identified by NHS Lothian and the other parties involved<sup>2</sup> that the SHTM 03-01 guidelines on ventilation did not set out what the ventilation requirements would be for the twenty, four bedded rooms. Model room types referenced in Appendix 1 of the SHTM 03-01 include single rooms, critical care, theatres, isolation single rooms, and general wards.
90. Where no guidance exists, NHS Lothian should set out what they require within the Board Construction Requirements (within the contract). Where the contractor cannot comply with the Board Construction Requirements or has a different design solution proposal then Project Co, under the terms of the contract, should submit a derogation for approval. The contract sets out that where competing guidelines exist, the more onerous should be followed. However, it is silent on when there are no guidelines.
91. In our view, based on review of documentation and our understanding, the ventilation requirements for the four bedded rooms remained open to interpretation. First within NHS Lothian and then subsequently between NHS Lothian and Project Co. There was never clarity and agreement reached over this matter.

#### Four bedded rooms designed within the critical care department

92. The lack of clarity noted above is further complicated by the inclusion of three, four bedded rooms designed within critical care.
93. SHTM 03-01 includes requirements for critical care. Critical care, as set out in Appendix 1 to the SHTM, requires 10 air changes per hour and positive pressure. Whilst what constitutes critical care is not defined in the SHTM 03-01, it is our understanding that all space used to treat patients within critical care is a clinical area and would require 10 air changes per hour.
94. However, from the outset there is a failure by NHS Lothian to identify that the four bedded rooms within critical care require a different ventilation regime from the rest of the four bedded rooms within RHCYP. This is subsequently not identified by Project Co.
95. There is then a continued failing within the project, when the four bedded rooms are being disputed over air pressure, to subsequently identify those within critical care. This is not acknowledged by NHS Lothian or by Project Co.

<sup>1</sup> This stage shaped the project design and decisions taken by NHS Lothian and other parties involved in the project. It is noted that between 2011 and 2014 NHS Lothian had not entered a contract. The contract signed in February 2015 legally binds both parties contractually, and only from this date onwards.

<sup>2</sup> Mott MacDonald Limited (MML) and other technical advisers appointed, Multiplex Brookfield Construction (design and build), Wallace Whittle (mechanical engineers appointed by Multiplex), and Acadis (Independent Tester).



96. Throughout the project, discussions and review took place between the NHS Lothian technical advisers, the NHS Lothian project Team including Clinicians, IHSL, and Multiplex, yet no party identified firstly the lack of clarity and secondly that three four bedded rooms (out of the twenty) were located within critical care.

#### **Generic and key rooms at design stage**

97. The report produced, outlining the creation of a reference design (2012), recommended that within the ITPD reference design only drawings and specifications which should be shared are those for the rooms determined as “generic” and for the list agreed as key rooms.
98. Generic rooms were defined as “rooms which occur multiple times in the new RHCYP and require the same design”. The generic room clinical output specification was produced and agreed by NHS Lothian with input from MML and the clinical project team members.
99. There are 1,839 rooms within the RHCYP design. Of these, 756 rooms (41%) were covered by 31 generic room specifications.
100. We believe at this stage that four bedded rooms were incorrectly classified as a generic room. This is what was subsequently shared with bidders through clinical output specifications and broader reference design information. Given three four bedded rooms are within the critical care department and per SHTM 03-01 guidelines require a differing air change rate and pressure, the same mechanical and ventilation criteria cannot be applied to these rooms.
101. The critical care department was determined as a key room and a separate clinical output specification was shared in 2013 for critical care.
102. At this stage NHS Lothian and MML did not identify a risk of differing interpretation, and how the generic specification was to be interpreted and applied within critical care, and the differing requirements both of which are contradictory.
103. Both the generic room specification and the critical care clinical output specification were marked as approved by the clinical Project Director. Both documents were shared within Volume three of the tender documents.
104. The importance of this lack of clarity is demonstrated in the creation, and subsequent updates of the environmental matrix. Each room is classed per type of room. Four bedded rooms were specified as having 4 air changes per hour. Within the critical care department, where a four bedded room is referenced the generic specification was automatically copied across. This failed to identify that the four bedded room was in critical care. It is this error which is later not identified through review.

#### **Early design work completed by NHS Lothian and determining how to use this work within the new procurement required**

105. In January 2011 it was decided by the Project Director and project board to use the completed early design work through the creation of a reference design. This was to recognise early work completed including involvement of clinicians in design and the costs NHS Lothian incurred between 2008 and 2010 on the project.
106. Sharing of the reference design was intended to provide guidance to prospective bidders over the design principles and requirements of NHS Lothian.
107. This approach was endorsed by Scottish Government and Scottish Futures Trust to reduce the procurement timeframe. This also ensured work to date was not wasted.
108. Technical advisers MML produced a procurement option paper for the project board to consider and approve.

109. The paper outlined three options on reference design including the benefits to NHS Lothian and the bidders in adopting the differing approaches:
- Option A: Mandate clinical functionality (clinical functionality was the terminology used in the paper but within an NPD project the language is operational functionality).
  - Option B: Mandate full design. This would mean that bidder needed to comply with the full design as already prepared by NHS Lothian.
  - Option C: Mandate more detailed design with room for innovation from bidders. This was a hybrid approach which would still allow the bidders to innovate in design, which they would not be allowed to do under option B.
110. The options paper presented recommended the project board approve option A. This is not clearly captured in the project board minutes but we understand through discussions that option A was endorsed.
111. In our opinion, based on the review of the documentation and the subsequent reference design that was shared with the bidders during procurement, we believe what happened in practice went beyond what was approved by the project board. There is not a rationale documented that sets out why this was the case and how decisions on reference design were later taken by the reference design team and brought back into the NHS Lothian project team.

### Operational functionality

112. Operational functionality is recognised NPD terminology. Operational functionality is a spatial concept.
113. NHS Lothian's responsibility is to define room layout, adjacencies, and how each individual clinical space will be utilised, including equipment.
114. Operational functionality is the only risk that NHS Lothian retain under the contract whereas design and construction risk rests with Project Co. If NHS Lothian incorrectly define operational functionality, for example the space no longer fits the equipment needs, then the cost to rectify the design, including any delay to the project, is solely incurred by NHS Lothian.

This boundary, between NHS Lothian and Project Co needs to remain clear.

Operational functionality is defined in the Project Agreement (Page 160 to 163 within definitions) as:

1. The following matters as shown on the 1:500 scale development control plan and site plans: point of access to and within the site and facilities; the relationship between one or more buildings that compromise the facilities; and the adjacencies between different hospital departments and within facilities.
2. The following matters shown on the 1:200 scale plans: point of access to and within the site and facilities; the relationship between one or more buildings that compromise the facilities; the adjacencies between different hospital departments and within facilities; and the adjacencies between rooms within hospital departments within the facilities.
3. The quality, description, and areas (in square metres) and the minimum critical dimensions of those rooms and spaces as indicated on drawings.
4. The location, and relationship of equipment, furniture, fittings and user terminals as shown in 1:50 plans in respect of: all bed and trolley positions; internal room elevations; actual ceiling layouts; the non-clinical services and supplies, storage distribution and waste management spaces; and ICT requirements.
5. The location of and the inter-relationships between rooms within the departments within the facilities.

115. Based on the above definition, mechanical and engineering requirements do not fall into the definitions of one to five as these are spacial in nature.

### Creation of a reference design

116. NHS Lothian worked with MML between June 2011 and May 2012 to agree an approach to the creation of a reference design.
117. Approval was sought and granted to use early design work produced by BAM as principal consultants between 2008 and 2010. The decision to make use of this work was supported by Scottish Government and Scottish Futures Trust. The benefit of this was set out in the project board minutes as being able to make the procurement timeline as short as possible.
118. MML produced a report entitled “Reference design approach” dated May 2012. This was approved by the project board.
119. The report defines operational functionality and how within the reference design created, NHS Lothian would be mandating operational functionality. As operational functionality was to be mandated, the bidders could not make any amendments to these requirements and had to demonstrate compliance in the final proposals submitted.
120. Various versions of the reference design approach were considered and captured in differing drafts of the overall report produced by MML. This recognises the evolution of the approach and how the approach and thinking was developed between NHS Lothian, MML, Scottish Futures Trust, and Scottish Government. As the first Acute NPD in Scotland, thinking was still being developed and tested.
121. The report sets out that alongside mandated operational functionality, other information will be shared with bidders as helpful for bidders in articulating their proposals. This was noted as including room data sheets, output specifications for all generic rooms (including four bedded rooms), and key rooms (of which critical care was included).
122. In earlier versions of the reference design report produced by MML we noted:
  - In one version the environmental matrix is classified as being mandated operational functionality.
  - An updated draft states, “Similarly the environmental matrix specifies parameters and criteria that need to be met and for which bidders will be required to advise the levels that will be achieved in their particular design”.
  - There is reference to the environmental matrix forming an appendix of the Board Construction Requirements.
123. Whilst the above points were updated in the final reference design report, there was no mention of the environmental matrix. We believe this evolution of thinking then moved through to the work of the reference design team and further ambiguity was seen in documentation. As a result, not all parties involved in the creation of the reference design may have had the identical level of understanding. Ambiguity, unintentionally, may have continued also into the documents which were shared within the tender process, and clarity over the purpose of the documents being shared.

### Involvement in reference design team

124. A reference design team was established to oversee the development of the agreed reference design and the documents agreed for inclusion in Volume three and four of the tender documentation (Invitation to Participate in Dialogue, ITPD).
125. The reference design team consisted of:
  - Hulley and Kirkwood, mechanical engineering
  - Davis Langdon (led design team)
  - Nightingale Associates (concept architects)
  - Turner and Townsend
  - BMJ (clinical architect)
  - ARUP (infrastructure, transport, and fire)
  - Montague Evans (limited town planning role)

126. In addition to the external parties noted above, NHS Lothian representatives attended the reference design team meetings, including the clinical Project Director.
127. Davis Langdon were appointed as the principal sub-contractor by MML. The role of Davis Langdon was project management.
128. Prior to 2010, Davis Langdon, Hulley and Kirkwood, Nightingale Associates, and BMJ were working with NHS Lothian on the capital RHCYP project. We understand, given their roles previously, they continued to be involved. As noted, David Langdon were sub-contracted by MML. Davis Langdon further sub-contracted to the other parties involved.
129. During 2012, Davis Langdon ceased to exist as an organisation and at that stage any roles fulfilled by Davis Langdon were transferred to MML.
130. A concern was highlighted by Scottish Futures Trust over the reference design team arrangements. The concern was over the number of advisers and that the advisers could gain a competitive advantage by joining the organisations who were bidding on the procurement.
131. NHS Lothian took steps to ring fence the work of the reference design team and ensured that this team had no access to the wider procurement information, which could give a competitive advantage. Once the reference design was completed, all parties involved were no longer contracted and could join bidding teams.
132. However, the point on the number of advisers involved, and their contracting arrangements, remained unaddressed. The concern by Scottish Futures Trust did not appear to be escalated within a key stage report and we noted no further discussion.

#### Reference design team project arrangements

133. The reference design team worked separately from the NHS Lothian project team and board. The linkage was between MML and Davis Langdon and the lead clinicians. From what we can evidence there was no clear reporting line in place between the reference design team and the project board. As a result, it may have been possible for this group to expand on the agreed remit and go beyond what was agreed by the project board. The reference team appeared to work independently on decision making.
134. As the reference design team left the project as the tender documentation went to bidders, they were unable to answer any questions of design detail the bidders may have had during competitive dialogue. This was acknowledged as a risk. However, this would be addressed by the Project Director and MML if design questions raised in competitive dialogue.
135. Given Hulley and Kirkwood created the matrix, and also supported wider on mechanical and engineering advice, specific thinking on the planned 4 air changes per hour through a combination of mechanical and natural ventilation may not have been fully understood by all parties.
136. We reviewed a series of project plans produced which governed the documentation and timeline for producing the reference design for inclusion in the tender. Inconsistencies were noted in the project plan, including:
  - The incorrect inclusion of the environmental matrix as a mandated document.
  - Environmental matrix referenced as included in an appendix.
  - No reference to the environmental matrix as a shared document in either Volume three or Volume four.
  - Documentation listed as within Volume three subsequently changed to Volume four.
137. This demonstrates a further lack of clarity over the status of the environmental matrix in the tender documents, and for what purpose the environmental matrix was being shared.

### Documentation produced by reference design team

138. Whilst we could locate some minutes and documents produced by the reference design team, we do not believe these were the full suite of documents. As well as retaining documents on a shared internal NHS Lothian drive, an additional portal system was used to exchange documents between Project Co and NHS Lothian. The search functionality and overall user friendliness of the portal is limited.
139. Based on our understanding of the documentation reviewed, it is noted that the reference design team decided not to produce standard room sheets. However, the information to be included in the Invitation to Participate in Dialogue (ITPD), some of which would traditionally be in room sheets, included:
1. General requirements
  2. Clinical output specifications (generic rooms and key rooms including critical care)
  3. Environmental matrix
  4. Design notes and schedule of operational equipment
  5. Accommodation schedule
  6. Operational functionality by reference design, as described in the documentation
140. It is unclear what control was in place to review the suite of ITPD documentation for completeness, accuracy, and consistency. In addition, the differing schedules were signed as approved by different members of the NHS Lothian project team, depending on the nature of the output.
141. Disclosable design data and information only was implied rather than explicitly stated in each of the documents shared within Volume three and Volume four of the tender documents. We believe a bidder, experienced in similar projects, would understand what NHS Lothian's responsibility was compared with Project Co's responsibility. However, there could have been a risk of misinterpretation, particularly where there was contradictory information.
142. Within the suite of documents listed, contradictions existed in:
- The environmental matrix showed single rooms and four bedded rooms to have 4 air changes per hour
  - Clinical output specifications record the need for Project Co to comply with SHTM 03-01, which is 6 air changes for single rooms, 10 air changes for critical care, and no definition of guidelines for four bedded rooms.

### Tender documentation – Inclusion of the environmental matrix in Volume three of the ITPD

143. The draft environmental matrix was included in Volume three of the ITPD. Volume three was overseen and produced by the reference design team. Sitting within Volume three were the clinical output specifications and schedule of accommodation, which directly relate to NHS Lothian requirements and what was defined as operational functionality. Hulley and Kirkwood produced the environmental matrix dated 2012 for inclusion in the tender. The matrix is identifiable as Hulley and Kirkwood via the logo. The matrix does not, and never, included NHS Lothian's branding.
144. Hulley and Kirkwood were specifically commissioned by Davis Langdon to deliver a mechanical and engineering project specification. Within this specification, an environmental matrix is recorded as a deliverable.
145. We noted an earlier matrix produced by Hulley and Kirkwood when working for principal consultants BAM. This version produced in 2010, correctly records critical care as requiring 10 air changes per hour in accordance with SHTM 03-01. This earlier version would have been produced on a design that pre-dated 2010. At this stage, four bedded rooms were not within the design.
146. The environmental matrix dated 2012 which was included in the tender documentation records, in the detail, includes critical care as requiring 4 air changes per hour. The guidance note tab at the front of the matrix (an excel document) correctly stages the SHTM 03-01 critical care guidelines of 10 air changes per hour. It is unclear how this is then subsequently incorrect in the detailed matrix. This looks to be, based on our review, human error in copying across the four bedded room generic ventilation criteria into the critical care room detail.



147. It would be reasonable to conclude that a control should have existed for Davis Langdon to confirm the accuracy and completeness of the environmental matrix. In addition, MML, as Davis Langdon was a sub-contractor, are contractually responsible for the quality of work undertaken.
148. NHS Lothian should have had a control in place to seek and be provided with assurance over the technical accuracy of the environmental matrix, and wider documentation related to reference design prior to inclusion in the tender. We have not been able to evidence a control within Davis Langdon, MML or NHS Lothian.

#### **Mechanical and Engineering considerations by Hulley and Kirkwood on Temperature Control**

149. In February 2012 Hulley and Kirkwood produced a report titled “Ward room thermal comfort analysis”. This focused on mechanical and engineering solutions to achieve temperature control.
150. Based on our review of documentation, we identified strands of discussions (but not one paper or articulation of the problem and potential solutions) on:
- The clinical teams desire to cap temperature in the RHCYP to 25 degrees. This appears to flow from historical issues at the Royal Infirmary Edinburgh where temperatures were considered too high. The SHTM 03-01 allows for a temperature range with a maximum of 28 degrees. However, the clinical teams wanted to ensure no more than 25 degrees was reached.
  - The desire to achieve this temperature while obtaining the most efficient energy solution for the building resulted in a mechanical and engineering solution which would have the optimum result.
151. The report outlines a ventilation solution to achieve the maximum 25-degree temperature cap. The solution set out is for ventilation with an air change rate of 4 air changes per hour.
152. We understand, based on discussion with the Project Director and Director of Capital Planning this would be a combination of mechanical ventilation (4 air changes per hour) and natural ventilation. The combination of mechanical and natural ventilation would result in 6 air changes per hour. This is what is required in the SHTM.
153. However, the combination of ventilation to that effect is not explicitly set out in the Hulley and Kirkwood report.
154. It appears that this report was accepted as the reference design, as articulated in the draft environmental matrix, which sets out air change rates of 4 per hour. We believe this is the origin of the 4 air changes being in the matrix from the outset.
155. However:
- The report did state that critical care required 10 air changes per hour and therefore did not inform the study undertaken by Hulley and Kirkwood. Given this acknowledgement, it is unclear why Hulley and Kirkwood did not ensure 10 air changes per hour was reflected in the environmental matrix for critical care.
  - The draft environmental matrix states 4 air changes for all single rooms and four bedded rooms. There is no reference in the matrix to a combination of natural and mechanical ventilation to achieve the 6 air changes per the SHTM 03-01 guidelines.
  - Natural ventilation includes the ability to open a window. Within critical care, due to infection control, a window would not be able to be opened.

#### **Invitation to Tender documentation – The structure**

156. The ITPD had four Volumes:

<b>Volume</b>	<b>Content</b>
One	Background and structure to the Invitation to Tender. Included NHS Lothian overview and financial and technical pro-forma.
Two	Project Agreement (draft contract, Project Co would be required to sign). Articles of association.
Three	Board Construction Requirements. This included clinical output specifications and the draft environmental matrix as an appendix.
Four	Data including reference design, civil/engineering structures, site drawings, planning, mechanical and engineering concept drawings, and energy outlines.

157. What information was included in the tender and where it was located evolved as the ITPD was built. From our review we were unable to note a rationale for why the draft environmental matrix was included in Volume three. As Volume four included reference design, this would have been the more obvious place for inclusion, if required at all.
158. The ITPD states there is no legal obligation between the bidder and NHS Lothian at this stage. A contractual obligation exists when the contract is awarded and signed by both parties. There are caveats within Volume one of the ITPD in relation to sharing of information only. However, individual documents are not marked information only (or as disclosable data). Recognising Volume four contains the reference design based on our understanding from how reference design was developed, this would be information only. However, the environmental matrix is included in Volume three alongside NHS Lothian requirements including clinical output specifications. Therefore, it is potentially less clear the overall status of the matrix – as a requirement or to inform the bidders design.

### Approval of the ITPD

159. As evidenced in the project board minutes, significant time was spent reviewing Volume one and Volume two. Both documents were developed through ongoing iterations including legal adviser input.
160. It is noted that whilst the legal adviser's input into the project agreement included in Volume two, they did not write the Board Construction Requirements. We understand Board Construction Requirements were drafted by MML, reviewed, and signed off by the Project Director. However, we cannot evidence this in the documentation we reviewed.
161. From a review of the Board Construction Requirements shared within the tender documents, we noted within the mechanical and engineering section a statement that "Project Co shall provide the works to comply with the environmental matrix." This further creates a question over the status of the matrix. In addition, given the Board Construction Requirements list all guidelines for Project Co to comply, we believe this statement is not required.
162. The project board minutes note the approval of the ITPD for issue to the bidders shortlisted. However, from the project board minutes, it is unclear if Volume three and Volume four were reviewed.

### Competitive dialogue phase (2012/13)

163. Three bidders participated in the competitive dialogue stage of the procurement. This stage took place between March 2013 and November 2013. An agreed structure was established, and a series of individual bidder meetings were held. These meetings were facilitated by the NHS Lothian project team and attended by MML for the technical input. After each stage, feedback was given to the bidder to support them in preparing their final tender submission. Where non-compliance was identified or a response at this stage was considered below expectation this was fed back.
164. We noted one bidder, not the appointed Project Co, outlined in their submissions that reference design was 4 air changes per hour and not 6 changes per hour as required in the SHTM guidelines, but this was acceptable to NHS Lothian. In the same submission, the bidder also notes the positive pressure to corridor, built into reference design, and acknowledges this is one option allowable, the alternative being balanced or negative pressure. We were unable to identify any further discussion or approval of this, by the NHS Lothian project team, in the documentation we reviewed.

### Tender evaluation

165. Design and construction were one of the workstreams established. Guidelines for evaluating the tenders was produced and approved by the project board. This was to ensure consistency in approach and scoring within each evaluation workstream.
166. Mechanical and engineering submissions were evaluated within the design and construction workstream. The evaluation team comprised the Project Director, a representative from estates and facilities, and a technical adviser from MML. The team evaluated all three bidders mechanical and engineering submissions.
167. Design and construction submissions were allocated 23% of the quality assessment (out of 40% set for quality). Within this, the mechanical and engineering score constituted 3% (3 marks out of a possible 100).
168. Of the three bidders, Multiplex scored the lowest on the mechanical and engineering submission. Based on our review of the three bidder responses, the Multiplex bid appeared to lack detail compared to other tenders received. As we are not technical experts, we cannot comment on the quality of the technical information submitted.

169. Question eight within the submission required the bidder to answer: “Bidders are asked to confirm they comply with the NHS Lothian environmental matrix. Where they do not comply, to explain areas of non-compliance”. Multiplex’s response noted, “We comply with the environmental matrix”.
170. Another bidder responded to this question noting compliance alongside the inclusion of a revised environmental matrix where the bidder had identified changes they would propose. The changes included by this bidder did correct the environmental matrix to record critical care as requiring 10 air changes per hour. Other corrections were also made.
171. We note:
- The language used in the tender document implies the matrix is the responsibility of NHS Lothian, which bidders must comply with in their tender response, rather than a document shared by NHS Lothian to inform the bidders design only.
  - Multiplex included a contradiction in the response which was not identified. The submission confirms compliance with all guidelines, including SHTM 03-01, whilst also confirming they will comply with the environmental matrix included in the tender (which is now known not to comply with SHTM 03-01).
  - 3% for assessing mechanical and engineering is low, given the significance of this to the design and construction of the hospital (although at the time the high-profile issues were not reported and it is acknowledged a number of matters are important in the design and construction of a hospital).
  - The evaluation team did not identify that one bidder corrected the error within critical care in the environmental matrix and there was not a read across between bidder responses.
  - If one of the requirements was to demonstrate the mechanical and engineering design complied with the guidelines, including SHTM 03-01, two out of three bidders in confirming compliance with the draft environmental matrix may have submitted a non-compliant tender.

### Clinical output specifications

172. A clinical output specification (COS) was prepared by each individual clinical team for all RHCYP departments. These were all approved by the Clinical Project Director. The output specifications and wider decisions, involving clinical engagement, were approved by the Clinical Project Director. Although the Clinical Project Director was a member of the NHS Lothian project board, little clinical discussion took place at the project board.
173. Healthcare planners were commissioned by NHS Lothian in 2011 to support with the preparation of the COS. The remit was to review the COS’s focused on ensuring that single clinical solutions were not presented in error, and incorrectly transferring risk to NHS Lothian which should rest as Project Co risk.
174. COS’s set out:
- Anticipated patient numbers modelled
  - Number of rooms and room types including clinical and non-clinical spaces
  - Equipment required including IT requirements
175. Each COS includes a section entitled environmental criteria.
176. Certain COS’s were included in reference design and the tender, including the critical care specification. The remainder were completed during 2014 and included as an appendix to the Board Construction Requirements within the signed contract.
177. A paper was presented by the Clinical Project Director to the project board. This set out an overview to producing the COS and an example COS. The full pack of COS’s was not submitted to the project board for review or approval. These were signed as approved by the Clinical Project Director.
178. Between 2011 and 2012, there were eight versions of the COS for critical care produced. There was little difference between the eight.
179. The final version dated October 2014, included in the contract, did not reflect all the review comments shared by the healthcare planners in early reviews. Annotations by healthcare planners noted where the COS was setting out one clinical solution, and a risk re operational functionality being prescribed. Not all these references appeared to be removed.



180. From our review of the final COS for critical care we note:
- The environmental section references the need to comply with SHTM 03-01, as well as Health Building Notices.
  - Whilst the environmental section cross references to guidelines, other sections do stray into environmental requirements, for example “positive pressure lobbies”. It is not clear if this is across all rooms, or only limited to isolation rooms, which we believe was the intention.
  - There is a reference to cohorting patients and all rooms requiring the same specification, but this is not further articulated, and the implications are unclear.
  - It is not clear, based on our review, if the COS’s are more detailed than they needed to be as in places they were prescriptive when the cross reference to the guidance to be complied with may have been sufficient, to avoid contradictory comment.
181. From 2016/17 there was an ongoing dispute between Project Co and NHS Lothian regarding pressure regimes. This focused on the four bedded rooms. NHS Lothian determined rooms were to be balanced or negative in pressure. Project Co had designed the rooms as positive pressure. Project Co interpreted positive being what NHS Lothian required per the COS. There is ambiguity over the COS which may have led to either interpretation, based on our review.

### Room data sheets

182. Room data sheets are contractually the responsibility of Project Co. There is a requirement, within the contract, that these are produced and submitted to NHS Lothian. The project team review the room data sheets and mark these as approved, where the information contained relates to operational functionality. Room data sheets show in greater detail the design and construction elements of the RHCYP including mechanical and engineering requirements.
183. Room data sheets are connected to the environmental matrix. The environmental matrix is the one document which captures all requirements for the 1,839 rooms. It is used by Project Co as a reference point without the need to refer to individual room data sheets.
184. Room data sheets are a recognised element of new build projects. There is not a prescribed way that these are created. In the case of the RHCYP, the environmental matrix was developed first, and this information replicated in the room data sheets.
185. The room data sheets submitted by Project Co at preferred bidder stage in September 2014 included:
- Generic four bedroom (multi-bed) within critical care specifies 4 air changes per hour with positive pressure.
  - High acuity room in critical care incorrectly identifies 4 air changes per hour with positive pressure.
  - Single bed isolation room in critical care is recorded correctly as 10 air changes per hour in accordance with the SHTM.
  - Reference to ensuite facilities being within the design of critical care rooms.
186. As at September 2014 the project team did not approve the room data sheets. This unapproved status was acknowledged in the contract and formed reviewable design data which was not approved at point of contact.
187. The inaccuracies in the individual room data sheets correspond to what is set out in the environmental matrix. The inclusion of ensembles within critical care is a new error that first appears in the September 2014 environmental matrix produced by Project Co.
188. There are two reviews by the project team at this stage (and beyond) which may have identified the ventilation errors: the environmental matrix and the room data sheets. Despite numerous review comments being captured on both the matrix and room data sheets by the project team, and MML on behalf of the project team, these errors were missed.

## Infection Control

189. The Board Construction Requirements include the need for Project Co to comply with Infection Control requirements (including specific reference in the mechanical and engineering section). This references guidelines:
- SHFN 30 “Infection control in the built environment: Design and planning”
  - HAI-Scribe
  - Health Facilities Scotland – Healthcare Associated Infection – Systems for controlling risk in the built environment
  - NHS Lothian Infection Control manual
190. Throughout the project there are key prescribed points for Infection Control engagement, via the HAI-Scribe process.
191. The NHS Lothian Infection control team undertook, at preferred bidder stage, a review of the design to assess compliance with infection control requirements (HAI-Scribe 2). The review is based on the design drawings, room data sheets, and other information provided by Project Co. The assessment in November 2014 included a “no” response, against ventilation. The response included comment that further drawings were awaited to allow infection control to confirm ventilation was appropriate.
192. As drawings were not agreed at the point of contract, caveats were included in the contract over the respective status of the reviewable design data submitted by Project Co to NHS Lothian.
193. Based on our review we did not evidence the ventilation assessment being escalated through to the SRO and project board.
194. In November 2014, there was a flag that infection control was not able to assess ventilation as being compliant with infection control requirements. This issue got wrapped up into the wider outstanding reviewable design data between both parties. This was an early warning sign over ventilation which was not acted upon until later in the project, when both parties disputed ventilation pressure.
195. We can evidence infection control input during the project and consultation, or inclusion of infection control representatives, within specific design and construction consultations. Infection control also supported the clinical groups at points in time.
196. From review of the timeline of Infection Control engagement we note:
- Infection control involvement in the decision to endorse the environmental matrix to status B in 2016 was not evident
  - Attendance at meetings with Multiplex to discuss the pressure requirements during 2016
  - Involvement in July 2017 four bedded clinical risk assessments considering pressure. Whilst involved, we did not identify any evidence that Infection control raised concerns over critical care’s inclusion in the pressure discussions and need for different air changes.
  - Representatives attended the project operational commissioning group meetings
  - Infection Control were copied into emails between clinical teams and between clinical teams and the project team.
197. It is unclear, based on the limited documentation we have reviewed relevant to Infection Control, the relationship between the clinical teams and Infection Control in respect of who’s view would take precedence over the other. It is also difficult to fully understand how Infection Control were engaged in decision making compared with being included for information or action. In certain emails Infection Control were one of many receiving the email.

### The Project Agreement (contract, signed in February 2015 at financial close)

#### Derogations agreed at financial close between Project Co and NHS Lothian

198. When the Project Agreement was reached, 42 derogations were agreed between NHS Lothian and Project Co. Derogations are where Project Co are unable to deliver a requirement within the Board Construction Requirements or propose an alternative solution. These need to be approved by NHS Lothian.
199. Of the 42 derogations, those relevant to our review were:
- Identification by Project Co of the incorrect guidance reference in a clinical output specification (an HBN is noted instead of the SHTM) and corrected to relevant SHTM.
  - One in respect of the environmental matrix. The detail captured in this request by Project Co is less detailed than others and looked incomplete. Through discussion we understand this derogation arose to recognise at the time of signing the contract not all reviewable design data was agreed between both parties, and the matrix was included within reviewable design data.
  - Derogation to accept non-compliance with the guidelines on 100% single rooms.
200. Although derogations were agreed, at this stage Project Co appears to have not identified that the SHTM 03-01 was silent on four bedded rooms, and that the Board Construction Requirements did not articulate NHS Lothian's specific requirement for these rooms.

#### Project Agreement (Contract)

201. Scottish Futures Trust have a model NPD contract, although this model contract does not include the technical specification element (Board Construction Requirements). The model contract was reviewed and updated by the legal advisers where changes were required.
202. The contract is 750 pages with numerous sections. Certain sections of the contract are owned by NHS Lothian, others are Project Co sections. The contract sets out what the change control requirements are, and how derogations to the contract are to be managed and agreed.
203. A draft project agreement was issued with the tender documents. This is what was signed by both parties in February 2015. The contract was considered by Finance and Resources Committee who recommended approval. This was endorsed by the NHS Lothian Board and approved by the Scottish Government. Scottish Government approval was required given the financial value of the contract.

#### Contract sections relevant to our review were:

##### Schedule 6 construction matters:

- Section 3: NHS Lothian's Board Construction Requirements
- Section 4: Project Co proposals
- Section 5: Reviewable design data (Project Co's expansion in more detail on how Project Co proposals will be delivered to meet Section 3)

##### Other relevant schedules include:

- Schedule 8: Review procedures (Derogations) including clause 12.6 (Board design approval-RDD review)
- Schedule 12 Change control

204. The contract, within Schedule 6, Section 3 states that where contradictory guidelines are within the Board Construction Requirements then the more onerous shall take precedence, and the more recent guidelines take precedence. NHS Lothian would determine what constitutes the more onerous requirement.
205. Where there is a conflict resulting from the use of the guidelines, Project Co should involve NHS Lothian in the decision making. The final decision rests with NHS Lothian.

### Board Construction Requirements

206. Board Construction requirements are where NHS Lothian set out clinical and operational requirements for the RHCYP including specific design or construction requirements NHS Lothian want, which Project Co are to comply with. Within this section there is a list of all guidelines that Project Co are to comply with. This listing includes SHTM 03-01.
207. Therefore, we understand as at February 2015 there was a contractual obligation for Project Co to design and construct the RHCYP to comply with SHTM 03-01. Specifically, the critical care department should have had 10 air changes per hour. However, there is, we believe, an incorrect reference to the inclusion of the environmental matrix within the BCR's, which may, depending on legal interpretation, mean Project Co had to comply with the matrix and SHTM 03-01 guidance, which are now known to be contradictory.
208. SHTM 03-01 are guidelines. Our understanding is that as guidelines, they can be deviated from. However, the inclusion of the SHTM 03-01 in the contract makes this contractual.

### Reviewable Design Data (RDD)

209. Reviewable design data includes detailed drawings of the RHCYP, room data sheets, and the environmental matrix. RDD is an extension of detail, setting out how Project Co proposals will be implemented to comply with the Board Construction Requirements. This will include detail that was not yet known or fully articulated when Project Co proposals were produced.
210. At the point, the contract was signed, RDD was not agreed by both parties. RDD had been assessed by NHS Lothian. Where the RDD item has been assessed as being category A or B in status then this was accepted, and Project Co could proceed with that build element. Where an RDD item was categorised as C or D this was not accepted, and review comments were outstanding to be able to move the categorisation.
211. The listing and corresponding categorisation of all RDD items was collated by MML and reviewed by the project team. This listing was included in the contract, with legal advice sought on how to contractually reflect the position.
212. Following the contract being signed, the contract protocol was followed by both parties to sign off the outstanding RDD items. NHS Lothian would only sign off RDD where it concerned operational functionality. It is difficult to understand, on review of the environmental matrix in particular, how this constituted operational functionality.
213. Where a design change was identified by Project Co, this had to follow the change protocol. Agreeing outstanding RDD was not a mechanism to agree changes to design and construction which were not previously captured in Project Co proposals.
214. The Volume of RDD that was outstanding at the point of the contract being signed was in our view substantial. Whilst we understand through discussion it is not unusual to have RDD matters outstanding at the point of contract, agreeing RDD and the exchange of paper work back and forward between both parties between 2015 and 2017 was extensive.
215. We could not identify a risk assessment as at February 2015 on the outstanding RDD and the need to enter the Contract, and the consequences for NHS Lothian on both possibilities. However, we do note the desire from Project Co to start the construction, to support their cash flow, given significant work on design to date had been incurred and payments could not start until the contract was signed. We also noted in project minutes the impact on a further delay on the timeline for delivery.
216. The assurance paper prepared by MML for the Finance and Resources Committee in 2015 did not identify any significant technical risks to NHS Lothian regarding the outstanding RDD.

### Construction (2015 to 2019)

#### Environmental Matrix

217. An environmental matrix was included within the tender documentation.
218. Project Co took ownership for the matrix, in 2014 and the environmental matrix was a live document, subject to review by NHS Lothian project team and updates by Multiplex as the building construction commenced.

219. Some comments were successfully closed off and amended in the matrix. However, based on our review of the comments across each version of the matrix, no explicit concern was noted on the environmental matrix recording that what was set out in the matrix for critical care was incorrect. This remained the case throughout the entire project.
220. As noted earlier, the environmental matrix was an aspect of RDD which was not agreed by both parties prior to the contract being signed.
221. The environmental matrix was given a level B endorsement in 2016 from the project team. This allowed Project Co to carry on with the construction, as set out in the matrix. At the stage, the project team approved the environmental matrix and the ventilation equipment had started to arrive on the RHCYP site.
222. However, in endorsing the matrix, we note the following comments by MML:
- “The Board have serious concerns over the upgrading Environmental Matrix to Status B considering some of the issues raised (as per MM-GC-2084) being the same as the issues that had been raised since FC. There are also concerns over the potential inaccurate information being transferred to the Room Data Sheets being submitted through RDD.*
- However, as requested by Project Co, the Board has upgraded the Environmental Matrix to status B, noting the Board still does not believe the Environmental Matrix and resultant design complies with the Project Agreement. Project Co’s failure to comply with the BCRs / PCPs (as per MM-GC-002084) the Board believes would result in a non-compliant Facility.*
- The Board would suggest that Project Co resolved the non-compliant and other issues as a matter of urgency, and requests that Project Co issues a strategy for resolution of these issues.”*
223. Given the comment, and the ongoing concern of non-compliance, it is unclear why the matrix was subsequently endorsed. And whether full consideration was given by the project team, including advisers, on any implication for this to the future project delivery. The non-compliance referred to included pressure of the four bedded rooms, which was only resolved via Settlement in February 2019, four years after the comments were raised.
224. As no flag was included in the matrix as the principal route to start with of identifying non-compliance with the Board Construction Requirements, the default position was that critical care arrangements were assumed to be correct.
225. Further commentary on versions of the Environmental Matrix, the requirements set out for critical care, and the comments by the project team are set out in **Appendix 3 of the report**.

### Ventilation correspondence

226. In the documentation reviewed, we identified certain ventilation correspondence between Project Co and NHS Lothian. The first one was in 2016, then further dialogue in early 2017. The correspondence did not relate to critical care. However, they did indicate a potential confusion between Multiplex’s mechanical engineers and the clinical commissioning team on exact ventilation requirements. This included ventilation requirements to meet HSCRIBE infection control, and what arrangements would need to be in place to satisfy these requirements. The responses back to the queries by the project clinical director, copied to others in the project team, including MML give short responses and re-direct Project Co back to the incorrect environmental matrix.
227. This correspondence, if identified at the time, may have raised an increased flag to the project team on ventilation and the understanding of Project Co and whether this was aligned to NHS Lothian’s understanding.

### Relationship between Project Co and NHS Lothian

228. From our review of project documentation, we note a deterioration in relationship between NHS Lothian and Project Co. Many matters were submitted back and forth between both parties, and either partially or unresolved for longer periods of time. Examples include:
- Comments on the environmental matrix and up to a six-month gap before an updated environmental matrix was shared.
  - Communication coming to NHS Lothian direct from Multiplex, rather than via IHSL, and equally NHS Lothian corresponding directly with Multiplex not IHSL, in attempts to see resolution.



- Pressure was flagged as a review comment on the environmental matrix in 2015 but only started to get resolved in 2018.

229. At the same time, from 2016 onwards the project team and MML were identifying concerns over design and installation compliance. As a result, the project team and MML increased their review and commentary on the submissions by Project Co, within the RDD process.
230. Our understanding is that the NPD contract ensures that Project Co are fully responsible for design and construction. The remit of NHS Lothian, and therefore the technical advisers supporting the project, only relates to operational functionality. However, when on review, an area of non-compliance is identified, then under professional obligations to deliver the project, this was notified to Project Co for correction. From 2016 onwards parallel matters were being debated between both parties routinely.

#### **Four bedded rooms and pressure regime**

231. There was an assumption by all parties that by 2016/17, everything already set out to date had been agreed and was correct.
232. When future discussions shifted to the pressure regime, this did not trigger the need to re-look at air changes, and wider compliance with the guidelines. Although comments existed in the environmental matrix, none were specifically raised within critical care.
233. The environmental matrix references ongoing comment by the project team on pressure regimes. This is not specifically related to the critical care department. The design of the four bedded room was positive pressure. The project team comment is that pressure should be balanced or negative. This was identified firstly in the four bedded room within Haematology and then broadened out to all four bedded rooms.
234. Project Co submitted in May 2016 a ventilation derogation request, for pressure and adjusting pressure via ensuite extracts. This was rejected by NHS Lothian and further discussion took place.
235. Comments in response from Project Co is initially to make the adjustment to ventilation in the ensuites, to give the room ventilation pressure desired. However, on further review, this was leading to excessive air changes per hour being required, impacting on energy efficiency.
236. It is on the review of the annotations by Project Co within the environmental matrix to change air rates to achieve desired pressure that it is identified by the project team and MML that critical care incorrectly references the inclusion of ensuites. However, no comment is made on critical care ventilation, pressure, or air changes.
237. Ongoing discussions took place between Project Co and the project team on pressure regime. This included NHS Lothian reviewing what they required, and what changes would be necessary.

#### **Risk assessment for critical care (ventilation)**

238. The subsequent risk assessments completed by the clinical teams in 2017/18 for the multi-bed rooms focused on the ventilation pressure regime, not air changes. The risk assessments were completed when it became apparent that Project Co, were not planning on changing the ventilation pressure designed. Risk assessments were completed to support the project team's evaluation of options available.
239. However, the opportunity to identify that three out of the twenty rooms were in critical care, and that critical care requirements were set out in the SHTM 03-01 was missed.
240. The completed risk assessments were undertaken by the clinical teams and did not appear to consider the guidelines that needed to be complied with, for example SHTM 03-01, and how these were complied with or otherwise.
241. Each risk assessment was signed off by the Deputy Associate Nurse Director. These were then assessed by the project clinical director and two commissioning managers. The risk assessments were first undertaken in 2017, but not signed off by the project clinical director until February 2018. It is unclear why there was delay in signing off these assessments.

#### **Independent tester**

242. The independent tester is a joint appointment between NHS Lothian and Project Co and is built into the contract.

243. The Independent Tester routinely visited the RHCYP site and reviewed the testing that Multiplex, and others, were completing. Following the Independent Tester visit, a report was produced for NHS Lothian and Project Co which identified a list of matters arising. Matters identified were categorised by the Independent Tester using a red/amber/green rating. A red rating was used to identify significant deficiencies which would delay the project delivery.

244. Within the contract there is a scope of work for the Independent Tester. This includes:

Undertake regular inspections during the works, as necessary, in accordance with the Project Agreement. Report on the completion of the project identifying any work that is not compliant with the Board Construction requirements, Project Co's proposals and the Approved Reviewable Design Data (Approved RDD) and/or the completion criteria.

Within Section 3 of the scope of services (design review) it states:

Monitor the detailed working drawings and specifications for a sample number and type of rooms which in his professional judgment is appropriate to be selected by the Independent Tester to verify that they comply with the Approved RDD as described in the Project Agreement.

245. From a review of the contract, it does allow for the Independent Tester to certify based on the approved Reviewable Design Data. How this sits with the clause on identifying work not compliant with the Board Construction Requirements is unclear.
246. It is unclear if the Independent Tester should be responsible for identifying non-compliance with guidelines, including SHTM 03-01 within approved RDD, or where there are discrepancies between the guidance and what is agreed within RDD.
247. Reviewable design data agreed between Project Co and NHS Lothian includes the individual room data sheets.
248. Within the SHTM 03-01, it is stated "specific requirements for individual spaces and departments are included in the Health Building Notes (HBNs) and Activity Database (ADB) A-Sheets, or Scottish Health Planning Notes (SHPNs)".
249. In discussion with the Independent Tester it was noted, in their view, the specific requirements contained in the A-Sheets (the room data sheets) as incorporated into the environmental matrix takes precedence.
250. Schedule Part Ten "Outline Commissioning Programme" notes that the Independent Tester reviews the commissioning test results against the room data sheets, and the environmental matrix, not the general requirements within SHTM 03-01. However, this interpretation still appears to be subject to agreeing what is delivered is in accordance with the contract.
251. The room data sheets for critical care were not compliant with 10 air changes per hour as set out in the SHTM 03-01. The room data sheets were developed using the information in the environmental matrix, which shows critical care as being designed to have 4 air changes per hour.
252. Between financial close to approval of the environmental matrix, within the RDD process there were no changes to critical care.
253. From review of the Independent Tester reports, we note they were aware of the dialogue between Project Co and NHS Lothian on ventilation in the four bedded rooms. They did not identify any non-compliance within critical care testing as the testing validated what was in the agreed critical care room data sheets – 4 air changes per hour.
254. In discussion with the Independent Tester, we noted this role is not an arbitrator in disputes. From our review of the project steering board minutes, we note references to both parties, NHS Lothian, and Project Co, seeking to engage the Independent Tester in providing a view over which judgement on pressure within the four bedded rooms was correct.
255. The dispute between NHS Lothian and Project Co only related to ventilation pressure. It did not at any stage cover the air change rates designed. Both parties felt the other was unreasonably trying to influence the work of the Independent Tester and therefore compromise the independence of the role.

256. In 2018, following requests by Project Co and NHS Lothian, the Independent Tester provided a view. The view set out that there were conflicting views regarding the standards for the four bedded rooms and that in the circumstances the Board had the final decision regarding the standards. Following the commercial and technical meetings, NHS Lothian delegated the 6 air changes to 4 air changes within the settlement for the four bedded rooms.
257. In February 2019, the Independent Tester signed off the completion certificate and the building was handed over to NHS Lothian. The Independent Tester references the agreed financial settlement between IHSL and NHS Lothian in February 2019 and notes this resolves the disputed items between both parties.
258. Given the Independent Tester's expertise and knowledge, including SHTM 03-01, it would not be an unreasonable assumption that non-compliance within critical could have been identified and raised with Project Co and NHS Lothian.

#### Site visits by MML

259. In 2018 MML, on behalf of NHS Lothian, commenced a programme of site visits.
260. We understand this was considered necessary given the increasing number of concerns MML and the project team had on design compliance and the quality of work being undertaken. This was separate from the work of the Independent Tester.
261. The MML reports produced after the site visits focused on identifying poorer construction or evidence where the contractor appeared to be behind the project schedule. These were considered by the project team and raised in liaison meetings between NHS Lothian and Project Co.

#### Identification of ventilation and pressure regime

262. From 2016 to 2019, certain matters were subject to ongoing discussion between NHS Lothian and IHSL.
263. Ventilation was identified through comments in the environmental matrix on non-compliance with SHTM 03-01. Initial comments were noted in September 2014. This was in respect of the pressure regime, not air changes. It related to how Multiplex were proposing to ensure pressure within the room, between pressure in the room to ensuite. This was designed as positive. In achieving pressure overall in each room, it was identified there would be an impact on energy consumption and temperature under Multiplex plans. It is emphasised this non-compliance was identified as pressure only. No comments on ventilation were annotated on the matrix on critical care. The only annotation, through review by both parties on the matrix, was the identification in 2016 that critical care was identified incorrectly as having ensuite facilities.
264. The points raised continued to be unaddressed in subsequent updates of the matrix. Initially Project Co agreed to resolve the comments on pressure (February 2017). However, subsequently on review, determined they did not agree with the comments and would not make a change. When this happened, the issue was escalated. An early technical workshop was held by both parties and a resolution agreed, which was later withdrawn.

#### Differing view and interpretation

265. The project team and MML disagreed with Project Co, specifically Multiplex on the design of the ventilation pressure in the four bedded rooms. NHS Lothian stated the design should be balanced or negative pressure, not positive as was designed.
266. NHS Lothian commissioned an expert to consider the design on their behalf and form a view (David Rollinson, October 2017). This view was considered by Project Co, who separately commissioned DSSR Consulting engineers (December 2017). Subsequently two QC opinions were sought, as both parties considered legal action, prior to agreeing to seek contract resolution.
267. As internal auditors we are not legal experts, in what is a complex legal matter. Our review of these reports, and the QC opinions, recognising the legal privileged nature of these documents, noted:
- Reference to a Chief Executive Letter (CEL) 19 (2010) and SHTM 2.60 which require compliance with ADB sheets. ADB sheets require balanced or negative pressure to corridor in multi-bedrooms. There is a note on the Environmental matrix, from 2012 throughout, which implies the existence of the environmental matrix is in replacement of ADB sheets on the project.
  - Industry guidelines for infection control set out the need for balanced or negative pressure.
  - SHTM 03-01 allows for positive pressure on general wards



- Project Co understanding that the design of the four bedded rooms were the same in design as a general ward. A general ward, per SHTM 03-01, can have natural ventilation and therefore a different pressure regime.
- Question of was there clarity over whether the design was to treat the four bedded room as a single room or a general ward, and did both parties have the same view in design from the outset.
- Reference to Scottish Health Planning Notes (SHPN 04-01) and how these interfaces with SHTM 03-01. SHPN 04-01 – is Adult In-Patient facilities guidelines which reference four bedded rooms.
- 8.5.3 of the Board Construction Requirements references Air Quality. The section notes that “Project Co shall provide natural ventilation wherever possible, except where.....e) Clinical requirements, as detailed in the Room Data Sheets, do not allow in areas such as isolation rooms, where positive or negative pressure are required...”.
- Understand the Board may have an issue with air change rates but not subject to this report.

268. The expert report commissioned by NHS Lothian in October 2017 records “Understand the Board may have an issue with air change rates but not subject to this report”. We believe this was about the 6 air changes versus the 4-air change rate. We identified no future further consideration of air change rates, the focus up to settlement continued to be on air pressure.

### Dispute Resolution

269. Alongside ventilation significant matters of disagreement existed between Project Co and NHS Lothian. NHS Lothian explored options on how these matters could be resolved, including potential legal action. Several contract commercial meetings were held between both parties, on advice from NHS Lothian’s legal advisers. At one stage resolution looked unlikely and NHS Lothian planned to pursue legal action through Court proceedings. At this point Project Co indicated a willingness for further discussion and resolution, resulting in ultimately the settlement in February 2019.
270. At this stage it is understood Project Co were experiencing cash flow difficulties. A risk was identified that the funders of the project could withdraw their funding support. The consequences, for NHS Lothian, would have been significant including a substantial time delay on the project and a risk that new funders may not be identified. Following discussions at the NHS Lothian Board and with Scottish Government approval, NHS Lothian entered commercial discussions to reach a settlement.
271. To reach a settlement (February 2019) there were a series of technical workshops, alongside commercial negotiation throughout 2018, to seek resolution on the technical matters. This included ventilation pressures.

### Signed settlement agreement (SA1)

272. The settlement agreement was signed in February 2019. This followed a period of 18 months of discussions and negotiation. Whilst discussing and agreeing the more significant matters (including ventilation, but also discussions on drainage, fire dampeners and heater batteries), smaller items were agreed between both parties.
273. MacRoberts had a significant role in advising and concluding the settlement agreement. This included supporting NHS Lothian in contract negotiations, reviewing the legal contract and liaising with IHSL’s legal advisers. This did not involve the completeness or accuracy of the technical items collated and included in the settlement, as this was technical in nature.
274. In reaching the settlement agreement, the position on ventilation and the accepted change happened within the technical workshops. We have not located all the minutes and decisions taken in the various technical workshops that led to the settlement agreement. We note certain documents are legally privileged and these are retained by MacRoberts. However, MacRoberts were not involved in the technical workshops.
275. The listing for inclusion in settlement was firstly developed by Project Co and subject to iterations through the commercial and technical workshops. The Project team, including MML, were involved in reviewing the listing. We did not identify an independent review of this listing, from anyone who had not been involved in the discussions, and therefore were removed from the detail history and look objectively.

276. As ventilation had been agreed, unlike drainage, heater batteries and fire dampeners it was not prominent in the papers prepared for the NHS Lothian Board.
277. NHS Lothian approved the signing of the Settlement Agreement in February 2019, following Scottish Government approval over the financial settlement. The settlement agreement approved for signing included a list of 81 items.
278. Within the settlement agreement it was agreed that the pressure within all twenty, four bedded rooms would be changed to negative or balanced.
279. The settlement agreement re-iterates what was already shown throughout the project in the environmental matrix that these rooms would have 4 air changes per hour. Captured in the settlement is the formal sign off that the three four bedded rooms within critical care were to have 4 air changes per hour. It was not identified at this stage, as it had not been previously identified, that critical care required 10 air changes per hour in accordance with SHTM 03-01.
280. Included in the settlement was the confirmation that all single rooms were to have 4 air changes per hour instead of 6. Whilst this was designed from the outset, this settlement inadvertently accepted 4 air change rates per hour within the single rooms located in critical care, in error.

## 5. Further observations not within NHS Lothian's influence

281. Within our review we identified further observations, which were not within the direct control or influence of NHS Lothian. These factors shaped the project and are points of context. As outside of our agreed internal audit scope, we have captured these observations below. These observations may be further explored within the public inquiry. Considering these points may lead to further improvements in delivering projects within the NHS and may fall under the remit of the centre of excellence being established within NHS National Services Scotland.

### Guidance vs requirements

282. As set out in the Board Construction Requirements (of the contract) there is a substantial listing of all relevant documentation a contractor must comply with in their design and construction.
283. These include SHTMs, HBNs, and Chief Executive Letters (CELS). The documentation referred to has been developed and built up over a period. Consequently, there is not one comprehensive guide. In addition, there is no real clarity over what a guideline is, and open to interpretation and local decision, compared with what is a requirement and must be delivered.
284. The current suite of documentation cross-references multiple times to further guidelines or requirements. It is unclear how any contradictions across all these documents are subsequently addressed, and what would take precedent.
285. Lastly, in the case of the RHCYP project, when a project spans a lengthy period, if new guidelines are introduced over this timeframe at what point do you change approach. Albeit there would be a likely time and cost associated with the change.
286. It is a complicated map which needs greater clarity including what must be complied with, what is optional, and how contradictions are addressed. There should be one comprehensive source of standards setting out a clear framework.
287. Within the contract there is a list of requirements and guidelines that the contractor must comply with when building a hospital. What is unclear is whether these are requirements, so need to be in place, or if guidelines, what is the degree of interpretation that both NHS Lothian and/or IHSL have. There is not one suite of comprehensive standards that set out a clear framework.
288. A clarity over requirements versus guidelines would also help NHS Board's forecast in the costs and/or time of complying with all requirements, from the start of the project.

### Assessment of mechanical and engineering requirements at procurement stage

289. The procurement for RHCYP took place in 2013. NHS Lothian followed the Scottish Futures Trust model weighting at the time which was sixty percent price and forty percent quality. Now greater weighting is given to quality than price in procurements.
290. The forty percent allocated to quality was segmented into elements with a combination of pass/fail questions and weighted questions. Mechanical and engineering accounted for three percent of the forty percent.
291. Given the history of ventilation, alongside wider design and build issues across the public sector, how much weighting mechanical and engineering should be given in the future should be considered.

### Infection Control

292. The role of infection control is principally set out in Scottish Health Facilities Note 30 Version 3 "Infection control in the built environment: design and planning" (January 2007).
293. Infection control involvement is described in an advisory capacity. Infection control offer advice and guidance at certain points in time during the project.
294. The guidance and advice should be currently weighted up alongside financial implications, project delivery, and clinicians who are providing the services. It is not seen as more or less significant.
295. The role of infection control in future projects should be considered and built in. This could include role and remit through attending the project board, the sign off at points in time, and the weighting of the advice particularly where there are conflicting views.

### Independent Tester role on NPD projects

296. Within NPD projects, the role of an Independent Tester is set out in the contract. This is an independent role appointed by both parties (NHS Lothian and Project Co). The contract sets out that the Independent Tester will validate that the design and build is following the Board Construction Requirements, Project Co proposals, and Reviewable Design Data.
297. The Independent Tester is an independent role and does not mediate between both parties. The contract sets out the need to comply with Board Construction Requirements and Project Co proposals, and the Independent Testers duties in respect of this obligation. However, it is not clear on what happens when there is an identification of inconsistency in requirements, what is the process in this circumstance, and what is the role of the Independent Tester.
298. The Independent Tester validates compliance through own testing and overseeing Project Co testing, completed by Project Co.
299. The Independent Tester asserts it is not a role that provides blanket assurance that all guidelines will be met, and that the building complies with all guidelines. The final certificate issued by the Independent Tester allows the building to be handed over and confirms the design as agreed is what is delivered.
300. Once the building was handed over, NHS Lothian were required to validate ventilation before moving patients into the new RHCYP. A third party, IOM, was commissioned in May 2019 to undertake this validation. IOM were commissioned to check ventilation against the SHTM 03-01 standards. This did not consider what was designed and contracted.
301. In future, there may be options to expand or better articulate the role of the Independent Tester. For example, if the Independent Tester had been validating back directly to SHTM 03-01, the error would have been identified. There is also consideration of whether the Independent Tester could have a broader role and/or be complemented through an on-site clerk of works role.

### Building handover – sequencing

302. SHTM 03-01 requires an independent validation of ventilation to be commissioned. This is post building handover but before the facility is open to patients. This can only take place when building work is completed. For RHCYP, this stage was reached in May 2019. The building was handed over in February 2019.
303. Currently this is a client activity. Any non-compliance would then be discussed between both parties and resolved within the terms of the contract in place.
304. Given the significance of ventilation, it could be better to have the sign off on ventilation compliance before the building is handed over.

### Technical Expertise

305. In March 2011, Scottish Government wrote to all NHS Board Chief Executives setting out the Scottish Government's conditions for delivering projects through the NPD model.
306. Within the letter it notes that the project team should provide a challenge function to advisers. In the case of NHS Lothian, technical advisers were appointed as NHS Lothian did not have these skills. The technical advisers worked alongside the project team, providing advice and guidance, which was subsequently followed by NHS Lothian.
307. Given the technical matters that arose, and the need for technical input and expertise, it is unclear how the project team would be able to effectively challenge the advice provided.
308. Going forward, a framework on how technical advice should be followed on these projects which considers much of this expertise will rest with advisers rather than within the NHS, would be beneficial. In particular, how a reasonable challenge can be established over the accuracy of advice and what assurance can be formally sought from technical advisers via the project director role.

### Clinical involvement

309. Significant clinical engagement and direct involvement occurred over the life of the RHCYP project. Clinical groups are brought in for their clinical expertise. Those brought in to the project, do so for a period typically in addition to their clinical roles. Whilst fully understanding clinical requirements, they may be less familiar with the balancing, on capital projects, over clinical service delivery, financial impact, and project impact.
310. There may be merit in exploring how future clinical engagement takes place, including supporting clinical groups in whether the contribution is clinical services or supporting the delivery of the project, to achieve clinical requirements within the framework of guidelines for building new hospitals. At times, given the multiple guidelines, the two roles may contradict. There is also limited clarity on what the guideline states compared with what solution clinical groups may prefer, and how this is determined.

### Timescales

311. By their nature capital projects bring complexity and delivery over a long period. It would be beneficial for clarity over how changes in guidelines or potential difficulties identified in other capital projects across the NHS and wider public sector are captured and factored into ongoing projects. All project decisions need to consider financial implications, quality factors and impact on project delivery timelines.
312. Building on this would provide greater clarity over decision making within the governance framework and how decision-making flows through the project governance established.

### Scottish Futures Trust

313. The RHCYP project was the first large Acute NPD being undertaken in Scotland. NHS Lothian worked with Scottish Futures Trust to develop arrangements and inform NHS Lothian understanding. The project evolved rather than followed a descriptive set out pathway, particularly in the early stage.
314. Scottish Futures Trust had a dual role – advice and guidance to NHS Lothian and assurance over the project through key stage reviews. This assurance was undertaken on behalf of Scottish Government.
315. Observations relevant to Scottish Futures Trust are:
- Between 2010 and 2014 Scottish Futures Trust were represented on the NHS Lothian project board providing advice and supporting decision making. Alongside this role, they were providing independent assurance. Whilst each key stage report has a second reviewer, there may remain a potential conflict in fulfilling both roles.
  - Based on our review of NHS Lothian project board minutes there was not always clarity on what decision was solely NHS Lothian's decision, or what decision needed to be taken based on advice from Scottish Futures Trust and Scottish Government to satisfy their requirements.
  - The key stage review reports (five in total) identified areas for further consideration by NHS Lothian. The further considerations/actions were not risk assessed. On review, it was not clear what action NHS Lothian must take to progress to the next stage, and whether the observation was an improvement or a gap in NHS Lothian's arrangements to be addressed. In turn, the reports could have been clearer on what Scottish Government needed to be aware of, in terms of project delivery.
  - Scottish Futures Trust appointed a Public Interest Board Member (PIBM). The PIBM is a member of Project Co Board and fulfils their responsibilities as an independent company director. The PIBM is to represent the public interest, fulfilled through the Board member role, as set out in the job description. When both parties encounter difficulties, the independence of the PIBM may be challenged.

**Scottish Government Health and Social Directorate remit and responsibility**

316. During the project, Scottish Government Health and Social Care Directorate sought and received assurances through a range of sources. In particular:
- Active attendance at NHS Lothian Project Board between 2010 to 2015 by the Deputy Director of Finance and Capital planning (at the time).
  - Through Scottish Futures Trust key stage assurance reports.
  - Formal sign off by Scottish Government on outline business case, full business case, prior to Financial Close and in 2019 in approving the financial settlement.
  - Routine meetings between the NHS Lothian Director of Finance and/or NHS Lothian Chief Executive and relevant individuals within Scottish Government.
317. Going forward there may be benefit in greater clarity between the organisation, Scottish Futures Trust and Scottish Government over the expected sources of assurance over the life of the project and reporting lines. This should be clear on decision making responsibility versus assurance.
318. Where there is a change in Scottish Government policy, Scottish Government should work with the organisation to understand the impact, including unintended consequences. This should include a risk assessment.

## 6. Recommendations

319. During our review we identified recommendations for management consideration. These are focused on the more significant matters arising from our review, designed to support NHS Lothian in strengthening its internal control environment. It is acknowledged that recommendations here may become superseded or impacted by the creation of the new National Centre for Reducing Risk in the Healthcare Build environment, which may result in a different framework for delivering projects.

### Project route map outlining management activity and assurance activity

<p>Report reference</p> <p>Section 4 and Appendix 4</p>	<p><b>Recommendation:</b></p> <p>Capital projects are governed by the scheme of delegation and standing orders. In the case of the RHCYP there was a project board, the involvement of Finance and Resources Committee and the NHS Lothian Board. Responsibility for decision making on the RHCYP project was not always clear and there was potentially less of a distinction between management and assurance. For future capital projects a road map approved from the outset, setting out the following would be beneficial:</p> <ul style="list-style-type: none"> <li>• The activities management have in place to identify and mitigate project risk and how this is to be reported</li> <li>• Role and remit of the SRO and the interface between the SRO and governance structures</li> <li>• The role of the Accountable Officer</li> <li>• The required skills, including capacity, and how this is going to be achieved</li> <li>• The structures in place to provide assurance to the SRO, to support the SRO in decision making.</li> <li>• Who has oversight of the “whole” project e.g. a single pair of eyes, in particular linked to contract responsibilities and ensuring delivery of the contract and can triangulate matters across the project.</li> <li>• How advisers are engaged, direct to support decisions or in an assurance role, and their interface into the project reporting lines</li> <li>• How governance structures, for example Finance and Resources and the NHS Lothian Board will receive assurance over the mitigation of risk and project decisions, and when and how this assurance will be received.</li> <li>• The distinction between assurance compared with updates for information, and the differing role anticipated</li> </ul> <p>This road map may then evolve during the project but would give clarity of management vs assurance, and the respective roles individuals, groups, and committees have within the project.</p> <p><b>Management Response:</b></p> <p>Within our current Scheme of Delegation, we have already defined for capital projects the roles of Senior Responsible Officer, Project Director, Project Manager, and Director of Capital Planning &amp; Projects. Within that we have stipulated that the Director of Finance may not be a Senior Responsible Officer. There is also a link to the national capital process.</p> <p>It should be noted that the content of the Scheme was not in place at the start and during most of this project.</p> <p>A framework for decision making will be developed for capital projects. This will identify any required amendments to the Board’s Standing Orders/Scheme of Delegation, and distinguish the role of management from those of the Board’s Committees</p> <p>Action owner: Director of Finance</p> <p>Timescale: December 2020</p>
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### Responsibility for making and approving decisions

<p>Report reference</p> <p>Section 4</p> <p>Appendix 4 and 5</p>	<p><b>Recommendation:</b></p> <p>The RHCYP project was complex, involving significant complex negotiations, both of a legal and technical nature. Throughout the project decisions were made routinely for example by clinical teams, the project team including technical advisers and project director. It is not always clear based on the project documentation retained what decisions were made when and by who, and how these were shared with the SRO, through the project board or project steering group or an alternative reporting process. Examples include:</p> <ul style="list-style-type: none"> <li>• Advice by the technical advisers and how this was formally captured as advice</li> <li>• How the project director and project team received assurance from the technical advisers and how this was assessed</li> <li>• The engagement of technical advisers direct with Project Co and how this was recorded as on behalf of NHS Lothian, and the clarity of who has a relationship with Project Co and for what purpose</li> <li>• How project changes and/or derogations are documented, assessed, and approved</li> </ul> <p>There should always be clarity over who, within NHS Lothian, is responsible for decision making, and what assurance has been provided to support that decision.</p> <p><b>Management Response:</b></p> <p>A process for agreeing and documenting technical changes/derogations is currently being developed for all Capital Projects. This will require to take account of the role and responsibility of the Centre of Expertise, as well as that of Technical advisers.</p> <p>This process for all Capital projects will be agreed by the Executive team</p> <p>Action owner: Director of Finance</p> <p>Timescale: December 2020</p>
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**Clinical engagement**

<p>Report reference</p> <p>Paragraphs 86 – 88, 172-181, 189-197, 238-241</p> <p>Appendix 4</p>	<p><b>Recommendation:</b></p> <p>Clinical stakeholders were identified and very involved in the project. However, there was not a clarity over the alignment (or otherwise) of the clinical need compared with guidelines and in which instance, what, would take a greater importance over the other.</p> <p>In addition, where clinical decisions were set out, how these linked and/or impacted on other decisions within the project.</p> <p>A framework for clinical engagement on future projects would support:</p> <ul style="list-style-type: none"> <li>• Clinicians being engaged and actively bought into the planned NHS Lothian outcomes.</li> <li>• Clarity over the specifications including how clinical practices, quality, financial, delivery is aligned and the weighting of the respective factors.</li> <li>• An understanding of the purpose of the engagement and involvement e.g. clinical expertise for a specific service. This could include how clinicians are trained to be involved in capital projects compared with trained through experience.</li> <li>• The balance between local ownership in the project vs responsibility for overall design</li> <li>• Involvement of Infection Control and how Infection Control advice, links to advice of others and how potential conflicting views are resolved</li> </ul> <p>If this framework were supported by greater clarity over what is a requirement compared with guidelines and a minimum requirement for a new hospital, this would support a greater understanding of what could be changed and what is required.</p>
	<p><b>Management Response:</b></p> <p>The Centre for Expertise will provide the clear framework for the minimum requirements for capital builds including an explicit determination of what is guidance and what is mandated.</p> <p>Inevitably local engagement with clinical teams will continue to be a key feature of capital projects going forward, given the need for local ownership and the rapidly changing nature of healthcare delivery.</p> <p>This requires the organisation to define from the outset what the Board's outcomes and specifications need to be, and each Project explicitly linked to the relevant Clinical Strategy</p> <p>A framework for clinical engagement, training requirements, and the process and delegated authority for derogations will be developed. This will be in line with the process for the agreeing and documenting technical changes referred to in Recommendation 2</p> <p>Action owner: Director of Finance</p> <p>Timescale: December 2020</p>

**External Advisers**

<p>Report reference:</p> <p>Section 4</p> <p>Appendix 5</p>	<p><b>Recommendation:</b></p> <p>NHS Lothian had technical, legal, and financial advisers. How each adviser engaged in the project, depended on the role and remit. The advisers with the most significant input through the project were MML as technical advisers. Over time the engagement with MML developed and whilst change orders were established, to approve new scopes of work, how NHS Lothian worked with MML on the project became less clear.</p> <p>Going forward, when working with external advisers we would recommend:</p> <ul style="list-style-type: none"> <li>• Ensuring clarity over reporting line</li> <li>• The distinction is clear between when the adviser is offering technical advice directly contributing to the decisions to be taken, compared with providing assurance to support NHS Lothian is taking a decision</li> <li>• How the advisers formally report into the project vs informal custom and practice as a member of the project team</li> <li>• Steps are taken to maintain the adviser's independence and objectivity</li> </ul> <p>We noted during our review the advice and input from the legal advisers was formal in nature, captured either through reports or formal email correspondence. This practice could be something to consider across all advisers.</p> <p><b>Management Response:</b></p> <p>It is fully accepted that there requires to be more clarity of the role of advisers, and their responsibilities at each stage of a capital project.</p> <p>The Board's Scheme of Delegation sets out that the Director of Capital is responsible for the implementation of the Board's overall capital plan through delivery of capital projects and applying project management resource and practices. This includes resource for Technical advisers.</p> <p>It is proposed that a review of the procurement of technical advisers is undertaken. This will include how the appropriate due diligence is undertaken on their brief, and how changes to this are managed. This review will include input from both the Board's Head of Procurement and the Centre of Expertise</p> <p>Action owner: Director of Finance</p> <p>Timescale: December 2020</p>
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**Role, remit, and involvement in project boards**

<p>Report reference</p> <p>Appendix 4</p>	<p><b>Recommendation:</b></p> <p>In the case of the RHCYP project although the project board (and then the project steering board) had an agreed term of reference, this was not clear about who should attend, for what purpose and how this particular board was to support decision making.</p> <p>In particular, the project steering board (from 2015 onwards) had over 30 routine attendees.</p> <p>Going forward a clear framework for project boards for capital projects should be in place. This should include:</p> <ul style="list-style-type: none"> <li>• Ensuring right attendees are involved and defining what should be input into decision making. This should be a core group to facilitate the strategic discussions and focus on decisions.</li> <li>• The attendees have the capacity and skills required</li> <li>• Smaller sub-groups could support the project board and report to the project board, and this should be a defined reporting line.</li> <li>• Reporting lines from the project board into NHS Lothian’s governance structure, including SRO (as referenced in earlier recommendations).</li> </ul>
	<p><b>Management Response:</b></p> <p>Over the last 15 years there has been a range of reports on how Projects should be managed. This includes the Scottish Capital Investment Manual which was updated during the course of the project.</p> <p>This is now reflected in the Board’s Standing Orders with the role and responsibilities of the SRO, Project Director, Director of Finance, and Director of Capital Planning in relation to Capital projects set out. The Standing Orders requires that all Business Cases should be prepared in accordance with SCIM.</p> <p>The capital programme currently has several significant projects in comparatively early development. It is intended to undertake a rapid gap analysis of the membership, skills, and experience for Strategic Project / Programme Boards, in line with SCIM business case requirements and taking into account any emerging advice from the Centre of Excellence. This will be reported to Finance and Resources Committee.</p> <p>Action owner: Director of Capital</p> <p>Timescales: December 2020</p>

**NHS Lothian Framework for decision making**

<p>Report reference: Paragraphs 66, 77, 107 Appendix 4 and Appendix 5</p>	<p><b>Recommendation:</b></p> <p>Whilst most decision making rested directly with NHS Lothian, other parties were involved in either directly supporting the decision-making process or approval. In particular, the role of Scottish Futures Trust, as a member of the project board alongside producing key stage reviews. Without the sign off at key stages, NHS Lothian would not have been allowed to progress to the next project stage. The key stage reviews informed Scottish Government decision making, and the sign offs on the project as out with NHS Lothian’s delegated authority.</p> <p>Based on our review of documentation the respective roles and responsibilities were not always clearly understood, by all parties involved in the project.</p> <p>On future projects it would be helpful for NHS Lothian to set out an overarching framework and timeline for the project, which can be approved by the NHS Lothian Board and/or Finance and Resources Committee (depending on delegations) This can build in:</p> <ul style="list-style-type: none"> <li>• Decisions to be taken by the NHS Lothian Board</li> <li>• Decisions where authority rests with Scottish Government and what informs Scottish Government decision making</li> <li>• How parties out with NHS Lothian inform decision making.</li> </ul> <p>This could be linked to the broader capital project route map, and built in here, or as a separate project document.</p> <p><b>Management Response:</b></p> <p>Scottish Government essentially defines health strategy and policy, and all Boards operate within the delegated authority that they have. Any capital scheme over £10m (and previously £5m) is beyond the Board’s authority to take forward autonomously.</p> <p>NHS Lothian routinely works closely with Scottish Government and Scottish Futures Trust on capital and infrastructure projects/issues. For all major capital projects NHS Lothian requires approval from Scottish Government at key stages of the Project. Equally for Non-Profit Distributing (NPD) projects there was a gateway approach adopted by Scottish Futures Trust as the “owners” of the NPD process. NPD projects no longer exist.</p> <p>To address this recommendation further dialogue will be required with Scottish Government and Scottish Futures Trust colleagues.</p> <p>It is proposed that the outcome of this dialogue is incorporated within the actions set out in the Management responses above so that there is clear distinction in responsibilities amongst Scottish Government/Scottish Futures Trust/ NSS Centre of Expertise/NHS Lothian</p> <p>Action owner: Director of Finance</p> <p>Timescales: December 2020</p>
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## Appendices

<b>Appendices</b>	<b>Page Number:</b>
1: Internal Audit scope including limitations	42
2: Project Timeline	45
3: Environmental Matrix	46
4: NHS Lothian project and governance arrangements	54
5: Advisers and other parties involved, external to NHS Lothian	59

The following appendices set out additional information and detail, expanding further on commentary in the main body of the report.

## Appendix 1 Internal Audit scope including limitations

**Review of NHS Lothian’s internal controls and governance, including engagement with advisors, over the period of the project to seek to understand why NHS Lothian ended up in the current position.**

### Background

- A1 In July 2019 the opening of the new Royal Hospital for Children and Young people (RHCYP) and Department of Clinical Neurosciences was deferred. Following this announcement, the Cabinet Secretary for Health and Social Care commissioned two separate reports which were published in September 2019. The KPMG report focused on certain aspects of governance and decision making (“the what”) and the report from NHS National Services Scotland – Health Facilities Scotland (NSS – HFS) focused on the technical aspects of the new hospital and the failings identified. In addition to the two reports commissioned by the Cabinet Secretary, NHS Lothian’s External Auditors (Scott-Moncrieff) reported on certain arrangements in their Annual Report to those charged with governance, focused on financial management, as requested by Audit Scotland.
- A2 Following the publication of the two reports the Scottish Government announced the appointment of a Senior Programme Director who will oversee the actions taken to ensure that the facility is fit for operation, reporting directly to SGHSCD.
- A3 The Cabinet Secretary for Health announced that there would be a public inquiry into the delay, and the NHS Lothian Chief Executive and Chairman have been having ongoing discussions with the Director General for Health and Social Care/Chief Executive for Scotland in respect of the NHS Lothian action plan. As part of the creation of the action plan the NHS Lothian Finance and Resources Committee (alongside the NHS Lothian Board) are keen to explore various aspects of accountability over the timeline of the project, who was involved and when (in what decision making capacity) and the how and why NHS Lothian found themselves in the situation they did.
- A4 The Finance and Resources Committee met in September 2019 and considered the NSS and KPMG Reports and agreed that given the Board’s responsibilities on governance and internal controls it was important that action was taken to develop a robust action plan in response, to allow NHS Lothian to make the necessary improvements in its control environment and learn lessons for the future. The Committee also recognised the accountability of NHS Lothian and that there may be a need to take appropriate internal action, depending on the contractual arrangements in place with the respective advisors and/or follow NHS Lothian HR arrangements (depending on the findings identified in the review).
- A5 Given the wider link to internal control and governance the Finance and Resources Committee in September 2019 discussed and agreed the involvement of internal audit.

### Scope

- A6 The scope is set out in phases and depending on the outcome of phase 1, phase 2 will be undertaken. This will allow us to better understand the internal controls and governance in place over the period of the project, and will support management in determining if there is further action NHS Lothian can take, either in respect of individuals or the advisors, which may then require specific HR and/or legal advice.
- A7 It is recognised in the scope of our work that this was a complex project involving multiple project roles and stakeholders, and as an NPD project needed to operate within certain arrangements, including financial arrangements, and throughout the project these complexities and requirements would have informed decision making.
- A8 Our work is designed to support NHS Lothian in collating a factual record in advance of the public inquiry, clarifying the timeline of events and critical decision making and to support NHS Lothian in pulling the findings of the three reports together to come up with an action plan to be agreed and implemented, demonstrating how lessons have been learned within the organisation.

**Phase 1 (reflecting discussions within Finance and Resources Committee and a follow up conversation with the Deputy Director of Finance, as internal auditor sponsor):**

- To produce a timeline of the key events and decisions over the project lifecycle up until the announcement to delay the opening. The timeline will seek to build in the context for the decision making, and the rationale for how/why events occurred, where this can be determined. This timeline will act as a formal record for all NHS Lothian Board members, supporting the timeline for the public inquiry and providing a factual record of events.
- Linked to the timeline we will consider the scope and remit (including commissioned role and expertise, ownership and involvement in decision making, alongside roles in providing assurance) for all advisors\* to the project over the timeline. For each advisor, a record will be maintained of the involvement in the project, outlining respective roles, providing a factual record. Where we identify potential failings or gaps in internal control/governance this will be identified, and this will cover NHS Lothian staff and advisors.

A9 \*Advisors will include for example those internal to NHS Lothian for example Accountable Officer/Chief Executive, Project Sponsor, project owner as well as external parties including MacRoberts, Mott MacDonald, Independent Tester, Scottish Future's Trust and Scottish Government. To explore the root cause of the underlying issues (focused on why). This will help understand any gaps in NHS Lothian's governance or internal control arrangements so that management can devise new or amended internal controls (detective and preventative) to demonstrate lessons have been learned and the future approach at NHS Lothian is strengthened, particularly in relation to programme management.

**Phase 2:**

- A10 Phase 2 is dependent on the outcome from phase 1. If during the course of our work we identify any matters which indicate that either individuals and/or advisors did not act in accordance with the agreed role and remit we would look to use our healthcare advisory specialists to support a further review to determine any potential failings and the actions the NHS Board could consider taking.
- A11 Grant Thornton specialists that would be available to support this work include specialists in NPD and PFI models, Health Estate, procurement and contract management and forensics. We also have access to relevant technical advisors who we can utilise, if required.

**Internal Audit review sponsor**

A12 The internal audit review will be overseen by the agreed internal audit sponsors. They are the Deputy Director of Finance; Chair of Finance and Resources; and Chair of Audit and Risk. Internal audit is an independent assurance function. The three sponsors are named in an overseeing role only not to direct the work or influence the conclusions of internal audit. The Internal Audit sponsors, as set out, have seen and agreed this scope.

**Approach**

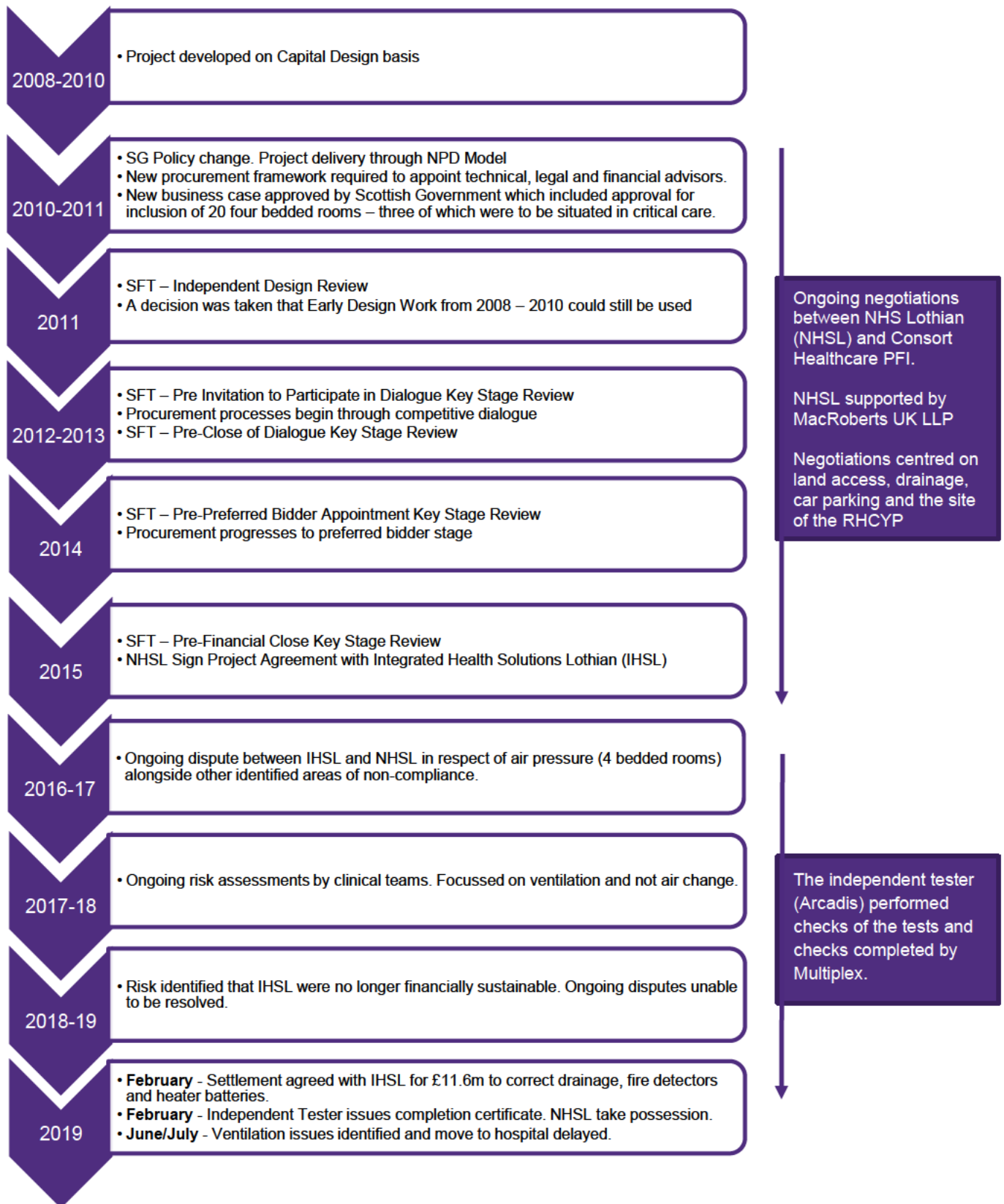
- A13 For phase 1 our approach will include:
- Reviewing the three reports and pulling out key messages and synergies
  - Speaking to KPMG to understand the methodology for their review and process followed
  - Reviewing all documentation that has been collated by NHS Lothian for the project, focusing on understanding and evidencing the internal controls in place, the governance arrangements, timeline, and role/remit of advisors and their involvement.
  - Based on the above 3 points we will then determine what interviews are required and the interviews will be based on our documentation review, and questions arising from that - focused on internal control, governance, and key roles (internal and external to NHS Lothian).

### Limitations of Scope

- A14 Our review was undertaken in our capacity as NHS Lothian's internal auditors, and under the Public Sector Internal Audit Standards framework. Our work focused on governance and internal control based on review of documentation and meetings with relevant individuals. The content of this report is solely based on the documentation retained by NHS Lothian which we reviewed alongside meetings with individuals we considered necessary to support our understanding.
- A15 Comments and conclusions made by internal audit in this report are based on our review of the documents we obtained and should not be regarded as offering legal advice or opinion. It is a matter for NHS Lothian to consider whether our findings merit further consideration and action and seek external views where appropriate.
- A16 We identified several recommendations to support NHS Lothian going forward alongside certain wider observations which may be further considered within the public inquiry. These recommendations and observations are made in the context of our experience as internal auditors and may not represent all future actions. Should any additional information or documentation subsequently become available, relevant to our scope, we reserve the right to amend our findings considering that information.
- A17 This report has been produced solely for the benefit of NHS Lothian and in our capacity as internal auditors for NHS Lothian. In preparing this report we have not considered the interests, needs, or circumstances of anyone apart from NHS Lothian.
- A18 Any other party, other than NHS Lothian, that obtains access to this report or a copy under the Freedom of Information (Scotland) Act 2002 or through NHS Lothian's publication scheme or otherwise and chooses to reply on this report (or any part of it) does so at their own risk. To the fullest extent permitted by law Grant Thornton UK LLP does not assume any responsibility and will not accept any liability in respect of this report to any other party other than NHS Lothian.



## Appendix 2 Project Timeline



## Appendix 3 Environmental Matrix

- A19 The environmental matrix is a tool which captures mechanical engineering requirements (as well as other data) for the hospital in an excel workbook.
- A20 The mechanical engineering requirements set out in the matrix, in the case of RHCYP, were then replicated in the individual room data sheets and detailed drawings.
- A21 The matrix has 3 worksheets:
- One: Guidance notes. These reference specific requirements NHS Lothian requested, per the Board Construction Requirements, alongside specific SHTM and HBN guidelines which need to be complied with.
  - Two: Sets out all the room types within the new hospital for example single bedroom, corridor, office, theatre etc. This includes for each room type the mechanical and engineering requirements have
  - Three. Records all rooms in the hospital, split by department. There is a column showing room type, and data for this room type from worksheet two is copied over.
- A22 There are 1,839 rooms/spaces within the RHCYP and therefore the environmental matrix is large. Alongside air change rates it captures heating, type of ventilation, pressure and other mechanical engineering aspects related to the plant to be installed.
- A23 As the matrix is mechanical engineering in focus, we understand it is the responsibility of the Project Co, as Project Co are responsible for the mechanical and engineering design.
- A24 The report into governance and internal control (August 2019) referred to the environmental matrix as an NHS Lothian document. Whilst a version of a matrix was included by NHS Lothian in the tender documents this matrix was never branded with an NHS Lothian logo.
- A25 Under the NPD model, all NHS Lothian should retain responsibility for its operational functionality and the mechanical engineering of the RHCYP does not, we believe, meet this definition.
- A26 We reviewed the copies of the environmental matrix retained by NHS Lothian. Where we have included dates, these reflect the dates per the NHS Lothian document being saved. Not all versions of the matrix included formal dates. Our comments on the matrices are set out below, for each version we obtained and reviewed.

When*	Who	Purpose	Internal Audit Comments
2010	Hulley and Kirkwood employed by BAM (principal consultants) for when the project was capital funded.	Early mechanical and engineering considerations to support the design of the RHCYP.	<ul style="list-style-type: none"> <li>• Correctly identifies critical care as requiring 10 air changes per hour.</li> <li>• Does not include four bedded rooms, as these did not form the early design.</li> <li>• The matrix was not complete, representing the status of the design work in 2010.</li> </ul>

\*When is determined using the date of the document retained by NHS Lothian. It is noted that in agreeing RDD, including the environmental matrix, Project Co's system was used to support the sharing and review of documents by both parties. Therefore, the dates may differ between parties depending on how records were saved and filled.

When	Who	Purpose	Internal Audit Comments
2012	Hulley and Kirkwood. This version was commissioned by Davis Langdon under a mechanical and engineering specification to support reference design.	<p>This version was commissioned by Davis Langdon (sub-contractor of MML) under a mechanical and engineering specification to support reference design. The specification included specific reference to the environmental matrix to support design.</p> <p>This matrix was included in Volume three of the tender documents, alongside Board Construction Requirements and Clinical Output Specifications.</p> <p>The tender specification, and all four volumes were NHS Lothian documents.</p>	<p>The guidance note worksheet (worksheet one) includes the following guidance:</p> <ul style="list-style-type: none"> <li>• <b>HDU:</b> HBN57, SHTM 03-01 and 10 ac/hr</li> <li>• <b>Critical care:</b> SHTM 03-01 and 10 ac/hr</li> </ul> <p>Worksheet two, the master room type, records four bedded rooms as requiring 4 air changes per hour.</p> <p>For critical care (worksheet three) all rooms are recorded as being 4 air changes per hour, positive pressure.</p> <p>Worksheet one notes: <i>'This workbook is prepared for the Reference Design Stage as an easier reference tool to replace ADB RDS M&amp;E Sheets for the Environmental Criteria elements as described on these sheets.'</i></p> <p>The narrative above continues in all future versions. This arises later, in the independent engineering specialist report commissioned to support Project Co, in their interpretation of pressure and NHS Lothian requirements, as a potential source of interpretation difference between the parties.</p> <p>Whilst the guidance note (worksheet one) is correct the detail shown within the critical care department is not in compliance with the SHTM.</p>

When	Who	Purpose	Internal Audit Comments
September 2014	Wallace Whittle (Multiplex mechanical and engineering design consultants).	<p>This version of the matrix was produced at preferred bidder stage, leading up to Financial close.</p> <p>This formed Project Co proposals.</p>	<p>On review of this matrix we note the following:</p> <ul style="list-style-type: none"> <li>• Hulley and Kirkwood logo has been removed</li> <li>• Guidance notes (worksheet one) remain the same, alongside a reference referring to preparation for financial close</li> <li>• Guidance for Critical care and HDU is still recorded as 10 ac/hr in accordance with SHTM 03-01 (worksheet one)</li> <li>• In worksheet two, the room master type, it sets out "Bedroom" (4 ac/hr and balanced)</li> <li>• HDU as a room master type has been removed</li> <li>• Bedroom 4 ac/hr via ensuite and balanced pressure (worksheet two)</li> <li>• Multi-bed wards 4 ac/hr via ensuite and positive pressure to ensuite (worksheet two)</li> <li>• B1 (Critical care) open plan four bed (multi-ward) 4 ac/hr via ensuite and positive to ensuite (Worksheet three)</li> </ul> <p>The room master type states the four bedded rooms as having ensuites and this is what has then been copied into worksheet three for all 20 four bedded rooms in the RHCYP. The three four bedded rooms in critical care do not have ensuites so this is an error. The first version of the matrix (2012) did not show critical care as having ensuite facilities.</p> <p>The air changes shown for critical care continues to not be in accordance with SHTM 03-01 guidance (4 air changes per hour not the 10 specified).</p> <p>The air-change rate for the individual bedrooms is not in accordance with SHTM 03-01 as the SHTM 03-01 appendix one shows bedrooms as requiring 6 air changes per hour. Within the matrix all bedrooms have 4 air changes per hour.</p>

When	Who	Purpose	Internal Audit Comments
2015  (Version 3, post Project Agreement being signed)	Project Co	Project Co proposals, forming part of Reviewable Design Data (RDD) discussion.  Noted in Project Agreement (February 2015) as part of RDD not agreed.	<p>In addition to the three worksheets a tracker has been added into worksheet one tracking comments received by the NHS Lothian project team. The NHS Lothian project team included MML as technical advisers. Whilst comments are recorded it is not possible to determine who in the project team made what comments.</p> <p>Note 4 annotated on the matrix states “detailed plans awaited on bedroom ventilation to achieve balanced/negative pressure to corridor. Single bed ensuite extract to be increased noted”. Whilst not specific to critical care it indicates a review comment by NHS Lothian querying pressure regime.</p> <p>Worksheet one (guidance) has had the word “isolation” inserted after the note “critical care air changes 10 per hour”.</p> <p>The insertion of isolation implies 10 air changes per hour only applies to the isolation rooms in critical care.</p> <p>Who inserted the work isolation is unclear, but a reasonable assumption would be this was Multiplex as they are responsible for the matrix and have ownership for the changes to the matrix.</p>
Version ww-xx-dc-xxx-001 (Revision 2)	Project Co	Iteration of the matrix as design was being developed.	This version of the matrix does not have a date. On review there are no material differences between this version, and the version dated 26 November 2015.

When	Who	Purpose	Internal Audit Comments
Version 5 (dated 26 November 2015 and 11 February 2016)	Project Co (branded with the Wallace and Whittle logo)	<p>Environmental matrix with tracker, tracking changes made by Project Co following NHS Lothian review.</p> <p>Part of process of agreeing RDD, including detailed drawings.</p>	<p>There is a reference in here to 2<sup>nd</sup> batch of comments</p> <p>There is a schedule (built into worksheet one), which is marked up with either a tick or a cross noting if there is a drawing implication, comment received at financial close, or a comment post financial close. This schedule includes a column headed NHS Lothian reference.</p> <p>Comments from the NHS Lothian project team include references back to guidance and relevant SHTM detail and whether Multiplex are complying with the guidelines in their design.</p> <p>A comment by NHS Lothian includes “refer back to reference design drawings. Extract via ensuite (SHPN-04). If no ensuite – via room”.</p> <p>Specifically related to critical care we noted:</p> <ul style="list-style-type: none"> <li>• B1 Room 063: 4 air changes extract via ensuite. Response states “refer to reference design drawings if no ensuite extract is via room”. There is then a tick to say this was a post financial close comment, and a note saying no action required.</li> <li>• B1 Room 090: Area of 8m squared. Project co to populate areas. Response: review carried out; update schedule of accommodation required for this item. Now updated.</li> </ul> <p>From our review of the project team comments it is noted that a substantial number of comments are raised, identifying questions over design and subsequent compliance with guidelines. However, no comments were raised directly against critical care, specific to air change or pressure (other than the point on ensuites above).</p>

When	Who	Purpose	Internal Audit Comments
Environmental matrix Version 7 (19 September 2016)	Project Co	Updated following NHS Lothian comment – continuing to track changes.	<p>Note included stating this version had been updated to suit revised accommodation schedule and general mechanical updates per drawings.</p> <p>There is a specific comment from the NHS Lothian project team which notes critical care does not have ensuite and the need for this to be updated.</p> <p>The NHS Lothian review comment is only in respect of the inclusion of ensuite. It does not state that what is included in the matrix for critical care does not comply with the guidelines in SHTM 03-01.</p> <p>From review of comments and correspondence to Project Co on this version, we noted the following relevant comments from MML:</p> <p><i>“The Board have reviewed the Environmental Matrix and still has significant concerns on items that do not appear to comply with the BCRs...some ventilation rates don’t appear to comply with BCRs. The Board would like to point that is still awaiting response from Project Co to the issued raised as per MM-RFI-00172 &amp; MM-GC-002006 relating to ventilation rates.”.</i></p> <p>Based on our review, and looking at the comments, this is specific to pressure.</p> <p>The NHS Lothian project team endorsed the EM to status B. However, it was noted by MML on 7 November 2016:</p> <p><i>“The Board have serious concerns over the upgrading Environmental Matrix to Status B considering some of the issues raised (as per MM-GC-2084) being the same as the issues that had been raised since FC. There are also concerns over the potential inaccurate information being transferred to the Room Data Sheets being submitted through RDD.</i></p> <p><i>However, as requested by Project Co, the Board has upgraded the Environmental Matrix to status B, noting the Board still does not believe the Environmental Matrix and resultant design complies with the Project Agreement. Project Co’s failure to comply with the BCRs / PCPs (as per MM-GC-002084) the Board believes would result in a non-compliant Facility.</i></p> <p><i>The Board would suggest that Project Co resolved the non-compliant and other issues as a matter of urgency, and requests that Project Co issues a strategy for resolution of these issues.”.</i> This comment was made by MML direct to Project Co.</p>



When	Who	Purpose	Internal Audit Comments
Version 9 May 2017	Project Co	Continued dialogue between Project Co and NHS Lothian.	<p>This notes that the matrix has been updated to reflect comments from the meeting on 17 January 2017, and responses (by Multiplex) dated 18 May 2017.</p> <p>For critical care this shows the following revision:</p> <ul style="list-style-type: none"> <li>• Open plan. 4 ac/hr. 1.8 positive pressure.</li> <li>• Open plan (3 cots). 4 ac/hr 1.9 positive pressure</li> <li>• Open plan (4 beds). 4 ac/hr. 0.5 positive pressure</li> </ul> <p>The guidance front cover tab remains unchanged and still records 10 air changes per hour in critical care (isolation rooms).</p>
Version 10 September 2017	Project Co	Continued dialogue between Project Co and NHS Lothian.	<p>This matrix notes updated NHS Lothian comments 28 August 2017 and then 12 September 2017</p> <p>The tracker of comments between NHS Lothian and Multiplex are still recorded. There are now a cumulation of 50 review points NHS Lothian have raised in this matrix since 2015.</p> <p>Critical care in this version has changed:</p> <ul style="list-style-type: none"> <li>• B1 063 4 bed. 4 ac/hr. Extract of 3 and positive pressure</li> <li>• Open plan (cots). 4 ac/hr. Extract of 4 and balanced pressure</li> </ul> <p>Changes are still being made in red, to support tracking, and updated in the front tracker</p> <p>The guidance front cover tab remains unchanged and still records 10 air changes per hour in critical care (isolation rooms).</p>

When	Who	Purpose	Internal Audit Comments
Version 11 October 2017	Project Co	Continued dialogue between Project Co and NHS Lothian.	NHS Lothian project board comments still included and notes revised schedules of accommodation.  The information on critical care is still the same as previous, including the front cover tab referenced 10 air changes per hour in critical care (isolation rooms).

### Summary

A27 Based on our review we note the following:

- No explicit comments were included by the NHS Lothian project team (and MML) related to critical care and compliance with SHTM 03-01
- Versions 3, 4, 6 or 8 could not be obtained. These may not exist; it may be due to referencing.
- The change to insert “Isolation” in the guidance tab was not marked in red by Multiplex, when at that stage all changes were to be marked in red to ensure easily identifiable. This change went unidentified by NHS Lothian.
- Each version of the matrix was reviewed by the NHS Lothian project team. MML in their project management support role collated comments and annotated the matrix directly with their observations as well, based on our understanding.
- Technical comments were made, including areas of non-compliance with guidelines, including non-compliance with SHTM 03-01 (out with critical care). None of these were in respect of critical care.

A28 There were substantial NHS Lothian project team (including MML) comments on the environmental matrix. Given NHS Lothian’s role was only to comment on operational functionality it is difficult to understand the connection between the matrix and operational functionality, given the purpose of the matrix and its focus on mechanical and engineering design. In addition, in reviewing the comments made, and other areas of non-compliance with guidelines identified, it is difficult to understand, why non-compliance with critical care was not identified.

## Appendix 4 NHS Lothian project and governance arrangements

- A29 From the outset, as capital and then NPD NHS Lothian identified the need to appoint technical, legal, and financial advisers to support the project. The change to NPD delivery required a new procurement exercise to appoint advisers, including relevant experience of NPD/PPP projects.
- A30 Project team arrangements were established pre 2010 and these remained the same, including the project director who was appointed on a full-time basis to the project.
- A31 Scottish Futures Trust wrote to NHS Lothian outlining conditions of funding and support for the project. Within this letter, Scottish Futures Trust raised a question over the PPP/NPD experience within the project team and whether that was considered sufficient.
- A32 Following the Scottish Futures Trust correspondence, and the change in funding, NHS Lothian reviewed the respective roles and responsibilities within the project. As part of this review, the SRO and project director reviewed the model roles provided by Scottish Future's trust with the NHS Lothian arrangements. The project team structure, roles and remits were discussed at the Finance and Resources Committee and approved.
- A33 The full business case submitted to the Scottish Government in 2014, summarised NHS Lothian's roles as:

Role	Summary of Role
Senior Responsible Owner (SRO) (Director of Finance)	Overall responsibility for the project, being directly accountable to the NHS Lothian Board. Provides strategic direction and leadership and ensures that the business case reflects the views of all stakeholders.
Project Director	Lead responsibility for delivering the facilities and services agreed in the business case. Provides strategic direction, leadership and ensures that the business case reflects the views of all stakeholders.
Board Observer	NHS Lothian representative who will attend and participate (but not vote) at Project Co board meetings after financial close. This was determined to be the project director.
Project Clinical Directors	Represents clinical services in the project. Works with preferred bidder to financial close to complete design in line with the Board's Construction Requirements within the financial limits. Leads the implementation of the agreed service model in respective clinical services to deliver the associated benefits.
Head of Commissioning and Service Redesign	Ensures that the clinical enabling projects required in the RIE are delivered. Leads the overall service change and workforce planning implementation for the project. Leads planning for and co-ordinate the transition of services into the new facility in conjunction with Project Co.
Commercial lead (Director of Capital planning)	Manages the legal, commercial, and financial workstreams for NHS Lothian. Liaises with SFT regarding the funding competition. Interface with the RIE PFI contract. Supports the project director in relation to wider Board capital plan requirements.
Head of Property and Asset Management Finance	Responsibility for all finance aspects relating to NHS Lothian's capital plan / programme and lead financial input into the project.
Contracts Manager	Ensures that NHS Lothian expenditure is effective and efficient and that a productive relationship is established and maintained with Project Co. This role is endorsed by SFT and described in SCIM Guidance.

- A34 A project board was created, chaired by the SRO. Whilst including the roles above this also included financial, estates and facilities representation from within NHS Lothian alongside the Director of Finance for Scottish Futures Trust and the Assistant Director of Finance and Capital for Scottish Government Health Directorate.
- A35 A pivotal role was the project director. The project director was the interface between the project delivery teams, the professional advisers appointed, and the project board and SRO. Based on the organisation chart agreed in 2011, there were thirty different individuals, via groups, reporting to the project director.
- A36 Project governance was fulfilled by the Finance and Resources Committee, the NHS Lothian Board and then Scottish Government (as the level of investment required ultimate decision making to rest with Government).

### Observations

- A37 Below we have identified our main observations in respect of NHS Lothian's governance and project management arrangements. Over a decade the control environment within NHS Lothian has changed. Given the nature of the technical matters, it is unlikely that differing management and governance arrangements would have identified the problem.

<b>Governance observations</b>	
NHS Lothian Board	<p>NHS Lothian Board delegated business case consideration to Finance and Resources, as would be the usual arrangement for capital projects. Assurances over the project were received from Finance and Resources. In addition, update papers were presented. The NHS Lothian Board approved the contract in February 2015 and the settlement agreement in February 2019.</p> <p>Whilst routine updates were provided, often for information, they could have been more clearly structured to provide assurance to the Board. Despite the scale and the new NPD model, the Board, in terms of engagement, treated the project like any other capital project.</p>
Finance and Resources Committee	<p>Finance and Resources Committee can approve business cases within delegated financial limits. The NHS Lothian board approved an increase in delegated limits to Finance and Resources for the RHCYP project.</p> <p>The Committee were predominantly focused on the financial assurances for the project. Regular updates were provided either by the Director of Finance (in capacity as SRO and/or Director of Finance capacity) and/or the Director of Capital planning. The project director also attended the Finance and Resources Committee to present certain papers but was not a consistent attendee.</p> <p>Regular papers were presented, but like the Board there could have been greater clarity over what was an information paper, a paper providing assurance and a decision paper.</p> <p>Finance and Resources, following papers from the SRO and the advisers to the project reviewed the contract, which was ratified by the Board.</p> <p>From the outset there was no agreement, that we could evidence, which articulated the assurance needs of finance and resources over the project and how the assurances would be sought and achieved. If this had been agreed, there would have been a framework for reporting and clarity.</p> <p>Two Non-Executive members of the Committee attended the project board. Based on the documentation this was determined by Finance and Resources Committee, designed to support the project team. This was at the stage of complex Consort discussions and then the procurement of Project Co. We believe this created less of a distinction between the Finance and Resources non-executive assurance and scrutiny role, and that of operational management.</p>
Scottish Futures Trust	<p>Scottish Futures Trust have a role in providing assurance over the procurement and governance arrangements. This is done through formal key stage reviews. If Scottish Futures Trust were unable to provide assurance, Scottish Government would not approve.</p>

Scottish Government	The RHCYP project was beyond the Board's delegated authority. Therefore, decision making rested with Scottish Government including the approval for NHS Lothian to sign the contract, and also the settlement in February 2019.
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<b>Project management observations</b>	
Project Board (2010 to 2015)	<p>SFT and the Scottish Government were members of the project board, contributing to discussions and providing advice. Whilst decisions rested with NHS Lothian, their roles were influential.</p> <p>The project board had many attendees and many groups supporting the project, who provided updates to the board or were in attendance. Collectively the project board made decisions. An alternative would have been to retain the larger project board structure, which then reported into a smaller leadership group. This would have allowed a strategic overview to be maintained as the SRO would not have been so close to detail.</p>
Project Steering Board (2015 onwards)	<p>This group had over 30 members and was too large to fulfil a steering board remit. On review of minutes it was more an information sharing group. Whilst the disputes between NHS Lothian and Project Co were outlined via project director updates the underpinning technical matters were not set out and discussed in detail. Ventilation is mentioned three times in the minutes between 2015 and 2019. Within the minutes there is no evidence over the scale of the difficulty and the exact dispute. Actions are noted including correspondence with the Independent Tester and Project co but follow up action and resolution is not reported back in a consistent way.</p>
Clinical engagement	<p>The appointed project clinical director was a member of the project board. Supporting this role was a myriad of clinical teams and clinical engagement. All these workstreams reported to the clinical director who updated the project board. From a review of project board minutes there is little updates on the clinical aspects of the project. Sign off, of documents relevant to the clinical aspects of the project were all signed by the clinical project director.</p> <p>In the governance structure, the clinical project director and the project director sat side by side. In practice, for sign-off of drawings (for operational functionality) if a clinical space the project clinical director signed off, if non-clinical the project director signed off.</p> <p>Although the project board was designed to include clinical input clinical engagement and decisions ran alongside but out with the project board.</p>
SRO role and remit	<p>When a capital project, an SRO was appointed. The first project SRO, due to a change in circumstance, had to step down and the Chief Executive asked the Director of finance to act in the SRO role. At the time of this decision NHS Lothian did not have a Chief Operating Officer.</p> <p>The SRO changed again in 2015 to the Deputy Chief Executive (Chief Operating Officer). The change was made by the Chief Executive. In practice, given the contract disputes, whilst the SRO was formally the Deputy Chief Executive, the Director of Finance was still involved heavily. It wasn't clear in the documentation we reviewed whether this was due to the significant financial and legal inputs required and acting in capacity as Director of Finance or whether the SRO was fully understood by all involved and who was doing what, as SRO.</p> <p>The Chief Operating Officer role is not a Board Member role, whilst they attend the Board. Therefore, Board updates continued to be provided by the Director of Finance.</p> <p>Lastly for a period the Deputy Chief Executive acted in capacity as Accountable Officer, whilst doing the SRO Role. This is an example of poor internal control, creating a risk over segregation of duties and review and oversight.</p>

SFT Key stage reports	SFT produced key stage reports. These were acknowledged and referred to in update papers to the Finance and Resources Committee. The full reports were not shared with the Committee. Given the focus on this committee seeking assurances, the decision to share reports would rest with management.
Advisers	<p>A framework for how advisers would report to NHS Lothian, including differentiating between technical input vs assurance over decision making was not clearly set out. Custom and practice built up over time, particularly with the technical advisers, who had the bigger adviser role on the project. The project team operated as one project team. When the technical advisers liaised directly with Project Co it is understood this was on behalf of NHS Lothian, but this was not articulated that we could evidence.</p> <p>From the outset, based on project team diagrams the technical advisers (finance, legal and technical) reported to the project director. Over time, the legal advisers, whilst still involving the project director, reported to the SRO for the project.</p> <p>An alternative could have been for day to day management this to rest with the project director, with the advisers then preparing papers for the project board, covering their remit, advice and assurance provided.</p> <p>At two stages in the project the advisers directly reported into NHS Lothian's governance structures. First, in 2015 when each adviser provided a supporting paper to give assurance to Finance and Resources and the NHS Lothian Board prior to signing the contract. There was varying degree of detail between the three advisers in these assurance statements. Subsequently there were legal assurances in February 2019 over the legal process, to support the NHS Lothian Board in agreeing the settlement. It is noted there was not the same degree of detail or input from the technical advisers to the NHS Lothian board at the stage of the settlement.</p>
Liaison meetings and dispute resolution	<p>A series of meetings were in place, providing project oversight between NHS Lothian and Project Co including liaison meetings. These became more important as disputes between both parties arose. Most dialogue and decision making appeared to take place in this forum. The minutes and agreed actions for all these meetings are not all retained by NHS Lothian. Although many will relate to legally privileged discussions and therefore, we understand will have been retained by the legal advisers.</p> <p>These discussions involved the Project director, Director of Finance, Director of Capital Planning and SRO.</p> <p>The Accountable Officer was not involved in these discussions. Evidence of Accountable Officer engagement and involvement is only at the NHS Lothian Board meetings contributing to discussions during the Board and certain Finance and Resources Committee meetings.</p>
Settlement agreement	<p>The dispute and discussions between both parties commenced in late 2017 and formal settlement was only reached in February 2019. This resulted in commercial dialogue alongside technical workstreams. The listing of items agreed within the settlement was developed over this time. Ventilation was an agreed settlement item. The full settlement agreement was presented to the NHS Lothian Board alongside statements from MacRoberts as the Board's legal advisers. Significant items including drainage and heater batteries were referenced explicitly in the covering papers as these remained disputed.</p> <p>Based on our review we could not evidence an independent review of the technical items compromising the settlement agreement. Everyone who was close to the detail, prepared the detail with no objective overview. Given the size of the listing, and that the error had been built into the project at an early stage the likelihood of it being picked up, would be reduced, but this was another opportunity missed.</p>



Capacity and skills	<p>Advisers were sought from the outset to support NHS Lothian. The technical advisers fulfilled general project management support and technical specialists. This skill was required and was brought into the project team with the project team working jointly together.</p> <p>Other roles in the project were fulfilled either through 100% project team for example project director, seconded into the project on a full-time basis from their substantive post e.g. clinical project director or fulfilled the role alongside other NHS Lothian roles and responsibilities. This was the case for the SRO, which is currently normal practice.</p> <p>Clinical input was through the views of clinicians aligned to clinical practices. Their role was not to understand the balance of clinical decisions vs project delivery and financial impact. They were not trained in project management or the delivery of capital projects.</p> <p>Recognising the scale and complexity of the project it is necessary to ensure individuals have the right skills but also the capacity to deliver the roles.</p>
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## Appendix 5 Advisers and other parties involved, external to NHS Lothian

- A38 The RHYCP is a complex project which evolved over a decade. The NHS Lothian project team recognised expertise was required for a project of this scale. In 2007/8 NHS Lothian appointed BAM as principal Supply chain partner to support the capital design.
- A39 BAM appointed a series of consultants to work with them in fulfilling this role. NHS Lothian appointed Davis Langdon at this stage in a project manager capacity. In addition, as a capital project Ernst and Young UK LLP (EY) were appointed financial advisers.
- A40 When the funding changed to an NPD, NHS Lothian, in accordance with procurement rules, undertook a procurement exercise to appoint technical, legal, and financial advisers, under procurement framework contracts.
- A41 In 2010/11, the following advisers were appointed:
- Financial Advisers. Ernst and Young UK LLP (EY). This was a continuation of advice.
  - Legal Advisers. MacRoberts UK LLP (MacRoberts). The CLO were not used as they did not have the required PPP/NPD experience or construction contract law expertise.
  - Technical Advisers. Mott MacDonald Limited (MML). Prior to this stage MML had a small role, directly appointed by NHS Lothian as NEC Supervisor within the capital procurement process.
- A42 There were two other key parties, external to NHS Lothian, involved in the project:
- Scottish Futures Trust (SFT). SFT were involved in providing advice and guidance to NHS Lothian on the NPD approach alongside assurance (procurement and governance) via key stage reviews.
  - Scottish Government as project sponsor with ultimate approval through ministers from outline and full business case submissions.
- A43 Role and responsibilities were set out in the covering paper to Finance and Resources in 2014, alongside the full business case. Extracted below is the summary table. What is set out remained the case throughout the project.

Role	Responsibilities
<b>Project Manager</b> – Mott Macdonald	The project manager will be co-ordinate the inputs of the appointed advisers and their interface with NHS Lothian and Project Co.
	Following financial close: <ul style="list-style-type: none"> <li>• Coordinate due diligence on bidder solutions</li> </ul>
<b>Legal Advisers</b> – MacRoberts LLP	The role of the legal adviser is to give appropriate advice in their areas of expertise, including up to financial close: <ul style="list-style-type: none"> <li>• Evaluating and advising on all legal and contractual solutions.</li> <li>• Developing the contract documentation for the project, using SFT specific standard documentation where appropriate; and</li> <li>• Undertaking legal due diligence on Project Co's solutions.</li> </ul>
	Following Financial Close: <ul style="list-style-type: none"> <li>• Supporting the Commercial Lead in clarification and fine tuning of legal aspects.</li> <li>• Assisting NHS Lothian on implementation of the contract</li> </ul>

Role	Responsibilities
<b>Financial Advisers - Ernst &amp; Young LLP</b>	The role of the financial adviser is to give appropriate advice in their areas of expertise, including up to financial close: <ul style="list-style-type: none"> <li>• Supporting the development of financial aspects of the FBC.</li> <li>• Developing the payment mechanism in conjunction with the technical advisers.</li> <li>• Reviewing funding and taxation aspects of the solutions; and</li> <li>• Preparing the accounting opinion for the Director of Finance.</li> </ul>
	Following financial close: <ul style="list-style-type: none"> <li>• Supporting the Commercial Lead in clarification and fine tuning of financial aspects.</li> <li>• Assisting NHS Lothian on implementation of the contract, for instance in the operation of the payment mechanism and reviewing calculation of the annual service payment.</li> </ul>
<b>Technical Advisers - Mott MacDonald Limited</b>	The role of the technical adviser is to give appropriate advice in their areas of expertise, including up to financial close: <ul style="list-style-type: none"> <li>• Supporting the development of technical aspects of the FBC.</li> <li>• Review of Project Co's proposals to ensure they meet NHS Lothian's objectives.</li> <li>• Developing the payment mechanism in conjunction with the financial advisers.</li> <li>• Undertaking technical due diligence and scrutinising costs of Project Co's proposals</li> <li>• Reviewing Project Co's planning submission.</li> <li>• Supporting the Project Director in clarification and fine tuning of technical issues.</li> </ul>
	Following financial close: <ul style="list-style-type: none"> <li>• Assist with general queries and assist with technical due diligence.</li> <li>• Support the Project Director in the construction and commissioning phase.</li> </ul>

A44 Based on our review of documentation, other relevant points are below.

#### **MacRoberts UK LLP**

A45 Following early discussion between NHS Lothian and the Central Legal Office (CLO) by the Director of Finance and SRO for the project it was agreed that the CLO did not have the contract legal skills required for the project and sufficient legal expertise over NPD contracts.

A46 Key areas of legal input were:

- The SA6 agreement, which was the agreement between NHS Lothian and Consort Healthcare around the site, including the inclusion of the DCN.
- Any amendments to the contract templates for NPD projects, provided by SFT.
- Review of any legal documentation and/or contracts before signing, including the contract between NHS Lothian and IHSL.
- Litigation advice between 2017 and 2019 as contract discussions were ongoing between NHS Lothian and IHSL.
- The SA1 agreement which was the signed settlement in February 2019.

**Mott McDonald UK LLP (MML)**

- A47 MML were the appointed technical advisers in 2011. Their services were procured via a public sectors contract framework and the contract signed by the SRO for the project in June 2011. The costs of the technical advisers were the largest costs NHS Lothian incurred, on external advisers for the project.
- A48 MML employed sub-contractors Davis Langdon and Turner Townsend. We understand the appointment of Davis Langdon was requested by NHS Lothian as up to 2010/11 Davis Langdon had invested in the project, had cumulative knowledge, and had an established role. The contract in place was between MML and Davis Langdon.
- A49 Within the 2011 contract a scope of work was included which broke down activities into deliverables, days input and who was responsible.
- A50 The contract with MML, signed in 2011 has remained in place. In addition to this contract, project work orders were produced by MML throughout the project which were approved by NHS Lothian. These work orders consider changing scope, from the initial contract and additional work undertaken by MML. There are a substantial number of these over the life of the project.
- A51 Specific roles that different individuals within MML have had on the project to date include:
- Technical advisers across a suite of specialist areas including mechanical and engineering advice.
  - Developed the approach to reference design in 2011 following agreement by the NHS Lothian project board on procurement options.
  - Involvement in the reference design work.
  - Project management services providing support through project management working alongside the NHS Lothian project team.
  - Involvement in technical workshops where technical advice was required.
  - Supporting the technical evaluation of the three tenders received.
  - Providing commissioned specialist advice for example an engineering report on the site of the RHCYP to support the SA6 agreement.
  - Site visits. These were ad hoc and at the request of NHS Lothian.
- A52 Based on the agreed roles and remits within the project, MML's principal reporting line with the NHS Lothian Project Director.

**Number of advisers involved in the project between 2011 and 2013**

- A53 The number of parties, external to NHS Lothian involved between 2011 to 2013 was substantial and involved differing contractual arrangements.
- A54 NHS Lothian directly contracted with:
- MML (contract signed in June 2011)
  - Tribal Consulting. Tribal were appointed healthcare planners. Subsequently Tribal were taken over by Capita and between 2010 and 2012 both organisations were named in documentation.
- A55 MML undertook work directly alongside the two sub-contractors MML entered into an agreement with – Davis Langdon and Turner Townsend. In addition, Thomson Gray were a sub-contracted party of MML's providing a cost advisory service.

A56 Davis Langdon, further sub-contracted work under their contract with MML to:

- Hulley and Kirkwood (H&K). Overseeing the mechanical and engineering project advice
- Nightingale Associates. As architects they were original appointed by BAM in the early stage of the project and this appointment retained their knowledge and experience to date.

A57 Davis Langdon initially acted in a project management role and oversaw the reference design work. Once reference design work was completed Davis Langdon left the project. At this stage (March 2013) the project management function transferred to MML. From March 2013 onwards MML were the only technical advisers working on the project.

### Scottish Government remit

A58 Scottish Government:

- Representative attendance the project board to contribute to discussions and decisions. The project board was attended by the Scottish Government's Deputy Director of Finance and Capital planning covering the period 2011 to 2015.
- Scottish Government decision making and approval for example full business case.

A59 Scottish Government took the policy decision to change the project from being funded from capital to being funded as an NPD project. This decision was announced in 2010 without any prior discussion with NHS Lothian on potential implications or consideration of options.

A60 The deviation from the guidance in an NHS Scotland letter to Chief Executives (CEL) for all new hospitals to have 100% single rooms was signed off by the Chief Medical Officer for the Scottish Government in 2011. This allowed NHS Lothian to design the RHCYP with four bedded rooms.

A61 In addition, Scottish government signed off the revised outline business case in 2011, the final business case in 2015 to allow the contract to be signed, and the sign-off of the settlement sum in February 2019.

A62 Over this time Scottish Government approval was informed by the assurances from Scottish Futures Trust via key stage review reports, and direct representation on the NHS Lothian project board.

A63 Throughout the project, as they would with other capital projects, NHS Lothian kept the Scottish Government updated, and Scottish Government signed off the respective plans.

### Independent Tester – Arcadis LLP

A64 In 2015 NHS Lothian and Project Co procured the services of an Independent Tester. This is a recommended role for NPD projects. The role is based on a risk assessment, to consider compliance with the build phase of the hospital with the contract between NHS Lothian and Project Co (namely the board construction requirements, project co proposals and reviewable design data). Routinely the Independent Tester provides reports to both parties and this included risk assessed actions, to be rectified, typically by Multiplex as the builder. The hospital cannot be handed over to NHS Lothian without the Independent Tester's final completion certificate.

### Post building handover ventilation – I.O.M.

A65 As required in SHTM 03-01 post building handover an independent compliance check should be undertaken on the ventilation before the building is occupied. NHS Lothian commissioned I.O.M. to undertake these required checks. This is in accordance with the current guidelines in the SHTM 03-01. Although the building was handed over in February 2019 this only happened in May 2019 as the remaining work had not yet been completed by Multiplex for the testing to take place.

### Scottish Futures Trust

A66 The role of SFT was notified to NHS Lothian in a letter, related to conditions of the NPD model. Within an update on the project to Finance and Resources, covering the funding change, the role of SFT was set out. SFT were automatically involved in the project, as agreed by Scottish Government and SFT.

A67 SFT attended the project board meetings between 2010 and 2015. In addition, SFT were also represented on the project steering group board established in 2015 and attended on an ongoing basis. SFT were the only party external to NHS Lothian who had membership of the steering group beyond 2015.

- A68 SFT were engaged from an early stage. SFTs role is providing assurance, on behalf of the Scottish Government that the project is being delivered effectively and within the financial model agreed. This is done through the completion of key stage reviews. Key stage review reports are produced and signed off by NHS Lothian, submitted to Scottish Government. Without SFT sign off at each stage, NHS Lothian would be unable to progress to the next stage of the project.
- A69 Alongside assurance, SFT also provided advice. Advice included sharing experiences of NPD projects, what skills and experience were required, key points in time, and templates. In addition, specific to this project, additional advice was needed over the site and the arrangements between NHS Lothian and Consort.
- A70 There were 5 key stage reviews completed and reported by SFT:
- Stage 1: Approval of project pre-OJEU stage 2012
  - Stage 2: Pre-ITPD stage. March 2013
  - Stage 3: Pre-close of dialogue. December 2013
  - Stage 4: Pre-preferred bidder appointment. February 2014
  - Stage 5: Pre-financial close. February 2015



## The Reprovision of the Royal Hospital for Sick Children – NHS Lothian

### Initial Agreement

#### 1. Introduction

- 1.1 The purpose of this Initial Agreement (IA) is to request approval from the Capital Investment Group of the Scottish Executive to progress to the development of an Outline Business Case (OBC) for a proposal to reprovide the Royal Hospital for Sick Children in Edinburgh. This will be undertaken in line with guidance set out in the Scottish Capital Investment Manual.
- 1.2 The OBC will incorporate the redesign of services required to meet the recommendations in the:
- NHS Lothian Children's and Young Peoples Health Strategy (2006);
  - Review of Tertiary Services for Children in Scotland (Youngson 2004)<sup>1</sup>; and
  - Building a Health Service 'Fit for the Future' (Kerr 2005)<sup>2</sup>.
  - Delivering for Health, Scottish Executive Response to Kerr (2005)<sup>3</sup>

#### 2. The Title of the Scheme is: 'The Reprovision of the Royal Hospital for Sick Children'

#### 3. Background

- 3.1 The Royal Hospital for Sick Children, Edinburgh (RHSC) was built in 1895 and has had several structural developments over the following 100 years. The Hospital and many of the surrounding houses, which are owned by NHS Lothian or by Endowments, are listed buildings.
- 3.2 In 1995 following a major public appeal to raise the necessary funds, a New Wing was built. This replaced previous staff and parental accommodation; the new building included two children's wards with integral parental accommodation and a suite of four theatres with recovery facilities.
- 3.3 The vacated clinical areas were rebuilt within the external structure, creating a new Paediatric Intensive Care Unit, (6 ITU beds, 6 HDU beds and 3 neonatal surgical cots), and a new Day Case Unit, with an adjacent day case theatre.

*1. Review of Tertiary Services for Children in Scotland - Youngson 2004*

*2. Building a health Service 'Fit for the Future' – Kerr 2005*

*3. Delivering for Health - Scottish Executive Response to Kerr (2005)*

*4 Bristol Royal Infirmary Inquiry – Kennedy 2001*



3.4 In 1998, the Edinburgh Sick Children's NHS Trust completed an options appraisal for expansion and development of the A&E and Out Patient Department. Following the amalgamation of the original three Trusts (Royal Infirmary Edinburgh & Associated Hospitals Trust, Western General NHS Trust & Edinburgh Sick Children's NHS Trust) to establish Lothian University Hospitals NHS Trust in 1999, this plan was set aside, as there was an expectation that reprovision of the whole hospital would be approved in the near future.

3.5 Following a formal visit to the Lothian Children's Services in March 2003, the Scottish Child Health Support Group (CHSG) stated that

*'The CHSG would urge early consideration of the long-term future of RHSC. Continued reinvestment to maintain the fabric of this institution seemed at first sight to be unproductive in the long term and it is clearly no longer fit for the purpose originally designed, although continued viability of the institution is essential in the short term.....Its relative isolation within the city of Edinburgh makes access a problem for some services, particularly those requiring physical transfer of items such as theatre trays.'*

#### **4. Fit with Lothian Property Strategy**

4.1 The NHS Lothian Property and Infrastructure Strategy published in November 2005 identifies that the existing buildings comprising the RHSC are:

- 56% non-compliant with fire;
- 56% non-compliant with other statutory and non-statutory standards;
- 69% of the property is not in an acceptable physical condition;
- 18% is deemed unfit for its present purpose; and
- 7% of the hospital is overcrowded.

4.2 This Strategy therefore recognises that the RHSC requires to be significantly modernised to provide an appropriate environment for the continued delivery of high quality paediatric services. Account must be taken of changing patterns of care and rapid developments in clinical practice. It accepts that it is unlikely that this could be successfully achieved within the confines of the current site and identifies that plans should be developed that will include options to relocate the hospital.

#### **5. Fit with National and the NHS Lothian, Health Strategies**

- 5.1 Youngson's Report in 2004<sup>1</sup>, produced for the Child Health Support Group, informed the work of the Specialist Paediatric Sub group of the National Framework for Service Change (The Kerr Report 2005<sup>2</sup>). Their recommendations included:
- Children's specialist acute services should be co-located with adult, maternity and neonatal services; however the distinct nature of children's services as highlighted by the Bristol Inquiry (Kennedy Report)<sup>4</sup>. should be protected and preserved; and
  - This should be progressed as a matter of urgency in Edinburgh and Glasgow where new, co-located children's hospitals in Edinburgh and Glasgow are recommended.
- 5.2 Kerr<sup>2</sup> further acknowledges:
- The commitment to rebuild Children's Hospitals in Glasgow and Edinburgh over the next five to eight years; and
- 5.3 Delivering for Health<sup>3</sup> reiterated the main recommendations from the review of specialist children's services in 2003 (Youngson<sup>1</sup>) included;
- Development of MCNs at Regional and National level;
  - Redesign of services using a 4 level model of care describing how services could be provided and organised at local, DGH and Regional and national levels;
  - An increase in specialist staff to meet the working time regulations and service gaps;
  - Development of specialist / consultant roles for nursing and AHP staff; and
  - Development of Regional and National Planning and Commissioning of services.
- 5.3 NHS Lothian approved at their Board meeting in September 2005 the development of an Options Appraisal for the Re-provision of the RHSC.
- 5.4 In addition, NHS Lothian will be discussing their Children's and Young People's Health Strategy at the Board Meeting in May 2006, prior to public consultation. The Strategy is focused on planning Children's Services in Lothian for the next 10-15 years.
- 5.5 The Strategy supports the proposal to re-provide the Children's Hospital and highlights the criteria that have been emphasised as

essential for a Children's Hospital in both the Kerr<sup>2</sup> and Youngson<sup>1</sup> Reports as noted above.

- 5.6 A new 'fit for purpose' Children's Hospital, is seen as a crucial element for the provision of 21<sup>st</sup> century services in Lothian for Children and Young People together with redesigned patient pathways that span primary, community, secondary, and tertiary care.

## 6. Clinical Need for Change

- 6.1 The implications of the Kerr<sup>2</sup> recommendations for Lothian that are supported by Delivering for Health<sup>3</sup> are that:

- Services are planned to ensure provision of age appropriate care up to 16 years, and to 18 years for clinical need or patient choice, with effective transition from child to adolescent service and adolescent to adult service. Most services in Lothian are currently provided up to the 13<sup>th</sup> birthday and transition services are not presently robustly delivered in either paediatric or adult services;
- The development of Ambulatory Care with supporting facilities is encouraged to provide a reduced need for inpatient care and more care closer to home;
- Paediatric general surgery should be planned and organised on a regional basis, with surgeons being part of a larger specialist team in Lothian, but providing surgical service within other hospitals in the region;
- High Dependency Units (HDUs) should be developed into regional lead HDU centres within a national Critical Care Network following the national audit;
- The two Paediatric Intensive Care Units (PICU) in Lothian and Glasgow should be developed as lead national PIC centres within the Critical Care Network – operating as a single PIC on two sites; and
- NHS Scotland's IT Strategy should support the roll out of technologies such as telemedicine and digital image transmission to support the delivery of specialist services for Scotland in partnership with local services.

- 6.2 Other clinical drivers for change include:

- The need to redesign services and develop staffing models that sustain specialities while meeting the constraints of the European Working Time Directive, the required legislative reduction in

Junior Doctor hours and the impact of Modernising Medical Careers. This will be significantly assisted by co-location with hospital services for adult patients, where clinicians can have combined rotas for both patients groups – e.g. A&E and orthopaedics;

- The challenge associated with sustaining specialist children's services due to the relatively small numbers of patients, the small numbers of expert clinicians and the necessity of achieving sufficient 'critical mass'. The potential for developing Regional and National Networks would support consultants establishing Regional and National rotas. This requires the Information Technology infrastructure support available in a re-provided facility e.g. telemedicine, digital imaging;
- Increasing number of support services have been amalgamated within the single system of NHS Lothian to provide effective service provision. These are based on adult service sites – e.g. laboratory services for pathology, and biochemistry / haematology, and HSDU service for sterilisation of theatre trays. Co-location of the Children's Hospital on an adult service site will support more effective working, reduce delays in obtaining results, increase opportunities for clinical collaboration leading to reduced length of stay for day case/in patients and waits for children in A&E; and
- Acknowledgement of demographic changes in the population in the South East of Scotland, which is expected to see a significant increase in population, including, the improved survival of children with complex clinical needs. This may lead to an increased demand on hospital facilities. This could not be supported within the current hospital building.

## **7. Current Services and the Need for Change**

- 7.1 NHS Lothian Children's services span the complete patient pathway for children requiring short-term episodes of care and for those requiring long-term and complex care. Hospital services are combined with community services, and integrated with other partners including local authorities and others.
- 7.2 NHS Lothian currently provides inpatient acute children's services on 2 sites, the RHSC (up to 13<sup>th</sup> birthday) & St Johns Hospital Children's Ward.
- 7.3 Current services on the RHSC site are provided from 94 inpatient, 26 day case (surgical and medical) and 15 critical care (6 ITU, 6 HDU & 3 Surgical Neonatal) cots/beds providing a wide range of services, including:

<b>Children services provided in RHSC</b>		
A&E	Haematology / oncology	Ophthalmology
Ambulatory paediatrics	Inherited metabolic disease	Paediatric Liaison psychiatry / psychology
Audiology	Paediatric Intensive Care	Paediatric Pharmacy
Burns	Paediatric High Dependency	Paediatric physiotherapy
Cardiology (inpatient facility in Yorkhill)	Infectious diseases	Paediatric Radiology
Child protection	Intensive Care Retrieval (NSD contract)	Renal medicine (outreach from Yorkhill)
Cleft lip and palate surgery (NSD MCN)	On-site laboratories – haematology / biochemistry	Paediatric Rheumatology (outreach from Yorkhill)
Day surgery	Maxilo-facial surgery	School teaching
Paediatric Dietetics	Paediatric medicine	Speech and language therapy
Endocrinology & diabetes	Neonatal surgery	Spinal surgery (NSD national contract)
Genetics	Occupational therapy	Paediatric general surgery
Gastro-enterology	Oral surgery	Specialist neuro-developmental paediatrics
	Out patient services	Theatres and Anaesthesia
<b>Services shared with adult service but provided on site at RHSC</b>		
Dentistry	Neurosciences (neurosurgery /neurology / neurophysiology)	Orthotics
Dermatology	Orthopaedics	Plastic surgery
ENT		
<b>Services shared with adult service provided off site</b>		
Paediatric Pathology (RIE)	Virology (RIE)	Ophthalmology out patients (PAEP)
Spinal surgery out patients (RIE)	Microbiology (RIE)	HSDU (RIE)

- 7.4 In patient services on St Johns site are provided from 12 beds including General medical, ENT, Ophthalmology, Dental Services and 6 beds for a GP referral service.
- 7.5 The current configuration of services does not support the clinical and strategic drivers previously identified. Pathways of care require to be significantly redesigned, however, it is not possible to effectively deliver many of these redesigned services within the confines of the current hospital and adjacent buildings. There is therefore a requirement to re-provide the current RHSC in order to deliver modern, ‘fit for purpose’ health care.
- 7.6 The process of redesign will involve the following:
- Deciding which local services should continue to be delivered from a children’s hospital site, and how these acute services will be configured across Lothian;
  - Identifying which services should be repatriated to primary care and be delivered from a health centre or other ambulatory care facility in the community;

- Benchmark performance to ensure Children's Services compare well with other children's services across the UK in delivering evidence-based, best practice, with redesign where necessary to improve efficiency and effectiveness;
- Quantifying current and future service needs of adjoining SEAT NHS Boards where support is required from the Edinburgh services, and designing services that meet these needs;
- Acknowledge the need to provide services on a more Regional basis and work with SEAT partners to establish appropriate Regional Managed Clinical Networks; and
- Work with NSD and others to support the ongoing development of current and future national clinical networks aimed at sustaining services, Regionally and Nationally.

## 8. Assumptions

8.1 Planning for future service delivery will be based on the assumption that NHS Lothian Children's Service will continue to provide:

- The local and regional services currently provided, though the models of care will be different;
- Paediatric Intensive Care and paediatric High Dependency Care; and
- Current NSD services of: Paediatric Intensive Care Retrieval, Scoliosis Service, Cleft Lip and Palate MCN.

8.2 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.

The 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.

However, 'The Specialist Children's Services Steering Group in Scotland' will make the final recommendations at a national level in 2007 on key services, and Lothian will contribute to this work. This, in

turn, will inform the final configuration of services to be provided in Lothian in the future. The time line for completion of the OBC takes account of the requirement for conclusion of the national discussions.

## **9. Proposed outcomes and benefits**

- 9.1 The project will be developed in partnership with, and with extensive involvement of, key stakeholders, including representation from: patients, parents, staff, staff partnership, CHP's and Local Authorities through Education and Social Work departments.
- 9.2 It is anticipated that the re-provided the RHSC will bring the following benefits:

### ***Benefits to patients***

Patients will benefit from the planned improvement in the quality of service by:

- The provision of a purpose-built hospital with improved facilities and an appropriate environment for children and young people;
- Having a hospital that is co-located with adult, maternity and neonatal services where the support of clinicians from across different specialities will be facilitated;
- Service delivery that supports sustainable local, regional and national services;
- Providing clinical care to children and young people up to 16 years (and to 18 years as appropriate) in purpose built, age appropriate facilities; and
- Providing an expanded 'front door' service and establishing an Acute Assessment Unit that links with primary care and unscheduled care services and therefore supporting service redesign and meeting national targets for reducing waits and delays in A&E

### ***Benefits to staff***

The proposal will provide:

- An improved working environment within improved facilities;
- Compliance with working time regulations, through facilitating the delivery of services within larger teams; and
- The synergy of having co-located adult and paediatric services will provide significant additional research and development opportunities for Children's Services, which is strongly supported by the Universities.



***Benefits to NHS Lothian***

A number of benefits will also be generated for the NHS System and these include:

- Improved value for money through improved productivity in modern, 'fit for purpose' facilities;
- Continued and improved achievement of mandatory employment legislation;
- Coherence with national policy and direction; and
- Improved opportunity to recruit staff due to, improved facilities and in turn, improved, redesigned services.

## 10. Options

10.1 The options to be considered for the reprovision of the RHSC will include the following:

Option No.	Option Description	Initial Comments
Option 1	Do Minimum – remain in current location utilising existing accommodation	<ul style="list-style-type: none"> <li>• Significant investment will be required to ensure compliance with statutory and non-statutory standards</li> <li>• Co-location with acute adult services, maternity &amp; neonatal services could not be achieved.</li> </ul>
Option 2	Reconfiguration / Refurbishment on current site	<ul style="list-style-type: none"> <li>• The main hospital and terraced properties are all B listed which will significantly constrain the extent to which major reconfiguration could be undertaken.</li> <li>• Co-location with acute adult services, maternity &amp; neonatal services could not be achieved.</li> </ul>
Option 3	New Build – WGH Site	<ul style="list-style-type: none"> <li>• The WGH Site Development Plan has identified that it may not be possible to reprovise the RHSC on this site</li> <li>• Co-location with maternity and neonatal services will not be achieved</li> </ul>
Option 4	New Build – RIE Site	<ul style="list-style-type: none"> <li>• The RIE Site Development Plan has identified that it would be possible to reprovise RHSC on this site</li> <li>• Co-location with acute adult services, maternity &amp; neonatal services would be achieved</li> </ul>
Option 5	New Build – St John's Site	<ul style="list-style-type: none"> <li>• The St John's Site Development Plan has identified that it may not be possible to reprovise RHSC on this site</li> <li>• Co-location with acute adult services, maternity &amp; neonatal services would be achieved</li> </ul>
Option 6	New Build – Other NHS Site	<ul style="list-style-type: none"> <li>• Co-location with adult acute services could not be achieved</li> </ul>

10.2 All these options will be fully explored in the Outline Business Case.

## 11. Economic Evaluation

### *Anticipated Capital Costs*

- 11.1 Re-provision of the RHSC could be addressed in a number of ways. Each of the above options (1-6) will generate a different capital cost and each will attract a capital charge. It is not possible to calculate the actual capital cost until services are redesigned and the range of services to be provided are agreed.
- 11.2 Initial estimates identify that the potential capital costs range from £13m for 'Do Minimum' option to £60m for a New Build and the net increase in Capital Charges range from £780k (Do Minimum) to £3m (New Build). The anticipated costs are based on 2005/06 prices and include a level of optimism bias.
- 11.3 These estimates are based on 'like for like' re-provision of the footprint of services currently provided in RHSC and the adjacent houses. To date, no account is taken of the:
- Anticipated increase in children's hospital activity due to the increased age range to 16 or 18 years,
  - Outcome of the redesign of services and shift of care to local settings
  - Impact of the decisions of the Specialist Children's Services Steering Group
  - Clinical demand from other centres as an outcome of revised Regional planning
  - Present facilities of 'on site' laboratories, estates, staff catering etc. which may have the potential to be shared on an adult site.

*These estimates are therefore only indicative of the likely range of costs.*

### ***Sources of Capital Funding***

- 11.4 Early investigation of the capital receipts that may be obtained from land/property sale has indicated that this could be in the region of £17.5 million. If the endowment properties are included as part of the capital receipts, a further £5.5 million could be added. These receipts, however, would only be relevant if the option to remain in the current facilities was rejected through the option appraisal process.
- 11.5 A careful review of procurement options will be required to decide the most appropriate route to deliver the upgraded facilities. Suitable sources of funding will be considered as part of the project including private, public partnership (PPP) funding and charitable donations. NHS Lothian receives an annual capital allocation of circa £45m per year, a significant proportion of which is required to replace or maintain existing equipment and buildings.

### ***Revenue Implications***

- 11.6 The current cost of providing the Acute Children's service is approximately £48m per annum (2005/06). This sum includes the provision of the current regional, tertiary and nationally funded services. Depending on the option chosen, a range of efficiency gains may be realised.

## **12. Project Management Arrangements**

- 12.1 The project will be managed within the Improving Care Investing in Change (ICIC) programme. The IA for the ICIC Programme was approved on the basis that this project would be added once this IA has been approved (See Appendix 1). Appendix 2 lists the ICIC projects with Project Sponsor, Director and Manager identified. The NHS Lothian Director of Strategic Planning will provide Board Level leadership as the Project Sponsor.
- 12.2 PRINCE2 methodology will be used to deliver the project. The Clinical/Project Director and Project Manager have both been appointed full time and have undertaken PRINCE2 training. Appendix 3 illustrates the project management structure with the proposed sub groups identified. Each sub group will have defined remits and timescales to support the process of redesign and capital planning.
- 12.3 The membership of the Project Board has been established to ensure representation from all key stakeholders including members who can represent the views of adjacent SEAT Health Boards. The names and communication responsibilities of Board members are identified in Appendix 4
- 12.4 The RHSC, Yorkhill have just commenced a similar project to reprovide the West of Scotland Children's Hospital, commencing at the same time as the Lothian project, but with Ministerial direction for the project to be completed in 2009. It is proposed to work closely with the Glasgow Project Team over the life of both projects to ensure a consistent approach to the provision of specialist services, especially those that will require national planning. The Medical Director and Project Manager of the Glasgow Reprovision Project are both members of the RHSC Reprovision Project Board.
- 12.5 This process will be further supported by the establishment of the 'Specialist Children's Services Steering Group in Scotland', chaired by Malcolm Wright (Chief Executive, NHS Education, Scotland), reporting to the Deputy Minister for Health and Community Care via the Children and Young People's Health Support Group.

## **13. Indicative Project Plan and Timetable for Delivery**

The following table identified the indicative milestones of the project:

<b>Task</b>	<b>Commence</b>	<b>Complete</b>
Prepare Initial Agreement	February 2006	May 2006
Develop project brief	May 2006	October 2006
Confirm current: <ul style="list-style-type: none"> <li>• Patient pathways and models of care</li> <li>• Capacity and demand</li> <li>• Workforce establishment and competencies</li> <li>• Cost</li> </ul>	February 2006	September 2006
Identify and agree future: <ul style="list-style-type: none"> <li>• Models of care evidenced to best practice</li> <li>• Capacity</li> <li>• Requirement of workforce establishment and competencies</li> <li>• Cost</li> </ul>	May 2006	December 2006
Prepare Outline Business case, including appraising:* <ul style="list-style-type: none"> <li>• Site options</li> <li>• Funding options</li> </ul>	December 2006	December 2007
OBC approval by NHS Lothian Board	Oct 2007	Oct 2007
OBC approval by SEHD	December 2007	December 2007
FBC approval by NHS Lothian Board	Oct 2008	Oct 2008
FBC approval by SEHD	December 2008	December 2008
Construction	May 2009	May 2012

*\*Can only be completed once the outcome of the Delivery of Specialist Children's Services in Scotland review is known*

It is recognised that the public consultation on the NHS Lothian Children and Young People's Health Strategy will be from June - September 2006. The Project Brief and time scales may have to alter if issues arise during this consultation process.

#### **14. Risk Assessment**

As an integral part of the project management arrangements, a risk register will be developed and will be reviewed and updated regularly. A recognised process of Risk Management will be identified for all projects managed within the ICIC Programme. Various options will be considered, including the use of the Gateway System. The high-level risk areas for this project are identified in Appendix 5.

#### **15. Confirmation of the Schemes Status**

15.1 NHS Lothian confirm that the following statements apply to this scheme:

- The proposed development is consistent with NHS Lothian's Health Plan;
- The Senior Management Team of NHS Lothian has approved the Initial Agreement; and
- It is Consistent with NHS Lothian's estates strategy.

**Sign Off**

NHS Lothian's Chief Executive approves the Initial Agreement. Scottish Executive approval is now sought to develop options within the Outline Business Case.

.....

Chief Executive  
NHS Lothian  
Date

———— Reporting accountability

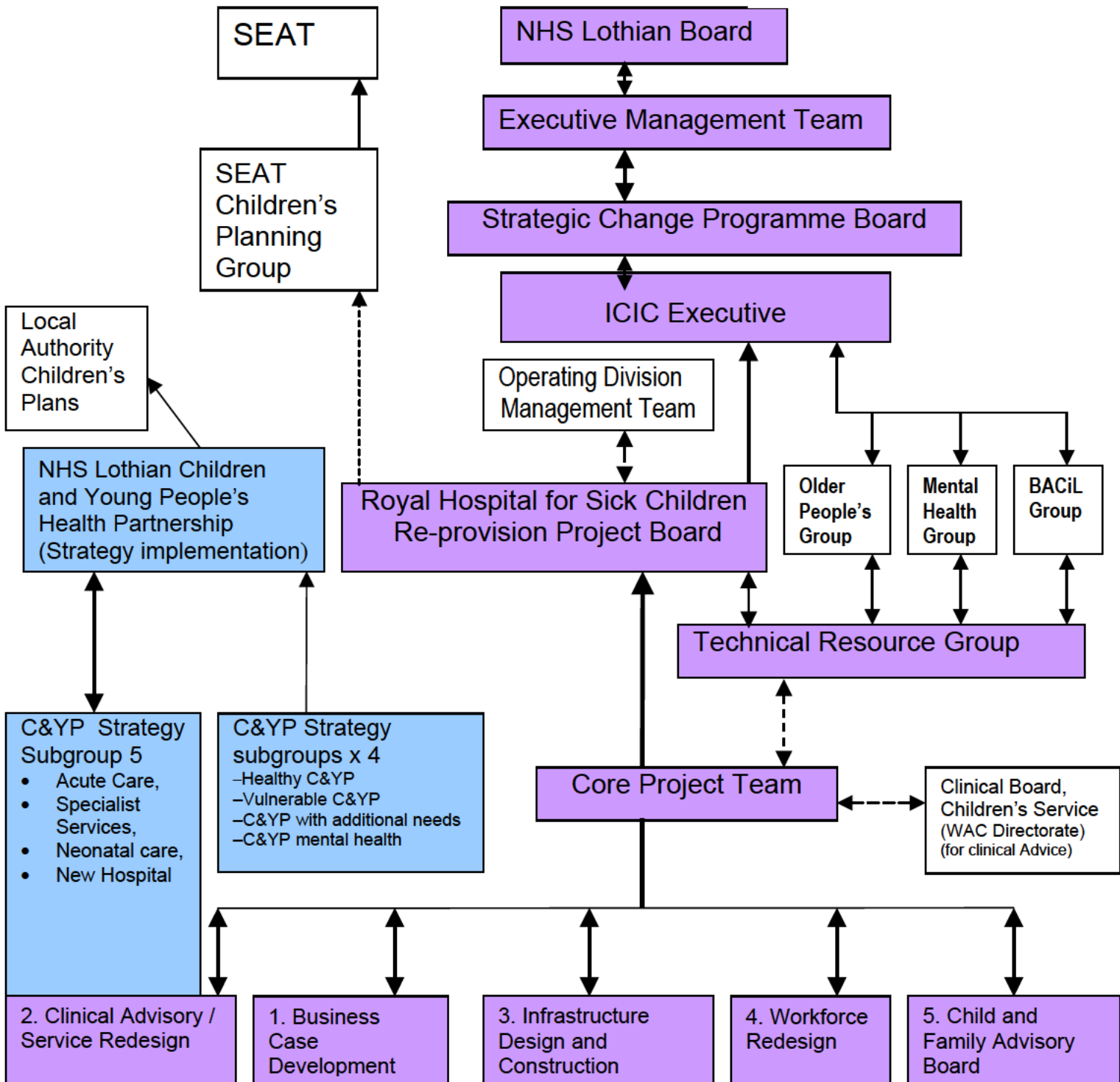
----- Line of Communication



Reprovision of the Royal Hospital for Sick Children Project & Reporting Structure



NHS Lothian C&YP Health Strategy Structure





## Appendix 4

**Reprovision of the Royal Hospital for Sick Children Project  
Project Board Membership**

<b>Name/Title</b>	<b>Position</b>	<b>Source of Nomination and Communication Responsibility</b>
Dr Sean Ainsworth	Consultant Neonatologist Forth Park Hospital, Kirkcaldy	Nominated by Chief Executive, Fife Acute Services Division Representing Fife Children's Services
Dr David Boag	GP representative Craiglockhart Medical Centre	Nominated by NHS Lothian GP Sub-committee Representing GP colleagues
Dr Donald Brown	Consultant Paediatrician RHSC Edinburgh	Nominated by RHSC Clinical Board Medical staff representative
Christina Burnett	Head of Support for Children, Young People and Families	Nominated by Director of Education City of Edinburgh Council
Rose Byrne	Reprovision Project Manager RHSC Edinburgh	Chair of subgroup 1
Peter Connor	Head of A&E Ambulance Services Scottish Ambulance Service Royal Infirmary of Edinburgh	SAS Staff, local managers, SAS service redesign committee and SAS Partnership Forum
Elaine Dhouieb	Senior Physiotherapist RHSC Edinburgh	Nominated by AHP Service group AHP representative
Harry Downie	Head of Capital Projects and Premises Development NHS Lothian	
Dr Zoë Dunhill	Clinical Director – Children's Service LUHD	
Eddie Egan	Partnership Director NHS Lothian	Representing Partnership Involvement
Deirdre Evans	Director, National Services Division Scotland	Representing National Children's Services planning
Dr David Farquharson	Head of Service Women's and Children's Directorate (WACS) LUHD	Management responsibility for Children's Service, member of Divisional management Team
Dr Peter Fowlie	Clinical Group Director Women's and Children's Services Ninewells Hospital, Dundee	Nominated by Chief Executive NHS Tayside Representing Tayside Children's Services
Ken Galloway	Service Manager Women and Children's Services LUHD	
Dr Nuala Gormley	Chair of Family Council Children's Services LUHD	Representing Children's Service, Patient and Public Involvement
Maureen Harrison	Director of the Sick Kids Friends Foundation (SKFF)	Nominated by Chair of SKFF Representing interests of this Charity
Nick Hunt	Design & Construction manager NHS Lothian	Chair of subgroup 3

<b>Name/Title</b>	<b>Position</b>	<b>Source of Nomination and Communication Responsibility</b>
Mr Morgan Jamieson	Medical Director Reprovision Project, Yorkhill	Invited to be member of Project Board, to ensure collaborative working between 2 projects, and joint working wherever appropriate
Lynne Khindria	Deputy Director of HR for NHS Lothian	
Isabel McCallum	Clinical/Project Director Reprovision of Royal Hospital for Sick Children	Chair of Subgroup 2 (service redesign) and 4 (workforce redesign)
Janice Mackenzie	Chief Nurse – Children’s Service LUHD	
Fiona Mercer	Project Manager, Reprovision Project, Yorkhill	
Dr Sheena Milne	GP West Lothian	Nominated by NHS Lothian GP Sub Committee
Prof Robert Minns	Consultant paediatric neurologist, Child Life and Health, University of Edinburgh	Nominated by the Vice Principal and Head of the College of Medicine and Veterinary Medicine
Kath Oakes	‘Improving care, Investing in Change’ (ICIC) Programme Director	
Cathy Orr	Child Health Commissioner, NHS Lothian	
Ralf Roberts	General Manager, NHS Borders	Nominated by Chief Executive NHS Borders
Mike Rosendale	Head of Strategic Planning City of Edinburgh Council	Nominated by Director of Education City of Edinburgh Council
Sharon Russell	Charge Nurse ward 6 RHSC Edinburgh	Nominated by Chief Nurse and Charge Nurse Forum Charge Nurse representative
Jackie Sansbury	Director of Planning, NHS Lothian	Project Sponsor, Chair of Project Board
Dr John Schulga	Consultant Paediatrician Forth Valley Health Board	Nominated by Chief Executive Forth Valley Representing Forth Valley Children’s Services
Dr David Simpson	Consultant Anaesthetist, Associate CD and Clinical Lead for Theatres and Critical Care RHSC	Co-chair of Subgroup 2 – Service Redesign
David Small	General Manager, Edinburgh CHP	NHS Lothian CHP representative
Stuart Smith	Chair, Lothian University Hospitals Division	
Jenifer Stirton	Director of Communications, NHS Lothian	
John Wilson	Chief Executive Fife Acute Services Division Chair of SEAT Children’s Service Planning Group	Invited to join as Chair of SEAT Children’s Service Planning Group
Dave Wright	Service Finance Manager NHS Lothian	





## SCOTTISH EXECUTIVE

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Health Department  
Directorate of Finance

Dear Colleague

### **A POLICY ON DESIGN QUALITY FOR NHSSCOTLAND**

Please note that the following Policy has now been superseded  
by -

**[CEL 19 \(2010\) - A policy on design quality for NHSScotland:  
2010 revision \(2 June 2010\)](#)**



## SCOTTISH EXECUTIVE

Health Department  
Directorate of Finance

Dear Colleague

### A POLICY ON DESIGN QUALITY FOR NHSSCOTLAND

#### Summary

1. This letter provides colleagues with a statement of the Department's Policy on Design Quality for NHSScotland (Annex A). Associated with the policy is an Annex of policy guidance (Annex B) which should be reflected in the Design Action Plans and related operational policies of NHSScotland Bodies.
2. The policy requires that each NHSScotland Body appoints a Design Champion at Board level and a supporting Project Officer. Colleagues will already be aware of the requirement to appoint a Design Champion and supporting Project Officer through prior written notification from the SEHD Head of Property and Capital Planning which included a 'person specification' for the role.

#### Background

3. The attached policy statement reflects consultation with colleagues in the Scottish Executive, NHSScotland and Architecture and Design Scotland. It provides a concise definition of policy along with details of mandatory requirements which must be complied with by NHSScotland Bodies, although the Department recognises that these requirements may not be directly applicable to the day-to-day operations of those Special Health Boards which are not actively engaged in the procurement of new healthcare premises and refurbishments to existing healthcare premises.

23 October 2006

#### Addresses

##### For action

Chief Executives, NHS Boards.  
Chief Executives, Special Health Boards.  
Directors of Facilities, NHS Boards.  
Directors of Estates, NHS Boards.

##### For information

Chief Executive, National Services Scotland.  
Director, Health Facilities Scotland  
Scottish Executive Architecture Policy Unit.  
Chief Executive, Architecture and Design Scotland.  
Chief Executive, Scottish Building Standards Agency.

#### Enquiries to:

Ian Grieve  
Property & Capital Planning Division  
Property Branch  
St Andrew's House  
EDINBURGH EH1 3DG

Tel: [REDACTED]

Fax: [REDACTED]

[ian.grieve](mailto:ian.grieve@nhs.uk) [REDACTED]

4. The fundamental principle upon which this new policy is founded is that all NHSScotland Bodies, as an integral part of the commitment to deliver the highest quality of environment for patient care, ensure that design quality is fully integrated into the healthcare building procurement process and is apportioned appropriate emphasis throughout all stages of this process.
5. Colleagues are advised that although the initial issue of this letter and attached policy statement will be in the traditional ‘hard copy’ format, the electronic version available from the Publications section of Scottish Health on the Web takes precedence [ [www.show.scot.nhs.uk/](http://www.show.scot.nhs.uk/) ]. This will ensure that colleagues have access to the embedded hyperlinks to online policies, guidance, reference and other material.

### **Implementation**

6. The implementation of this policy by NHSScotland Bodies must be supportive of and consistent with all other Scottish Executive policies and associated guidance which impacts upon and, has relevance to, the procurement and management of NHSScotland healthcare facilities.
7. In order to assist the initial implementation of this policy, the Scottish Executive Health Department (SEHD) has entered into a three year Framework Agreement with Architecture and Design Scotland (A+DS), the Scottish Executive’s champion for good architecture, design and planning in the built environment to deliver a broad range of services to support NHSScotland to facilitate the design of modern, patient focused health care facilities that create community responsive environments.
8. A+DS will work with SEHD to:
  - raise the level of ambition for good quality design;
  - provide dedicated, hands on assistance to projects in setting the platform for delivering design quality and securing design teams that deliver that ambition; and
  - provide advice on the design quality of proposed healthcare facilities.
9. In broad terms A+DS plans to work with SEHD over the three year period to meet the challenges established in national policy. It plans to use a team of built environment experts to deliver a range of programmes to satisfy Ministers’ expectations in relation to healthcare and broader community objectives through:
  - “enabling” projects;
  - establishing and facilitating a Design Champions network amongst NHSScotland Health Boards; and
  - interacting and advising on the design merits of proposals undertaking the Gateway Review process and the Key Stage Review process.

10. In order to enable A+DS to carry out its function, SEHD will:

- ensure each NHSScotland Board appoints a Design Champion at Board level and supporting Project Officer;
- refer suitable projects to both the Enabling and Design Assessment strands;
- provide regular updates of relevant issued policy documents, events and other background information; and
- arrange a formal review meeting between appropriate staff at SEHD and A+DS following the issue of each annual report and the final report.

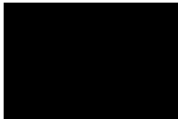
11. Awareness and training will be required by NHSScotland on a number of issues in relation to the implementation of this Policy. This will be facilitated in the first instance through the Framework Agreement between SEHD and A+DS whereby appointed NHSScotland Design Champions will be provided with training and support appropriate to their role. It is envisaged that further support will be provided, as appropriate, by Health Facilities Scotland (HFS) through the provision of operational guidance and training via the HFS Continuous Professional Development programme.

### **Action**

12. Addressees should ensure that a copy of this letter is cascaded to all appropriate staff within their area of responsibility.

13. The new Policy on Design Quality for NHSScotland and associated mandatory requirements take immediate effect.

Yours sincerely



**ALEX SMITH**  
Interim Director of Finance





# A Policy on Design Quality for NHSScotland



Scottish Executive Health Department  
Directorate of Finance  
Property and Capital Planning  
Property Branch

2006



## A POLICY ON DESIGN QUALITY FOR NHSSCOTLAND

### Purpose

The purpose of this document is to provide NHSScotland Bodies<sup>1</sup> with a clear statement of policy on design quality. It also provides guidance on how NHSScotland Bodies can ensure that design quality is embedded within the healthcare building procurement process.

### Context

In recent years the value of good design has been increasingly recognised and a wealth of evidence based findings has demonstrated that good design adds value, not only from an economic perspective but also in terms of a range of social and environmental benefits. This capacity to add value is particularly important for healthcare environments, where the physical and psychological well-being of patients, staff and visitors is of paramount consideration.

At a UK level, the Prime Minister established the 'Better Public Buildings' initiative in October 2000 to achieve a step change in the design quality of publicly procured buildings. Following this, in 2001, the Scottish Executive (SE) launched its '[Policy on Architecture for Scotland](#)' which contained an objective "to promote a culture of quality in the procurement of publicly-funded buildings that embraces good design as a means of achieving value for money and sustainable development". Its policy on architecture promotes and encourages investment in well designed buildings in both the public and private sectors.

As one of the early steps in the implementation of its policy, the Executive reinforced the Prime Minister's initiative by taking forward design quality issues within the education sector. The present document now responds to the quality objectives of the Policy on Architecture for Scotland within guidance and initiatives particular to NHSScotland.

As stated in the foreword to the Scottish Executive document 'A Policy on Architecture for Scotland', "*buildings form a fundamental part of our physical environment and the quality of our buildings - of our architecture - has a vital role to play in bringing about the improvements we seek*". This is especially poignant in the context of healthcare building, where well-designed health buildings can help patients recover their spirits and their health and have a positive effect on staff performance and retention, as well as improving the efficiency of operational relationships and providing better value for money in the context of whole-life costs. The Scottish Executive therefore recognises the importance of good building design as the physical means of delivery for a range of wider policy objectives

The Scottish Executive's Architecture Policy Unit (APU), which was established to implement policy commitments, can offer advice on design and acts as the sponsor body for [Architecture and Design Scotland](#), a Non Departmental Public Body established as the national champion for good architecture, design and planning in the built environment.

<sup>1</sup> NHSScotland Bodies in the context of this document means all Health Boards, Special Health Boards and the Common Services Agency performing functions on behalf of Scottish Ministers. 2

[‘Designing Places: A Policy Statement for Scotland’](#), launched in 2001, is an Executive campaign to drive up the standard of design in Scotland's towns and cities and sets out the Scottish Executive's aspirations for design and the role of the planning system in delivering these. It aims to demystify urban design and to demonstrate how the value of design can contribute to the quality of all our lives.

‘Designing Places’ sits alongside the Policy on Architecture. They share an overall aim to improve the life of the people of Scotland through improving the quality of our built environment. Achieving this depends on recognising the value of good design at all scales of development. Individually, buildings accommodate our activities, but collectively they define and shape our towns and cities and have the potential irrevocably to alter the character of our rural areas. A drive for quality cannot, therefore, focus solely on individual buildings - but must be concerned with the way that buildings, new and old, work together, and create places which affect our quality of life.

Health buildings can often be the places in which we may feel at our most vulnerable, whether as a patient, relative or friend. The quality of the building environment that we experience can provide us with calming reassurance or, conversely, it can accentuate our feeling of stress and unease.

Many factors can contribute to engendering a sense of ease, for instance:- the degree of natural light, brightness and airiness, colour and texture, an easily understood layout with clearly defined focal points, uncluttered signage and a clear distinction between the realms of public and private space, maintaining patient dignity.

In many health buildings, external public spaces are vitally important in that they can also provide the opportunity for positive respite in periods of stress. Sensitive landscaping and well-defined public space in a healthcare environment can provide far more than simply an attractive setting. Through careful design social or intimate, tranquil spaces can be created, providing an environment where people might want to sit or meet, and which further contribute to the healing process.

The creation of a new or refurbished facility can also bring with it the opportunity to show a positive civic presence, and the development of a high quality public building can do much to help the regeneration of communities. It is thus also a matter of considerable importance that health buildings respond to the urban or rural contexts in which they sit. This includes considerations such as how they fit within historic contexts, how the approach and entrance act to welcome concerned families and friends, and how they contribute to the quality of their neighbourhoods, both in terms of the buildings themselves and the places they create around them.

Healthcare buildings play a significant part in the environment and, increasingly, patients are becoming "empowered" to demand better environments in which they receive healthcare. It is appropriate that we embrace such matters and introduce appropriate policies and initiatives in Scotland.

At the heart of this policy is the recognition that strong client commitment is required to deliver facilities that provide the high quality caring environments we desire. We are now looking to NHSScotland bodies to develop their individual visions for the kind of places in which patients and staff would wish care to be provided.

The term 'good design' is not merely a question of style or taste but describes what arises from the intelligent and creative synthesis of many interrelated factors such as: strategic planning of healthcare provision; social and physical regeneration; the local urban (or rural) context and forms; links to infrastructure and transport; sustainability agendas; the building's sense of welcome; intelligibility of layout; security; unobtrusive supervision; ease of use and maintenance; efficiency; and, promotion of human dignity. It covers the way in which buildings sit within and, contribute to, their community as well as how they work and look. Successful healthcare design resolves a wide range of functional requirements efficiently whilst, at the same time, exploring the opportunities to provide an uplifting environment for patients, visitors and staff.

Design should not be thought of as an "add-on extra" in health buildings or, indeed any building. Irrespective of questions of quality, the process of design must in any case take place, as it is an inevitable activity arising from the decision to build. But good design need not cost more and the difference between achieving good or poor quality outcomes is more often the result of having the right knowledge or advice, understanding, care and commitment.

Many aspects of good design are not subjective. A design can be evaluated objectively through the use of appropriate tools such a Design Quality Indicators (DQIs) to assess whether the building will function efficiently and effectively; whether there is clear evidence of thoughtful, imaginative and even inspirational proposals that will not only work, but work better; whether the building integrates with its surroundings in an appropriate manner and creates a sense of place and; whether the materials, construction methods and the proposed layout will enhance long-term value for money.

The physical form of a development can enhance or detract from the qualities of a place and can support or undermine the intended uses. In every part of a city, town or village where there is scope for change there will be a wealth of opportunities for achieving good design. **In order to achieve value for money (VFM), good design has to combine fitness for purpose and flexibility with whole-life costs which is a fundamental requirement of public sector procurement policy.** By integrating a high standard of design quality early in the procurement and design process, cost savings associated with the whole-life revenue costs of a facility can be reduced for a comparatively small additional investment to the capital. In addition to long term operational savings, such well directed initial investment in a high quality healthcare environment helps boost staff morale and improves working conditions, recruitment and retention.

Design evaluation, in particular Post Project Evaluation, can contribute to the emerging field of "evidence-based design" which is proving a valuable tool in the design process towards both reducing costs and improving outcomes. Research has shown that evidence-based design methods, introduced early in the process of facility programming and design can improve the experience of patients who will be treated within the healthcare facility and assist in health recovery which results in improving medical outcomes, shorter bed stays, greater throughput and a reduction in patient and staff stress.

The [Commission for Architecture and the Built Environment](#) (CABE), through its work on healthcare buildings, has established key elements of good healthcare design which include the following:

**Good urban design** allowing the building to contribute positively to the urban environment and providing a clear, easy approach that is integrated with public transport.

**Good public open space** where pedestrians are prioritised over cars so that the building is not dominated by landscaping requirements. Well landscaped external space benefits staff,



patients and visitors, offering an alternative environment to rest and relax away from the stresses inherent in healthcare environments.

**A clear plan** with a natural progression from public to treatment rooms. Ideally visitors should be able to see their destination from their starting point.

**A single reception point** makes for a clear expression of the entrance on the outside, an early welcome once inside and assists in orientation when travelling around the building. Security and privacy issues can be resolved in the detail design of the reception area.

**Circulation and waiting areas** that are pleasant and calming places in their own right, designed with human dignity in mind. Where waiting and circulation are combined, this should be achieved to the benefit of each.

**Robust and attractive materials, finishes and furnishings** – structure and detail should all correspond to a clear approach to design, benefiting whole life costs by reduced maintenance and replacement.

**Generous amounts of natural light and ventilation** contributes to good, energy efficient environmental conditions throughout. In addition to providing a comfortable and Therapeutic environment, such provision improves the external feel of the building, provides views out and aids navigation within. The provision of views and positive distraction and the ability to control one's environment have been shown to be instrumental in patient recovery and in staff health and satisfaction.

**Capacity to adapt to future changes** is key to the long-term utility of the building and therefore its sustainability and VFM. Aspects such as sizing rooms generously and arranging them thoughtfully can allow flexibility. Viewing space as a resource, not a territory, helps patterns of use to evolve over time.

## **The Way Forward**

The recent Scottish Executive Health Department report "[Building a Health Service: Fit for the Future](#)" (the Kerr Report) is particularly apt in the context of design quality of healthcare building. The report recognises that the NHS in Scotland needs to change, not because it is in crisis but because Scotland's Healthcare needs are changing rapidly and we need to act now to ensure that we are ready to meet the future challenge. In looking ahead over the next 20 years the report identifies a number of key messages:

- that NHSScotland delivers sustainable and safe local services;
- that we redesign where possible to meet local needs but specialise where required having regard to clinical benefit and access;
- the NHS as a service to be delivered primarily in local communities rather than in hospitals;
- a focus on preventative anticipatory care rather than reactive management.

The report highlights that the new models of care being introduced will have an impact on the services that NHSScotland provides. With public expectations changing regardless of where care is delivered it is paramount that we deliver the highest quality environment for healthcare. Implementing the recommendations will go a long way to ensuring that buildings of a quality which the people of Scotland expect are delivered.

It is critical that design issues are addressed regardless of the procurement method used to deliver healthcare buildings and, that the outcomes specified for these buildings in terms of the care environment are reflected in their design. However, the implementation of design quality and the procurement route used have a particular relationship and therefore the procurement method used can have a significant bearing on the development of design quality during the process. Although it can be argued that good design is independent of cost, it's relationship with design management and procurement in practice needs careful examination. The recently published National Audit Office report "[Improving Public Services Through Better Construction](#)" (March 2005) supports this view and advocates that all key stakeholders should be involved and all proposals subjected to independent challenge before key design decisions are made and that design and decision-making be based on "whole-life value".

The concept of 'evidence-based design' has already been mentioned in the context of Post Project Evaluations. There has been a historical assumption that each healthcare building has to be unique in order to fulfil the vision and aspirations of the brief which can, unfortunately, result in the repetition of mistakes, albeit perhaps unintentionally. The starting point for any new healthcare building should, logically, be the successes of one or a number of existing buildings based on a careful analysis of what constitutes the 'good' and what constitutes the 'bad'.

Also of importance is the emerging field of 'supportive healthcare design'<sup>A</sup>. Traditionally, there has been an assumption that the main requirement placed upon a healthcare facility should be the mitigation of infection or the risk of exposure to disease. Additionally, through decades of advances in medical science and technology, many healthcare designers and technicians have been conditioned to create buildings that are successful delivery platforms for new technology. By concentrating on the need for functional efficiency and the pathogenic concept of disease and health, healthcare facilities have been procured which contain environments which can be considered stark, institutional, stressful to their occupants and thus detrimental to the quality of care they are intended to provide. In spite of evidence of the major stress caused by illness and the subsequent traumatic experience of hospitalisation, there has, historically, been comparatively little emphasis on the creation of surroundings which can calm patients, reinforce their ability to cope in such environments and generally address their social and psychological needs.

The process of 'supportive design' begins by eliminating the environmental characteristics which are known to contribute to stress or can have negative impacts on outcomes and, importantly, continues by emphasising the inclusion of characteristics in the healthcare environment which research has indicated have the ability to calm patients, reduce stress and strengthen their ability to cope and promote healthy, healing processes.

(Ref <sup>A</sup>: Ulrich R S, 2000 - 'Effects of Healthcare Environmental Design on Medical Outcomes'  
Ulrich R S, 2000 - 'Evidence based environmental design for improving medical outcomes. Proceedings of the conference: *Healing By Design: Building for Healthcare in the 21<sup>st</sup> Century*', McGill University Health Centre, Montreal)

Due to the length of time that healthcare buildings may be in use there is potential to constrain changes in delivery practices. It is therefore vitally important that design processes are an integral part of a robust procurement mechanism in order to ensure that buildings are not only functional when constructed but are flexible and adaptable over their entire lifetime.

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SEHD will continue to play its part in supporting and implementing wider Scottish Executive procurement strategies and policies by setting these within a healthcare-specific context.

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## Policy Aims

- The purpose of this policy is to articulate the Scottish Executive Health Department's ambition for NHSScotland's estate and to embed the need for well designed healthcare environments as an integral part of service delivery. It also provides guiding principles which a NHSScotland Body's Design Action Plan should address ([Annex B](#)) and two further annexes providing reference to relevant Scottish Executive Health Department property-related policies and supporting guidance ([Annex C](#)) and, useful references and web links ([Annex D](#)).
- The Scottish Parliament has articulated the desire that Scotland becomes "*the best small country in the world*" and has further asserted that the quality of our built environment is a key factor in achieving this, not only to benefit the country's residents but, to influence the international perception of Scotland. The Scottish Executive Health Department believes that improving the quality of our caring environments is crucial to delivering the confident, compassionate Scotland that is aspired to.
- Therefore this policy statement requires that all NHSScotland Bodies, as an integral part of the commitment to deliver the highest quality of environment for patient care, ensure that design quality is fully integrated into the healthcare building procurement process and is apportioned appropriate emphasis throughout all stages of this process.

## Scope

This policy must be considered alongside other Departmental policies bearing upon property including those for fire safety, property transactions, construction procurement, property management and environmental management. Such policy statements are intended to inform the formulation and updating of operational policies and guidance. Such operational policies and property strategies are important corporate expressions of a NHSScotland Body's intentions and as such should be a manifestation of integrated service planning and the appropriate involvement of all relevant interests.

The policy must also be supportive of other relevant Health Department, Scottish Executive and Government policies and commitments.

## Policy Statements

**Statement 1** All NHSScotland Bodies, as clients, must commit to the integration of design quality in the procurement of healthcare building throughout all stages of the process, regardless of procurement route used.

**Statement 2** All NHSScotland Bodies must have a policy on design quality – a [Design Action Plan](#) - consistent with and supportive of the Department's property-related policy and supporting guidance (listed at [Annex C](#)) and, with the policy guidance contained within [Annex B](#) of this document.

**Statement 3** The SEHD must provide guidance on compliance with those aspects of statutory and mandatory requirements which are particular to the procurement, design and delivery of healthcare buildings and guidance on best practice. This will be effected through the publication of appropriate operational guidance by [Health Facilities Scotland](#).

## **Mandatory Requirements**

1. Each NHSScotland Board must have a clear, articulated policy on design quality – a [Design Action Plan](#) – consistent with the Department’s policy.
2. Each NHSScotland Board must appoint a member of the NHS Board to act as [Design Champion](#) at a strategic level and, where not impractical, also a Senior Officer to act as supporting Design Champion at a technical level.
3. All NHSScotland Bodies engaged in the procurement of both new build and refurbishment of healthcare buildings must do so in compliance with EU, UK and Scottish Executive procurement policy and guidance.
4. All NHSScotland Bodies, as clients, must ensure the development of a clear project brief which should not only describe the physical requirements of the building but should also articulate the Board’s vision and aspiration.
5. All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must use and properly utilise the English Department of Health’s [Activity DataBase \(ADB\)](#) as an appropriate tool for briefing, design and commissioning. If deemed inappropriate for a particular project and an alternative tool or approach is used, the responsibility is placed upon the NHSScotland Body to demonstrate that the alternative is of equal quality and value in its application.
6. All NHSScotland Bodies must use [Design Quality Indicator \(DQI\)](#) tools as appropriate to manage their design requirements through the life of a project. The English Department of Health’s [Achieving Excellence in Design Evaluation Toolkit \(AEDET\)](#) and associated supplementary tools such as ASPECT are recognised as the exemplars towards achieving the appropriate level of project design management.

## **Monitoring**

7. All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must conduct thorough and, independent, Post Project Evaluations and Post-Occupancy Evaluations and make available to SEHD any resulting evaluation data which will be used in the formulation of generic reports to inform future policy and disseminate nationally the lessons learned.

## **Training**

8. Awareness and training will be required by NHSScotland on a number of issues in relation to the implementation of this Policy. This will be facilitated in the first instance through the Framework Agreement between SEHD and Architecture and Design Scotland whereby appointed NHSScotland Design Champions will be provided with training and support appropriate to their role and, additionally, through ad-hoc support as deemed appropriate from [Health Facilities Scotland](#).

## **Policy Guidance**

A NHSScotland Body's **Design Action Plan** should be consistent with and supportive of the guidance contained within this Annex and the policy and guidance documents listed at [Annex C](#).

[The following guidance aligns in part with the Scottish Executive "*Construction Procurement Manual: Section 6 – Design quality in building procurement*" but with appropriate additions and amendments in order to apply to the healthcare context.]

## **Contents:**

### **Design quality in building procurement**

[Key issues](#)

[Achieving good design](#)

[Fire safety](#)

[Designing for equality](#)

[Evaluating good design](#)

[The business case](#)

### **Role of the client**

#### **Project brief**

[Activity DataBase \(ADB\)](#)

### **The Client Design Adviser**

#### **Design Quality Group**

#### **The Design Team**

[Design Team selection](#)

[Quality Based Designer Selection \(QBS\)](#)

[Design competitions](#)

[Procedure for appointing the Design Team](#)

[Design Team selection criteria](#)

[Selection criteria at bidding stage](#)

[Relation of selection criteria to budget considerations](#)

### **Design quality**

[Evaluating design quality](#)

[General](#)

[Achieving Excellence in Design Evaluation Toolkit \(AEDET\)](#)

[Using AEDET Evolution](#)

[When to use AEDET Evolution](#)

[A Staff and Patient Environment Calibration Tool \(ASPECT\)](#)

[Role of Architecture and Design Scotland \(A+DS\)](#)

[NHSScotland Design Champions](#)

[Enabling](#)

[Design Assessment](#)

[Role of Health Facilities Scotland](#)

[Maintaining design quality on site](#)

### **Public space**

#### **Use of the arts in healthcare**

## Design quality in building procurement

### Key issues

- Good design is not an alternative to value for money (VFM), but is integral to its achievement. A good building project must also contribute to the environment in which it is located, deliver a wider range of social and economic benefits and be adaptable to accommodate the needs of future users. An enhanced built environment which incorporates principles of good design can improve the quality of life of those who use and work in public buildings. Throughout the life of a building, design excellence can improve the standard of public service delivery, make it more efficient and contribute to staff recruitment and retention. Good design can ensure that capital costs are competitive and that savings can be achieved on running costs through reduced maintenance, energy and operating costs without compromising the attractiveness and quality of the building. **Therefore investing in good design can make the most beneficial and effective use of resources, can add value and represents a sound investment in the future. High quality building design is therefore a key mechanism in providing VFM in the provision of healthcare services.**
- **Good design is not merely a question of visual style or personal perception but arises from the careful synthesis of many interrelated factors including architectural vision, functionality and efficiency, structural integrity and build quality, accessibility, security, sustainability, lifetime costing, flexibility in use and a sense of space in the community.**
- Clients must be clear about the level of funds available for a project from the outset and ensure that their aspirations for quality are underpinned by realistic and affordable assumptions.
- Clients must carefully assess and define their priorities before appointing design consultants.
- The process must allow for effective consultation with all stakeholders to establish a clear, well-defined brief.
- Sufficient time and resources should be allocated towards establishing the client's design quality aspirations.
- The Client's Design Advisers must be retained throughout the construction process in order to monitor the quality of design and finishes.
- Post Project Evaluations of building programmes are mandatory for major projects and any lessons learned must be shared with the Scottish Executive and other NHSScotland bodies.
- Quality Based Selection (QBS) is a structured procedure for selecting a design team and professional advisers. Design competitions are a means to primarily select specific design ideas or outline design ideas for a project, rather than the design team personnel.
- All public sector appointments, irrespective of the client's preferred nature of competition or reference to any other guidance on design competitions, must be consistent with EU procurement rules in terms of process and outcome. Public sector clients must ensure that design team appointments follow the procedures described in [Section 3 Annex A](#) of the works procurement guidance part of the Construction Procurement Manual. Detailed

guidance on the appointment of consultants, conditions of contract and contract guidance in a NHSScotland context is contained within 'PROCEDURE: Property Procurement Guidance for NHSScotland', published by [Health Facilities Scotland](#). Quality aspects cannot be considered in isolation but must be assessed as part of the VFM evaluation which also takes account of fee proposals.

- The role of an informed client is vital in ensuring the successful delivery of the project within the agreed timescale and budget and to the required standards and requirements of all users.

### **Achieving good design**

From the outset, clients must be clear about the level of funds available for a project and ensure that their aspirations for quality are underpinned by realistic and affordable assumptions through establishing the right budget. These quality matters and functional requirements must then be set out in a clear and thorough project brief. In order to monitor and control the procurement, design and construction processes, procedures and responsibilities should be clearly defined (and assigned). Ideally, designers should engage in challenging and constructive dialogue with the client, building users and those involved in supplying and manufacturing materials, goods and services. All concerned should work to a realistic and robust timetable, which gives the design team enough time to develop and achieve a good solution.

An informed, demanding and committed client is vital in ensuring that aspirations for quality are maintained throughout the procurement, design and construction processes.

By nature of their complexity, healthcare buildings can be expensive to manage and maintain due to the imposition of build cost constraints during the procurement process in order to adhere to a short-term financial hurdle. **It is therefore imperative that the process recognises the need to address the whole-life cycle of the building and the integral part that good design can play in mitigating potential future financial penalties imposed by the adoption of such a short-term vision. Whole-life costing must be the standard for investment decisions. Those involved in the making of such decisions will be ultimately judged on the lifetime VFM of their decisions rather than whether they managed to get a project past the initial financial hurdle.**

Healthcare facilities and the associated equipment used therein must be designed to support all the people who are likely to use them in order to operate effectively. It is therefore vital that all potential users of a proposed facility – staff, public and patients – are involved early in the design process and throughout its progress. Additionally, stakeholders such as regulators, professional bodies, community bodies, etc, should also be engaged throughout the process as this has the potential to provide a valuable source regarding the projected use of the facility, the processes which will be undertaken therein and how the facility's users will work or interact with it. Early user involvement in the design process can help ensure that a planned facility will support the people who are to use it.

The standardisation of systems and processes to be carried out within a proposed facility, layouts, room orientation, human interfaces, wayfinding and even storage can provide many benefits for patients, staff and visitors. Standardisation can help reduce mental workload and thus reduce errors, can make errors and departures from normal working easier to detect and can allow the transfer of skills and staff between departments with reduced training needs. Thus standardisation in conjunction with a wider engagement with users and stakeholders can also enhance safety.

**The Scottish Executive Health Department requires that NHS Boards appoint Design Champions at Board and Senior Officer level to consolidate a commitment to the championing of good design.**

### Fire safety

Fire safety legislation and standards generally state that all people should be evacuated from a building in the event of fire. In terms of healthcare premises, this is not the case due to certain circumstances. Fire in a hospital or other healthcare building can be especially serious because of the difficulties and dangers associated with the emergency evacuation of patients, many of whom will be highly dependent. Therefore in such buildings the concept of progressive horizontal evacuation is the norm and is cited as so within the [Technical Handbooks to the Building \(Scotland\) Regulations 2004](#). However, because of other special requirements particular to fire safety in healthcare buildings, guidance and recommendations contained in NHSScotland Fire Safety Management guidance, including NHSScotland Firecode, which is additional to the mandatory requirements set out in the Technical Handbooks to the Building (Scotland) Regulations 2004, must be adhered to. This additional guidance is ratified by the [Scottish Executive Health Department's Fire Safety Policy](#). The requirements of NHSScotland Firecode must be considered throughout the design process in addition to the requirements of the Building (Scotland) Regulations 2004. NHSScotland Firecode is published by [Health facilities Scotland](#).

### Designing for equality

NHSScotland, as a provider of services, is subject to equality legislation which requires the provision of services which are accessible to everyone. In a healthcare environment it is important to recognise the complexity and the number of difficulties with which patients, staff and visitors may have to cope on a day-to-day basis. Sensory impairments, perceptual problems, reduced mobility, chronic pain, communication barriers, are but a few. Informed planning and design plays an important role in enabling people of all abilities access to services and facilities. It is therefore essential that the concept of "access and egress for all" is incorporated early in the design process and throughout its progress and that best practice guidelines are followed. By considering equality issues early in the design process, costs associated with addressing equality issues can be minimised which would inevitably prove more onerous if addressed retrospectively.

Egress for all in the case of an emergency must also be considered during the design process. Everyone rightly expects that if they are in a public building when an emergency occurs they should be subject to evacuation procedures which come into force to ensure their safety. However, in healthcare buildings there may be many persons who, by nature of their presence there or otherwise, may be particularly vulnerable. In particular, in larger healthcare buildings such as hospitals it will not be possible to ascertain the number of people who may have an impairment, let alone the type of impairment or, the number of people who may have cognitive or communication or language difficulties. Addressing the needs of all in the context of emergency egress early and throughout the design process will have significant benefit towards the procurement of a facility which ensures the safety of patients, staff and the general public.

### Evaluating good design

Design evaluation can be structured around a number of key design issues. To support the continual improvement of the construction and procurement process, Post Project Evaluations (PPEs) of building programmes are mandatory for major projects with a cost in excess of the delegated limits and are an integral requirement of the Scottish Capital Investment Manual (currently under review). However, it is recognised that all projects would



benefit from such evaluation and any lessons learned should be shared with the Scottish Executive and other NHSScotland bodies in order to inform best practice and future policies. Independent PPEs should be carried out before the break up of the design team to review the success of the project against its original objectives, its performance in terms of time, cost and quality outcomes and whether it has delivered value for money.

Guidance on Post Project Evaluations can be found within the Scottish Capital Investment Manual.

Post-Occupancy Evaluations (POEs) also have a significant role. The key advantage of POEs is the opportunity to achieve improvements in the ways future buildings will support operational objectives. Participants often identify areas where design improvements could be made and ways in which buildings and equipment could be used more cost effectively. These may only be minor, but they could produce significant benefits to future designs. The process of evaluation can provide important feedback on whether resources are being targeted at the most important areas. This can also enable poorly functioning or seldom used features to be eliminated from future designs and the repetition of mistakes to be avoided.

The nature of PPE and POE reports must be set out and agreed at the start, and project sponsors must ensure that provision is made for the independent preparation of both when setting budgets and timetables.

PPEs and POEs can be valuable in the formulation of “evidence based design” methodology. As has been stated in the preambles to this policy document, the field of “evidence-based design” is proving a valuable tool in the design process towards both reducing costs and improving outcomes. Research has shown that evidence-based supportive design methods, introduced early in the process of facility programming and design can have significant impact on the design of physical environments which can affect patient medical outcomes and care quality. An important impetus for the growing international awareness of healthcare facility design has been mounting scientific evidence that certain environmental design strategies can promote improved outcomes whereas other approaches can worsen patient health.

### **The business case**

The business case process must include statements of expectation for design quality. The preparation of the Outline Business Case should be the starting point for embedding design quality issues into the procurement process and, ideally this should be initiated during Phase II of the Business Case process at the point from which service objectives are established, as defined within the SEHD Scottish Capital Investment Manual (currently under review). Discussions with professional advisers at the earliest stage can assist in determining and defining design priorities and setting project objectives. Consideration of the design issues must continue throughout the entire process.

For projects which are to be provided under the Private Finance Initiative (PFI) the guidance contained within the Department of Health publication '[Design Development Protocol for PFI Schemes: Revision 1](#)' (August 2004) should be followed, in so far as it is applicable in Scotland, for the preparation of Business Cases.

### **Role of the Client**

The key role of the client is to develop a clear, well defined brief. At the beginning of the project, the client will need to establish the nature and scale of what is required. Clients should establish the views and aspirations of all stakeholders, and their aims will become the

reference point throughout the design and construction stages and can be used to test the overall success of the project over the long term. As with any building project, the initial stages are vital and, a period when the most value can be added. Providing sufficient time and resources for strategic thinking will produce dividends in the long run. An informed and motivated client is critical to the success of a project.

As part of their responsibilities, the client must:

- fully develop a client strategy which has identified the need for the building whilst setting and securing a budget for the project. Understand that the budget cannot be finally established until the brief is settled;
- set a realistic and achievable timetable allowing sufficient time for consultation, brief development and for design;
- involve their Design Champion throughout the briefing and project delivery and listen to their comments;
- allocate sufficient time and resources to establish the client's design quality aspirations and set out clear benchmarks which the client must reinforce through all stages of the process;
- consider the skills and experience required of individual client team members, assess in-house skills and, where necessary, engage external consultants;
- appoint a Client Design Adviser to aid in the preparation of the brief and the assessment of the schemes that come forward through any competitive design process;
- consult with stakeholders to establish a clear, well-defined brief;
- be informed and demanding about operational requirements and quality objectives to get the best possible outcome from the procurement process;
- articulate the Board's requirements not only through the use of DQIs but in a clearly expressed brief that establishes and communicates their vision for the development;
- show commitment to achieving a well-designed and constructed project by giving design quality a high percentage in the assessment of bids and publishing that ratio. Make sure that bidders understand that poor or mediocre developments are not acceptable;
- establish clear and effective routes for communication between the Client Team and the bidding Design Teams during the bidding process so that the Board's needs and aspirations can be more fully discussed and incorporated into the designs that are brought forward. Establish a Design Quality Group to work with the bidders throughout the ITN process, commenting on and directing the solutions that are brought forward;
- choose a Delivery/Design Team which is committed to achieving the best quality possible within the agreed budget and timetable; allow sufficient fee budgets for the work that the designers must do;
- not allow design time to be squeezed in order to recover time lost in the programme for other reasons – good design takes time;



- carry out Post project Evaluations (PPEs) and Post Occupancy Evaluations (POEs) and ensure that the reports from these are available to SEHD for formulation of generic reports which can properly feed back into future procurement processes.

## **Project Brief**

A vital factor in achieving high quality design is that clients have a firm and well developed view of what they want, before appointing design consultants, and that this is clearly stated in project briefs. A well-developed brief, with common consensus on operational and quality priorities, is essential for the provision of better design. A rigorous approach to this stage of work will significantly improve the client's capacity to deliver a quality project.

On the other hand, proceeding with sketchy and under-investigated assumptions can be detrimental to the outcome of the project. Statements that set out the client's aspirations on design in terms of matters such as character and durability should be incorporated into briefs.

Detailed guidance on the development of the Project Brief is available to NHSScotland Bodies from within PROCODE: Property Procurement Guidance for NHSScotland, published by [Health Facilities Scotland](#).

Of particular importance in the context of healthcare buildings is the need for the Project Brief to incorporate policy, guidance and best practice in relation to reducing Healthcare Associated Infections (HAI). Guidance to ensure that prevention and control of infection issues are identified, analysed and planned for at the earliest stage of the provision of new or refurbished healthcare facilities is contained within Scottish Health Facilities Note 30 (SHFN 30): 'Infection Control in the Built Environment: Design and Planning', published by [Health Facilities Scotland](#). Additionally, Health facilities Scotland has developed a system which aims to assess and manage the risk of infection in the built healthcare environment called HAI-SCRIBE, an acronym for Healthcare Associated Infection System for Controlling Risk in the Built Environment. HAI-SCRIBE has been designed as an effective tool for the identification and assessment of potential hazards in the built environment and the management of these risks. The tool should be applied from the design and planning stages of a project through to the occupation and operation of the facility.

The project brief should also contain statements on the client's desired approach to sustainability. Integral to the design and procurement process, a commitment to sustainable design can bring real benefits in terms of reduced running costs and quality of environment for users. Further guidance on achieving sustainability in construction procurement is set out in the [SEHD Environmental Management Policy for NHSScotland](#) and in [Section 7 of the Scottish Executive Construction Procurement Manual](#).

To assist NHSScotland Bodies in delivering sustainable solutions and embedding energy efficiency into healthcare building projects, Health Facilities Scotland has developed an exemplar Environmental Management System, GREENCODE, through which NHSScotland Bodies can continually aim to improve the environmental performance of their property and, exemplar energy efficiency guidance, EnCO<sub>2</sub>de, which aims to ensure that everyone involved in procuring, managing and using healthcare buildings and equipment thinks about the implications of energy use.

## **Activity DataBase (ADB)**

[Activity DataBase \(ADB\)](#) is the briefing, design & commissioning tool for both new-build and refurbishment of healthcare buildings. It is a briefing and design package with an integrated

textual and graphical database, an interface with AutoCAD and an extensive graphical library - the complete tool for briefing and design of the healthcare environment.

ADB is produced by the Department of Health in England and is endorsed for use in Scotland by the Scottish Executive Health Department as the preferred briefing and design system for NHSScotland. It has been developed to assist in the construction, briefing development, design and alteration of healthcare facilities.

In 2005, the Scottish Executive Health Department, in association with the NHSScotland Property and Environment Forum (now [Health Facilities Scotland](#)) launched an initiative to support NHS Boards in the implementation of ADB throughout NHSScotland by way of a national agreement in which SEHD would fund the first year's licence subscription to ADB and Health Facilities Scotland would provide ongoing training and user-network support. This is now in place and NHS Boards, having recognised the merits and cost-effectiveness of the system, are expected to continue to subscribe annually on their own behalf.

Spaces designed using ADB data automatically comply with English planning guidance (such as Health Building Notes (HBNs) and Health Technical memoranda (HTMs) as ADB forms an integral part of the English guidance publication process. Whilst Scottish users can create their own project-specific briefs and designs using ADB's extensive library of integrated graphics and text which includes room data sheets, room layouts and departmental room schedules, extreme care should be taken to ensure that such data generated by the package are consistent and compliant with Scottish-specific guidance such as Scottish Health Planning Notes, Scottish Hospital Planning Notes (SHPNs) and Scottish Health Technical Memoranda (SHTMs) as published by [Health Facilities Scotland](#).

### **The Client Design Adviser**

The first few decisions at the start of a project can have a very significant impact on the quality of the design. The challenge is to break the mould of 'fixed thinking' which too often leads to projects which are not the best solution possible. By employing a Client Design Adviser (CDA) early in a project, clients can become empowered to question fundamental issues. The interface between the project team and the users can be effectively smoothed by the CDA – healthcare officials are in the main not trained to read design plans which often results in buildings being 'signed off' which fail to reach their potential. The appointment of a CDA is, naturally, an additional cost but good preparation is vital to the creation of a good project.

The CDA is appointed by the Client as a consultant to the Client Team and operates in the sole interest of the client to achieve best value outcomes through design. However, healthcare buildings often constitute complex engineering systems, the design and maintenance of which must be addressed at the design stage. Also, many of the key issues surrounding healthcare building design are irrevocably connected with sustainability. It is vitally important, therefore, that the CDA is capable of understanding the range of issues and has the ability to provide the necessary breadth of input.

The CDA acts from the inception of a project through to its completion, performing a range of tasks to help ensure that the healthcare buildings delivered are of the highest quality including:

- contributing to the understanding and knowledge of design;
- reviewing user needs and assisting in the preparation of the outline brief;
- drafting documentation;

- judging the quality of ideas and suggestions;
- suggesting and evaluating delivery team members;
- asking searching questions of all those involved in supply; and
- facilitating consultation with stakeholders.

### **Design Quality Group**

The Client needs to ensure that all schemes designed in the competitive process up to Invitation To Negotiate are acceptable. In order to ensure this, it is advisable to set up a Design Quality Group to review the designs alongside the user consultation process. The group should be kept small and will normally be made up of the Project Director, Building Project Director, Client Design Adviser and some input from the A+DS Enabler, if appointed.

A typical format for a Design Quality Group review would be:

- bidders submit designs beforehand and Group members review them privately;
- the Design Quality Group meet to discuss the designs and formulate any questions to clarify, in order;
- the Group meet with the bidders and hold a brief Q & A session;
- Group members then collate and agree on comments which are subsequently fed back to bidders, normally on the same day.

This entire process can be carried out in a matter of a couple of hours per bidder, and ideally would be done at 3 points during the ITN process. The three meetings would follow a similar format, but have slightly different objectives:

- the first is arguably the most important, being carried out before the design becomes fixed in peoples' minds;
- the second is useful to see how the bidders have listened to and, taken account of, the group's comments; giving an indication of their partnering abilities;
- the third meeting, just before the designs are fixed, is a good time to test the bidder's grasp of costing issues and whether there is duplication or superfluous space in the design.

It is important that bidders are aware beforehand that it is the fundamental issues which will be considered – they shouldn't appear at review meetings with 'completed' designs! Bidders should view the review as an opportunity to learn about the client's reaction to their proposals rather than using the time to justify their design as it stands.

### **The Design Team**

#### **Design Team selection**

There are several methods of selecting the appropriate design team for a project, including Quality Based Designer Selection (QBS) which is a structured procedure for selecting a

design team, and design competitions, which primarily select specific design ideas or outline designs for a project, rather than the design team personnel.

The Scottish Executive's [Construction Works Procurement Guidance: Section 3 – Procurement Strategies and the Appointment of Consultants and Contractors](#) provides information on some of the different procurement strategies available and the consultancy roles and professional advice that may be required at the various projects stages. Further advice is contained in the [Guide to the Appointment of Consultants and Contractors](#) published by the [Office of Government Commerce](#).

**Detailed guidance on the appointment of consultants, conditions of contract and contract guidance in a NHSScotland context is contained within PROCODE: Property Procurement Guidance for NHSScotland, published by [Health Facilities Scotland](#).**

Regardless of the procurement strategy adopted, the appointment of a design team, consultants, professional advisers, etc, should be based upon the principles adhered to in Quality Based Selection methodology, outlined below. The [Royal Institute of British Architects \(RIBA\)](#), together with the [Construction Industry Council](#), has published a booklet of Guidance for Clients to Quality Based Selection.

### **Quality Based Designer Selection (QBS)**

QBS looks for an appropriate balance of design skills, experience, innovation, and an ability to perform on schedule to the required standards and within budget. A client, or client committee, selects a team based upon a weighted scoring of a list of relevant factors, including technical capacity, resources, previous experience of similar projects, deliverability of the design and partnering arrangements, aimed at determining which design team is most able to handle the project successfully.

Throughout a building project, designs will be developed through constant dialogue with the design team, so it's essential that a key selection consideration is inter-personal skills; the client must feel that it has the ability to work with the designers.

It is essential to know that a design team's claimed expertise is actually currently available. The question of whether a design team has completed major quality projects within the past five years may give a more fair comparison between long established and new design teams. It is important to ensure that the principal designer responsible for successful past projects is present for the interview, and such individuals should be named in the contract if that design team is successful.

### **Design competitions**

A competition to select an outline design, rather than the design team members, requires the client to have a well developed brief for the project. Design competitions may be appropriate where there is either a unique problem that will benefit from a wide range of design approaches being explored (along with likely considerable public interest - which may be the case on a major new public building) or where the competition promoter wishes to encourage the development of new talent.

### **Procedure for appointing the Design Team**

All public sector appointments, irrespective of the client's preferred nature of competition or reference to any other guidance on design competitions, must be consistent with EU procurement rules in terms of process and outcome.

The appointment or competition must therefore:

- strike the correct balance between quality and price to achieve whole-life VFM;
- evaluate the quality and price aspects against clear, unambiguous and pre-determined criteria;
- assess the technical and financial capacity of the design team (including design partnership arrangements) to deliver the project on time and within budget, as well as to the required standards of quality; and
- maintain a full and transparent record of all aspects of the competitive process from start to conclusion, including the evaluation of the pre-qualification questionnaires as well as the selection and award stages.

NHSScotland Bodies must follow the guidance on the appointment of consultants contained within Section 2 of PROCODE: Property Procurement Guidance for NHSScotland. Also, as Public Sector clients, NHS Bodies must ensure that design team appointments follow the procedures described in [Section 3 Annex A](#) of the works procurement guidance part of the Scottish Executive Construction Procurement Manual which sets out appropriate criteria to use at both the selection (short listing) and award (bidding) stages of the appointment process, as well as indicative quality: price evaluation ratios for different types of project.

#### **Design Team selection criteria**

Selection criteria should include design ability, aspiration, financial status, insurance provisions and technical capacity; the last of these enables consideration to be given to resources, technical suitability and past performance. This stage also aids production of an objective and transparent short list of the most suitable organisations, from all those that expressed interest in providing design services.

#### **Selection criteria at the bidding stage**

The award criteria enables a further qualitative assessment to be made of the specific proposals for the project - not just technical merit of the design proposals but also other aspects of successful delivery such as proposed team-working, management arrangements, and project team organisation.

Where design partnerships are proposed - perhaps to combine the innovative skills of a new or small design practice with the experience and resources of a longer-established designer - the award criteria enables the client to assess the ability of both parties to fulfil their responsibilities and to evaluate the compatibility of working cultures and practices. Visits to the design offices of all candidates, including those forming partnerships, should follow a consistent approach and involve the same personnel.

NHSScotland Bodies, as clients, should consider the benefits to be accrued from requesting an Interim Bid Submission from bidders, particularly in a PPP or joint venture (such as “hub”) initiative context. This should be based upon clearly specified requirements within the Invitation To Negotiate (ITN) documentation and should be undertaken at an approximate mid-point stage through the period from release of OJEU to the return of ITN documentation with clear expectations on outputs from bidders that are measured but, not too cumbersome, perhaps structured by means of the use of the AEDET Evolution design evaluation tool.

## Relation of selection criteria to budget considerations

The qualitative criteria adopted at the selection and award stages should be appropriate for the individual project and weighted to suit the circumstances. It is important that these aspects aren't considered in isolation but should be assessed as part of the VFM evaluation which takes account of fee proposals. [Section 3 Annex B of the Scottish Executive Construction Procurement Manual](#) describes other aspects of appointing consultants, including the various ways of paying for professional services. In circumstances where *ad valorem* (usually percentage) fee structures are appropriate, consideration must always be given to the application of an abatement or capping mechanism in order to contain fee costs at a fair and appropriate level.

Criteria used during selection and award stages must be applied consistently by all of those involved in that stage of the procurement procedure. In other words, once selection and award criteria are established, individual members of a sift or tender evaluation panel must not apply different criteria. Furthermore, once selection criteria are established, they should be made available to candidates. Award criteria must be set out in either the OJEU contract notice or the contract documents.

## Design Quality

### Evaluating design quality

#### General

There are, inevitably, some aspects of what constitutes 'good design' that can be subjective, but these are primarily issues of style. However, many other design issues can be assessed objectively - whether a building will function efficiently and effectively; whether there is clear evidence of thoughtful, imaginative and even inspirational proposals that will not only work, but work better; whether it responds positively to its surroundings; whether it provides well-defined and meaningful public spaces for patients and the community; and whether the materials, construction methods and the proposed layout will enhance long-term value for money. The Scottish Executive [Construction Procurement Manual: Section 6 – Design quality in building procurement](#) lists a number of key issues to be considered in evaluating a design.

General guidance on achieving value for money (VFM) in works procurement, based on seeking to achieve an optimum combination of whole life cost and quality, is set out in [Section 2 of the Scottish Executive Construction Procurement Manual](#). Evaluating and achieving consensus on quality can be facilitated through the use of formal techniques and there are a number of tools which can help. The Construction Industry Council (CIC), for example, has developed its Design Quality Indicator (DQI) to evaluate the design quality of buildings throughout the development and life cycle of a project.

#### Achieving Excellence Design Evaluation Toolkit (AEDET)

However, healthcare building design frequently involves complex concepts which are more difficult to measure and evaluate. In order to address these specifics in a DQI context the Department of Health (England) Estates and Facilities Directorate has developed the [Achieving Excellence Design Evaluation Toolkit \(AEDET\)](#), the latest version of which is AEDET Evolution and is a tool specifically directed towards achieving excellence in design rather than ensuring compliance with legislation, regulation and guidance. High scores in AEDET do not therefore necessarily guarantee compliance with statute.



The AEDET Evolution toolkit assists NHS Bodies in managing their design requirements from initial proposals through to post-project evaluation. It is a benchmarking tool and forms part of the guidance for PFI, joint ventures including 'hub' and, conventionally funded schemes. AEDET Evolution contains evaluation criteria which ensure that design takes place within a common, industry wide framework. The toolkit enables the user to evaluate a healthcare building design in a non-technical way that covers the three key areas of **impact**, **build quality** and **functionality**.

AEDET Evolution uses ten key criteria that have evolved from sources including the [Commission for Architecture and the Built Environment \(CABE\)](#) and the [Construction Industry Council \(CIC\)](#) to establish an industry-wide framework for assessing design. The ten key criteria are:

**Uses**

Service philosophy, functional requirements and relationships, workflow, logistics, layout, human dignity, flexibility, adaptability and security.

**Access**

Vehicles, parking, pedestrians, disabled people, wayfinding, fire and security.

**Spaces**

Space standards, guidance and efficient floor layouts.

**Character and innovation**

Excellence, vision, stimulation, innovation, quality and value.

**Citizen satisfaction**

External materials, colour, texture, composition, scale, proportion, harmony and, aesthetic qualities.

**Internal environment**

Patient environment, light, views, social spaces, internal layout and wayfinding.

**Urban and social integration**

Sense of place, siting, neighbourliness, town planning, community integration and landscaping.

**Performance**

Daylight, heating, ventilation, air conditioning, acoustics, passive thermal comfort.

**Engineering**

Emergency systems, fire safety, engineering standardisation and prefabrication.

**Construction**

Maintenance, robustness, integration, standardisation, prefabrication, health and safety.

Using AEDET Evolution

AEDET Evolution is a tool for evaluating the quality of design in healthcare buildings. It delivers a profile that indicates the strengths and weaknesses of a design or an existing building. It is not meant to produce a simplistic single overall score. Because of the nature of design, which inevitably involves trade-offs, it may not be possible to produce a building which would have the maximum score for all the sections. Indeed it may quite often be the case that a high score for one statement reflects a design which inevitably may be scored



low on another statement. A single overall score would thus be misleading and uninformative.

AEDET Evolution can either be used by individuals or in workshops by groups. In the latter case it is probably desirable that an experienced user of AEDET Evolution should facilitate the group to avoid excessively lengthy debate. AEDET Evolution can be a helpful tool in enabling a group to come to a common understanding with the help of a facilitator who can moderate group discussions.

AEDET Evolution can be used at different 'scales' in evaluating the design of a healthcare building, e.g. at a building scale, a department scale or a complete site scale. The level of detailed information available may dictate the scale of the evaluation.

AEDET Evolution is designed to be used by those involved in the commissioning, production and use of healthcare buildings. In particular public and private sector commissioning clients, developers, design teams, project managers, estates/facilities managers and design champions may find AEDET Evolution a helpful and useful tool. User clients such as patient representatives and members of the general public should also be able to use AEDET albeit within a workshop environment alongside other more experienced professionals.

#### When to use AEDET Evolution

AEDET Evolution can be used to evaluate existing buildings in order to compare them or understand their strengths and weaknesses.

AEDET Evolution can be used on the plans for new buildings in order to evaluate and compare designs.

AEDET Evolution can be used on "imaginary" buildings in order to set standards for preparation of a brief.

AEDET can be used at various stages during the design of healthcare buildings – as the level of detail of the information available increases it should be possible to respond to more of the statements in the tool. AEDET Evolution can also be used in the preparation of Interim Bid Submissions (see " Selection criteria at the bidding stage" above).

#### A Staff and Patient Environment Calibration Tool (ASPECT)

To complement AEDET Evolution, the Department of Health (England) Estates and Facilities Directorate has developed the [ASPECT toolkit](#). ASPECT stands for A Staff and Patient Environment Calibration Tool and is based on a database of over 600 pieces of research. That research deals with the way the healthcare environment can impact on the levels of satisfaction shown by staff and patients and on the health outcomes of patients and the performance of staff.

This research and the ASPECT toolkit itself are set out under 8 headings. ASPECT can be used as a stand alone tool, or it can be used to support AEDET Evolution to provide a more comprehensive evaluation of the design of healthcare environments.

When used to support AEDET Evolution it enables the user to score the Staff and Patient Environment Heading of AEDET Evolution in a more detailed, accurate way.

The toolkit has 3 layers which allow users to create a design evaluation profile:

- the SCORING layer on which you score;

- the GUIDANCE layer that gives more detailed help;
- the EVIDENCE layer that points to available research evidence.

### **Role of Architecture and Design Scotland (A+DS)**

[Architecture and Design Scotland](#) has been established by Scottish Ministers as the National Champion for Good Architecture, Design and Planning in the built environment. Its aim is to operate within the Executive's policy framework on architecture and design, as well as in partnership with a range of bodies in the private and public sector to help turn the aspirations of policy into reality.

The aim is to raise the quality of new development, so that high standards of layout and design are the rule, not the exception. Overall, the development of well designed and attractive cities, towns and villages will support Ministers' determination to make Scotland a better place to live, work and visit.

A+DS has taken over the independent Design Review and Advisory roles of the Royal Fine Art Commission for Scotland and has a wider and more proactive role in advocating the benefits of good design through Enabling, Advocacy, Research and Communications activities.

Projects of strategic significance, making a significant impact on the local environment, or particularly sensitive sites or setting new standards for the future will be considered within the A+DS independent Design Review process through meetings with a Design Review Panel.

The role of A+DS is to be proactive in promoting the qualities and benefits of good design by:

- inspiring excellence in all kinds of development from housing estates to major cultural buildings.
- encouraging high quality public buildings (e.g. schools and hospitals) and public places.
- stimulating and supporting a demand for better design by clients and the public for improved quality from investors, developers and the design professions.
- working in partnership with local authorities, government agencies, professional bodies, non-government organisations and where appropriate local communities to develop effective design policies, frameworks and guidance.
- improving skills and design in the built environment through training, by working with universities and professional bodies.
- communicating and disseminating key messages, in a clear and accessible form, on architecture and design to a wide audience, including the media.
- building up evidence which demonstrates the value of investment in good design.
- considering new thinking on how the built environment needs to respond to drivers such as climate change, the sustainable development agenda, technological advances and demographic changes.

SEHD and A+DS have developed a range of initiatives to assist NHSScotland in addressing design quality issues in the procurement of healthcare building projects. These initiatives include:

- training and advocacy to support the introduction of Design Champions within every NHSScotland Board;
- enabling by providing “hands-on” assistance to projects; and
- carrying out assessments of the design merits of significant projects to advise and inform the Gateway Review and Key Stage Review processes.

### **NHSScotland Design Champions**

The Scottish Executive Health Department requires that NHS Board Chairs are responsible for nominating a member of the NHS Board and a Senior Officer to take on the roles of Design Champions for the Board. The Senior Officer should have knowledge and experience in capital investment procedures and expertise in technical matters. Both must be in a position to influence the overarching policies, procedures and ethos of the organisation, albeit in their own manner.

A Design Champion should be:

- well respected and an excellent communicator who is able to promote the need for good design to a wide variety of audiences, both within the Health Board and externally. Both appointees should be able to persuade colleagues and the wider community of the benefits of well designed healthcare buildings;
- a consensus builder, able to bring together the various stakeholders both within the local authority and the wider community; and
- able to see the ‘bigger picture’ and help develop a ‘vision’.

The Design Champions, ideally, are in a position to influence the work undertaken by the Health Board but it is important that the roles are not created for status but, for action.

The role of the Design Champion is not project specific but is to advocate design quality and to ensure that mechanisms are in place within the NHS Board to deliver the design agenda. NHS Design Champions will be supported initially by Architecture and Design Scotland through a Framework Agreement with the Scottish Executive Health Department which requires A+DS to:

- establish and facilitate an NHS Scotland Design Champions Network;
- provide an induction pack for use by the NHS Scotland Design Champions Network’s members to assist them in undertaking their duties as design champions;
- hold at least two NHS Scotland Design Champions Network events per year.

Design Champions will be expected to work with all the necessary disciplines. The role of the Design Champion is expected to include a responsibility to ensure that:

- the building promotes civic pride;
- patients and staff are consulted and their views addressed;

- the building fits into the local surroundings and settings;
- the building is fit for purpose;
- the building takes on board modern technology;
- the design considers sustainability issues;
- quality is questioned throughout the process;
- there is support for resisting change which reduces quality and VFM.

The Design Champion should ensure that:

- aspirations for design quality underpin all projects undertaken across the NHS Board;
- a Board Design Action Plan is produced and delivered;
- a design vision is established in order for the Board to produce clear briefs within which these aspirations are clearly stated;
- all procedures encourage the achievement of high quality design;
- an assessment is made of the current environment for patients, staff and visitors;
- the Achieving Design Excellence Evaluation Toolkit (AEDET) is used throughout a project where appropriate;
- the evaluation of tenders is based on VFM and not lowest cost;
- budgets and timetables are realistic;
- the Board has the correct skill mix to deliver the design agenda;
- the scheme includes the full involvement of the local community and the support of clinical and other staff.

The Design Champion will raise the profile of design excellence by:

- encouraging the selection of designers with a proven track record of good design or design awards;
- promoting awareness of national and international best practice in healthcare design;
- encouraging schemes, either refurbishments or new build, to be put forward for local and national competitions and awards;
- maintaining a forum for regular review and feedback to the Board;
- recognising the support, guidance and initiatives available.

It is important that NHS Boards acknowledge the fact that the role of Design Champion is one that requires a considerable amount of time. Design Champions are required to

understand what constitutes good design across a range of different and, sometimes very technical, disciplines and the amount of time required to do so can easily be underestimated.

### **Enabling**

Enabling seeks to provide dedicated hands-on assistance to those charged with delivering a project or establishing the policy framework for the delivery of other projects. At its very basic level enabling seeks to influence that project's particular outcome so that the chances of achieving design quality are enhanced. However, the enabling process seeks to work at a much deeper and broader level by imparting the skills, capacity and confidence to the client team so that design quality can be raised in each successive project.

[Architecture and Design Scotland](#) provides enabling advice which is delivered by A+DS staff and by leading professionals working as consultants for A+DS. The enabler's involvement is generally at the outset of the design and briefing process, before the appointment of a design team or a developer.

The A+DS enabling work supports commissioning organisations in their aspirations for design quality, championing the highest standards in urban design, landscape, architecture and regeneration - with the aim of achieving better- designed spaces and places. It assists public building programmes to secure good value for money by providing direct advice on critical areas that impact on the final design of the project. These are issues such as project vision, client resources, briefing, and competitive selection of design and developer teams.

The enabling service also contributes to the overall understanding of procurement processes and best practice in built environment and public space projects.

SEHD will work with A+DS to identify a number of key projects to enable and this work will be funded through the initiative. Those NHS Boards which are embarking on the first major project for some time or, a project that presents particularly difficult design issues, may also wish to consider approaching A+DS to assist in:

- embedding the qualities of good design in the procurement process;
- providing early hands-on advice;
- the development of the brief;
- exploring key design issues.

### **Design assessment**

Currently, project approval mechanisms focus on how a building is procured with less emphasis on the merit of what is to be procured. Design Assessment is intended to balance this so that 'why' we build and 'what' we build can be seen alongside 'how, in making the decision to build.

Design Assessments will be carried out at 3 key points during selected projects to look at the merits of what is proposed. The information that may be assessed will depend on the project stage and procurement route but is likely to include a number of the following aspects:

- the quality and content of the briefing information prepared;
- the impact of the chosen procurement procedures (timetables, submission requirements etc.) on the development of design quality;

- the site options and appraisals that have been carried out;
- any Public Sector Comparator design that has been developed;
- the proposals to be submitted for Outline Planning Consent;
- proposals brought forward as part of the bidding process for Design & Build and PPP/PFI schemes;
- early proposals under development by appointed Design Teams.

Design Assessments will be carried out by a team established by A+DS. A representative of the assessment team and a report detailing the Assessment Team's conclusions will be available to Gateway Review Teams and to PartnershipsUK to aid their evaluation of the project.

### **Role of Health Facilities Scotland**

Health Facilities Scotland (HFS) is a division of National Services Scotland and provides operational guidance to NHSScotland Bodies on non-clinical topics such as:

- estates engineering;
- building and architecture;
- procurement;
- fire safety;
- environment;
- energy;
- property management;
- clinical waste management;
- sterilisation;
- legionella and other estates related pathogenics;
- hazards and safety action notices.

This assists the NHSScotland meet the Government's policy and strategic aims and to establish professional/technical standards and best practices, including the promotion of new initiatives in the field of healthcare practice and management. Clearly HFS can have a pivotal role to play in the implementation and support for this Policy, both through the provision of supporting guidance and through their Continuous Professional Development (CPD) programme which provides essential training to NHSScotland personnel on operational issues as impacted by national policies and objectives.

### **Maintaining design quality on site**

There is a risk that, once a project moves on to site, the client may underestimate the effort which will continue to be required to maintain design quality. Any shortcuts taken at this stage can put the overall design quality of the project at risk. The client's design advisers must be retained throughout the construction process in order to monitor the quality of design and finishes.

These advisers should also ensure that design aims are not sacrificed in the management of change during the running of the project. If design standards and quality thresholds are clearly defined, then the review process throughout the delivery stage should provide sufficient safeguards against quality dilution. A structured process of quality checks during construction is important to ensure that what has been agreed is actually being provided. All partners should be involved in these checks as the risks of unsupervised changes on site can affect a wide range of matters, such as the provision of resource areas necessary for facilities management and the quality of finishes, which in turn may affect both cleaning and maintenance.

### **Public Space**

A statement setting out the Executive's aspirations for design and the role of the planning system in delivering public spaces is described in the published document [Designing Places: A Policy Statement for Scotland](#).

It is important that public space is not considered as an afterthought. New public buildings need to be responsive to their contexts, both in terms of their scale and form, and in the materials they use. It is not enough to simply respond to the appearance of surrounding buildings; it is important to also think in terms of the integrity of surrounding public spaces. In the creation of new public buildings, it is important that the design team is perceptive of the buildings' relationships to the maintenance or improvement of existing public spaces or the potential for new public spaces.

The creation of public buildings can also give something positive to the public realm rather than simply create residual areas around them, and clients may wish to consider whether the location of a building is sufficiently sensitive to merit the inclusion of an urban design specialist on the team. An approach is required which gives due consideration to the way in which the spaces created by buildings will be used, and to the needs of users in terms of accessibility, safety, lighting, shading, shelter, orientation, views, surfaces, seating, planting, and maintenance.

### **Use of the arts in healthcare**

There may be scope for the involvement of artists or craftsmen in a project. When successfully implemented, artworks can help to create more distinctive and attractive buildings and urban spaces and enhance the public's experience of an architectural space. In a healthcare perspective, artwork can have an even more positive effect. NHSScotland can benefit in many ways from the adoption of the arts in healthcare programmes including better patient environments and an improvement in staff morale. It is recognised that art in healthcare can benefit the NHS through the promotion of user and staff involvement in the design of the healthcare environment and can subsequently have an impact on health outcomes. There is growing evidence that patient recovery rates and stress levels are improved by the adoption of appropriately selected art in healthcare programmes. The integration of art can also assist in improving the communication of health information and the redesign of services. The involvement of staff, patients, artists and local communities at



the earliest stages of the design process for new buildings and refurbishments can result in innovative, creative solutions.

The use of art in a healthcare setting need not be restricted to the visual arts. Other arts activities which involve music, performing arts, storytelling and patient workshops can have therapeutic benefits and can have great value in certain healthcare environments. Art-related therapy, e.g. dance, music, drama or art creation, is recognised as an integral psychological and creative tool for the improvement of physical and mental well-being.

Some NHS Boards retain the services of “artists in residence”. However, Boards may also wish to seek specialist advice from public art agencies with regard to including artwork within a project.

Boards may wish to consider allocating a specific budget for the inclusion of artwork as an integral element of a project. However, care should be taken to ensure that any resulting expenditure is proportionate to the benefits and is appropriate to the building's status and function, in order to avoiding subsequent criticism of the project for inappropriate use of public funds.

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## Scottish Executive Health Department property-related policies

### [Fire Safety Policy \[NHS HDL\(2005\)53\]](#)

Scottish Executive Health Department  
[http://www.show.scot.nhs.uk/sehd/mels/hdl2005\\_53.pdf](http://www.show.scot.nhs.uk/sehd/mels/hdl2005_53.pdf)

### [NHSScotland Property Transactions \[NHS HDL\(2001\)15\]](#)

Scottish Executive Health Department  
[http://www.show.scot.nhs.uk/sehd/mels/HDL2001\\_15.htm](http://www.show.scot.nhs.uk/sehd/mels/HDL2001_15.htm)

### [Construction Procurement Policy \[NHS HDL\(2001\)47\]](#)

Scottish Executive Health Department  
[http://www.show.scot.nhs.uk/sehd/mels/HDL2001\\_47.htm](http://www.show.scot.nhs.uk/sehd/mels/HDL2001_47.htm)

### [Property Management Policy and Other Related Matters \[NHS HDL\(1999\)44\]](#)

Scottish Executive Health Department  
[http://www.show.scot.nhs.uk/sehd/mels/1999\\_44.pdf](http://www.show.scot.nhs.uk/sehd/mels/1999_44.pdf)

### [Environmental Management Policy for NHSScotland \[NHS HDL\(2006\)21\]](#)

Scottish Executive Health Department  
[http://www.show.scot.nhs.uk/sehd/mels/hdl2006\\_21.pdf](http://www.show.scot.nhs.uk/sehd/mels/hdl2006_21.pdf)

### [Revised Interim Capital Guidance \[NHS HDL\(2002\)87\]](#)

Scottish Executive Health Department  
[http://www.show.scot.nhs.uk/sehd/mels/hdl2002\\_87.pdf](http://www.show.scot.nhs.uk/sehd/mels/hdl2002_87.pdf)

## Supporting guidance

### Scottish Capital Investment Manual

[Scottish Executive Health Department](#)

### [Private Finance and Capital Unit website](#)

Scottish Executive Health Department

### [The Design Development Protocol for PFI schemes: Revision 1, August 2004](#)

Focuses on the information that must be finalised between a NHS Trust (England) and bidders at each stage of the PFI process up until Financial Close. Although written for the NHS in England, NHSScotland users should ensure that the guidance is adopted in so far as it is applicable to Scotland.  
[http://www.show.scot.nhs.uk/pfcu/PDFs/DDP\\_rev1\\_letter.pdf](http://www.show.scot.nhs.uk/pfcu/PDFs/DDP_rev1_letter.pdf)

### NHSScotland Fire Safety Management / NHSScotland Firecode

[Health Facilities Scotland](#)

### [NHSScotland Property Transactions Handbook](#)

Scottish Executive Health Department

### PROCEDURE: Property Procurement Guidance for NHSScotland

[Health Facilities Scotland](#)

### NHSScotland Property Management System

[Health Facilities Scotland](#)

### GREENCODE

[Health Facilities Scotland](#)

### EnCO<sub>2</sub>de

[Health Facilities Scotland](#)

Scottish Health Facilities Note 30: Infection Control in the Built Environment: Design and Planning  
[Health Facilities Scotland](#)

HAI-SCRIBE: HAI System for the Control of Risk of Infection in the Built Environment  
[Health Facilities Scotland](#)

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## Useful references and web links

### General

#### [Health Facilities Scotland](#)

Provides operational guidance to NHSScotland healthcare bodies on non-clinical topics including: building and architecture, procurement, property management, estates engineering, energy & environment.

<http://www.hfs.scot.nhs.uk/>

#### [Architecture and Design Scotland](#)

The Scottish national champion for good architecture, design and planning in the built environment.

<http://www.ads.org.uk/>

#### [Centre for Architecture and the Built Environment](#)

The UK government's advisor on architecture, urban design and public space.

<http://www.cabe.org.uk/>

#### [Construction Industry Council](#)

The representative forum for the professional bodies, research organisations and specialist business associations in the construction industry.

<http://www.cic.org.uk/>

#### [Art in Healthcare](#)

A new forward-looking arts-in-health organisation formed from Paintings in Hospitals Scotland and the Friends of Paintings in Hospitals Scotland.

<http://www.artinhealthcare.org.uk/newpages/>

#### [Scottisharchitecture.com](#)

Provides a network of digital resources relating to architecture and the built environment

<http://www.scottisharchitecture.com/>

#### [The Lighthouse](#)

Scotland's centre for architecture, design and the city

<http://www.thelighthouse.co.uk/>

#### [SUST. – The Lighthouse on Sustainability](#)

Aims to raise awareness of the importance of a sustainable approach to design in the built environment by providing increased access to guidance, tools and techniques for clients, design teams and community-based groups.

<http://www.sust.org/>

### Scottish Executive links

#### [Scottish Executive Architectural Policy Unit](#)

Promoting and encouraging better architecture.

<http://www.scotland.gov.uk/Topics/Arts-Culture/arch/intro>

#### [Scottish Executive Construction Procurement Manual](#)

Provides the Executive's Departments, Associated Departments, Executive Agencies and most sponsored bodies (as well as the Scottish Parliament Corporate Body and the Forestry Commission in Scotland) with mandatory policy and procedures for understanding construction works projects.

<http://www.scotland.gov.uk/Publications/2005/11/28100404/04066>

#### [Scottish Executive Planning and Building](#)

The provision of planning guidance and advice, construction procurement guidance and technical advice for government departments and other bodies.

<http://www.scotland.gov.uk/Topics/Planning>

#### [Scottish Building Standards Agency](#)

An executive agency of the Scottish Executive to undertake the national functions related to the building standards system.

<http://www.sbsa.gov.uk/>

### [Scottish Executive Sustainable Development](#)

The Scottish Executive's contribution to the UK strategic framework for sustainable development.  
<http://www.scotland.gov.uk/Topics/SustainableDevelopment>

### [Sustainable Development Policy into Practice – New Buildings](#)

This report describes progress in work by Scottish Executive agencies and divisions to further the sustainable development of new buildings, both domestic and non-domestic.  
[http://www.sbsa.gov.uk/current\\_standards/Sustainability.htm](http://www.sbsa.gov.uk/current_standards/Sustainability.htm)

### [Scottish Executive Private Finance and Capital Unit](#)

Policy and guidance on planning NHS capital developments including those developed through public private partnerships.  
<http://www.show.scot.nhs.uk/pfcu/>

### [GP Web](#)

Information for practices and others involved in GP & Primary Care premises issues to enable users to seek out best practice solutions to accommodation problems within their premises as well as the procurement routes available for new or extended facilities.

<http://www.show.scot.nhs.uk/gpweb>

## Department of Health (England) links and publications

### [OnDesign](#)

OnDesign is a visually-led repository of information that aims to assist the creative and functional design process in healthcare design, and to encourage networking and the sharing of knowledge and best practice between healthcare design schemes.

<http://www.design.dh.gov.uk/content/introduction/home.asp>

### [IDEAS](#)

A design tool to aid NHS clients and their architects and design consultants to develop their briefs and design ideas.

<http://design.dh.gov.uk/ideas/>

### [Achieving Excellence in Design Evaluation Toolkit \(AEDET\)](#)

The AEDET Evolution toolkit evaluates a design by posing a series of clear, non-technical statements, encompassing the three key areas of Impact, Build Quality and Functionality.

[http://www.design.dh.gov.uk/content/connections/aedet\\_evolution.asp](http://www.design.dh.gov.uk/content/connections/aedet_evolution.asp)

### [A Staff and Patient Environment Calibration Tool \(ASPECT\)](#)

ASPECT is a tool for evaluating the quality of staff and patient environments in healthcare buildings and can be used as a stand-alone tool or in conjunction with AEDET to provide a more comprehensive design evaluation of healthcare environments.

<http://www.design.dh.gov.uk/content/connections/aspect.asp#toolkit>

### [Activity Database](#)

The briefing, design & commissioning tool for both new-build and refurbishment of healthcare buildings.

<http://adb.dh.gov.uk/>

### [The architectural healthcare environment and its effect on patient health outcomes](#)

A research project funded by the Department of Health and led by Professor Bryan Lawson and Dr Michael Phiri of the University of Sheffield School of Architecture, in collaboration with John Wells-Thorpe. The document is available for purchase from The Stationery Office, ISBN 011322480X.

<http://www.tsoshop.co.uk/bookstore.asp?Action=Book&ProductId=011322480X>

### [The Healing Environment](#)

Part of the English Department of Health's Improving the Patient Experience initiative, this site looks at the components of a healing environment.

[http://patientexperience.nhsestates.gov.uk/healing\\_environment/he\\_content/home/home.asp](http://patientexperience.nhsestates.gov.uk/healing_environment/he_content/home/home.asp)

### Primary and Social Care Premises

Identifies the key considerations and actions for those involved in the planning, briefing and design of primary and social care premises, and gives some guidelines on funding, procurement and design.

*(Note: English-specific guidance only – use with caution)*

<http://www.primarycare.nhsstates.gov.uk/secure/content.asp>

#### Other references

### OGC Procurement Guide 09: Design Quality

Office of Government Commerce 2004

Part of the OGC Achieving Excellence Procurement Guides

<http://www.ogc.gov.uk/assets/images/cp0069.pdf>

### A guide to quality based selection of consultants: a key to design quality

Published 1998, £15.00 ISBN 1 898671 14 1

Construction Industry Council recommends this Guide as an inclusive guide and method for delivering construction clients with the consultants services they require and to realise the real economies and benefits to be had from good design.

<http://www.cic.org.uk/services/publicationsCIC.shtml>

### Effects of Healthcare Environmental Design on Medical Outcomes

Ulrich R S, 2000

[http://www.designandhealth.com/edu\\_res/Roger%20S.%20Ulrich%20p49.pdf](http://www.designandhealth.com/edu_res/Roger%20S.%20Ulrich%20p49.pdf)

### Visual landscapes and psychological well-being, Landscape Research, Vol. 4, No. 1

R S Ulrich, 1979

<http://www.tandf.co.uk/journals/carfax/01426397.html>

### Human responses to vegetation and landscapes, Landscape and Urban Planning, Vol. 1

R S Ulrich, 1986

<http://www.sciencedirect.com/science>

### Stress recovery during exposure to natural and urban environments Journal of Environmental Psychology Vol. 11

R S Ulrich, R F Simons, B D Losito, E Fiorito, M A Miles, M Zelson

<http://www.elsevier.com/locate/issn/0272-4944>



## INTERIM GUIDANCE FOR NHSSCOTLAND

### PROVISION OF SINGLE ROOM ACCOMMODATION

Current guidance on the design of in-patient accommodation recognises the principle of devolved clinical case management to the patient bedside with services and supplies located as closely as possible. In an attempt to balance the potential conflicting demands for a clinically suitable, people-centred environment with the efficient use of staff and financial resources the extant guidance<sup>1</sup> provides choices enabling beds to be provided in an arrangement of 50%, 75% or 100% single occupancy rooms.

There is also a wider current debate on the determinants influencing such design decisions as healthcare systems are faced with new challenges such as rising public expectations, increased professional competencies widening the portal for care and treatment and to assist in controlling the incidence of healthcare associated infection.

Recognising that there is a lack of clear direction on this issue a Steering Group has been established to take forward the recommendations from a Peer Review of a report prepared for the Department of Health by the European Health Property Network entitled "[Hospital Ward Configuration – Determinants Influencing Single Room Provision](#)".

Perhaps the most significant conclusion of the Peer Review Group, in the context of this interim statement, was the acceptance of the general principles and conclusions contained in the EuHPN Report. This interim statement therefore reflects that Report's broad conclusions.

Membership of the Steering Group has been drawn from experts within NHSScotland and the Health Department and as this work will take some months to complete the Steering Group feel it essential that SEHD provide an interim statement which outlines the latest thinking on this issue for those in NHSScotland developing projects.

In making any decision on the appropriate level of single room provision you should be fully aware of the changing perceptions described above including the recommendations contained in the EuHPN Report. In planning for the construction or major refurbishment of healthcare facilities it is appropriate to provide an overall single occupancy room level of between 50% and 100%. The appropriate level within that range is a matter for each individual NHSScotland Board to consider based on the following broad criteria.

- **Science-based** decisions relating to the clinical and nursing care of patients and overall hygiene standards;
- **Value-based** judgements about the nature of personal services and responsiveness to the local community and generational cultures;
- **Operational needs**, for example managing volatility in demand or changing clinical needs and priorities; and





- The need to balance these against **economic considerations**.

The above criteria clearly establish the need to make decisions on sound clinical judgements and the profile of the hospital and its local catchment population in developing a predictive model which will translate population need and risks such as infection into service requirement. It is important when considering the percentage provision of single rooms that full regard is taken of the conditions which will be treated, the models of care for the delivery of treatment and the changing aspirations of patients over future years, rather than basing decisions on past trends and social patterns – particularly around the acceptability of communal facilities.

The related issue of bed spacing will also be covered by the Review Group in its final report. Current guidance<sup>2</sup> recommends that “where not in a single-bed room each bedspace should not be less than 3.0m x 2.7m”. Having regard to ergonomic criteria, primarily the space required for patient handling and other activities which take place in the immediate vicinity of the bed it is recognised that the minimum bedspace should not be less than 3.6 m x 3.7m.

Accordingly when planning any new in-patient accommodation or any major refurbishments of existing accommodation it is recommended that the increased bedspace is adopted.

I hope that the information provided in this statement gives a degree of clarity on where we are at present and will enable those involved in developing projects to make decisions regarding new or refurbished major facilities against a sound evidence based background.

If you have any specific questions which arise from this interim statement you should address these in the first instance to David Hastie, at the Scottish Executive Health Department’s Property and Capital Planning Division on 0131 244 2079 or via email to [david.hastie@scotland.gsi.gov.uk](mailto:david.hastie@scotland.gsi.gov.uk).

**DAVID HASTIE**

15 December 2006

### Notes

<sup>1</sup> Scottish Health Planning Note 04 – In-patient accommodation: Options for choice, May 2000

<sup>2</sup> Scottish Health Planning Note 04 – In-patient accommodation: Options for choice, May 2000; and  
Scottish Health Facilities Note 30 – Infection Control in the Built Environment – Design and Planning, January 2002

The above publications are available for download at the Health Facilities Scotland website:

<http://www.hfs.scot.nhs.uk>

**FRAMEWORKS SCOTLAND**  
EXCELLENCE IN HEALTHCARE CONSTRUCTION

**FRAMEWORK AGREEMENT**

among

**THE COMMON SERVICES AGENCY**

and

**BAM CONSTRUCTION LIMITED**

**Re: FRAMEWORKS SCOTLAND**

**THE COMMON SERVICES AGENCY**, a Statutory Body constituted pursuant to the National Health Service (Scotland) Act 1978, having its place of business at Gyle Square, 1 South Gyle Crescent, Edinburgh, EH12 9EB (the “**CSA**”)

and

**BAM CONSTRUCTION LIMITED** a company registered in England under Company number 2379469 and having its registered office at Merit House, Edgware Road, London, NW9 5AF (the “**PSCP**”),

hereinafter referred to as “**the Parties**”

**WHEREAS:**

- (A) The CSA advertised in the Official Journal of the European Union (“OJEU”) on 11<sup>th</sup> March 2008 its intention to invite tenders for partners to enter into framework agreements in connection with construction schemes to be let under the initiative called Frameworks Scotland. An invitation to bid was sent out to short listed tenderers on 20 June 2008.
- (B) The PSCP submitted a tender dated 31 July 2008 for appointment under a framework agreement. On 13 October 2008, Health Facilities Scotland (“HFS”) acting on behalf of the CSA, notified the PSCP that its tender submission was successful.
- (C) This Agreement sets out the terms on which NHSScotland Boards or other NHSScotland Organisations may engage the PSCP to carry out works or services for schemes by entering into Scheme Contracts (as hereinafter defined).
- (D) The CSA has entered into support framework agreements with project managers, cost advisers, construction supervisors, CDM Co-ordinators and healthcare planners to enable NHSScotland Boards or other NHSScotland Organisations to obtain advice and support in relation to their entry into Scheme Contracts.
- (E) The CSA proposes to create the role of National Cost Advisor (as hereinafter defined) to advise it in connection with this Agreement.

**IT HAS BEEN AGREED AS FOLLOWS:-**

**1. DEFINITIONS**

1.1 In this Agreement the following definitions shall have the meaning now ascribed to them:

“**Agreement**” means this Agreement including its recitals and

Schedules;

<b>“Change in Control”</b>	means (save in respect of a bona fide solvent internal restructuring or reorganisation (which shall not constitute a Change in Control)) any sale or other disposal of any legal, beneficial or equitable interest by an owner of at least 20% of, or a controlling interest in, the equity share capital of the PSCP (or any company (other than a public quoted company whose equity securities are listed on a recognised investment exchange, as defined in section 285(1) of the Financial Services and Markets Act 2000) of which the PSCP is a subsidiary) including the control over the exercise of voting rights conferred on that equity share capital or the control over the right to appoint or remove directors;
<b>“Commencement Date”</b>	means the date of execution of this Agreement;
<b>“Commercial Working Group”</b>	means a representative from the PCSP, the Framework Manager and representatives from sister frameworks who will deal with commercial and contractual matters.
<b>“Confidential Information”</b>	means the classes of information set out in Schedule 4 to this Agreement;
<b>“Considerate Constructors Scheme”</b>	means the national initiative set up by the construction industry as referred to in clause 6.9;
<b>“Construction Stage”</b>	means the stage where a Scheme is being designed, constructed and completed.
<b>“Consultants”</b>	means the project managers, cost advisors, construction supervisors, CDM Co-Ordinators and healthcare planners appointed under separate framework agreements with the CSA and the National Cost Advisor and any other consultants engaged by the CSA to advise in connection with the operation of this Agreement;
<b>“Contracting Authority”</b>	has the meaning ascribed to it in Article 1 of

	European Directive 2004/18/EC;
<b>“CSA Objectives”</b>	means the over-riding objectives set out in Clause 4.1 below;
<b>“Extended Period”</b>	means a period or periods up to a maximum of two Years from the end of the Initial Period;
<b>“FBC”</b>	means the full business case prepared for the Scheme by the NHSScotland Boards or other NHSScotland Organisations and submitted to the NHS Board or Scottish Government Health Directorate Capital Investment Group (subject to delegated financial limits).
<b>“Force Majeure”</b>	<p>means –</p> <ul style="list-style-type: none"> <li>• war, civil war, rebellion, revolution, insurrection, military or usurped power or terrorism;</li> <li>• nuclear chemical or biological contamination provided that such contamination has not been caused or allowed to occur by any act or omission of the PSCP or any PSCM</li> <li>• strikes, riots and civil commotion not confined to the PSCP’s or the PSCM’s employees;</li> <li>• pressure waves caused by devices travelling at supersonic speeds;</li> <li>• any change in Law (except where such change in Law is specific to a Party and arises from that Party’s act or omission);</li> </ul> <p>which directly causes any Party to be unable to comply with all or a material part of its obligations under this Agreement;</p>
<b>“Framework Manager”</b>	means Health Facilities Scotland and any replacement body authorised by the CSA to carry out the role of HFS under this Agreement as may

	be notified from time to time by the CSA;
<b>“Framework Steering Group”</b>	means a representative from the PCSP and a representative from the Framework Manager who will deal with best practice, innovation and sharing of knowledge.
<b>“Good Industry Practice”</b>	means in relation to any undertaking and any circumstances, the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced person engaged in the same type of undertaking under the same or similar circumstances;
<b>“Health Facilities Scotland”</b>	means Health Facilities Scotland having its principal place of business at 4th Floor Empire House 131 West Nile Street Glasgow G1 2RX;
<b>“Initial Agreement” or “IA”</b>	Means the stage at which the need for change is established, stemming from strategic review, and a skeleton description of what is envisaged within a Scheme is set down;
<b>“Initial Period”</b>	means the period of four Years from the Commencement Date;
<b>“Insolvency Event”</b>	means the occurrence of any of the following in relation to the PSCP (or any event analogous to the following in a jurisdiction other than Scotland): <ul style="list-style-type: none"> <li>• the PSCP passing a resolution for its winding up or a court of competent jurisdiction making an order for the PSCP to be wound up or dissolved or the PSCP being otherwise dissolved;</li> <li>• the appointment of an administrator of, or the making of an administration order in relation to, the PSCP, or the appointment of a receiver or administrative receiver of, or an encumbrancer taking possession of or selling, the whole or part of the PSCP's undertaking, assets, rights or revenue;</li> </ul>

- The PSCP entering into an arrangement, compromise or composition in satisfaction of its debts with its creditors or any class of them or takes steps to obtain a moratorium or makes an application to a court of competent jurisdiction for protection from its creditors;
- The PSCP being unable to pay its debts or being deemed unable to pay its debts within the meaning of section 123 of the Insolvency Act 1986; or
- The PSCP entering into any compromise, arrangement or composition in satisfaction of its debts with its creditors;

However, a resolution by the PSCP or a court order that the PSCP be wound up for the purpose of a bona fide reconstruction or amalgamation shall not amount to an Insolvency Event;

**“Intellectual Property Rights”**

means patents, rights to inventions, copyright and related rights, trade marks, trade names and domain names, rights in get-up, rights in goodwill or to sue for passing off, unfair competition rights, rights in designs, rights in computer software, database rights, semi-conductor topography rights, rights in confidential information (including know-how and trade secrets) and any other intellectual property rights, in each case whether registered or unregistered and including all applications (or rights to apply) for, and renewals or extensions of, such rights and all similar or equivalent rights or forms of protection which subsist or will subsist now or in the future in any part of the world

**“Interim Agreement”**

means an agreement between the NHSScotland Boards or other NHSScotland Organisations undertaking the Scheme and the PSCP in the form set out in Schedule 13 of this Agreement pending the necessary preparation of documentation required in order to enter into a Scheme Contract;



“KPIs”	means the key performance indicators and associated targets set out in Schedule 3 or (as applicable) the latest version or change to those as agreed in writing between the Parties from time to time;
“Law”	<p>means -</p> <ul style="list-style-type: none"> <li>• any applicable statute or proclamation or any delegated or subordinate legislation;</li> <li>• any enforceable community right within the meaning of section 2(1) of the European Communities Act 1972;</li> <li>• any applicable guidance, direction or determination with which a Party is bound to comply; and</li> <li>• any applicable judgment or decision of a court of competent jurisdiction which is a binding precedent in Scotland,</li> </ul> <p>in each case in force in Scotland;</p>
“Month”	means a calendar month.
“National Cost Advisor”	means a person employed by the Framework Manager to gather and collate all cost (both capital and whole life cycle) and performance management data to ensure continuous improvement and value for money is being achieved with the frameworks.
“NHSScotland Boards or other NHSScotland Organisations”	means the CSA, NHSScotland Boards and other HNS Scotland Organisations or a Local Health Board or any successor body to any of them exercising its or their functions in relation to the provision of healthcare services or facilities or such other bodies as the CSA may from time to time nominate, and “NHSScotland Boards or other NHSScotland Organisations” shall be construed accordingly;

<b>“OBC”</b>	means the outline business case prepared for the Scheme by the NHSScotland Boards or other NHSScotland Organisations and submitted to the NHS Board or Scottish Government Health Directorate Capital Investment Group (subject to delegated financial limits).
<b>“Parent Company”</b>	means BAM Construct UK Limited registered under company number 3311781 and having its registered office at Merit House, Edgware Road, Colindale, London, NW9 5AF, which will execute parent company guarantees in accordance with Clause 3.6.1 below;
<b>“PSCM”</b>	means the Principal Supply Chain Member identified in Schedule 12 including any agent, employee, servant or supply chain member of the PSCP or other person acting for or on behalf of the PSCP or with the PSCP’s authority;
<b>“Representative”</b>	means a representative appointed by each Party for the purposes of this Agreement as referred to in clause 25.3;
<b>“Restricted Person”</b>	means any person who has a material interest in the production of tobacco products or alcoholic beverages;
<b>“Schemes”</b>	means a scheme covered by this Agreement subject to any changes as may be agreed in writing from time to time between the Parties;
<b>“Scheme Contract”</b>	means an agreement to carry out works and/or services for Schemes entered into under the terms of this Agreement between one or more NHSScotland Boards or other NHSScotland Organisations and the PSCP in the form set out in Schedule 1;
<b>“Scheme Objectives”</b>	means the objectives relating to the successful completion of Schemes as set out in Clause 4.2;
<b>“Scottish Government”</b>	Means the executive arm of the government of Scotland, established under the Scotland Act 1998

	and formerly known as the Scottish Executive;
<b>“Sister Frameworks”</b>	means framework agreements entered into with other PSCP’s who may be used in connection with Schemes as referred to in clause 7.1;
<b>“Stage”</b>	one of the 4 stages to a Scheme to be used for Scheme Contracts;
<b>“Termination Date”</b>	means, subject to Clause 5.3 the date falling four Years after the Commencement Date, unless notice is given in accordance with Clause 5.2, in which case the Termination Date shall be the date upon which the Initial Period plus any Extended Period expires;
<b>“Working Day”</b>	means a day when the major clearing banks in the UK are open for business not being a weekend or a public holiday.
<b>“Year”</b>	means a calendar year

1.2 In this Agreement unless the context otherwise requires:

- 1.2.1 references to a statute or statutory provision shall be construed as a reference to the same from time to time amended, consolidated, modified, extended, re-enacted or replaced. Any reference to a statutory provision shall include any subordinate legislation made from time to time under that provision;
- 1.2.2 words in the singular shall include the plural and vice versa and a reference to a gender shall include a reference to all genders;
- 1.2.3 a reference to a person shall include a reference to a firm, a body corporate and unincorporated association or to a person's executors or administrators;
- 1.2.4 a reference to a Clause or Schedule shall be a reference to a clause or schedule (as the case may be) of or to this Agreement;
- 1.2.5 the headings are for convenience only and shall not affect the interpretation of any provision of this Agreement.

2. **THE FRAMEWORK MANAGER**

- 2.1 The CSA has appointed the Framework Manager as its agent for all purposes in connection with this Agreement, including without limitation with authority to :-

- 2.1.1 give or receive any instruction, approval, consent or other communication on behalf of the CSA for the purposes of this Agreement;
- 2.1.2 vary the terms of this Agreement;
- 2.1.3 give notice extending this Agreement; or
- 2.1.4 give notice terminating this Agreement or consent to its termination by the PSCP.

2.2 The Framework Manager has no obligations or liability under this Agreement and the CSA is responsible for any act (or failure to act) as required by this Agreement on the part of the Framework Manager.

### 3. **SCHEME CONTRACTS**

3.1 Scheme Contracts shall:-

- 3.1.1 be in the form as set out in Schedule 1, subject to changes in accordance with clauses 3.3 and 3.5 below;
- 3.1.2 include, pre and post construction services, design and construction of the type and nature which may be required of the PSCP more particularly described in Schedule 2 - Part A;
- 3.1.3 use the fee percentages and rates set out in Schedule 2 – Part B subject to adjustment for inflation; and
- 3.1.4 set delay damages in accordance with the Scheme Contract

3.2 An NHSScotland Board or other NHSScotland Organisation may engage the PSCP under a Scheme Contract at the beginning of (or within) any Stage of the Scheme. In the event that Prices (as defined in the Scheme Contract) are to be agreed before a Scheme Contract is entered into, they shall be determined in accordance with Appendix 6 of the Contract Data Part one as set out in the Scheme Contract. In the event that a Completion Date (as defined in the Scheme Contract) is to be agreed before a Scheme Contract is entered into, it shall be determined in accordance with Appendix 7 of the Contract Data Part one as set out in the Scheme Contract.

3.3 The Framework Manager may at any time require changes to the terms for Scheme Contracts (prior to the relevant Scheme Contract being entered into) to reflect changes in best practice within the construction sector or the NHS, changes in Law, Scheme specific requirements or otherwise, to reflect experience gained under this Agreement, provided that any such change must be approved by the PSCP (such approval not to be unreasonably withheld or delayed) before it takes effect for the purposes of this Agreement.

- 3.4 Any proposal, by an NHSScotland Board or other NHSScotland Organisation (other than the CSA) or the PSCP, to introduce a change for the purposes set out in clause 3.3 or for any other reason to use a Scheme Contract which is inconsistent with the terms of this Agreement must be approved by the Framework Manager before it takes effect or is acted upon.
- 3.5 Without prejudice to and without affecting the terms of a Scheme Contract once entered into, any financial thresholds or levels to be incorporated into a Scheme Contract, including without limitation, levels of insurance cover, shall from time to time as the CSA may require by giving written notice, be adjusted for inflation in accordance with the change in the Median Index of Public Sector Building Tender Prices (MIPS) from the Commencement Date to the time when the relevant Scheme Contract is to be entered into.
- 3.6 In addition to the Scheme Contract, the PSCP:-
- 3.6.1 will be required to deliver within 28 days of being requested (and at the same time procure that its Parent Company completes) a parent company guarantee (in the form attached in Schedule 6) duly executed in self proving form; and
- 3.6.2 will deliver within 28 days of being requested (and at the same time procure that the relevant PSCM consultant or any other party with design responsibility completes) collateral warranties in favour of the NHSScotland Board or other NHSScotland Organisation (in the applicable form attached in Schedule 7) and/or in favour of the tenant or beneficial user of a completed scheme (in the applicable form attached in Schedule 8 as applicable) in duly executed in self proving form.
- 3.7 Nothing in this Agreement shall give rise to any presumption or implication or otherwise have a bearing on whether or not a Scheme Contract has at any time been entered into. It is for the NHSScotland Board or any other NHSScotland Organisation wishing to enter into a Scheme Contract to determine between themselves whether a Scheme Contract has been entered into
- 3.8 Neither the CSA nor the Framework Manager shall have any liability under any Scheme Contract and neither gives any guarantee or representation in relation to any Scheme Contract.
- 3.9 It is intended that the Scheme Contract be entered into before any services or works are carried out by the PSCP on a Scheme but in recognition that it may take some time to finalise or prepare the documentation required in order to enter into a Scheme Contract, an NHSScotland Board or other NHSScotland Organisation may (if it feels it necessary to maintain its programme) require the PSCP to start services or work while the necessary documentation required in order to enter into a Scheme Contract is being finalised or prepared. The PSCP will only carry out work or services on a

Scheme before a Scheme Contract in respect of that Scheme is entered into on the following conditions (subject to any express agreement with the CSA to vary these conditions):-

- 3.9.1 no work or services will be undertaken until an Interim Agreement has been entered into in respect of the relevant services or work;
- 3.9.2 only one Interim Agreement may be entered into and the terms of the Interim Agreement will not be changed and will not last longer than 8 weeks;
- 3.9.3 when a Scheme Contract is entered into work or services undertaken under the Interim Agreement will be treated as if the same had been undertaken under the Scheme Contract and any sums paid under the Interim Agreement shall be treated as a payment on account of sums due under the Scheme Contract.

#### 4. **CSA AND SCHEME OBJECTIVES**

4.1 The CSA Objectives set out in sub-clauses 4.1.1 to 4.1.4 below shall be the aims guiding the CSA and the PSCP in the operation of this Agreement, and in entering into and performing the Scheme Contracts. The CSA and the PSCP hereby agree: –

- 4.1.1 to work together and with the NHSScotland Boards or other NHSScotland Organisations and the Consultants in good faith and in a spirit of mutual trust and respect;
- 4.1.2 to act in a co-operative and collaborative manner so as to achieve and advance the Scheme Objectives;
- 4.1.3 to share information honestly and openly; and
- 4.1.4 to highlight any difficulties at the earliest possible opportunity.

4.2 The CSA and the PSCP agree to work together in accordance with the terms of this Agreement and in co-operation and collaboration with the NHSScotland Boards or other NHSScotland Organisations and the Consultants, to achieve the successful delivery of Schemes and in particular, the following Scheme Objectives:-

- 4.2.1 completion of Schemes to the standard and functionality that meets the requirements set out in the Scheme Contract;
- 4.2.2 value for money, not only for the initial capital cost, but also for the whole asset life cycle through the application of the principles of value engineering;
- 4.2.3 certainty of delivery in terms of time and cost;
- 4.2.4 consistent delivery of quality in both design and construction;

- 4.2.5 the introduction of continuous improvement through collaborative working, the adoption of benchmarking and performance management;
  - 4.2.6 improved management of risk; and
  - 4.2.7 optimised delivery of sustainable development on all major NHS schemes in Scotland procured through the Frameworks Scotland initiative.
- 4.3 In order to achieve and advance the CSA Objectives and the Scheme Objectives, the CSA and the PSCP agree that they will at all times support collaborative behaviour and confront behaviour that does not comply with the CSA Objectives and the Scheme Objectives.
- 4.4 The PSCP shall ensure that its supply chain members act in accordance with the above principles and objectives in relation to both itself, the CSA and the NHSScotland Boards or other NHSScotland Organisations and the Consultants. The CSA shall procure that other NHSScotland Boards or other NHSScotland Organisations act in accordance with these principles.
- 4.5 The Framework Manager and the PSCP agree :-
- 4.5.1 to review from time to time the appropriateness of the KPIs and (by agreement) change them as appropriate;
  - 4.5.2 that their performance will be measured against the KPIs not less frequently than once a year as set out in Schedule 3;
  - 4.5.3 that they will strive to achieve the KPIs;
  - 4.5.4 that they will seek to improve their performance continuously in meeting the KPIs;
  - 4.5.5 that they will participate in learning sets or performance review meetings or workshops as agreed from time to time.
- 4.6 Any breach of this clause 4 may give rise to termination in accordance with clause 11 but neither Party shall be liable to the other in damages or any other form of compensation whatsoever for failure to comply with any provision of this Clause 4.
- 4.7 The Commercial Working Group will meet on a regular basis to review any commercial and contractual matter arising under this Agreement and will evolve this Agreement by implementing commercial and contractual best practice.
- 4.8 The Framework Steering Group will meet on a regular basis and will promote and implement best practice, innovation and sharing of knowledge for the benefit of the framework.

#### 4.9 Insurances

- 4.9.1 The PSCP will be obliged to carry out and maintain the insurances as set out in Schedule 14.

#### 5. COMMENCEMENT AND DURATION OF THIS AGREEMENT

- 5.1 This Agreement shall come into force on the Commencement Date and, unless terminated early in accordance with clause 11 (subject to clause 5.3), shall continue until the Termination Date.
- 5.2 The CSA may at its discretion give notice to the PSCP to extend this Agreement by the addition of an Extended Period. The duration of such Extended Period shall be such period as the CSA in its discretion thinks fit (subject to the maximum permitted duration of two Years). The CSA may at its discretion serve more than one such notice and extend the Agreement by more than one period up to the maximum permitted duration of the Extended Period. Such notice must be given not later than (1) three months before the end of the Initial Period or (2) (as applicable) the end of such Extended Period as may already apply at the relevant time. Any breach of this clause 5.2 may give rise to termination in accordance with clause 11 but neither Party shall be liable to the other in damages or any other form of compensation whatsoever for failure to comply with any provision of this Clause 5.2.
- 5.3 Clause 4 of this Agreement will extend and will not determine in relation to any individual Scheme Contract prior to completion which is still being carried out at the expiry of the Initial Period plus any Extended Period or early termination of this Agreement. Such Scheme Contracts shall continue in force until the completion, expiry or termination of such Scheme Contracts in accordance with their terms, whereupon they shall determine. For the avoidance of doubt, no further Scheme Contracts may be awarded during the period of any extension pursuant to this Clause 5.3. Any breach of this clause 5.3 may give rise to termination in accordance with clause 11 but neither Party shall be liable to the other in damages or any other form of compensation whatsoever for failure to comply with any provision of this Clause 5.3.

#### 6. PSCP'S OBLIGATIONS

- 6.1 The PSCP undertakes during the term of this Agreement to enter into the Scheme Contract and any relevant and associated documentation as requested by NHSScotland Boards or other NHSScotland Organisations in respect of Schemes.
- 6.2 The PSCP will perform its obligations under this Agreement in accordance with all applicable Law.



- 6.3 The PSCP agrees that it will perform its obligations to the relevant NHSScotland Boards or other NHSScotland Organisations fully and faithfully and in accordance with the terms of the Scheme Contract.
- 6.4 The liability of the PSCP to any person seeking to enforce rights under this Agreement in respect of its performance of its obligations in relation to any Scheme shall in no circumstances exceed its liability under the relevant Interim Agreement or Scheme Contract.
- 6.5 Under no circumstances shall any person seeking to enforce rights under this Agreement be entitled to double recovery under this Agreement in respect of losses arising under any other agreement from the same event.
- 6.6 The PSCP must disclose to the Framework Manager if their resources are overstretched and declare that they are excluding themselves from further work arising from this Agreement until such a time as they have sufficient resources and capability to carryout further work under this Agreement.
- 6.7 If the PSCP has not declared that they are excluding themselves from further work arising from this Agreement due to resource constraints and declines work arising out of this Agreement on three separate occasions, the Framework Manager reserves the right to exclude the PSCP from any further work arising from this Agreement.
- 6.8 The PSCP acknowledges that on 17 April 2008 the Office of Fair Trading issued a statement of objections against a number of construction companies. In the event that the Office of Fair Trading decides that the PSCP or any member of the supply chain has infringed competition law the Framework Manager may at his sole discretion terminate this Agreement and any such termination will be treated as having occurred due to a material breach of this Agreement by the PSCP.
- 6.9 **Considerate Constructors Scheme**
- 6.9.1 The PSCP will within 28 days of being asked to do so:-
- 6.9.1.1 provide evidence that it is registered; or
- 6.9.1.2 become registered with the Considerate Constructors Scheme and shall abide by and be monitored against the Code of Considerate Practice, more particularly set out in Schedule 10.
- 6.10 **IT Compatibility**
- 6.10.1 A common electronic data environment for Schemes, the collation and transmission of KPIs and other matters related to this Agreement is to be developed and agreed between the PSCP and Framework Manager.

6.10.2 Standard design protocols for the implementation of the common data environment and collaborative working are to be developed and agreed between the PSCPs and Framework Manager.

6.10.3 The PSCP will act reasonably and in a spirit of collaborative working in order to develop and agree the common electronic data environment and the standard design protocols. Once these are agreed, the PSCP will implement and operate them in the manner and to the extent agreed with the Framework Manager.

#### 6.11 CAT Proforma Procedure

6.11.1 The PSCP hereby undertakes to adopt the Frameworks Scotland CAT Proforma Procedure for early warning notifications and shall comply and adhere with these forms as set out in Schedule 11.

### 7. MECHANISM FOR LETTING SCHEME CONTRACTS

7.1 This Agreement has been entered into with the intention that other similar framework agreements have or will be entered into with other PSCPs in respect of Schemes to be undertaken by NHSScotland Boards or other NHSScotland Organisations. From time to time, the CSA may enter into further framework agreements in relation to Schemes, whether by way of replacement or termination or in addition to those originally entered into. All such original, further or additional framework agreements (not including this Agreement) which are at any time entered into in respect of Schemes are here referred to as the "**Sister Frameworks**". Nothing in this Agreement shall restrict the CSA's right to enter into Sister Frameworks, nor require any consent or involvement of the PSCP in relation to the Sister Frameworks, but the Framework Manager shall notify the PSCP if any replacement or additional Sister Frameworks are entered into.

7.2 Where any NHSScotland Boards or other NHSScotland Organisations decide to use this Agreement (in conjunction with the Sister Frameworks) the mechanism for letting Scheme Contracts shall be as set out in Schedule 5.

7.3 The PSCP agrees (subject to any agreement pursuant to Clause 3.3 or 3.4) that it shall not, when dealing with NHSScotland Boards or other NHSScotland Organisations in relation to Schemes, seek, impose or attempt to seek or impose any other contractual terms other than the terms of a Scheme Contract in accordance with this Agreement.

### 8. PRINCIPAL SUPPLY CHAIN MEMBERS

8.1 The PSCP agrees to use as the core members of its supply chain those PSCMs listed in Schedule 12 as supplied by the PSCP. Any replacement or additional PSCMs it proposes to engage for Schemes shall be subject to the consent of the Framework Manager (such consent not to be unreasonably withheld or delayed). The Framework Manager may at any time require the removal or replacement of any PSCM on

reasonable grounds, but shall not have the right to interfere with the PSCP's supply chain under any Scheme Contract already entered into.

## 9. KEY PERSONNEL

- 9.1 The PSCP agrees to use in relation to this Agreement the named key personnel listed in Schedule 9. Any replacement of such key personnel it proposes to use for the purposes of this Agreement shall be subject to the consent of the Framework Manager (such consent not to be unreasonably withheld or delayed). The Framework Manager may at any time require the removal and/or replacement of any key personnel on reasonable grounds, but shall not under this provision have the right to interfere with the PSCP's key personnel under any Scheme Contract already entered into.

## 10. CSA's OBLIGATIONS

- 10.1 The PSCP acknowledges and agrees that neither the CSA nor any NHSScotland Board or other NHSScotland Organisation are under any obligation to require services or works from the PSCP under this Agreement. The CSA gives no undertaking, representation or guarantee that the PSCP will be given any works or services, offered any Scheme Contract or any opportunity to compete for Schemes under this Agreement, or will be involved in any other way in connection with Schemes.
- 10.2 Unless otherwise stated by the CSA, NHSScotland Boards or other NHSScotland Organisations may not award Schemes to PSCPs other than those under the Sister Frameworks, without first obtaining the consent of the CSA. The CSA shall encourage NHSScotland Boards or other NHSScotland Organisations to use this Agreement and the Sister Frameworks where appropriate, but neither the Framework Manager nor the CSA shall be liable for any breach of this Clause on the part of any NHSScotland Boards or other NHSScotland Organisations.
- 10.3 If a Scheme Contract is terminated before completion of the Scheme to which the Scheme Contract relates, the NHSScotland Boards or other NHSScotland Organisations that entered into the Scheme Contract may award the balance of work or services to any other PSCP under a Sister Framework unless instructed by the Framework Manager to do otherwise.
- 10.4 The PSCP shall not be paid any sums under this Agreement in respect of any costs incurred or services or work done or to be done under, prior to, or in connection with this Agreement or any scheme. The PSCP's entitlement to payment shall be limited to its right to payment under Scheme Contracts or Interim Agreements.

## 11. TERMINATION

- 11.1 Existing Scheme Contracts will be unaffected by the termination of this Agreement.

- 11.2 The CSA may terminate this Agreement at its sole discretion by giving three months' written notice to the PSCP.
- 11.3 The CSA may determine this Agreement immediately if the PSCP scores less than 70% on average in relation to the KPIs set out at Schedule 3 for three or more Schemes.
- 11.4 Either party may terminate this Agreement immediately by written notice to the other (the "Defaulting Party") if:
- 11.4.1 there is a serious breach of the terms of this Agreement indicating a breakdown of relationship incompatible with the continuation of the relationship; or
  - 11.4.2 the defaulting party commits a material breach of the terms of this Agreement and in the case of a breach capable of remedy, fails to remedy the same within 30 days of receipt of a notice from the other party pointing out the breach; or
  - 11.4.3 an event of Force Majeure occurs, subject to and in accordance with the provisions of Clause 13.
- 11.5 The CSA may terminate this Agreement immediately if:
- 11.5.1 an Insolvency Event occurs in relation to the PSCP;
  - 11.5.2 the PSCP breaches or fails to comply with any of the provisions of Clauses 12.2 or 12.3 in respect of any assignment or sub-contracting, or a Change in Control occurs in relation to the PSCP which is prohibited by Clause 12.4, or shares equal to or in excess of the minimum permitted by Clause 12.5 are held by a Restricted Person;
  - 11.5.3 the PSCP without reasonable justification (which may not, for the avoidance of doubt, include any reason relating to the anticipated profitability of any proposed Scheme Contract) refuses or fails to participate in any competition or other action required under this Agreement.
- 11.6 This Agreement may be terminated by the PSCP for a reason other than one stated above with the CSA's consent.
- 11.7 Termination of this Agreement for any reason shall not affect any rights or liabilities which have accrued prior to the date of termination.
- 11.8 Notice of termination shall in each case be given in writing by the Party seeking to terminate to the other Party.
12. **ASSIGNMENT, SUB-CONTRACTING AND CHANGE IN CONTROL**

- 12.1 The CSA may transfer, assign, novate, dispose or sub-contract the whole or any part of this Agreement to another body controlled by the CSA or to an NHSScotland Boards or other NHSScotland Organisation constituted or authorised to discharge the functions and/or responsibilities of the CSA with regard to the provision of healthcare services and facilities without the consent of the PSCP being required. The CSA shall be entitled to disclose to any successor, assignee, transferee or any other person or body ("Transferee") entitled to the benefit of this Agreement any information (including Confidential Information) of the PSCP. In such circumstances the CSA shall authorise the Transferee to use any such Confidential Information only for purposes relating to this Agreement and/or any Scheme Contract and for no other purposes and, for the avoidance of doubt, the CSA shall require that the Transferee shall be bound by a confidentiality undertaking substantially similar to that in Clause 14 (Confidentiality) in relation to such Confidential Information.
- 12.2 The PSCP shall not assign, novate, charge, transfer or otherwise dispose of this Agreement, in whole or in part, without the prior written consent of the CSA.
- 12.3 The PSCP shall not sub-contract the whole or any part of its obligations under this Agreement without the prior written consent of the CSA, not to be unreasonably withheld or delayed. No sub-contracting arrangement shall in any way reduce, affect or diminish the PSCP's liability under this Agreement.
- 12.4 Subject to Clause 12.5, no Change in Control shall be permitted without the prior written approval of the CSA. The PSCP shall notify the CSA at least 21 days in advance of any proposed Change in Control.
- 12.5 Notwithstanding any other provision of this Agreement, the PSCP shall not at any time permit a Restricted Person to hold five (5) per cent or more of the total value of any shares in the PSCP or any of its Associate Companies and shall notify the CSA immediately upon the PSCP becoming aware that a Restricted Person holds or may be about to acquire such a shareholding.

### 13. **FORCE MAJEURE**

- 13.1 If either Party is prevented or delayed in the performance of any of its obligations under this Agreement by Force Majeure that Party shall serve notice in writing immediately on the other Party specifying the nature and extent of the circumstances giving rise to Force Majeure and shall (subject to service of such notice and to the other provisions of this Clause 13) have no liability in respect of the performance of such of its obligations as are prevented by the Force Majeure events during the continuation of such events.
- 13.2 If either Party is prevented from performance of its obligations for a continuous period in excess of six (6) months the other Party may terminate this Agreement immediately on service of written notice upon the Party so prevented in which case neither Party

shall have any liability to the other except that rights and liabilities which accrued prior to such termination shall continue to subsist.

13.3 The Party claiming to be prevented or delayed in the performance of any of its obligations under this Agreement by reason of Force Majeure shall use reasonable endeavours to bring the Force Majeure event to a close or to find a solution by which the Agreement may be performed despite the continuance of the Force Majeure event.

13.4 Without prejudice to the generality of Clause 13.3, the Parties shall meet as soon as possible after service of a notice under Clause 13.1 above and acting in good faith and a spirit of mutual co-operation, will use reasonable endeavours to agree such amendments and/or modifications to this Agreement as may be necessary to enable it to continue in spite of the event of Force Majeure. If such agreement is reached within six Months of service of a notice under Clause 13.1 above, any right to terminate this Agreement which had accrued to either Party shall immediately be of no effect.

#### 14. **CONFIDENTIALITY**

##### 14.1 **Treatment of terms of Agreement and Scheme Contracts**

The Parties agree that the terms of this Agreement and each Scheme Contract shall, subject to Clause 14.2 below, not be treated as Confidential Information and may be disclosed without restriction.

##### 14.2 **Duty of Confidentiality**

The Parties shall keep confidential all Confidential Information received by one Party from the other Party. The Parties shall both use reasonable endeavours to avoid and to prevent their PSCMs, employees and agents from making any disclosure (other than as permitted by this Agreement) to any person of any Confidential Information.

##### 14.3 **Permitted Disclosure**

Clause 14.2 shall not apply to:

- 14.3.1 any disclosure of information to the Parties' professional advisors;
- 14.3.2 any disclosure of information that is reasonably required by, or to, persons engaged in the performance of either Party's obligations under the Agreement for the performance of those obligations or is otherwise expressly permitted under this Agreement;
- 14.3.3 any information which the disclosing Party can demonstrate is already generally available and in the public domain otherwise than as a result of a breach of this Clause 14;

- 14.3.4 any disclosure which is required by any statutory or legal obligation (including any order of a court of competent jurisdiction or a decision of the Scottish Information Commissioner or Scottish public body pursuant to the Freedom of Information (Scotland) Act 2002, or disclosure to any of them to allow such a decision or order to be made), or the rules of any stock exchange or governmental or regulatory authority having the force of law;
- 14.3.5 any disclosure of information which is already lawfully in the possession of the receiving party, prior to its disclosure by the disclosing party, and which is not subject to an obligation of confidentiality;
- 14.3.6 any provision of information to the PSCP's bankers or their professional advisers or insurance advisers or, where it is proposed that a person should or may provide funds (whether directly or indirectly and whether by loan, equity participation or otherwise) to the PSCP to enable it to carry out its obligations, to that person but only to the extent reasonably necessary to enable a decision to be taken on the proposal;
- 14.3.7 any disclosure by the CSA of information relating to this Agreement or any Scheme Contract and such other information as may be reasonably required for the purpose of conducting a due diligence exercise to:
  - 14.3.7.1 any proposed replacement PSCP, its advisors and lenders; or
  - 14.3.7.2 any person engaged in any review, testing, validation or benchmarking of any matter connected with the Agreement or any Scheme Contract;
- 14.3.8 When appropriate, any registration or recording of consents and/or property registration required;
- 14.3.9 any disclosure of information by the CSA to any NHSScotland Board or other NHSScotland Organisation, the UK Government, the European Union, or any devolved administration in the UK;
- 14.3.10 any disclosure for the purpose of:
  - 14.3.10.1 the examination and certification of the CSA's accounts; or
  - 14.3.10.2 any audit or examination of the economy, efficiency and effectiveness with which the CSA has used its resources; or
  - 14.3.10.3 (without prejudice to the generality of clause 14.3.4), compliance with the Environmental Information (Scotland) Regulations 2004.

- 14.4 Where disclosure is permitted under Clause 14.3.1, 14.3.2, 14.3.6 and 14.3.7, the disclosing party shall ensure that the recipient of the information shall be subject to the same obligation of confidentiality as that contained in this Agreement.
- 14.5 Provisions and obligations set out in this Clause 14 shall survive and remain in force upon and following the termination of this Agreement.
- 14.6 The PSCP shall not make use of this Agreement or any information issued or provided by or on behalf of the CSA in connection with this Agreement otherwise than for the purpose of this Agreement, except with the written consent of the CSA.
- 14.7 Where the PSCP, in carrying out its obligations under this Agreement, is provided with information from or by a third party, the PSCP shall not disclose or make use of any such information otherwise than for the purpose for which it was provided, unless the PSCP has sought the prior written consent of that third party, and has obtained the prior written consent of the CSA.
- 14.8 On or before the expiry or termination of this Agreement, the PSCP shall ensure that such documents or computer records as are requested by the CSA and are in the PSCP's possession, custody or control, which contain information relating to third parties including any documents in the possession, custody or control of a PSCM, are delivered up to the CSA. All computer records so delivered should be in a format agreed between the Parties that is compatible with the CSA's systems.
- 14.9 Audit Scotland (or the equivalent body) has the right to publish details of this Agreement (including Confidential Information) in its relevant reports to Parliament or to the CSA as the case may be.
- 14.10 Subject to Clause 14.11 below the PSCP shall indemnify and keep indemnified the CSA against all actions, claims, demands, costs, charges, expenses and losses sustained by it in respect of any breach of the provisions of this Clause 14 to the extent the same arises as a result of any act or omission of the PSCP or any PSCM.
- 14.11 The PSCP shall not be responsible or be obliged to indemnify the CSA pursuant to this Clause 14 for any losses caused by the negligence or wilful misconduct of the CSA, its employees, agents or PSCPs or by any breach by the CSA of its obligations under this Clause 14 provided that such breach is not caused by the PSCP or any PSCM.
- 15. FREEDOM OF INFORMATION AND DATA PROTECTION**
- 15.1 If the CSA receives a request for information under the Freedom of Information (Scotland) Act 2002 from a third party concerning any information of the PSCP or which was provided by the PSCP it shall as soon as reasonably possible notify the PSCP of the request and ask the PSCP for its views on the disclosure of the information which is the subject of such request.



- 15.2 The PSCP shall respond within five Working Days (or such other period as the Parties shall, acting reasonably, agree) to the notice given by the CSA under Clause 15.1 above. If the PSCP is of the opinion that the information which is the subject of the request should not be disclosed, it shall provide the CSA with reasons to support its opinion, including (where relevant) the harm or prejudice that the PSCP believes its business would suffer if the said information were to be disclosed.
- 15.3 The CSA undertakes (subject always to its obligations under the Freedom of Information (Scotland) Act 2002 and, where applicable, its Code of Practice on Public Access to Information) not to disclose the information referred to in Clause 15.1 until the expiry of five Working Days starting from the day after receipt of the notice specified in Clause 15.1. The CSA shall have due regard to (but shall in no circumstances be bound by) the PSCP's response pursuant to Clause 15.2 before disclosing the information identified by the PSCP in its response.
- 15.4 Subject to Clause 15.5 below the PSCP shall indemnify and keep indemnified the CSA against all actions, claims, demands, costs, charges, expenses and losses sustained by it in respect of any breach of the Data Protection Act 1998 as amended or re-enacted from time to time to the extent the same arises as a result of any breach of that Act by the PSCP and/or any act or omission of the PSCP or any PSCM.
- 15.5 The PSCP shall not be responsible or be obliged to indemnify the CSA pursuant to Clause 15.4 for any losses caused by the negligence or wilful misconduct of the CSA, its employees, agents or PSCPs or by any breach by the CSA of its obligations under the Data Protection Act 1998 provided that such breach is not caused by the PSCP or any PSCM.

## 16. PUBLICITY

- 16.1 Except with the prior written consent of the CSA (and as applicable the NHSScotland Boards or other NHSScotland Organisation whose Scheme it is), the PSCP shall not make any press announcement or publicise anything in connection with this Agreement or any Scheme.
- 16.2 The PSCP shall procure that the provisions of Clause 16.1 are observed, by all relevant PSCMs.
- 16.3 If the CSA agrees with the PSCP pursuant to clause 16.1 text to be used by the PSCP in marketing its products and/or services, such agreement may be withdrawn if the text becomes incorrect, incomplete or misleading, in which case the PSCP shall cease immediately in using such text.
- 16.4 The provisions of this Clause 16 shall apply during the continuance of this Agreement and indefinitely after its expiry or termination.

## 17. INTELLECTUAL PROPERTY RIGHTS

- 17.1 Unless otherwise agreed, and subject to clauses 17.3 and 17.4, all Intellectual Property Rights in all drawings, reports, specifications, pricing documents, calculations and other documents (together referred to as "documentation") produced or provided by the PSCP in connection with this Agreement and/or any Scheme shall remain vested in the PSCP or the person responsible for their production (as the case may be).
- 17.2 The PSCP must use all reasonable endeavours to ensure that its PSCM's and/or any other suppliers consultants employed or appointed by it comply with Clause 17.4 (licence to use documentation).
- 17.3 Where documentation is produced by an NHSScotland Boards or other NHSScotland Organisation, all Intellectual Property Rights in such documentation shall remain vested in the NHSScotland Board or other NHSScotland Organisation .
- 17.4 Subject to Clause 17.6, the PSCP grants (so far as it may lawfully do so) to the CSA, HFS and NHSScotland Boards or other NHSScotland Organisations an irrevocable and royalty free licence to use and copy (and authorise the use and copying of) any and all documentation (in whatever media the same may be created, stored, received or transmitted) provided to the CSA or HFS under this Agreement, or to NHSScotland Boards or other NHSScotland Organisations under Scheme Contracts, and to reproduce the designs contained in such documentation to:
- 17.4.1 facilitate any future use, extension, alteration, maintenance or repair, demolition or partial demolition of the Scheme;
  - 17.4.2 complete the construction of the Scheme; and
  - 17.4.3 use and disseminate it within the CSA and the NHS (including, without limitation, to other NHSScotland Boards or other NHSScotland Organisations involved in other construction Schemes whether or not involving the PSCP), for the purpose of benefiting from past experience and making improvements in design and in methods and practice in design and construction and NHSScotland Boards or other NHSScotland Organisations may as reasonably required for the purposes of carrying out construction work or services, pass on such documentation to their consultants and PSCPs for their use (subject where applicable to Clause 14). Without limiting this general purpose, the PSCP acknowledges the CSA's wish to reuse good designs produced by the PSCP on other construction schemes (whether or not involving the PSCP) in order to standardise components and designs, to assist buildability and to encourage off site manufacture and pre-fabrication.
- 17.5 The licence set out in Clause 17.4 above shall carry the right to grant sub-licences.

- 17.6 For the avoidance of doubt the licence required to be granted by the PSCP under Clause 17.4.3 does not apply to any proprietary products, software, systems, inventions, or source code which are not developed specifically for the purposes of this Agreement or any Scheme.
- 17.7 The PSCP shall on demand, fully indemnify and keep fully indemnified the HFS, CSA, and NHSScotland Boards or other NHSScotland Organisations against any third party claim arising out of or in connection with any actual or alleged infringement of third party rights as a result of any use as licensed by clause 17.4.
- 17.8 Without prejudice to clause 17.7, the PSCP shall not be liable for any use of any documentation provided pursuant to this Agreement for any purpose other than that for which it was originally prepared or provided, but the PSCP shall indicate when providing information (and/or when requested) any incompleteness or inaccuracy or limitation in the documentation provided in relation to its possible use for the purposes contemplated by this Agreement.
- 17.9 Neither the CSA nor HFS gives any warranty or representation in relation to any design or other information provided to the PSCP for the purpose of any Scheme, the PSCP's rights, responsibility or liability in relation to any such design or information being solely governed by the Scheme Contract entered into (or to be entered into) in respect of that Scheme.
- 17.10 The provisions of this Clause 17 shall apply during the continuance of this Agreement and shall survive its expiry or termination.
- 18. INFORMATION RECORDS AND AUDIT ACCESS**
- 18.1 The PSCP agrees (subject to Clause 14) to provide accurate and up to date information to NHSScotland Board or other NHSScotland Organisations (and the Framework Manager if requested) as reasonably requested from time to time by the Framework Manager, any NHSScotland Board or other NHSScotland whether to enter into a Scheme Contract with the PSCP including (without limitation) in relation to:-
- 18.1.1 its, and its key supply chain members', status, financial standing, structure and management;
- 18.1.2 its resource commitments and availability; and
- 18.1.3 its performance under this Agreement and/or Scheme Contracts.
- 18.2 The PSCP agrees at all times to keep the Framework Manager informed in respect of:-
- 18.2.1 the PSCP's, and its key supply chain members', status, financial standing, structure and management;

- 18.2.2 the PSCP's resource commitments and availability for Schemes;
  - 18.2.3 the PSCP's performance under this Agreement and under Scheme Contracts;  
and
  - 18.2.4 any change to the PSCP's (or, where the PSCP is aware of such matters, its supply chain members') insurance arrangements or policies which has or is likely to have a material impact on the PSCP (and/or its supply chain members') ability to comply with its obligations in relation to the provision of the required insurances under any Scheme Contract.
- 18.3 The PSCP agrees to provide accurate and up to date information as reasonably requested from time to time by the Framework Manager for the purposes of this Agreement including (without limitation):-
- 18.3.1 details of Schemes (in respect of which Scheme Contracts have been entered into by the PSCP) including without limitation design and construction details and information provided to NHSScotland Boards or other NHSScotland Organisations; and
  - 18.3.2 information requested by the Framework Manager for the purposes of monitoring or evaluating the extent to which the CSA Objectives or Scheme Objectives are being achieved.
- 18.4 The Framework Manager may (subject to Clause 14) pass information and documents provided by the PSCP prior to entering into this Agreement, or for the purposes of or pursuant to this Agreement or any Scheme Contract, to NHSScotland Boards or other NHSScotland Organisations for their information where relevant to the engagement (or proposed engagement) of the PSCP by the NHSScotland Board or other NHSScotland Organisations for one of its Schemes.
- 18.5 The PSCP shall keep and maintain until twelve years after the date upon which this Agreement expires or terminates, full and accurate records of this Agreement and of any Scheme Contract the PSCP enters into including the services or works undertaken, all expenditure reimbursed by NHSScotland Boards or other NHSScotland Organisations, all payments made by NHSScotland Boards or other NHSScotland Organisations, and of the costs incurred in connection with this Agreement or any Scheme Contract. The PSCP shall on request afford the CSA and/or its auditors or representatives such access to those records as may be required by the CSA.
- 18.6 The provisions of this Clause 18 shall apply during the continuance of this Agreement and shall survive its expiry or termination.

## 19. RECRUITMENT AND SUSTAINABILITY

- 19.1 The PSCP shall so far as lawful and appropriate and subject to availability use reasonable endeavours to employ in the carrying out of Schemes direct labour and PSCMs who are based in the locality of the Scheme.
- 19.2 The PSCP shall have regard to sustainability, renewability, the impact on the environment and energy efficiency in the selection of materials and components for Schemes, and in designing and carrying out Schemes, and in planning for and carrying out disposal of any material.
- 19.3 More specific requirements regarding recruitment and sustainability may be developed by agreement between the PSCP and NHSScotland Boards or other NHSScotland Organisations and inserted into Scheme Contracts.

## 20. COLLABORATIVE PURCHASING

- 20.1 The PSCP and the Framework Manager will work together in collaboration with NHSScotland Board or other NHSScotland Organisations together with other PSCPs and suppliers working with CSA and/or HFS or NHSScotland Board or other NHSScotland Organisations. Such collaborative working will aim to maximise the benefit to (and achieve best value for) NHSScotland Boards or other NHSScotland Organisations from joint or bulk purchasing arrangements in respect of materials and equipment to be supplied for Schemes.
- 20.2 The PSCP will not be required as part of this process to disclose any Confidential Information to another PSCP or third party.

## 21. CORRUPT GIFTS OR PAYMENTS

- 21.1 The PSCP will not offer or give, or agree to give, to any employee, servant, agent or representative of the CSA, HFS or any NHSScotland Boards or other NHSScotland Organisations any gift or consideration of any kind as an inducement or reward for doing or refraining from doing, or for having done or refrained from doing, any act in relation to the obtaining or execution of this Agreement or any Scheme Contract or any other contract with the CSA, any NHSScotland Boards or other NHSScotland Organisations or any other Contracting Authority or for showing or refraining from showing favour or disfavour to any person in relation to this Agreement or any Scheme Contract. The attention of the PSCP is drawn to the criminal offences created by the Prevention of Corruption Acts 1889 to 1916.
- 21.2 The PSCP will not enter into this Agreement, if in connection with its commission, it has been paid or has agreed to pay any employee, servant, agent or representative of the CSA by the PSCP or on the PSCP's behalf, unless before this Agreement is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to the CSA.

21.3 Where the PSCP or any PSCM breaches the provisions of Clauses 21.1 and/or 21.2 (“a Prohibited Act”) in relation to this or any other contract with the CSA or an NHSScotland Boards or other NHSScotland Organisations or another Contracting Authority, the CSA has the right to:

21.3.1 terminate this Agreement with immediate effect and recover from the PSCP the amount of any loss suffered by the CSA resulting from the termination;

21.3.2 recover from the PSCP the amount or value of any such gift, consideration or commission; and

21.3.3 recover in full from the PSCP any other loss suffered by the CSA in consequence of any breach of this Clause 21, whether or not the Agreement has been terminated.

21.4 In exercising its rights or remedies under this Clause 21, the CSA shall:

21.4.1 act in a reasonable and proportionate manner having regard to such matters as the gravity of, and the identity of the person performing the Prohibited Act;

21.4.2 give all due consideration, where appropriate, to action other than termination of the Agreement.

## 22. FRAUD

22.1 The PSCP shall safeguard the CSA's, any NHSScotland Boards' and other NHSScotland Organisations' funding of this Agreement and any Scheme Contract respectively against fraud generally and, in particular, fraud on the part of the PSCP or any PSCM. The PSCP shall notify the CSA immediately if it has reason to suspect that any fraud has occurred or is occurring or is likely to occur.

## 23. PREVIOUS AGREEMENTS

23.1 This Agreement supersedes any previous agreement between the Parties relating to the subject matter of this Agreement.

## 24. DENIAL OF PARTNERSHIP AND AGENCY

24.1 The Parties acknowledge and agree that this Agreement shall not constitute, create or otherwise give effect to a joint venture, pooling arrangement or partnership or similar arrangement between them.

24.2 Nothing in this Agreement is intended or shall be construed to create a relationship of agency between the Parties. Accordingly, except as expressly authorised herein, neither Party shall have any authority to act or make representations on behalf of the other Party, and nothing herein shall impose any liability on either Party in respect of any liability incurred by the other party to any third party.

24.3 Nothing in this Agreement is intended or shall be construed to create a relationship of agency between the CSA (or HFS) and any NHSScotland Boards or other NHSScotland Organisations other than the CSA in relation to rights and responsibilities under this Agreement and thus neither shall have authority to act or make representations on behalf of the other for the purposes of this Agreement and NHSScotland Boards or other NHSScotland Organisations other than the CSA shall have no liabilities or obligations under this Agreement. This shall not prevent NHSScotland Boards or other NHSScotland Organisations from separately appointing HFS to act as its agent in relation to Scheme Contracts.

**25. NOTICES AND PARTIES' REPRESENTATIVES**

25.1 Any demand, notice or other communication to be given or made in writing under this Agreement will be deemed to have been duly given or made as follows:-

25.1.1 if sent by e-mail on the day of sending provided that an electronic acknowledgement of receipt is received from the recipient's computer, and provided that a confirmatory copy is sent by pre-paid first class post on the same working day that the e-mail is transmitted; or

25.1.2 if sent by pre-paid first class post on the second Working Day after the date of posting; or

25.1.3 if delivered by hand upon delivery at the address provided for in this Agreement; or

25.1.4 if sent by facsimile on the day of transmission provided that a confirmatory copy is sent by pre-paid first class post on the same Working Day that the facsimile is transmitted;

provided however that if it is delivered by hand or sent by e-mail or facsimile on a day which is not a Working Day or after 4.00 p.m. on a Working Day it will instead be deemed to have been given or made on the next Working Day.

25.2 Any such demand notice or other communication will be addressed to and sent to the recipient at:

For the CSA: Peter Haggarty  
Health Facilities Scotland

[Redacted address]

Tel: [Redacted telephone number]

e-mail: [peter.haggarty](mailto:peter.haggarty) [REDACTED]

For the PSCP: John Mitchell  
BAM Construction Ltd

[REDACTED]

Tel: [REDACTED]  
Fax: [REDACTED]  
E-mail: [REDACTED]

or at such other address or fax number or e-mail address as may from time to time be notified in writing by the Parties as being the address for service provided that in the case of a company it may instead (at the option of the sender) be addressed to the registered office for the time being.

25.3 Each Party shall from time to time nominate a person to act as its representative in connection with the administration and running of this Agreement, and shall keep the other Party notified of any change of representative. Communications under or for the purposes of this Agreement shall unless agreed to the contrary be between Representatives.

**26. WAIVER**

26.1 The failure to exercise or delay in exercising a right or remedy provided by this Agreement or by law does not constitute a waiver of the right or remedy or a waiver of other rights or remedies. A waiver of a breach of any of the terms of this Agreement or of a default under this Agreement does not constitute a waiver of any other breach or default and shall not affect the other terms of this Agreement. A waiver of a breach of any of the terms of this Agreement or of a default under this Agreement will not prevent a Party from subsequently requiring compliance with the waived obligation.

26.2 The rights and remedies provided by this Agreement are cumulative and (subject as otherwise provided by this Agreement) are not exclusive of any rights or remedies provided by law or in equity.

**27. SEVERANCE**

27.1 If any term or provision in this Agreement shall be held to be illegal or unenforceable, in whole or in part, under any enactment or rule of law, such term or provision or part shall to that extent be deemed not to form part of this Agreement but the validity and enforceability of the remainder of this Agreement shall not be affected.



27.2 Each undertaking in this Agreement shall be construed as a separate undertaking and if one or more of the undertakings contained in this Agreement is found to be unenforceable or in any way an unreasonable restraint of trade the remaining undertakings shall continue to bind the Parties.

## 28. **DISPUTES, LAW AND JURISDICTION**

28.1 This Agreement shall be governed by and construed in accordance with the laws of Scotland as it applies in Scotland.

28.2 Each Party irrevocably agrees to submit to the non-exclusive jurisdiction of the Courts of Scotland in relation to any claim, dispute or difference concerning this Agreement and any matter arising from or in connection with it (other than under or in connection with any existing Scheme Contract, such disputes or differences being governed by the terms of the Scheme Contract).

## 29. **WARRANTIES AND REPRESENTATIONS**

29.1 The PSCP hereby warrants and represents that it has full capacity and authority and all necessary consents to enter into and perform this Agreement and that this Agreement is executed by the duly authorised representatives of the PSCP.

29.2 The PSCP warrants that it has and will have throughout the duration of this Agreement the necessary capability and capacity to carry out Schemes under Scheme Contracts.

29.3 The PSCP warrants and agrees that it has made and will make its own enquiries to satisfy itself as to the accuracy of any information supplied to it by or on behalf of the CSA and that where the CSA has or those acting on behalf of it have provided the PSCP with incorrect or insufficient information the PSCP shall not be relieved from any obligation under this Agreement, nor be entitled to claim against the CSA, except where such information is a fraudulent misrepresentation by the CSA.

29.4 The PSCP warrants and agrees that it will perform its obligations under this Agreement and under any Scheme Contract in accordance with and so as not to infringe any Law, and so as not to cause the CSA or any NHSScotland Boards or other NHSScotland Organisations to infringe any Law.

29.5 The PSCP warrants that it employs people based on their individual capabilities and skills regardless of marital status, sex, sexual orientation, race, colour, religion, national origin, age and in accordance with its statutory obligations in respect of mental and physical disability.

29.6 The PSCP warrants that it is not in default in the payment of any due and payable taxes or in the filing, registration or recording of any document or under any legal or statutory obligation or requirement which default might have a material adverse effect

on its business, assets or financial condition or its ability to observe or perform its obligations under this Agreement or any Scheme Contract.

### 30. GENERAL INDEMNITY

30.1 The PSCP shall:-

30.1.1 be responsible for, and shall release and be liable to the CSA and NHSScotland Boards or other NHSScotland Organisations and their employees, agents and PSCPs on demand from and against, all liability for:

30.1.1.1 death or personal injury;

30.1.1.2 loss of or damage to property (including property belonging to the CSA or any NHSScotland Boards or other NHSScotland Organisations or for which either is responsible); and

30.1.1.3 losses and/or costs;

and

30.1.2 shall release and indemnify the CSA and NHSScotland Boards or other NHSScotland Organisations and their employees, agents and PSCPs on demand from and against, all liability for any and all actions, claims, demands made by any third party together with any and all costs, charges and expenses, arising as a result thereof,

which may arise out of, or in consequence of the performance or non-performance by the PSCP or any PSCM of its obligations under this Agreement or the presence on the CSA's or any NHSScotland Boards or other NHSScotland Organisations' property of the PSCP or any PSCM.

30.2 The PSCP shall not be responsible or be obliged to indemnify the CSA under the preceding Clause 30.1 to the extent that the principal cause of any injury, loss, damage, cost and expense is the negligence or wilful misconduct of the CSA or an NHSScotland Boards or other NHSScotland Organisations or any of their employees, agents or PSCPs (other than the PSCP or any PSCM ) or the breach by the CSA of its obligations under this Agreement.

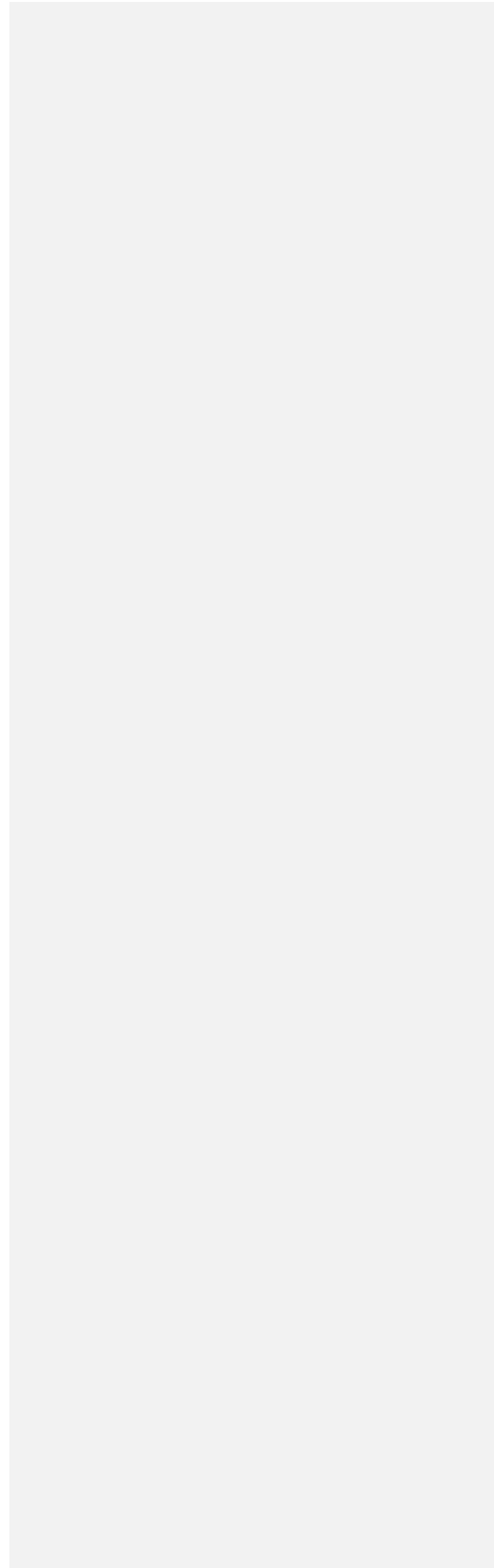
### 31. AMENDMENT AND VARIATION

31.1 No amendment, variation or other change to this Agreement shall be valid unless made in writing and signed by the duly authorised representative of the Parties.

### 32. EXCLUSION OF THIRD PARTY RIGHTS

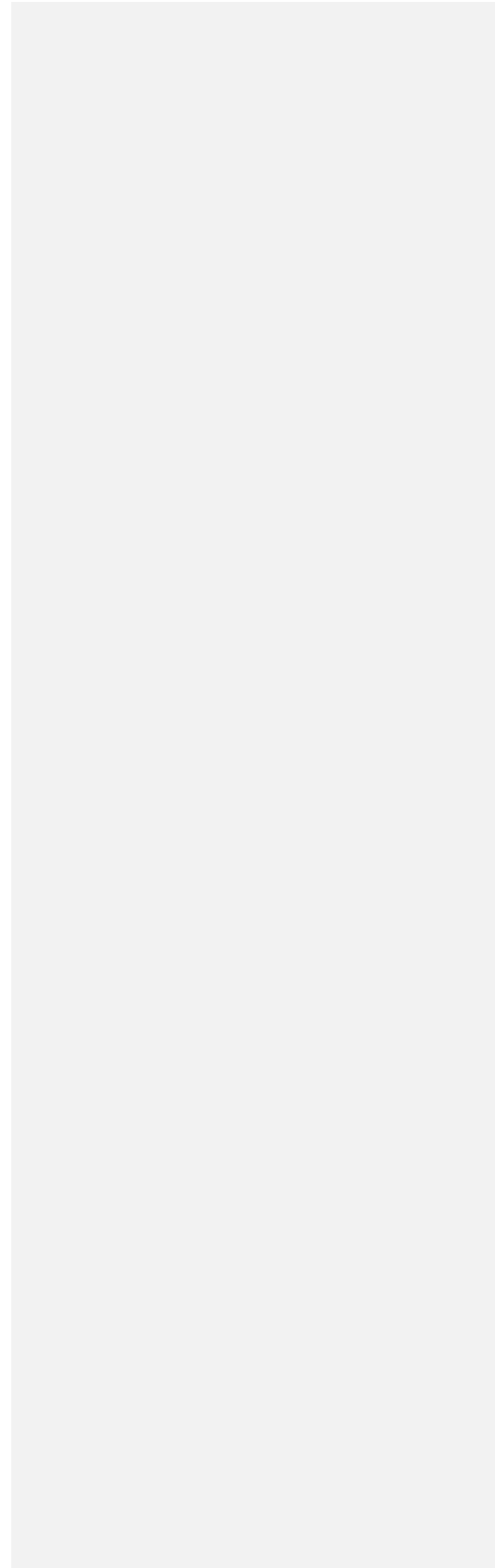
32.1 For the avoidance of doubt the Parties do not intend to create any rights in favour of third parties arising out of this Agreement.

**IN WITNESS WHEREOF**



**This is Schedule 1 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

**Form of Scheme Contract**



**This is Schedule 2 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

**Part A**

**Pre and Post Construction Services and Design**

The planning, design, construction, management and delivery of all other works, supplies (including provision of equipment and plant) and services connected with or intended to facilitate, Schemes to provide NHS buildings and facilities in Scotland with an estimated construction value excluding VAT and fees of £1m (one million pounds) or more. The scheme cost for this purpose being the predicted out-turn of the Scheme excluding land purchase, fees and equipment.

**This is Schedule 2 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

**Part B  
Fee percentages and rates**

Referred to in clause 3.1.3

The hourly rates set out in this Schedule 2 for design for PSCP and PSCM staff are fixed for two years, thereafter they are subject to adjustment for price fluctuations. This will be applied as follows:-

After a period of 24 months (from the date of tender return submission) the staff rates [R] will be twice subject to adjustment for price fluctuation.

- Firstly by application of the difference between the latest published index for the UK Retail Price Index (RPI(X)) available at [24 months from the date of tender return submission][i(2)] and the RPI 12 months earlier [i(1)].
- Secondly this revised rate is then subject to the same change in index to derive the midpoint of the subsequent 24 month period. The PSCP and PSCM rates produced by the application of this adjustment for price fluctuation apply for the second 24 months period [insert appropriate 24 month period].
- Hence the new staff rate for the second 24 month period is defined as:  
$$R(\text{new}) = \{R \times i(2)/i(1)\} \times [i(2)/i(1)]$$
- Every 24 months thereafter the procedure in paragraph 2 is repeated, applying the difference in the RPI indices prevailing at date of the review and the same index that applied 12 months earlier.
- The amount of Defined Cost produced by using the PSCP and PSCM staff rates is excluded from Secondary Option 1 Price Fluctuation calculations.
- The price fluctuations percentage calculations will be undertaken by the Cost Advisor for Frameworks Scotland. The percentage change to the rates set out in this schedule 2 will be notified in writing to the PSCP.

**This is Schedule 3 referred to in the foregoing Framework Agreement between the Common Services Agency and BAM Construction Limited**

**Key Performance Indicators and Performance Measurement**

In order to improve the quality of service delivery and to drive continuous improvement within Frameworks Scotland the Framework Manager has included a series of KPIs against which the performance of the PSCP, PSCM Schemes and this Agreement will be measured.

These KPIs will be used to benchmark performance. PSCPs will be required to complete the relevant KPIs at key milestone dates throughout the Schemes and at key intervals throughout the term of this Agreement.

For each KPI a benchmarking toolkit will be used as a means of assessing and scoring the performance measurement criteria.

It is intended that the KPIs will be formally reviewed on an annual basis at a performance review meeting.

A benchmark of at least 70% on average must be achieved for all KPIs on each Scheme. If this is not the case then the Framework Manager will require a meeting to take place immediately and remedial action to be taken.

If this occurs on three or more occasions, then the Framework Manager will have the right to terminate the Agreement.

1. Quality of Design – assessing and evaluating the quality of design.
2. Sustainability – to measure the sustainability rating of the construction scheme, including Waste Resources Action Plan (“WRAP”) guidance.
3. Client Satisfaction – how satisfied is the client with the PSCP?
4. Cost Predictability – to measure the accuracy of forecasting. Target cost used to measure against. To be applied to OBC costs, FBC costs and the length of time to agree compensation events.
5. Time Predictability – to measure the accuracy of forecasting. Programme used to measure against.
6. Quality of Construction –life cycle costs, to measure the performance of the life cycle costs against a model to be agreed between the Framework Manager and the PSCPs.
7. Safety – to measure the number of reportable (RIDDOR) accidents in a given period.

8. Defects – to assess the impact on the client of any defects at the point of handover and the number of defects.
9. Collaboration – questionnaire to be completed by all parties involved in the Scheme.



**This is Schedule 4 referred to in the foregoing Framework Agreement between the Common Services Agency and BAM Construction Limited**

**Confidential Information**

Below are the categories of information which the Parties have decided is to be treated as Confidential Information pursuant to Clause 14:

1. Pricing and potential margins, overhead and profit percentages, tender prices/rates and the same information in respect of sub PSCPs' appointments; and
2. (Without prejudice to the licence granted under Clause 17.4) proprietary products, software, systems, inventions, or source code which are not developed specifically for the purposes of this Agreement or any Scheme, and trade secrets.

Subject to the provisions of Clause 14, the above categories are to be kept confidential for a period of ten (10) years from termination or expiry of this Agreement.

**This is Schedule 5 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

**Mechanism for letting Scheme Contracts**

***The selection of a PSCP for an Individual Scheme***

**1. Principles**

- 1.1 All PSCPs at the relevant time will be invited to make submissions (as described below) to be appointed to all of the Scheme Contracts proposed to be let under this Agreement by an NHSScotland Boards or other NHSScotland Organisations.
- 1.2 Neither the CSA nor HFS shall be liable for any failure by an NHSScotland Boards or other NHSScotland Organisations to invite the PSCP to make a submission, or any act or omission whatsoever by an NHSScotland Boards or other NHSScotland Organisations relating to the provisions of this Schedule 5.
- 1.3 The NHSScotland Boards or other NHSScotland Organisations proposing to let the Scheme Contract shall apply the procedure set out below.

**2. Procedure**

- 2.1 At a very early stage when a capital scheme is being considered the NHSScotland Boards or other NHSScotland Organisations' Project Director is to contact HFS who will allocate a Framework Manager for the scheme.
- 2.2 The norm would be for an NHSScotland Boards or other NHSScotland Organisations to seek to appoint a PSCP after approval of an Interim Agreement. However, this is not fixed and the NHSScotland Boards or other NHSScotland Organisations has discretion to seek the appointment of a PSCP under a Scheme Contract at any stage of a Scheme and in respect of any scope of services. NHSScotland Boards or other NHSScotland Organisations can seek advice from the Framework Manager as to the most appropriate appointment time for specific schemes.
- 2.3 The Framework Manager will assist the NHSScotland Boards or other NHSScotland Organisations in discussing the options for choice of PSCPs (and Supply Chain Members) and assist in the preparation of a package of information, the Scheme Pack, for issue to the PSCPs. The Scheme pack will detail the scope of the PSCP's duties relevant to the Scheme and the specific NHSScotland Boards or other NHSScotland Organisations requirements at the relevant time.

- 2.4 The Scheme Pack will be sent to the Account Director of each of the PSCPs by e-mail and in accordance with the specific NHSScotland Boards or other NHSScotland Organisations' bidding return instructions.
- 2.5 The PSCP shall provide the NHSScotland Boards or other NHSScotland Organisations with its submission within fifteen (15) Working Days of the date of the issue of the Scheme Pack. The submission to be no more than 10 sides of A4 paper at not less than 10-point font. The submission to be submitted in electronic form, by e-mail and, if required by the NHSScotland Boards or other NHSScotland Organisations, hard copy.
- 2.6 It is at the NHSScotland Boards or other NHSScotland Organisations' discretion as to whether they hold an open day inviting all PSCPs to visit the proposed site(s) and have the opportunity to ask questions and have an informal one to one discussion. Best practice suggests that this is useful and most beneficial if held around day five (5) of the fifteen (15) day period.
- 2.7 The PSCP will be required to attend an interview or series of interviews and will ensure that the relevant staff referred to in its submission attend.
- 2.8 The NHSScotland Boards or other NHSScotland Organisations may seek clarification of any aspect of the PSCP's submission and the PSCP will provide such information as reasonably requested by the NHSScotland Boards or other NHSScotland Organisations.
- 2.9 The NHSScotland Boards or other NHSScotland Organisations shall make its evaluation of which PSCP best suits its specific scheme requirements in accordance with the following criteria and within the following percentage weighting bands:-
  - 2.9.1 Proposed personnel for the scheme 20-30%
  - 2.9.2 Experience relevant to the scheme 10-30%
  - 2.9.3 Proposed supply chain for the scheme 10-30%
  - 2.9.4 Programme 0-20%
  - 2.9.5 Approach to the scheme 10-20%
  - 2.9.6 Performance of the PSCP in relation to other schemes (without limitation) performance against the KPI's and performance under this agreement or Scheme Contracts 0-15%
  - 2.9.7 Applicable fees and rates of PSCP as set out in this Agreement 10-30%.
- 2.10 The Framework Manager will assist in facilitating the selection of a PSCP but will not score the submissions.

- 2.11 The NHSScotland Boards or other NHSScotland Organisations shall notify the successful PSCP and the other PSCP's at the same time.
- 2.12 If requested by any unsuccessful PSCP, the NHSScotland Boards or other NHSScotland Organisations shall inform the unsuccessful PSCP of –
- 2.12.1 the reasons why it was unsuccessful; and
  - 2.12.2 the characteristics and relative advantages of the successful submission.
- 2.13 If any dispute or difference is raised in respect of the operation of this Schedule 5, this shall not prevent a Scheme Contract from being entered into with the successful PSCP.

The PSCP shall bear all its own costs of and related to participating in the selection procedure as set out in this Schedule 5.

**This is Schedule 6 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

**[EMPLOYER]**

and

**[GUARANTOR]**

and

**[PSCP]**

**PARENT COMPANY GUARANTEE**

relating to

•

**AMONG:-**

1. • (Company No. •) whose registered office is at • (“the **Guarantor**”), and
2. • (Company No. •) whose registered office is at • (“the **Employer**”), which term shall include all permitted assignees under this Guarantee).
3. • (Company No. •) whose registered office is at • (“the **PSCP**”)

**RECITALS:-**

- A. The Employer and the PSCP have entered into a contract dated • (“the Contract”), which term shall include any changes to the Contract for the carrying out and completion of • at • (the “Scheme”).
- B. The Guarantor has agreed to guarantee to the Employer the due and proper performance by the PSCP of the PSCP’s obligations arising under the Contract upon the terms of this Guarantee.

**IT IS HEREBY AGREED that:-**1. **Guarantee**

## 1.1 The Guarantor hereby:-

1.1.1 irrevocably and unconditionally guarantees to the Employer as primary obligor, on demand, the due and punctual discharge, performance and satisfaction by the PSCP of each and all of the obligations, duties, warranties, liabilities and undertakings of the PSCP to the Employer under the Contract (the “Guaranteed Obligations”); and

1.1.2 in addition to its obligations under Clause 1.1.1, agrees to indemnify the Employer and hold the Employer harmless from and against all actions, demands, liability, losses, damages, costs, claims and expenses (including, but not limited to, all legal fees and taxes relative to the enforcement by the Employer of the Contract and/or this Guarantee) which the Employer may suffer or incur in respect of or arising in whole or in part from any failure by the PSCP duly and fully to discharge, perform and satisfy the Guaranteed Obligations or any of them.

2. **Maximum Liability**

2.1 The Guarantor's liability to the Employer, and the amounts recoverable by the Employer from the Guarantor, under this Guarantee shall be limited to the maximum extent to which, and (as the case may be) the maximum amount for which the PSCP may be liable to the Employer under or pursuant to the Contract. For the avoidance of doubt, this Clause shall not limit the Guarantor's liability under Clause 3 or Clause 11.

### 3. **Interest**

3.1 The Guarantor shall pay interest on any amount which it is required to pay under this Guarantee at 8% over the base rate from time to time of the Royal Bank of Scotland plc in respect of that amount (or any outstanding balance thereof from time to time) from the date when that amount becomes payable to the date on which it is actually paid in full.

### 4. **Continuing Liability**

4.1 The Guarantor's liability and the Employer's rights under this Guarantee shall not be affected by any act or omission or event which, but for this provision, might operate to release, impair or affect, or otherwise exonerate the Guarantor from its obligations under this Guarantee in whole or in part, including:

- 4.1.1 any variation of or amendment of any obligation of the PSCP under the Contract;
- 4.1.2 time or other indulgence granted by the Employer to the PSCP under the Contract;
- 4.1.3 the winding up, dissolution, insolvency, liquidation, reconstruction, reorganisation, or change in status, function, control or ownership of the PSCP;
- 4.1.4 any legal limitation, want of authority, want of due execution or incapacity relating to the PSCP;
- 4.1.5 any arrangement made between the PSCP and the Employer; and
- 4.1.6 the taking, variation, renewal or release of, the enforcement or the neglect to perfect or enforce any right, guarantee, remedy, or security from or against the PSCP or any other person.

### 5. **Continuing Guarantee**

5.1 This Guarantee is a continuing guarantee and shall remain in force until all the Guaranteed Obligations and all of the liabilities of the PSCP arising as a result of any failure to perform and/or any breach of the Guaranteed Obligations have been discharged in full and, without limitation, shall not be discharged or altered by any intermediate payment in respect of any such failure or breach of the Guaranteed Obligations.

- 5.2 The Employer shall not be obliged before making any claim under this Guarantee:-
- 5.2.1 to take any action in any proceedings (other than making a demand on the Guarantor), enforce any security, exercise any right of compensation or obtain or enforce any judgement, decree or order against the Guarantor; or
- 5.2.2 to make or file any claim or proof in any winding up, liquidation, administration or other insolvency proceedings of the PSCP or the Guarantor.
- 5.3 In the event that the Employer brings proceedings against the PSCP in relation to an alleged failure or breach of any of the Guaranteed Obligations, the Guarantor will be bound by any findings of fact, interim, or final award or judgement made in such proceedings in relation to the relevant failure or breach of the Guaranteed Obligations.
6. **Demands**
- 6.1 Subject always to Clause 2, the Employer may make any number of demands under this Guarantee.
7. **Defences**
- 7.1 In the event that the Employer seeks to enforce the terms of this Guarantee against the Guarantor, the Guarantor shall have available to it (in respect of the Guaranteed Obligations only) any defence, right or remedy as the PSCP may have against the Employer pursuant to the Contract.
8. **Assignment**
- 8.1 The Employer may assign its interest in this Guarantee to its permitted successors and assignees under the Contract, but not otherwise without the prior consent of the Guarantor (such consent not to be unreasonably withheld or delayed). Any such assignment shall not release the Guarantor from any liability under this Guarantee.
9. **Representations and Warranties**
- 9.1 The Guarantor hereby represents and warrants to the Employer as follows:
- 9.1.1 it is duly incorporated and validly exists under the laws of [ ];
- 9.1.2 it has the power to grant this Guarantee and to perform its obligations hereunder;
- 9.1.3 it has taken all necessary corporate action to authorise the execution and delivery of this Guarantee and to authorise the performance of its obligations hereunder;
- 9.1.4 this Guarantee constitutes a valid, binding and enforceable obligation of the Guarantor;



- 9.1.5 neither the granting of this Guarantee by the Guarantor nor the performance of its obligations hereunder will contravene any law or regulations or any agreement to which the Guarantor is a party or by which it is bound nor will it cause any limitation of any of the powers of the Guarantor however imposed or the right or ability to the directors of the Guarantor to exercise any of such powers to be exceeded;
- 9.1.6 that it has not received any notice, nor to the best of its knowledge is there pending any notice of any violation of any applicable laws, ordinances, regulations, rules, decrees, awards, permits or orders which may have a material effect on its ability to perform under this Guarantee;
- 9.1.7 that it shall take all necessary action directly or indirectly to perform the obligations expressed to be assumed by it or contemplated by this Guarantee and to implement the provisions of the Guarantee; and
- 9.1.8 that it has not entered into this Guarantee in reliance upon, nor has it been induced to enter into this Guarantee by any representation, warranty or undertaking made by or on behalf of the Employer (whether express or implied and whether pursuant to statute or otherwise) which is not set out in this Guarantee.

#### 10. **Non-Competition**

- 10.1 Until all of the Guaranteed Obligations shall have been paid, performed, satisfied or discharged (as the case may be) in full and irrevocably, the Guarantor shall not, unless requested to do so by the Employer in writing or with the prior written consent of the Employer:
  - 10.1.1 be subrogated to any rights of the Employer against the PSCP or be entitled to any right of contribution or indemnity from the Employer in respect of any payment to the Employer by the PSCP; or
  - 10.1.2 be entitled to claim in the insolvency, administration, winding-up, bankruptcy or liquidation of the PSCP to the extent that such claim is in competition with the Employer; or
  - 10.1.3 exercise any right of compensation, retention or set-off against the Employer
- 10.2 If any amount is received, retained or set off by the Guarantor either in contravention of Clause 10.1 or following a request from the Employer to exercise any of the rights referred to in Clause 10.1, the Guarantor shall pay any amount received, retained or set off to the Employer on demand.

#### 11. **Expenses**

- 11.1 The Guarantor will promptly reimburse the Employer for all legal and other costs (including VAT) directly and reasonably incurred by the Employer in connection with the enforcement and/or preservation of this Guarantee.

12. **Partial Invalidity**

12.1 If any provision of this Guarantee is or becomes invalid, illegal or unenforceable, that shall not affect the validity, legality and enforceability of any other provision of this Guarantee.

13. **Notices**

13.1 Unless otherwise stated in this Guarantee the following provisions shall apply to the giving of any notice (a "Notice") required or desired to be given under this Guarantee.

13.2 A Notice shall be in writing and shall be deemed to have been sufficiently given if properly addressed in accordance with Clause 13.3 and either:-

13.2.1 sent by first class recorded delivery post; or

13.2.2 delivered by hand and received by or on behalf of the appropriate addressee.

13.3 A Notice shall be properly addressed if it is addressed as follows:-

13.3.1 if to the Employer, addressed to [ ] or otherwise as notified from time to time by the Employer to the Guarantor; and

13.3.2 if to the Guarantor, addressed to [ ] or otherwise as notified from time to time by the Guarantor to the Employer.

13.4 A Notice shall be deemed to have been received (where sent by first class recorded delivery post) on the second Business Day after the day on which it was posted or (where delivered by hand) when receipt is acknowledged by the recipient thereof or on proof of delivery.

13.5 In proving posting of a Notice sent by first class recorded delivery it shall be sufficient to provide that the envelope containing the Notice was duly addressed in accordance with the provisions of Clause 13.3 and posted to the place to which it was addressed.

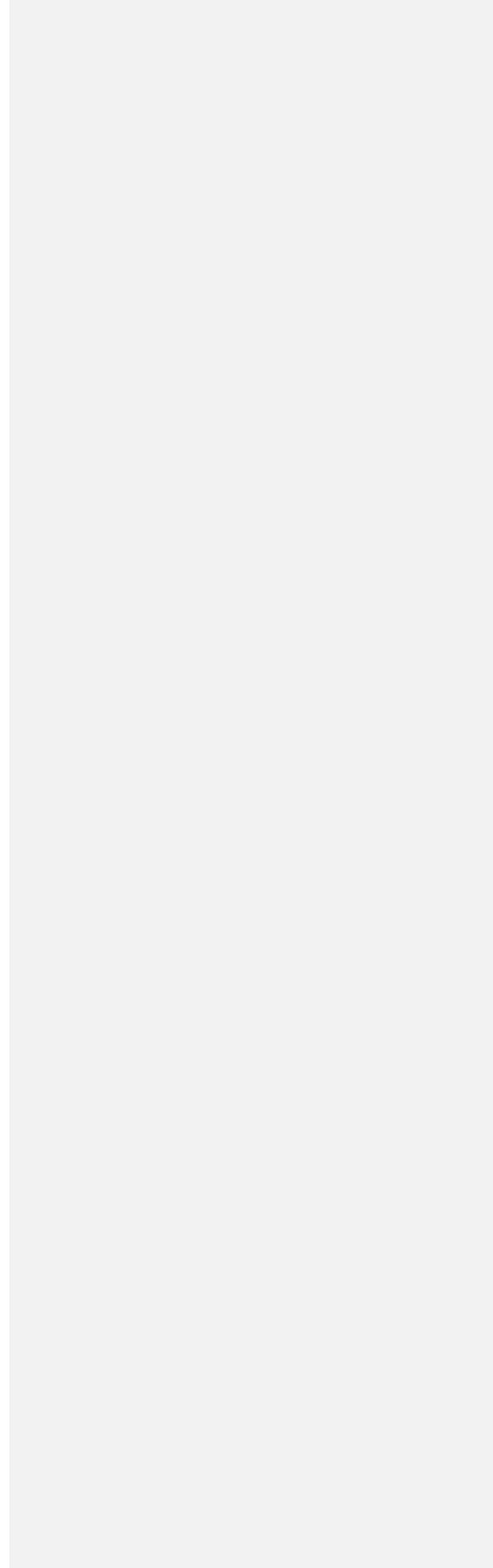
14. **Governing Law**

14.1 This Guarantee shall be governed by and shall be construed in accordance with the laws of Scotland. The Parties hereby submit to the exclusive jurisdiction of the Court of Session in Edinburgh as regards any claims or matters arising in relation to this Guarantee.

15. **Registration**

15.1 The parties hereto consent to registration hereof for preservation and execution.

IN WITNESS WHEREOF



**This is Schedule 7 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

•

- and -

•

-and-

•

**CONSULTANT'S COLLATERAL WARRANTY  
in relation to  
[Scheme]**

**AGREEMENT AMONG**

1. • of • (“the Consultant”); and
2. • of • (“the Beneficiary”, which term shall include all permitted assignees under this Agreement); and
3. • of • (“the PSCP”); and

**WHEREAS:-**

- A The Beneficiary has appointed the PSCP under a contract (“the Scheme Contract”) dated • relating to the design, construction and completion of [description of the works] (“the Works” which term shall include any changes to the works to be carried out in accordance with the Scheme Contract referred to in this recital A) at the property situate at • (“the Property”)
- B By a contract (“the Appointment” which term shall include any enforceable agreements reached between the PSCP and the Consultant which arise out of and relate to the same) dated • the PSCP has appointed the Consultant as • in connection with the Works.
- C It is a condition of the Scheme Contract and the Appointment that the Consultant will enter into this Agreement with the Beneficiary

**IT IS HEREBY AGREED**

1. The Consultant warrants to the Beneficiary that :-
  - 1.1 in respect of all services performed and to be performed by the Consultant in connection with the Scheme Contract and the Works it has exercised and will continue to exercise the reasonable skill and care to be expected of a properly qualified professional Consultant, who is qualified and experienced in carrying out such services for schemes of a similar size, scope, nature, complexity and value to the Works; and
  - 1.2 it has complied and will continue to comply with the terms of the Appointment and has fulfilled and will continue to fulfil its duties and obligations under the Appointment.
- 2
  - 2.1 Without prejudice to the generality of Clause 1, the Consultant further warrants that it has not specified or used and will not specify or use in the Works:
    - 2.1.1 products, goods or materials known to members of the Consultant’s profession at the time of specification to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used; and/or
    - 2.1.2 products, goods or materials which do not accord with British or European Union Standards and/or Codes of Practice current at the time of specification or such equivalent standards or requirements and good building practice; and/or

2.1.3 products, goods or materials which do not accord with the guidelines contained in the edition of the publication "Good Practice in the Selection of Construction Materials" (Ove Arup & Partners) current at the time of specification.

2.2 If in the performance of its duties under the Appointment the Consultant becomes aware that it or any other person has specified or used, or authorised or approved the specification or used by others of any such products or materials prohibited by clause 2.1 of this Agreement, the Consultant will notify the Beneficiary in writing immediately. This clause does not create any additional duty for the Consultant to check the work of others which is not required by the Appointment.

3

3.1 The Beneficiary has no authority to issue any direction or instruction to the Consultant in relation to performance of the Consultant's services under the Appointment unless and until the Beneficiary has given notice under clauses 5 or 6.

4

4.1 The Consultant acknowledges that it has been paid all fees and expenses properly due and owing to the Consultant under the Appointment up to the date of this Agreement. The Beneficiary has no liability to the Consultant in respect of fees and expenses under the Appointment unless and until the Beneficiary has given notice under clause 5 or clause 6.

5

5.1 The Consultant agrees that, in the event of the termination of the Scheme Contract or in the event of the PSCP becoming insolvent or having a liquidator, receiver, or administrative receiver appointed the Consultant will, if so required by notice in writing given by the Beneficiary to the Consultant, and subject to clause 7, accept the instructions of the Beneficiary or its appointee to the exclusion of the PSCP in respect of the Works upon the terms and conditions of the Appointment. The PSCP acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this clause 5 as conclusive evidence for the purposes of this Agreement of the termination of the Scheme Contract; and further acknowledges that such acceptance of the instructions of the Beneficiary to the exclusion of the PSCP shall not constitute any breach of the Consultant's obligations to the PSCP under the terms and conditions of the Appointment.

6

6.1 The Consultant further agrees that it will not without first giving the Beneficiary not less than twenty-eight (28) days notice in writing, exercise any right it may have to terminate the Appointment or to treat the same, as having been repudiated by the PSCP or to discontinue the performance of any services to be performed by the Consultant pursuant thereto. Such right to terminate the Appointment with the PSCP or to treat the same as having been repudiated or discontinue performance shall cease if, within such period of notice and subject to clause 7 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the PSCP in respect of the Works upon the terms and conditions of the Appointment.

- 6.2 The PSCP acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under clause 6 and that acceptance by the Consultant of the instruction of the Beneficiary to the exclusion of the PSCP shall not constitute any breach of the Consultant's obligations to the PSCP under the Appointment. Provided that nothing in clause 6 shall relieve the Consultant of any liability it may have to the PSCP for any breach by the Consultant of the terms and conditions of the Appointment or where the Consultant has wrongfully determined the Appointment or has wrongfully treated the Appointment as having been repudiated by the PSCP.

7

- 7.1 It shall be a condition of any notice given by the Beneficiary under clause 5 or clause 6 that the Beneficiary or its appointee accepts liability for payment of the fees and expenses properly payable and due to the Consultant under the Appointment and for the performance of the PSCP's obligations thereunder including payment of any fees and expenses properly due and outstanding at the date of such notice.
- 7.2 Upon the issue of any notice by the Beneficiary under clause 5 or clause 6 the Appointment shall continue in full force and effect as if no right of termination on the part of the Consultant has arisen and the Consultant shall be liable to the Beneficiary and its appointee under the Appointment in lieu of its liability to the PSCP.
- 7.3 If any notice given by the Beneficiary under clause 5 or clause 6 requires the Consultant to accept the instructions of the Beneficiary's appointee, the Beneficiary shall be liable to the Consultant as guarantor for the payment of all sums from time to time due to the Consultant from the Beneficiary's appointee.

8

- 8.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information (whether created or stored electronically or otherwise) prepared or under preparation by or on behalf of the Consultant in connection with the Works (together referred to in this Clause 8 as "the Documents") shall remain vested in the Consultant but the Beneficiary and its appointee shall have an irrevocable royalty-free and non-exclusive licence to copy and use the Documents and to reproduce the designs and content of them for any purpose related to the Works or to the Property including, but without limitation, the construction, completion, extension, maintenance, letting, promotion, advertisement, reinstatement, refurbishment and repair of the Works and/or the Property. Such licence shall be transferable to third parties without the consent of the Consultant being required and shall include the right to grant sub-licences.
- 8.2 The Consultant shall not be liable for any use by the Beneficiary or its appointee of any of the Documents for any purpose other than that for which the same were prepared by or on behalf of the Consultant.
- 8.3 Where the copyright in any of the Documents is not vested in the Consultant, the Consultant shall procure that the person in whom the copyright is vested grants to the Beneficiary a licence similar to that granted in clause 8.1 (or the Consultant shall itself grant a sub-licence having the same effect, if it has the right to do so) in relation to all such Documents.

8.4 The Consultant shall provide to the Beneficiary upon request copies of the Documents, the Beneficiary paying to the Consultant the reasonable copying charges.

9

9.1 The Consultant shall from the date of the Appointment take out and maintain (promptly paying all premiums) professional indemnity insurance with well established insurers of good repute in an amount of [ (€ ) ] [for any one claim] [for any occurrence or series of occurrences arising out of any one event] [in the aggregate in any one period of insurance] (save that such insurance shall be in the aggregate in respect of claims relating to pollution or contamination) for a period of 12 years from the date of the Completion of the Works (or of the completion of a Section of the Works where the Scheme Contract is modified for completion by staged sections) under the Scheme Contract, provided always that at the date of this Agreement and thereafter such insurance is available at commercially reasonable rates and terms. The Consultant shall immediately inform the Beneficiary if such insurance is not or ceases to be available at commercially reasonable rates and terms in order that the Consultant and the Beneficiary can discuss the means of best protecting the Consultant and the Beneficiary in the absence of such insurance. As and when it is reasonably requested to do so by the Beneficiary or its appointee, the Consultant shall produce for inspection documentary evidence that its professional indemnity insurance is being maintained.

10

10.1 This Agreement may be assigned by the Beneficiary on two occasions without the consent of the Consultant being required and such assignation shall be effective upon written notice thereof being given to the Consultant.

10.2 The Consultant shall not contend or argue that any person to whom the benefit of this Agreement may be assigned or otherwise dealt with by the Beneficiary pursuant to clause 10.1 shall be precluded or prevented from recovering under this Agreement any loss or damage resulting from any breach of this Agreement by the Consultant (Whenever it happens) by reason of the fact that such person is an assignee only or otherwise not the Beneficiary or because the loss or damage suffered has been suffered by such person only and not by the Beneficiary or because the loss or damage suffered is not the same as or is different from that which has been or would have been suffered by the Beneficiary.

11

11.1 Any notice to be given by the Consultant hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the Beneficiary at the above address; and any notice given by the Beneficiary hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the above mentioned address of the Consultant or to the principal business address of the Consultant for the time being and, in the case of any such notices, the same shall if sent by registered post or recorded delivery be deemed to have been received forty eight hours after being posted.

12



12.1 The liability of the Consultant under this Agreement shall not be released diminished or in any other way affected by

12.1.1 any independent enquiry, testing or investigation into any relevant matter which may be made or carried out by or on behalf of the Beneficiary or the failure to carry out any such independent enquiry, testing or investigation provided always that any reliance on any independent enquiry, testing, investigation, approval, consent, perusal or endorsement carried out by or on behalf of the Beneficiary shall not extend the duty of care originally owed by the Consultant to the Beneficiary; and/or

12.1.2 any approval, consent, perusal or endorsement given or made by or on behalf of the Beneficiary or the failure to give or make any such approval, consent, perusal or endorsement provided always that any reliance on any independent enquiry, testing, investigation, approval, consent, perusal or endorsement carried out by or on behalf of the Beneficiary shall not extend the duty of care originally owed by the Consultant to the Beneficiary

13

13.1 No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of 12 years from the date of the completion of the Works under the Scheme Contract or, Where the Scheme Contract is modified for completion by staged sections, no action or proceedings for any breach of this Agreement shall be commenced against the Consultant in respect of any Section after the expiry of 12 years from the date of the completion of such Section.

13.2 The Consultant shall be entitled in any action or proceedings raised against the Consultant on the basis of this Agreement to rely upon any limitation in the Appointment and to raise the equivalent rights in defence of liability as the Consultant would have against the PSCP under the Appointment (except for set-off and counterclaim).

14

14.1 The liability of the Consultant hereunder shall be limited to that proportion of such liability which it would be just and equitable to require the Consultant to pay having regard to the extent of the Consultant's responsibility for the same and on the basis that [insert the names of all other members of the design team] shall be deemed to have provided contractual undertakings to the Beneficiary on terms no less onerous than this agreement in any collateral warranties they have provided or are obliged to provide to the Beneficiary and shall be deemed to have paid to the Beneficiary such a proportion which it would be just and equitable for them to pay having regard to the extent of their responsibility.

15

15.1 The construction validity and performance of this Agreement shall be governed by the law of Scotland and the parties agree to submit to the non-exclusive jurisdiction of the Scottish Courts.

**IN WITNESS WHEREOF**

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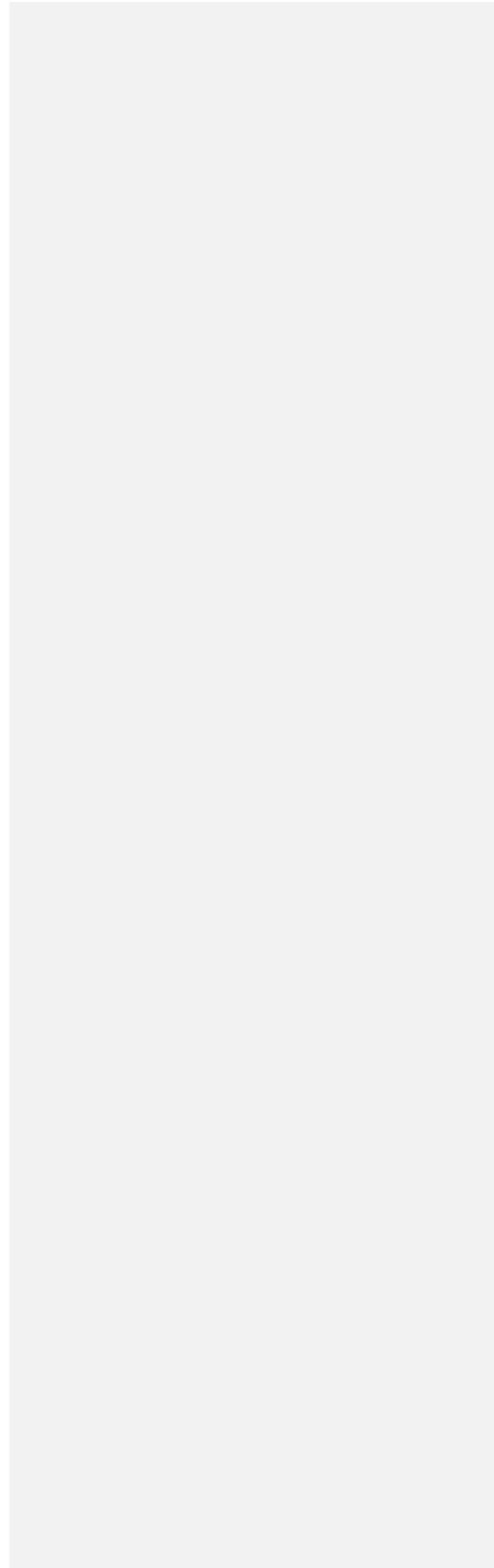
- and -

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-and-

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**PSCM COLLATERAL WARRANTY**  
in relation to  
[Scheme]



**AGREEMENT AMONG**

1. • of • (“the PSCM”); and
2. • of • (“the Beneficiary”, which term shall include all permitted assignees under this Agreement); and
3. • of • (“the PSCP”); and

**WHEREAS:-**

- A The Beneficiary has appointed the PSCP under a contract (“the Scheme Contract”) which relates to the design, construction and completion of [description of the works] (“the Works” which term shall include any changes to the works to be carried out in accordance with the Scheme Contract referred to in this recital A) at the property situate at • (“the Property”)
- B By a sub-contract dated • (“the Sub-Contract” which term shall include any enforceable agreements reached between the PSCP and the PSCM and which arise out of and relate to the same) the PSCP has engaged the PSCM in connection with • (“the PSCM Works” which term shall include any changes to such works in accordance with the Sub-Contract referred to in this recital B).
- C It is a condition of the Sub-Contract that the PSCM will enter into this Agreement with the Beneficiary.

**IT IS HEREBY AGREED** as follows:-

1.
  - 1.1 The PSCM confirms that it has complied and will continue to comply with the Sub-Contract (and, where relevant, the Scheme Contract) and that it has carried out and will continue to carry out and complete the PSCM Works in accordance with all of the terms and conditions of the Sub-Contract (and, where relevant, the terms and conditions of the Scheme Contract).
  - 1.2 The PSCM further warrants to the Beneficiary that:-
    - (i) to the extent that the PSCM has been or will be responsible for the design of the Sub-Contract Works he has exercised and will continue to exercise the reasonable skill and care to be expected of properly qualified and competent architect, engineer or other appropriate professional designer with experience in carrying out such work for schemes of a similar size, scope, nature, complexity and value to the PSCM Works; and
    - (ii) the PSCM Works will comply with the statutory requirements included or referred to in the Sub-Contract.
2.
  - 2.1 Without prejudice to the generality of Clause 1 hereof, the PSCM further warrants that to the extent that the PSCM is required to do so under the Sub-Contract, the PSCM has exercised and will continue to exercise the level of skill and care referred to in Clause 1.2(i) to see that, unless otherwise authorised by the PSCP

in writing, none of the following will be specified by the PSCM for use in connection with the PSC Works:

- 2.1.1 products, goods or materials which would be known to a competent designer at the time of specification to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used; and/or
- 2.1.2 products, goods or materials which do not accord with British or European Union Standards and/or Codes of Practice current at the time of specification or such equivalent standards or requirements and good building practice; and/or
- 2.1.3 products, goods or materials which do not accord with the guidelines contained in the edition of the publication "Good Practice in the Selection of Construction Materials" (Ove Arup & Partners) current at the time of specification.

- 2.2 If in the performance of its duties under the Sub-Contract the PSCM becomes aware that it or any other person has specified or used, or authorised or approved the specification or used by others of any such products or materials prohibited by clause 2.1 of this Agreement, the PSCM will notify the Beneficiary in writing forthwith.

3.

- 3.1 The Beneficiary has no authority to issue any direction or instruction to the PSCM in relation to the Sub-Contract unless and until the Beneficiary has given notice under clauses 4 or 5. The Beneficiary has no liability to the PSCM in relation to amounts due under the Sub-Contract unless and until the Beneficiary has given notice under clause 4 or clause 5.

4.

- 4.1 The PSCM agrees that, in the event of the termination of the Scheme Contract or in the event of the PSCP becoming insolvent or having a liquidator, receiver, manager or administrative receiver appointed the PSCM will, if so required by notice in writing given by the Beneficiary to the PSCM, and subject to clause 6, accept the instructions of the Beneficiary or its appointee to the exclusion of the PSCP in respect of the PSCM Works upon the terms and conditions of the Sub-Contract. The PSCP acknowledges that the PSCM shall be entitled to rely on a notice given to the PSCM by the Beneficiary under this clause 4 as conclusive evidence for the purposes of this Agreement of the termination of the Scheme Contract; and further acknowledges that such acceptance of the instructions of the Beneficiary to the exclusion of the PSCP shall not constitute any breach of the PSCM's obligations to the PSCP under Sub-Contract.

5.

- 5.1 The PSCM further agrees that it will not exercise any right of determination of his employment under the Sub-Contract without having first:
  - 5.1.1 copied to the Beneficiary any written notices required by the Sub-Contract to be sent to the PSCP prior to the PSCM being entitled to give notice

under the Sub-Contract that his employment under the Sub-Contract is determined; and

5.1.2 given to the Beneficiary written notice that he has the right under the Sub-Contract forthwith to notify the PSCP that his employment under the Sub-Contract is determined.

5.2 The PSCM shall not treat the Sub-Contract as having been repudiated by the PSCP without having first given to the Beneficiary written notice that he intends to so inform the PSCP.

5.3 The PSCM shall not

5.3.1 issue any notification to the PSCP to which clause 5.1 refers; or

5.3.2 inform the PSCP that he is treating the Sub-Contract as having been repudiated by the PSCP as referred to in clause 5.2

before the lapse of fourteen (14) days from receipt by the Beneficiary of the written notice by the PSCM which the PSCM is required to give under clause 5.1.2 or clause 5.2

5.4

5.4.1 The Beneficiary may, not later than the expiry of the fourteen (14) days referred to in clause 5.3 require the PSCM by notice in writing and subject to clause 6 to accept the instructions of the Beneficiary or its appointee to the exclusion of the PSCP in respect of the PSCM Works upon the terms and conditions of the Sub-Contract.

5.4.2 The PSCP acknowledges that the PSCM shall be entitled to rely on a notice given to the PSCM by the Beneficiary under clause 5.4.1 and that acceptance by the PSCM of the instruction of the Beneficiary to the exclusion of the PSCP shall not constitute any breach of the PSCM's obligations to the PSCP under the Sub-Contract. Provided that nothing in clause 5.4 shall relieve the PSCM of any liability he may have to the PSCP for any breach by the PSCM of the Sub-Contract or Where the PSCM has wrongfully served notice under the Sub-Contract that he is entitled to determine his employment under the Sub-Contract or has wrongfully treated the Sub-Contract as having been repudiated by the PSCP.

6.

6.1 It shall be a condition of any notice given by the Beneficiary under clause 4 or clause 5 that the Beneficiary or its appointee accepts liability for payment of the sums certified as due/properly due to the PSCM under the Sub-Contract and for the performance of the PSCP's obligations thereunder including payment of any sums certified as due/properly due and outstanding at the date of such notice.

6.2 Upon the issue of any notice by the Beneficiary under clause 4 or clause 5 the Sub-Contract shall continue in full force and effect as if no right of determination of his employment under the Sub-Contract, nor any right of the PSCM to treat the Sub-Contract as having been repudiated by the PSCP, had arisen and the PSCM shall be liable to the Beneficiary and its appointee under the Sub-Contract in lieu of its liability to the PSCP.

6.3 If any notice given by the Beneficiary under clause 4 or clause 5 requires the PSCM to accept the instructions of the Beneficiary's appointee, the Beneficiary shall be liable to the PSCM as guarantor for the payment of all sums from time to time due to the PSCM from the Beneficiary's appointee.

7.

7.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information (Whether created or stored electronically or otherwise) prepared or under preparation by or on behalf of the PSCM in connection with the Sub-Contract Works (together referred to in this Clause 7 as "the Documents") shall remain vested in the PSCM but the Beneficiary and its appointee shall have an irrevocable royalty-free and non-exclusive licence to copy and use the Documents and to reproduce the designs and content of them for any purpose related to the Works or to the Property including, but without limitation, the construction, completion, extension, maintenance, letting, promotion, advertisement, reinstatement, refurbishment and repair of the Works and/or the Property. Such licence shall be transferable to third parties without the consent of the PSCM being required and shall include the right to grant sub-licences.

7.2 The PSCM shall not be liable for any use by the Beneficiary or its appointee of any of the Documents for any purpose other than that for which the same were originally prepared by or on behalf of the PSCM.

7.3 Where the copyright in any of the Documents is not vested in the PSCM, the PSCM shall use its best endeavours to procure that the person in whom the copyright is vested grants to the Beneficiary a licence similar to that granted in clause 7.1 (or the PSCM shall itself grant a sub-licence having the same effect, if it has the right to do so) in relation to all such Documents.

7.4 The PSCM shall provide to the Beneficiary upon request copies of the Documents, the Beneficiary paying to the PSCM the reasonable copying charges.

8.

8.1 The PSCM shall from the date of the Sub-Contract take out and maintain (promptly paying all premiums) professional indemnity insurance with well established insurers of good repute in an amount of [            (£     ) ] [for any one claim] [in the aggregate in any one period of insurance] for a period of 12 years from the date of the Completion of the Works (or of the completion of a Section of the Works Where the Scheme Contract is modified for completion by staged sections) under the Scheme Contract, provided always that at the date of this Agreement and thereafter such insurance is available at commercially reasonable rates and terms. The PSCM shall immediately inform the Beneficiary if such insurance is not or ceases to be available at commercially reasonable rates and terms in order that the PSCM and the Beneficiary can discuss the means of best protecting the PSCM and the Beneficiary in the absence of such insurance. As and When it is reasonably requested to do so by the Beneficiary or its appointee, the PSCM shall produce for inspection documentary evidence that its professional indemnity insurance is being maintained.

9.

9.1 This Agreement may be assigned by the Beneficiary on two occasions without the consent of the PSCM being required and such assignation shall be effective upon

written notice thereof being given to the PSCM. No other or further assignation shall be permitted and shall be void.

- 9.2 Subject to the terms hereof, the PSCM shall not contend or argue that any person to whom the benefit of this Agreement may be assigned or otherwise dealt with by the Beneficiary pursuant to clause 9.1 shall be precluded or prevented from recovering under this Agreement any loss or damage resulting from any breach of this Agreement by the PSCM (Whenever it happens) by reason of the fact that such person is an assignee only or otherwise not the Beneficiary or because the loss or damage suffered has been suffered by such person only and not by the Beneficiary or because the loss or damage suffered is not the same as or is different from that which has been or would have been suffered by the Beneficiary.

10.

- 10.1 Any notice to be given by the PSCM hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the Beneficiary at the above address; and any notice given by the Beneficiary hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the above mentioned address of the PSCM or to the principal business address of the PSCM for the time being and, in the case of any such notices, the same shall if sent by registered post or recorded delivery be deemed to have been received forty eight hours after being posted.

11.

- 11.1 Subject to the terms hereof, the liability of the PSCM under this Agreement shall not be released diminished or in any other way affected by
- 11.1.1 any independent enquiry, testing or investigation into any relevant matter which may be made or carried out by or on behalf of the Beneficiary or the failure to carry out any such independent enquiry, testing or investigation; and/or
- 11.1.2 any approval, consent, perusal or endorsement given or made by or on behalf of the Beneficiary or the failure to give or make any such approval, consent, perusal or endorsement

12.

- 12.1 No variation to the Sub-Contract, nor any waiver of rights or compromise by the PSCM under or in respect of the Sub-Contract or any acceptance of any part of the Sub-Contract Works not being in accordance with the Sub-Contract, shall limit or reduce the rights of the Beneficiary under this Agreement unless done with the Beneficiary's express written consent.

13.

- 13.1 No action or proceedings for any breach of this Agreement shall be commenced against the PSCM after the expiry of 12 years from the date of the Completion of the Works under the Scheme Contract or, Where the Scheme Contract is modified for completion by staged sections, no action or proceedings for any breach of this Agreement shall be commenced against the PSCM in respect of any Section after the expiry of 12 years from the date of the completion of such Section.

- 13.2 The PSCM shall be entitled in any action or proceedings raised against the PSCM on the basis of this Agreement to rely upon any limitation in the Sub-Contract and to raise the equivalent rights in defence of liability as the PSCM would have against the PSCP under the Sub-Contract (except for set-off and counterclaim).
- 13.3 Save in respect of death or personal injury, the Beneficiary shall only look to the PSCM (and not to any individual engaged by the PSCM including any of its directors) for redress if the Beneficiary considers that there have been any breaches of this Agreement. The Beneficiary agrees not to pursue any claims in contract, delict or for breach of statutory duty (including negligence) against any individual working for the PSCM in carrying out its obligations under this Agreement at any time, whether named expressly in this Agreement or not.
- 13.4 No rights shall be conferred under or arising out of this Agreement upon any person other than the parties and there shall not be created a *jus quaesitum tertio* in favour of any person.
- 13.5 The PSCM's liability for costs and losses under or pursuant to this Agreement shall be limited to that proportion of such costs which it would be just and equitable to require the PSCM to pay having regard to the extent of its responsibility for the same and on the basis that the consultants appointed in connection with the Works shall be deemed to have provided contractual undertakings on terms substantially the same as this Agreement to the Beneficiary in respect of the performance of their services in connection with the Works and shall be deemed to have paid to the Beneficiary such proportion which it would be just and equitable for them to pay having regard to the extent of their responsibility and on the basis that there are no limitations on liability nor joint insurance or co-insurance provisions between the Beneficiary and any other party referred to in this clause.
- 13.6 The PSCM shall have no liability to the Beneficiary for any delay in completion of the Works or the PSCM Works howsoever caused

14.

- 14.1 The construction validity and performance of this Agreement shall be governed by the law of Scotland and the parties agree to submit to the non-exclusive jurisdiction of the Scottish Courts.

**IN WITNESS WHEREOF**



**This is Schedule 8 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

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- and -

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-and-

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**PSCP COLLATERAL WARRANTY**

**in relation to**

**[Scheme]**

**AGREEMENT AMONG**

1. • of • (“the Employer”); and
2. • of • (“the Beneficiary”, which term shall include all permitted assignees under this Agreement); and
3. • of • (“the PSCP”); and

**WHEREAS:-**

- A The PSCP has been appointed by the Employer under a contract (“the Scheme Contract”) dated • relating to the design, construction and completion of [description of the works] (“the Works” which term shall include any changes to the works to be carried out in accordance with the Scheme Contract referred to in this recital A) at the property situate at • (“the Property”)
- B The Beneficiary is the tenant or beneficial user of the completed Works
- C It is a condition of the Scheme Contract that the PSCP will enter into this Agreement with the Beneficiary

**IT IS HEREBY AGREED**

1. The PSCP warrants to the Beneficiary that :-
  - 1.1 in respect of all services and works performed and to be performed by the PSCP in connection with the Scheme Contract and the Works it has exercised and will continue to exercise all the reasonable skill, care and diligence, to be expected of a properly qualified professional contractor, who is qualified and experienced in carrying out such services and works for schemes of a similar size, scope, nature, complexity and value to the Works; and
  - 1.2 it has complied and will continue to comply with the terms of the Scheme Contract and has fulfilled and will continue to fulfil its duties and obligations under the Scheme Contract.
- 2
  - 2.1 Without prejudice to the generality of Clause 1, the PSCP further warrants that it has not specified or used and will not specify or use in the Works:
    - 2.1.1 products, goods or materials generally known to members of the PSCP’s profession at the time of specification to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used; and/or
    - 2.1.2 products, goods or materials which do not accord with British or European Union Standards and/or Codes of Practice current at the time of specification or such equivalent standards or requirements and good building practice; and/or

2.1.3 products, goods or materials which do not accord with the guidelines contained in the edition of the publication "Good Practice in the Selection of Construction Materials" (Ove Arup & Partners) current at the time of specification.

2.2 If in the performance of its duties under the Scheme Contract the PSCP becomes aware that it or any other person has specified or used, or authorised or approved the specification or used by others of any such products or materials prohibited by clause 2.1 of this Agreement, the PSCP will notify the Beneficiary in writing immediately. This clause does not create any additional duty for the PSCP to check the work of others which is not required by the Scheme Contract.

3

3.1 The Beneficiary has no authority to issue any direction or instruction to the PSCP in relation to performance of the PSCP's services under the Scheme Contract

4

4.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information (whether created or stored electronically or otherwise) prepared or under preparation by or on behalf of the PSCP in connection with the Works (together referred to in this Clause 4 as "the Documents") shall remain vested in the PSCP but the Beneficiary and its appointee shall have an irrevocable royalty-free and non-exclusive licence to copy and use the Documents and to reproduce the designs and content of them for any purpose related to the Works or to the Property including, but without limitation, the construction, completion, extension, maintenance, letting, promotion, advertisement, reinstatement, refurbishment and repair of the Works and/or the Property. Such licence shall be transferable to third parties without the consent of the PSCP being required and shall include the right to grant sub-licences.

4.2 The PSCP shall not be liable for any use by the Beneficiary or its appointee of any of the Documents for any purpose other than that for which the same were prepared by or on behalf of the PSCP.

4.3 Where the copyright in any of the Documents is not vested in the PSCP, the PSCP shall procure that the person in whom the copyright is vested grants to the Beneficiary a licence similar to that granted in clause 4.1 (or the PSCP shall itself grant a sub-licence having the same effect, if it has the right to do so) in relation to all such Documents.

4.4 The PSCP shall provide to the Beneficiary upon request copies of the Documents, the Beneficiary paying to the PSCP the reasonable copying charges.

5

5.1 The PSCP shall from the date of the Scheme Contract take out and maintain (promptly paying all premiums) professional indemnity insurance with well established insurers of good repute in an amount of [ (£ )] [for any one claim] [for any occurrence or series of occurrences arising out of any one event] [in the aggregate in any one period of insurance] (save that such insurance shall be in the aggregate in respect of claims relating to pollution or contamination) for a period of 12 years from the date of the Completion of the Works (or of the completion of a Section of the Works where the Scheme Contract is modified for completion by staged sections) under the Scheme Contract, provided always that

at the date of this Agreement and thereafter such insurance is available at commercially reasonable rates. The PSCP shall immediately inform the Beneficiary if such insurance is not or ceases to be available at commercially reasonable rates in order that the PSCP and the Beneficiary can discuss the means of best protecting the PSCP and the Beneficiary in the absence of such insurance. As and when it is reasonably requested to do so by the Beneficiary or its appointee, the PSCP shall produce for inspection documentary evidence that its professional indemnity insurance is being maintained.

6

- 6.1 This Agreement may be assigned by the Beneficiary on two occasions without the consent of the PSCP being required and such assignation shall be effective upon written notice thereof being given to the PSCP. Any further assignation shall require the PSCP's consent (such consent not to be unreasonably withheld or delayed).
- 6.2 The PSCP shall not contend or argue that any person to whom the benefit of this Agreement may be assigned or otherwise dealt with by the Beneficiary pursuant to clause 6.1 shall be precluded or prevented from recovering under this Agreement any loss or damage resulting from any breach of this Agreement by the PSCP (whenever it happens) by reason of the fact that such person is an assignee only or otherwise not the Beneficiary or because the loss or damage suffered has been suffered by such person only and not by the Beneficiary or because the loss or damage suffered is not the same as or is different from that which has been or would have been suffered by the Beneficiary.

7

- 7.1 Any notice to be given by the PSCP hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the Beneficiary at the above address; and any notice given by the Beneficiary hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the above mentioned address of the PSCP or to the principal business address of the PSCP for the time being and, in the case of any such notices, the same shall if sent by registered post or recorded delivery be deemed to have been received forty eight hours after being posted.

8

- 8.1 The liability of the PSCP under this Agreement shall not be released diminished or in any other way affected by
- 8.1.1 any independent enquiry, testing or investigation into any relevant matter which may be made or carried out by or on behalf of the Beneficiary or the failure to carry out any such independent enquiry, testing or investigation; and/or
- 8.1.2 any approval, consent, perusal or endorsement given or made by or on behalf of the Beneficiary or the failure to give or make any such approval, consent, perusal or endorsement

9

- 9.1 No action or proceedings for any breach of this Agreement shall be commenced against the PSCP after the expiry of 12 years from the date of the completion of

the Works under the Scheme Contract or, where the Scheme Contract is modified for completion by staged sections, no action or proceedings for any breach of this Agreement shall be commenced against the PSCP in respect of any Section after the expiry of 12 years from the date of the completion of such Section.

- 9.2 The PSCP shall be entitled in any action or proceedings raised against the PSCP on the basis of this Agreement to rely upon any limitation in the Scheme Contract and to raise the equivalent rights in defence of liability as the PSCP would have against the Employer under the Scheme Contract (except for set-off and counterclaim).

10

- 10.1 The construction validity and performance of this Agreement shall be governed by the law of Scotland and the parties agree to submit to the non-exclusive jurisdiction of the Scottish Courts.

**IN WITNESS WHEREOF**

- 

- and -

- 

-and-

- 

**CONSULTANT COLLATERAL WARRANTY**

in relation to

[Scheme]

**AGREEMENT AMONG**

1. • of • (“the Consultant”); and
2. • of • (“the Beneficiary”, which term shall include all permitted assignees under this Agreement); and
3. • of • (“the PSCP”); and

**WHEREAS:-**

- A The PSCP has been appointed under a contract (“the Scheme Contract”) dated • relating to the design, construction and completion of [description of the works] (“the Works” which term shall include any changes to the works to be carried out in accordance with the Scheme Contract referred to in this recital A) at the property situate at • (“the Property”)
- B By a contract (“the Appointment” which term shall include any enforceable agreements reached between the PSCP and the Consultant which arise out of and relate to the same) dated • the PSCP has appointed the Consultant as • in connection with the Works.
- C The Beneficiary is the tenant or beneficial user of the completed Works
- D It is a condition of the Scheme Contract and the Appointment that the Consultant will enter into this Agreement with the Beneficiary

**IT IS HEREBY AGREED**

1. The Consultant warrants to the Beneficiary that :-
  - 1.1 in respect of all services performed and to be performed by the Consultant in connection with the Scheme Contract and the Works it has exercised and will continue to exercise the reasonable skill and care to be expected of a properly qualified professional Consultant, who is qualified and experienced in carrying out such services for schemes of a similar size, scope, nature, complexity and value to the Works; and
  - 1.2 it has complied and will continue to comply with the terms of the Appointment and has fulfilled and will continue to fulfil its duties and obligations under the Appointment.
2.
  - 2.1 Without prejudice to the generality of Clause 1, the Consultant further warrants that it has not specified or used and will not specify or use in the Works:
    - 2.1.1 products, goods or materials known to members of the Consultant’s profession at the time of specification to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used; and/or

- 2.1.2 products, goods or materials which do not accord with British or European Union Standards and/or Codes of Practice current at the time of specification or such equivalent standards or requirements and good building practice; and/or
  - 2.1.3 products, goods or materials which do not accord with the guidelines contained in the edition of the publication "Good Practice in the Selection of Construction Materials" (Ove Arup & Partners) current at the time of specification.
- 2.2 If in the performance of its duties under the Appointment the Consultant becomes aware that it or any other person has specified or used, or authorised or approved the specification or used by others of any such products or materials prohibited by clause 2.1 of this Agreement, the Consultant will notify the Beneficiary in writing immediately. This clause does not create any additional duty for the Consultant to check the work of others which is not required by the Appointment.
- 3. The Beneficiary has no authority to issue any direction or instruction to the Consultant in relation to performance of the Consultant's services under the Appointment .
- 4.
  - 4.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information (whether created or stored electronically or otherwise) prepared or under preparation by or on behalf of the Consultant in connection with the Works (together referred to in this Clause 4 as "the Documents") shall remain vested in the Consultant but the Beneficiary and its appointee shall have an irrevocable royalty-free and non-exclusive licence to copy and use the Documents and to reproduce the designs and content of them for any purpose related to the Works or to the Property including, but without limitation, the construction, completion, extension, maintenance, letting, promotion, advertisement, reinstatement, refurbishment and repair of the Works and/or the Property. Such licence shall be transferable to third parties without the consent of the Consultant being required and shall include the right to grant sub-licences.
  - 4.2 The Consultant shall not be liable for any use by the Beneficiary or its appointee of any of the Documents for any purpose other than that for which the same were prepared by or on behalf of the Consultant.
  - 4.3 Where the copyright in any of the Documents is not vested in the Consultant, the Consultant shall procure that the person in whom the copyright is vested grants to the Beneficiary a licence similar to that granted in clause 4.1 (or the Consultant shall itself grant a sub-licence having the same effect, if it has the right to do so) in relation to all such Documents.
  - 4.4 The Consultant shall provide to the Beneficiary upon request copies of the Documents, the Beneficiary paying to the Consultant the reasonable copying charges.
- 5.
  - 5.1 The Consultant shall from the date of the Appointment take out and maintain (promptly paying all premiums) professional indemnity insurance with well established insurers of good repute in an amount of [ (£ )] [for any one claim] [for any occurrence or series of occurrences arising out of any



one event] [in the aggregate in any one period of insurance] (save that such insurance shall be in the aggregate in respect of claims relating to pollution or contamination) for a period of 12 years from the date of the Completion of the Works (or of the completion of a Section of the Works where the Scheme Contract is modified for completion by staged sections) under the Scheme Contract, provided always that at the date of this Agreement and thereafter such insurance is available at commercially reasonable rates and terms. The Consultant shall immediately inform the Beneficiary if such insurance is not or ceases to be available at commercially reasonable rates and terms in order that the Consultant and the Beneficiary can discuss the means of best protecting the Consultant and the Beneficiary in the absence of such insurance. As and when it is reasonably requested to do so by the Beneficiary or its appointee, the Consultant shall produce for inspection documentary evidence that its professional indemnity insurance is being maintained.

6.
  - 6.1 This Agreement may be assigned by the Beneficiary on two occasions without the consent of the Consultant being required and such assignment shall be effective upon written notice thereof being given to the Consultant.
  - 6.2 The Consultant shall not contend or argue that any person to whom the benefit of this Agreement may be assigned or otherwise dealt with by the Beneficiary pursuant to clause 6.1 shall be precluded or prevented from recovering under this Agreement any loss or damage resulting from any breach of this Agreement by the Consultant (whenever it happens) by reason of the fact that such person is an assignee only or otherwise not the Beneficiary or because the loss or damage suffered has been suffered by such person only and not by the Beneficiary or because the loss or damage suffered is not the same as or is different from that which has been or would have been suffered by the Beneficiary.
7.
  - 7.1 Any notice to be given by the Consultant hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the Beneficiary at the above address; and any notice given by the Beneficiary hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the above mentioned address of the Consultant or to the principal business address of the Consultant for the time being and, in the case of any such notices, the same shall if sent by registered post or recorded delivery be deemed to have been received forty eight hours after being posted.
8.
  - 8.1 The liability of the Consultant under this Agreement shall not be released diminished or in any other way affected by:-
  - 8.2
    - 8.2.1 any independent enquiry, testing or investigation into any relevant matter which may be made or carried out by or on behalf of the Beneficiary or the failure to carry out any such independent enquiry, testing or investigation provided always that any reliance on any independent enquiry, testing, investigation, approval, consent, perusal or endorsement carried out by or on behalf of the Beneficiary shall not

extend the duty of care originally owed by the Consultant to the Beneficiary; and/or

8.2.2 any approval, consent, perusal or endorsement given or made by or on behalf of the Beneficiary or the failure to give or make any such approval, consent, perusal or endorsement provided always that any reliance on any independent enquiry, testing, investigation, approval, consent, perusal or endorsement carried out by or on behalf of the Beneficiary shall not extend the duty of care originally owed by the Consultant to the Beneficiary.

9.

9.1 No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of 12 years from the date of the completion of the Works under the Scheme Contract or, Where the Scheme Contract is modified for completion by staged sections, no action or proceedings for any breach of this Agreement shall be commenced against the Consultant in respect of any Section after the expiry of 12 years from the date of the completion of such Section.

9.2 The Consultant shall be entitled in any action or proceedings raised against the Consultant on the basis of this Agreement to rely upon any limitation in the Appointment and to raise the equivalent rights in defence of liability as the Consultant would have against the PSCP under the Appointment (except for set-off and counterclaim).

10.

10.1 The liability of the Consultant hereunder shall be limited to that proportion of such liability which it would be just and equitable to require the Consultant to pay having regard to the extent of the Consultant's responsibility for the same and on the basis that [insert the names of all other members of the design team] shall be deemed to have provided contractual undertakings to the Beneficiary on terms no less onerous than this agreement in any collateral warranties they have provided or are obliged to provide to the Beneficiary and shall be deemed to have paid to the Beneficiary such a proportion which it would be just and equitable for them to pay having regard to the extent of their responsibility.

11.

11.1 The construction validity and performance of this Agreement shall be governed by the law of Scotland and the parties agree to submit to the non-exclusive jurisdiction of the Scottish Courts.

**IN WITNESS WHEREOF**

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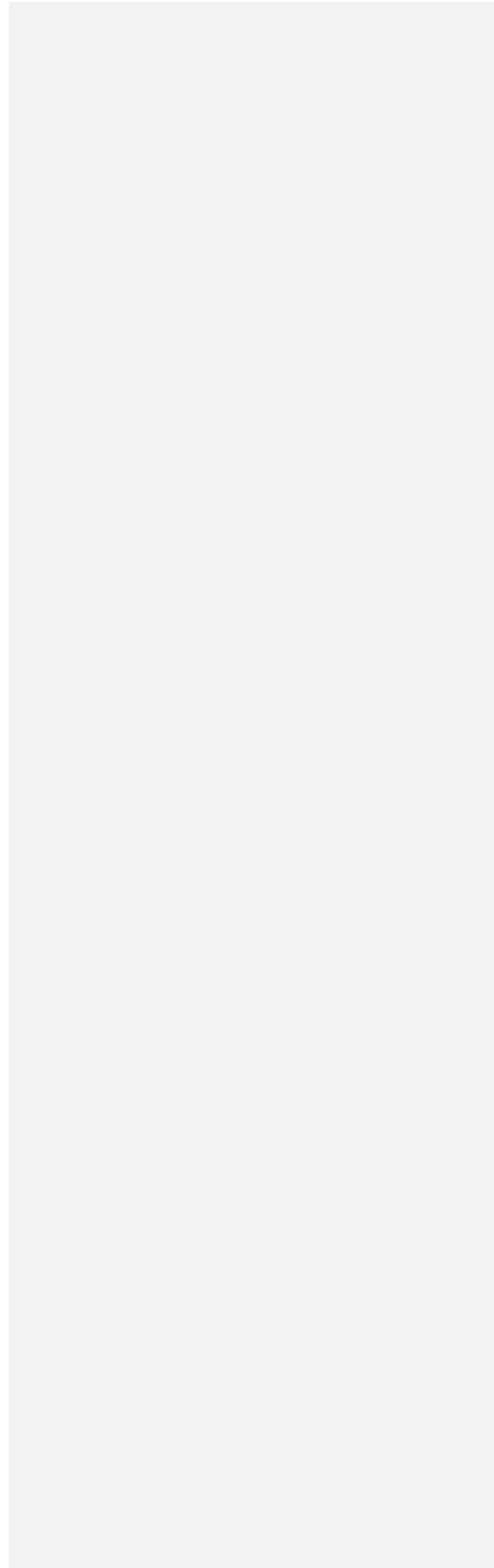
- and -

•

-and-

•

**PSCM COLLATERAL WARRANTY**  
in relation to  
[Scheme]



**AGREEMENT AMONG**

1. • of • (“the PSCM”); and
2. • of • (“the **Beneficiary**”, which term shall include all permitted assignees under this Agreement); and
3. • of • (“the PSCP”); and

**WHEREAS:-**

- A The PSCP has been appointed under a contract (“the Scheme Contract”) which relates to the design, construction and completion of [description of the works] (“the Works” which term shall include any changes to the works to be carried out in accordance with the Scheme Contract referred to in this recital A) at the property situate at • (“the Property”)
- B By a sub-contract dated • (“the Sub-Contract” which term shall include any enforceable agreements reached between the PSCP and the PSCM and which arise out of and relate to the same) the PSCP has engaged the PSCM in connection with • (“the PSCM Works” which term shall include any changes to such works in accordance with the Sub-Contract referred to in this recital B).
- C The Beneficiary is the tenant or beneficial user of the completed Works
- D It is a condition of the Sub-Contract that the PSCM will enter into this Agreement with the Beneficiary.

**IT IS HEREBY AGREED** as follows:-

1.
  - 1.1 The PSCM confirms that it has complied and will continue to comply with the Sub-Contract (and, where relevant, the Scheme Contract) and that it has carried out and will continue to carry out and complete the PSCM Works in accordance with all of the terms and conditions of the Sub-Contract (and, where relevant, the terms and conditions of the Scheme Contract).
  - 1.2 The PSCM further warrants to the Beneficiary that:-
    - (i) to the extent that the PSCM has been or will be responsible for the design of the Sub-Contract Works he has exercised and will continue to exercise the reasonable skill and care to be expected of properly qualified and competent architect, engineer or other appropriate professional designer with experience in carrying out such work for schemes of a similar size, scope, nature, complexity and value to the PSCM Works;
    - (ii) number not used;
    - (iii) number not used; and
    - (iv) the PSCM Works will comply with the statutory requirements included or referred to in the Sub-Contract.
- 2.

- 2.1 Without prejudice to the generality of clause 1 hereof, the PSCM further warrants that to the extent that the PSCM is required to do so under the Sub Contract, the PSCM has exercised and will continue to use the level of skill and care referred to in clause 1.2(i) to see that, unless otherwise authorised by the PSCP in writing, none of the following will be specified by the PSCM for use in connection with the PSCM Works
    - 2.1.1 products, goods or materials which would be known to a competent designer at the time of specification to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used; and/or
    - 2.1.2 products, goods or materials which do not accord with British or European Union Standards and/or Codes of Practice current at the time of specification or such equivalent standards or requirements and good building practice; and/or
    - 2.1.3 products, goods or materials which do not accord with the guidelines contained in the edition of the publication "Good Practice in the Selection of Construction Materials" (Ove Arup & Partners) current at the time of specification.
  - 2.2 If in the performance of its duties under the Sub-Contract the PSCM becomes aware that it or any other person has specified or used, or authorised or approved the specification or used by others of any such products or materials prohibited by clause 2.1 of this Agreement, the PSCM will notify the Beneficiary in writing forthwith.
3.
    - 3.1 The Beneficiary has no authority to issue any direction or instruction to the PSCM in relation to the Sub-Contract
4.
    - 4.1 The copyright in all drawings, reports, models, specifications, bills of quantities, calculations and other documents and information (Whether created or stored electronically or otherwise) prepared or under preparation by or on behalf of the PSCM in connection with the Sub-Contract Works (together referred to in this Clause 4 as "the Documents") shall remain vested in the PSCM but the Beneficiary and its appointee shall have an irrevocable royalty-free and non-exclusive licence to copy and use the Documents and to reproduce the designs and content of them for any purpose related to the Works or to the Property including, but without limitation, the construction, completion, extension, maintenance, letting, promotion, advertisement, reinstatement, refurbishment and repair of the Works and/or the Property. Such licence shall be transferable to third parties without the consent of the PSCM being required and shall include the right to grant sub-licences.
    - 4.2 The PSCM shall not be liable for any use by the Beneficiary or its appointee of any of the Documents for any purpose other than that for which the same were originally prepared by or on behalf of the PSCM.

4.3 Where the copyright in any of the Documents is not vested in the PSCM, the PSCM shall use its best endeavours to procure that the person in whom the copyright is vested grants to the Beneficiary a licence similar to that granted in clause 4.1 (or the PSCM shall itself grant a sub-licence having the same effect, if it has the right to do so) in relation to all such Documents.

4.4 The PSCM shall provide to the Beneficiary upon request copies of the Documents, the Beneficiary paying to the PSCM the reasonable copying charges.

5.

5.1 The PSCM shall from the date of the Sub-Contract take out and maintain (promptly paying all premiums) professional indemnity insurance with well established insurers of good repute in an amount of [ (£ )] [for any one claim] [in the aggregate in any one period of insurance] for a period of 12 years from the date of the Completion of the Works (or of the completion of a Section of the Works Where the Scheme Contract is modified for completion by staged sections) under the Scheme Contract, provided always that at the date of this Agreement and thereafter such insurance is available at commercially reasonable rates and terms. The PSCM shall immediately inform the Beneficiary if such insurance is not or ceases to be available at commercially reasonable rates and terms in order that the PSCM and the Beneficiary can discuss the means of best protecting the PSCM and the Beneficiary in the absence of such insurance. As and When it is reasonably requested to do so by the Beneficiary or its appointee, the PSCM shall produce for inspection documentary evidence that its professional indemnity insurance is being maintained.

6.

6.1 This Agreement may be assigned by the Beneficiary on two occasions without the consent of the PSCM being required and such assignation shall be effective upon written notice thereof being given to the PSCM. No other or further assignation shall be permitted and shall be void.

6.2 Subject to the terms hereof, the PSCM shall not contend or argue that any person to whom the benefit of this Agreement may be assigned or otherwise dealt with by the Beneficiary pursuant to clause 6.1 shall be precluded or prevented from recovering under this Agreement any loss or damage resulting from any breach of this Agreement by the PSCM (whenever it happens) by reason of the fact that such person is an assignee only or otherwise not the Beneficiary or because the loss or damage suffered has been suffered by such person only and not by the Beneficiary or because the loss or damage suffered is not the same as or is different from that which has been or would have been suffered by the Beneficiary.

7.

7.1 Any notice to be given by the PSCM hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the Beneficiary at the above address; and any notice given by the Beneficiary hereunder shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the above mentioned address of the PSCM or to the principal business address of the PSCM for the time being and, in the case of any such notices, the same shall if sent by registered post or recorded delivery be deemed to have been received forty eight hours after being posted.

8.

8.1 Subject to the terms hereof, the liability of the PSCM under this Agreement shall not be released diminished or in any other way affected by

8.1.1 any independent enquiry, testing or investigation into any relevant matter which may be made or carried out by or on behalf of the Beneficiary or the failure to carry out any such independent enquiry, testing or investigation; and/or

8.1.2 any approval, consent, perusal or endorsement given or made by or on behalf of the Beneficiary or the failure to give or make any such approval, consent, perusal or endorsement

9.

9.1 No variation to the Sub-Contract, nor any waiver of rights or compromise by the PSCP under or in respect of the Sub-Contract or any acceptance of any part of the Sub-Contract Works not being in accordance with the Sub-Contract, shall limit or reduce the rights of the Beneficiary under this Agreement unless done with the Beneficiary's express written consent.

10.

10.1 No action or proceedings for any breach of this Agreement shall be commenced against the PSCM after the expiry of 12 years from the date of the Completion of the Works under the Scheme Contract or, Where the Scheme Contract is modified for completion by staged sections, no action or proceedings for any breach of this Agreement shall be commenced against the PSCM in respect of any Section after the expiry of 12 years from the date of the completion of such Section.

10.2 The PSCM shall be entitled in any action or proceedings raised against the PSCM on the basis of this Agreement to rely upon any limitation in the Sub-Contract and to raise the equivalent rights in defence of liability as the PSCM would have against the PSCP under the Sub-Contract (except for set-off and counterclaim).

10.3 Save in respect of death or personal injury, the Beneficiary shall only look to the PSCM (and not to any individual engaged by the PSCM including any of its directors) for redress if the Beneficiary considers that there have been any breaches of this Agreement. The Beneficiary agrees not to pursue any claims in contract, delict or for breach of statutory duty (including negligence) against any individual working for the PSCM in carrying out its obligations under this Agreement at any time, whether named expressly in this Agreement or not.

10.4 No rights shall be conferred under or arising out of this Agreement upon any person other than the parties and there shall not be created a *jus quaesitum tertio* in favour of any person.

10.5 The PSCM's liability for costs and losses under or pursuant to this Agreement shall be limited to that proportion of such costs which it would be just and equitable to require the PSCM to pay having regard to the extent of its responsibility for the same and on the basis that the consultants appointed in connection with the Works shall be deemed to have provided contractual undertakings on terms substantially the same as this Agreement to the Beneficiary in respect of the performance of their services in connection with the Works and shall be deemed to have paid to the Beneficiary such proportion which it would be just and equitable for them to pay having regard to the extent of their responsibility

and on the basis that there are no limitations on liability nor joint insurance or co-insurance provisions between the Beneficiary and any other party referred to in this clause.

10.6 The PSCM shall have no liability to the Beneficiary for any delay in completion of the Works or the PSCM Works howsoever caused

11.

11.1 The construction validity and performance of this Agreement shall be governed by the law of Scotland and the parties agree to submit to the non-exclusive jurisdiction of the Scottish Courts.

**IN WITNESS WHEREOF**



**This is Schedule 9 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

**Key personnel**

**Account Director/ Key Account Manager:**

John Mitchell  
BAM Construction Ltd  
Kelvin House  
Buchanan Gate Business Park  
Stepps  
Glasgow  
G33 6FB

Tel: 0141 779 8888

Fax: 0141 779 8889

E-mail: [jmitchell@bam.co.uk](mailto:jmitchell@bam.co.uk)

**This is Schedule 10 referred to in the foregoing Framework Agreement between the Common Services Agency and BAM Construction Limited**

**The Code of Considerate Practice**

**1. Considerate**

All work is to be carried out with positive consideration to the needs of traders and businesses, site personnel and visitors, and the general public. Special attention is to be given to the needs of those with sight, hearing and mobility difficulties.

**2. Environment**

Be aware of the environmental impact of your site and minimise as far as possible the effects of noise light and air pollution. Efforts should be made to select and use local resources wherever possible. Attention should be paid to waste management. Reuse and recycle materials where possible.

**3. Cleanliness**

The working site is to be kept clean and in good order at all times. Site facilities, offices, toilets and drying rooms should always be maintained to a good standard. Surplus materials and rubbish should not be allowed to accumulate on the site or spill over into the surroundings. Dirt and dust from construction operations should be kept to a minimum.

**4. Good Neighbour**

General information regarding the Scheme should be provided for all neighbours affected by the work. Full and regular communication with neighbours, including adjacent residents, traders and businesses, regarding programming and site activities should be maintained from pre-start to completion.

**5. Respectful**

Respectable and safe standards of dress should be maintained at all times. Lewd or derogatory behaviour and language should not be tolerated under threat of severe disciplinary action. Pride in the management and appearance of the site and the surrounding environment is to be shown at all times. Operatives should be instructed in dealing with the general public.

**6. Safe**

Construction operations and site vehicle movements are to be carried out with care and consideration for the safety of site personnel, visitors and the general public. No building activity should be a security risk to others.

**7. Responsible**

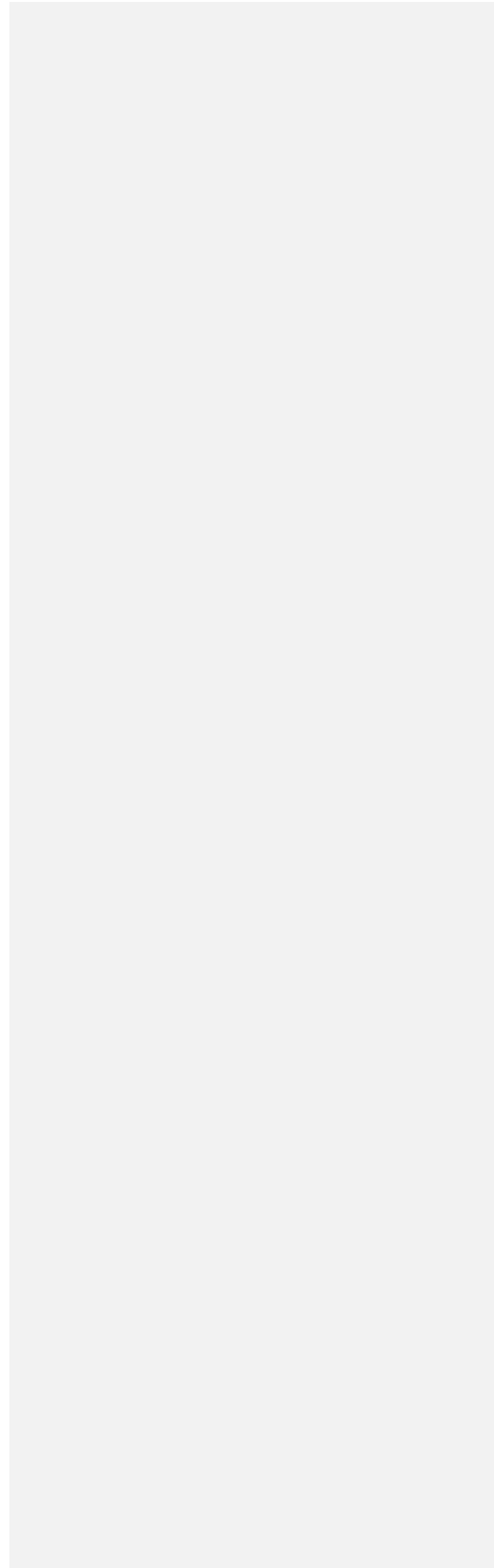
Ensure that everyone associated with the site understands implements and complies with this code.

**8. Accountable**

The Considerate Constructors Scheme poster is to be displayed where clearly visible to the general public. A site's contact details should be obvious to anyone affected by its activities.

**This is Schedule 11 referred to in the foregoing Framework Agreement between the Common Services Agency and BAM Construction Limited**

**CAT Proforma Procedure**



**This is Schedule 12 referred to in the foregoing Framework Agreement between the  
Common Services Agency and BAM Construction Limited**

**List of Principal Supply Chain Members**

Architectural Design/Master Planning

- Boswell Mitchell & Johnston
- Nightingale Associates

Civil & Structural Engineering Design

- Arup

Mechanical & Electrical Engineering Design

- Hulley & Kirkwood
- DSSR

Healthcare Planning/Master Planning

- Tribal

Cost Managers

- Doig & Smith

Project Managers

- Turner & Townsend Project Management

Mechanical & Electrical Sub-Contractors

- Forth Electrical Services
- Balfour Kilpatrick

Acoustics/Fire/BREEAM/Sustainability

- Arup

Facilities Management

- BAM FM
- Arup

This is Schedule 13 referred to in the foregoing Framework Agreement between the Common Services Agency and BAM Construction Limited

Form of Interim Agreement

\*Insert NHS Health Board Name and Address

\*Insert PSCP Name and Address

Date : \*Insert date  
Reference : \*Insert reference

Dear P.S.C.P. (\*Insert Name)

RE: [\*NAME OF SCHEME]

Further to your expression of interest and our meeting on [\*insert date] at [\*insert place] please accept this letter as notification of your appointment as the Principal Supply Chain Partner (PSCP) for the above named scheme and that you are instructed to proceed as follows:

The appointment is in accordance with the Construction Integrated Supply Chain NHSScotland Framework Agreement and incorporates the Template for the Scheme Contract (NEC3 ECC Option C) that details the contract obligations, payment and other processes. The ECC processes including programme and cost forecasting are to be entered into from commencement of work associated with this appointment

The Contract Date is:

The date of acceptance of the appointment by the PSCP entered in the 'Confirmation of acceptance of appointment as PSCP' appended to this letter for return to the NHSScotland Health Board at the above address.

As PSCP you are not authorised to commence work until the 'Confirmation of acceptance of appointment as PSCP' has been received and acknowledged by the NHSScotland Health Board at [the above address].

It is confirmed that the scope of work is as detailed in the scheme pack issued by the NHSScotland Health Board for registration of expression of interest by the PSCP

[ \*insert brief description of Project Specific Scheme Contract].

The affordability amount for the whole scheme, is:

[£..... Words .....(excluding VAT)]

The limit of authorised expenditure by the PSCP as Defined Cost plus the Fee in the period prior to submission of the PSCP's Entry Form of Proposal and signing of the Form of Agreement for the Scheme Contract by the NHSScotland Health Board and the PSCP is:

Commented [U1]: Page: 1  
The NHS Health Board should agree with the PSCP the expenditure limit for arriving at the signing of the Form of Agreement prior to issuing the appointment letter entering into the contract. It is not expected that an unrealistic amount should be imposed

[£..... Words].....(excluding VAT)]

Commented [U2]: Page: 1  
If in doubt consult the HFS advisor

For avoidance of doubt; there are no contract payments in excess of the stated limit prior to signing of the Form of Agreement by the Parties except that 'the limit is changed by the Employer where the Parties have complied with the contract procedures'.

The [period for providing the Form of Proposal] and entering into the Form of Agreement between the Parties during which the authorised expenditure is discharged is [insert number of weeks] .....

Commented [U3]: Page: 2  
If in doubt consult the Hfs Advisor

Commented [U4]: Page: 2  
The NHS Health Board should agree with the PSCP the time period for arriving at the signing of the Form of Agreement prior to issuing the appointment letter entering into the contract It is not expected that an unrealistic time should be imposed

I/We confirm your entry into the scheme is at the [pre-IA] [IA] [OBC] [FBC] phase.

The pre-start meeting for this scheme \*is to be arranged/\*has been arranged for:-

[\*Insert date and time] at [\*Insert location]

In the meantime the *Project Manager* with whom you may communicate on any matter concerning the contract is.

[\*Insert name]  
[\*insert location]  
[\*insert tel no],

Please note the person named is the only person authorised to give instructions in accordance with the contract on behalf of the NHSScotland Health Board.

I/We look forward to a successful working relationship and if you have any queries please do not hesitate to contact [\*me/\*the undersigned/\*other stated person].

Yours sincerely

.....  
NHSScotland  
(Health Board authorised signatory)

.....  
Date

Tear off strip.....

to  
\*Insert NHSScotland Health Board Name and Address

Dear Sirs,

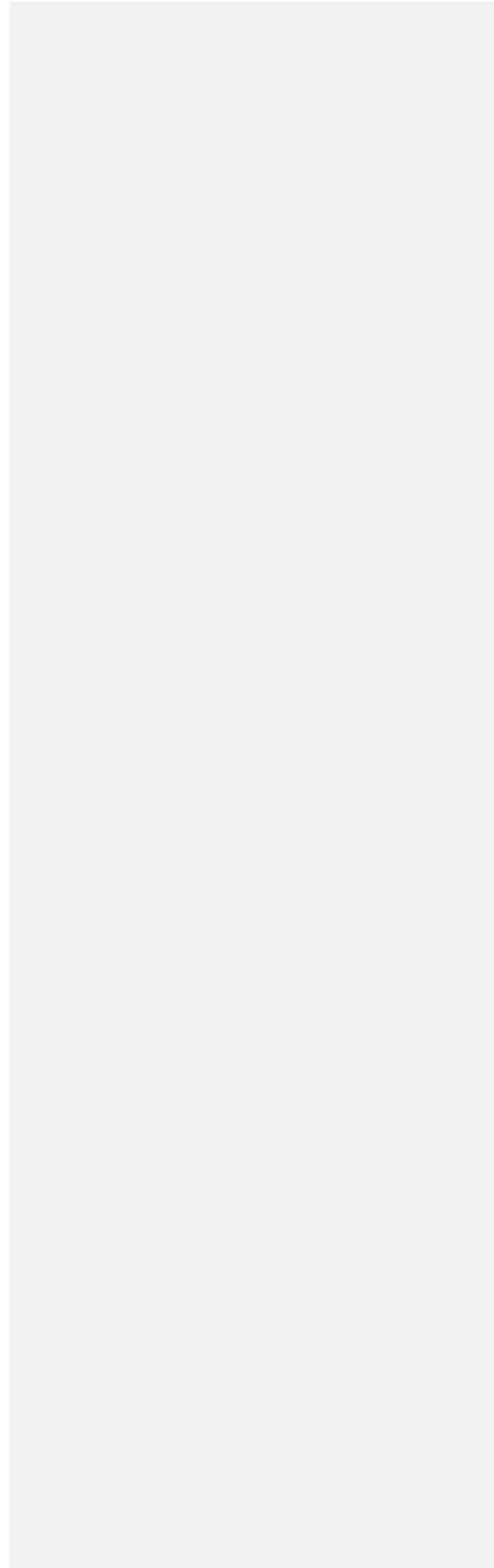
**RE: [\*NAME OF SCHEME]**

Confirmation of acceptance of appointment as PSCP

I/We confirm acceptance of the appointment and entry into the first stage of the contract with limitations as stated in the letter of appointment

.....  
The PSCP  
(Appointed signatory)

Date of acceptance



**This is Schedule 14 referred to in the foregoing Framework Agreement between the Common Services Agency and BAM Construction Limited**

**Required Insurances**

- Risks and insurance
- The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is  
**£10,000,000.00 (ten million pounds sterling).**
  - The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is  
**£10,000,000.00 (ten million pounds sterling).**
  - The amount of the minimum limit of indemnity for insurance in respect of loss or damage to the *works* in connection with this contract is the replacement cost
- and
- the amount for replacement of any Plant and Materials provided by the *Employer* is • amount to be identified by the *Employer* prior to agreement of the total of the Prices.

Commented [15]: Levels to be project specific

(Contractors All Risk)

- The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract for any one event is  
**[\*in any one event / \*in the aggregate of £5,000,000 (five million pounds sterling) – Project Specific]**  
*Contractor* to provide documentary evidence to which insurance option is being provided
- The *Contractor* provides all other insurances required by the law
- The *Employer* provides these insurances from the Insurance Table

1. Insurance against:

Cover/indemnity is:

The deductibles are:



2. Insurance against:

Cover/indemnity is:

The deductibles are:

If additional insurances are to be provided

|

- The *Employer* provides these additional insurances

**Commented [I6]:** Note: The Employer's property, e.g. existing buildings in which the works are being executed, is not a 'third party insurance risk' in the insurance table

**Commented [B7]:** This would be agreed during the FBC process of developing the target for the total of the Prices

1. Insurance against:

Cover/indemnity is:

The deductibles are:

2. Insurance against:

Cover/indemnity is:

The deductibles are:

If additional insurances are to be provided

- The *Contractor* provides these additional insurances

**Commented [B8]:** These insurances will not be covered by the PSCP's fee percentage and therefore the premiums are to be included in the Prices

1. Additional Public Liability Insurance for extension/refurbishment

Commented [B9]: The premium for this insurance would be included in the target total of the Prices

where –

- a. the *works* involve works to any existing building or structure of the *Employer*, or where the Site includes any existing building or structure of the *Employer*, and
- b. to the extent that the *Contractor's* Public Liability insurance does not provide the following cover:

the *Contractor* will provide insurance in the joint names of the Parties in line with Clause 84.2 against liability for loss of or damage to property (except the *works*, Plant and Materials and Equipment), due to activity in connection with this contract.

The minimum amount of cover or minimum limit of indemnity of such additional cover will be five million pounds (£5,000,000) or fifteen per cent (15%) of the target total of the prices, whichever shall be the greater, with cross liability so that the insurance applies to the Parties separately.

Cover/indemnity is:

The deductibles are:

2. Insurance against:

Environmental Impairment Liability

Commented [B10]: The premium for this insurance would be included in the target total of the Prices

Cover/indemnity is:

The deductibles are:

## LOTHIAN NHS BOARD

### FINANCE AND PERFORMANCE REVIEW COMMITTEE

Minutes of the Finance and Performance Review Committee held at 10.00am on Wednesday, 13 February 2008 in the Boardroom, Deaconess House, 148 Pleasance, Edinburgh.

**Present:** Mr R Y Anderson (Chair); Ms J Brown; Mr E Egan; Mr P Gabbitas; Dr A K McCallum; Dr I McKay; Mr J Matheson; Mrs J K Sansbury; Mr G Walker and Cllr I Whyte.

**In Attendance:** Ms D Irvine; Dr G McKenzie and Mr D Weir.

Apologies for absence were received from Professor J J Barbour, Mr A Boyter, Mr S Renwick, Ms J A Stirton, Dr C P Swainson and Professor H Tierney-Moore.

#### Welcome and Introduction

Mr Anderson welcomed Mr Walker to his first meeting advising that he had taken up appointment as a Non-Executive Member of NHS Lothian Board on 1 February 2008.

#### Declaration of Financial and Non-Financial Interest

The Chair reminded members that they should declare any financial and non-financial interest they had in the items of business for consideration, identifying the relevant agenda item and the nature of their interest. There were no declarations of interest.

#### 69. Minutes of the Previous Meeting held on 12 December 2007

69.1 The Minutes of the previous meeting of the Finance and Performance Review Committee held on 12 December 2007 were approved as a correct record.

#### 70. Matters Arising

70.1 Drug Action Teams – Mr Egan advised issues around the Drug Action Teams and the externalisation of West Lothian staff has been raised at the Staff Governance Committee amid concerns about the legitimacy of this process in respect of Standing Orders and Standing Financial Instructions. Mr Anderson undertook to raise this issue at the West Lothian CHCP Partnership Board. **RYA**

- 70.2 Health Improvement Fund Allocations 2008-2011 – Dr McCallum provided a verbal update on progress advising although the paper had been produced it had not yet been submitted to the Executive Management Team for discussion. The final paper would be brought forward to the next meeting of the Finance and Performance Review Committee after having been considered by the Executive Management Team. **AKM**
- 70.2.1 Mr Matheson commented the report required clear outputs and stated benefits would be needed to reflect the increased financial allocation through the comprehensive spending review.
- 70.2.2 Mr Egan suggested in some parts of Lothian, the health inequalities gap was increasing with uncertainty around funding having implications on staff who were not on permanent contracts. The areas of health inequalities were well known and the issue should be about focusing work to tackle these.
- 70.2.3 Cllr Whyte referred to the previous Minutes and stated he was surprised the paper had not been produced for the current meeting. Dr McCallum assured colleagues the paper would be discussed at the Executive Management Team, with comments reflected in the paper back to the Finance and Performance Review Committee on 9 April, with the priorities in the paper reflecting CHP priorities.
- 70.2.4 Mr Gabbittas advised the CHP in Edinburgh was working closely with Dr McCallum and the paper, once finalised, would be endorsed by the CHP.
- 70.3 Chalmers Hospital X-Ray Business Case – Mr McCaffery commented this was part of a two-stage process which would require the move of x-ray facilities, with colleagues working through a clinical synergy. Final proposals would be submitted to the University Hospitals Division Senior Management Team and thereafter to the Finance and Performance Review Committee at its next meeting. **AKM**
- 70.3.1 Dr McKay commented that within the system concerns had been expressed about a potential gap in service, whilst x-ray facilities were decommissioned in Chalmers and reprovided at Lauriston. Mr McCaffery advised options were being tested to minimise gaps, including the potential use of mobile units.
- 70.3.2 Mr Egan questioned whether the Business Case fitted with the East Lothian proposal to close x-ray facilities at Edenhall and other strategic proposals. Mr McCaffery advised all issues would be investigated within the Senior Management Team at the University Hospitals Division.
- 70.4 Major Capital Projects – Delivery Timescale Improvements – Mr McCaffery advised the purpose of the report was to update the Finance and Performance Review Committee on the complexity of capital processes and where timescale reductions could be made. He explained the various phases of the process that determined the speed of progress for capital schemes. In addition, new planning legislation required greater public participation. Mr McCaffery commented that compliance with the Standing Financial Instructions was critical.

- 70.4.1 Mr McCaffery advised indicators on capital costs would be brought to the next meeting.
- 70.4.2 The Finance and Performance Review Committee was advised in respect of the Haddington reprovisioning that consideration was being given to the use of a green field site and discussions were ongoing with the local authority and other partners. The 2012/2013 time line was dependent on all parts of the process, including capital charge elements, being addressed. In respect of the Royal Hospital for Sick Children, reprovisioning work was underway to truncate the 2012 timescale, with work in place to address affordability and capital issues. The Midlothian project was continuing with discussions ongoing with the Care Commission to ensure compliance with current registration standards.
- 70.4.3 Mr Egan questioned in respect of the potential changes around the use of PFI how this would impact on the availability of capital funding in future. Mr Egan commented he could not understand the process whereby the construction companies were guaranteed an out-turn of 13%.
- 70.4.4 Mr Egan advised in respect of the Midlothian facility that Midlothian Council had suggested they might not purchase beds. In addition, the Care Commission would not approve the facility until all construction work had been concluded. He also felt in future there should be potential to produce a generic building design template rather than paying separate fees for each new build.
- 70.4.5 Mrs Sansbury advised proposed changes in regulations requiring the provision of single room accommodation was a challenge and significantly affected the accommodation foot print and cost. It was important to note that there were clinical challenge in some areas about not providing single room accommodation and some latitude might be allowed through a case made to the Scottish Government in respect of the Royal Hospital for Sick Children, although not to adult wards within the rest of the acute sector.
- 70.4.6 Mrs Sansbury reported on changes to the capital process which was under review and would require additional steps for projects costing more than £10m through submission to a reassurance gateway review.
- 70.4.7 Mr Matheson reminded colleagues the new Government was not supportive of the continued use of PFI and was consulting on other options around a Scottish Futures Trust with a non-profit distribution model. It was important to recognise that the whole capital programme could not be delivered internally and, in that regard, a positive response would be submitted in respect of the Scottish Futures Trust proposal.
- 70.4.8 Mr McCaffery advised that work was underway to rebuild the capital team, recognising the points made by Mr Egan. Mr McCaffery advised he, Mrs Sansbury and Mr Matheson were working to ensure projects were better defined from the outset.

- 70.4.9 Mrs Sansbury advised two master plans were being produced covering three main sites. Transport and car parking would need to be considered as a requirement of the local authority planning process, which brought a different level of complexity to the process. The site master plan production would require external expertise, which would require to be sourced.
- 70.4.10 Mr Matheson commented in respect of the 13% optimisation target referred to by Mr Egan that this was a Scottish Government requirement and, initially, reflected a worse case scenario. He advised that as projects worked through, costs would reduce. The focus in Lothian was always to manage risk. Capital charges had been introduced to reflect the fact that capital was not a free good and some current schemes needed enhanced rigour to ensure that capital build costs had been rigorously challenged.
- 70.4.11 Mr Anderson commented that the circulated paper had been helpful in explaining the complexities of the process. He welcomed Mr McCaffery's reassurances that capacity within the capital projects team was being addressed.

## **71. Wester Hailes Healthy Living Centre Development**

- 71.1 Mr Gabbitas advised the Health Living Centre development was important and was being provided in a deprived area and replicated the Strathbrock model in West Lothian. The £10.3m capital had been secured from a variety of sources and was revenue neutral to NHS Lothian, with there being a cost of £62,000 to the City of Edinburgh Council, which had been addressed. The proposal had been approved by the NHS Lothian Executive Management Team, City of Edinburgh Council Management Team and the Edinburgh CHP. The proposal still required to be submitted to the full Policy and Strategy Committee of the City of Edinburgh Council on 25 March 2008.
- 71.2 Mr Egan had discussed the Business Case with Mr David Small and was uncomfortable about using NHS funding for the provision of the voluntary sector services, as well as the pharmacy building. He questioned the approval and exit process in respect of the 25 year building lease and, in particular, whether potential future political scenarios would compromise the deal.
- 71.3 Mr Matheson advised the NHS Lothian revenue neutral position was predicated on the capital grant proposals being approved by Audit Scotland and further work was required to achieve this approval. In that regard, he suggested the Finance and Performance Review Committee should approve the proposals in principle, subject to obtaining Audit Scotland approval.
- 71.4 Mr Walker agreed with comments made by Dr McKay about the benefits of sharing accommodation with other bodies. It would be important to also consider the commercial value to third parties and not just the value of the lease.

## Notes of the Joint Directors of Planning & Directors of Finance Meeting to discuss the RHSCE OBC

**held on 28 April 2008 at 10am. Fife Room, NHS 24, Norseman House, South Queensferry**

**Present:** Robbie Pearson (Chair), Robert Kemp, Russell Pettigrew, John Matheson, David Clark, Jackie Sansbury, Gavin Brown, Jan McClean, Fiona Ramsay, Brian Kelly, Gavin Brown, Joe McGhee

		Action
<b>1</b>	<p><b>Apologies</b></p> <p>Apologies were noted from: Peter Williamson, Myra Duncan, Derek Phillips</p>	
<b>2</b>	<p><b>RHSCE OBC – Presentation</b></p>	
	<p>Jackie Sansbury tabled the Outline Business Case and highlighted the main areas for SEAT to note.</p> <ul style="list-style-type: none"> <li>• The Project Board for the reprovision have worked closely with the Project Board for the Glasgow Sick Children’s reprovision and all SEAT Boards.</li> <li>• The West model differs in terms of HDU facilities as they intend to embed HDU facilities within the wards and have a small HDU whereas the RHSCE will have a separate HDU unit for all patients. Also Glasgow intends to have a 24 hour assessment unit against a 48 hour assessment unit in the RHSCE which we believe will see many more patients diverted from admission to a ward or discharged home.</li> <li>• There was no public consultation on the site for the hospital as the RIE was the only option in terms of national guidance on triple co-location. This was covered as part of our children &amp; young people’s strategy consultation and we agreed with Stakeholders the lack of options in the light of the national guidance.</li> <li>• There is a strong feeling from patients, parents and the public that the procurement of the new build should be non PFI.</li> <li>• The OBC does not reflect the impact of MMC which will be evident prior to the opening of the new RHSCE.</li> <li>• Despite pressure from the SGHD to plan for 100% single room provision, the OBC has been drafted to include approximately 56 single rooms following patient, parent and public consultation. The design will include the ability to flex space in order to maximize most efficient use</li> <li>• Current demographic changes differ and from the GRO predictions which could cause an increase in the required bed numbers more work will be done between OBC and FBC.</li> <li>• The increase in estimated costs from the initial proposal are due to: <ul style="list-style-type: none"> <li>– Circulation space was not included in the initial proposal</li> <li>– CAMH’s services were not included</li> <li>– Provision of single rooms had not been considered</li> </ul> </li> </ul>	

		Action
	<ul style="list-style-type: none"> <li>- An additional theatre has been added</li> <li>• The Project Board hope to submit the OBC 6 weeks prior to the 1<sup>st</sup> July meeting of the Capital Investment Group. The OBC will have had to go through individual Board governance procedures prior to that.</li> <li>• Glasgow reprovision is being funded in the main part by the Scottish Executive. West of Scotland Boards are not required to contribute financially to the Glasgow reprovision.</li> <li>• Boards in the East of Scotland are being asked for a substantial capital contribution to the RHSCE reprovision</li> </ul> <p><b>Assumed funding / sponsorship:</b></p> <ul style="list-style-type: none"> <li>• The Sick Kids Friends Foundation have pledged to raise £15 million for the new build.</li> <li>• SGHD will be approached for £4.2 million for the adolescent unit.</li> <li>• £28million capital contribution from SEAT Boards and £3million revenue.</li> <li>• £15million from the site of the existing RHSCE.</li> <li>• £14million endowments.</li> <li>• Update following the meeting - \$48.5 million agreed by Scottish Government as contribution which will set off a requirement for SEAT Boards to contribute capital.</li> </ul>	
<b>3</b>	<b>Discussion &amp; Next Steps</b>	
	<p><b>The following comments / issues were raised:</b></p> <ul style="list-style-type: none"> <li>• Inequity of capital funding arrangements between Glasgow and Edinburgh</li> <li>• Tight Timescale for individual Boards to take the OBC through their governance procures in time for a July submission.</li> <li>• Forth Valley refer most of their patients to the West and have not been asked for funding from the Glasgow reprovision however will be asked for funding for the RHSCE reprovision.</li> <li>• The SGHD have advised NHS Forth Valley not to include the RHSCE capital costs in their forthcoming financial plans.</li> <li>• There is a potential risk that Sick Kids Friends Foundation may not be able to raise £15 million.</li> <li>• The SGHD may not agree to the request for £4.2million for the adolescent unit.</li> <li>• The scale of individual Boards revenue contribution will have a substantial impact on Boards financial plans which have recently been submitted for the next 5 years and do not include the RHSCE reprovision.</li> <li>• The non NHS Lothian Boards indicated that the preferred option was currently unaffordable.</li> </ul>	



	<p><b>Agreed Actions:</b></p> <ul style="list-style-type: none"> <li>• John Matheson and Russell Pettigrew will have a discussion with Mike Baxter, Capital Planning, Scottish Government regarding the inequity of capital funding between the Glasgow and Edinburgh reprovisions.</li> <li>• Directors of Planning &amp; Directors of Finance will brief sessions their individual Boards.</li> <li>• Directors of Planning &amp; Directors of Finance will forward comments / questions on the OBC to Jackie Sansbury by 16<sup>th</sup> May 2008.</li> <li>• Jackie Sansbury and the Project Board will request written confirmation of funding from all possible sponsors. i.e. SGHD, Ronald McDonald, Sick Kids Friends Foundation.</li> <li>• Electronic copy of the OBC to be forwarded to DoP's and DoF's</li> <li>• OBC will be forwarded to the SEAT Children's Group for information.</li> </ul>	<p style="text-align: center;"><b>JM / RPettigrew</b></p> <p style="text-align: center;"><b>DoP's/DoF's</b></p> <p style="text-align: center;"><b>DoP's/DoF's</b></p> <p style="text-align: center;"><b>JS</b></p> <p style="text-align: center;"><b>JKS JKS</b></p>
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# Gateway Review

**PROJECT: : Re-provision of Royal Hospital for Sick Children,  
Edinburgh.**

**Gateway Review 1  
(Business Justification)**

Report Status:	Draft
Date/s of Review:	18/06/2008 to 20/06/2008
Draft Report Issued to SRO:	20/06/2008
Final Report Issued to SRO & Copied to Centre of Expertise:	dd/mm/yy
Overall Report Status:	Amber
Senior Responsible Owner:	Jackie Sansbury
Scottish Government's Accountable Officer:	Kevin Woods
Organisation's Accountable Officer: (where appropriate)	James Barbour

# Contents

<b>1. Background .....</b>	<b>4</b>
<b>2. Purpose and Conduct of the Review .....</b>	<b>5</b>
<b>3. Gateway Review Conclusion.....</b>	<b>5</b>
<b>4. Findings and Recommendations.....</b>	<b>6</b>
<b>5. Previous Gateway Review Recommendations .....</b>	<b>11</b>
<b>6. Next Gateway Review .....</b>	<b>11</b>
<b>7. Distribution of the Gateway Review Report.....</b>	<b>11</b>
<b>Appendix A - Purpose of a Gateway Review 1: Business Justification .....</b>	<b>12</b>
<b>Appendix B - Summary of Recommendations .....</b>	<b>13</b>
<b>Appendix C - Review Team and Interviewees.....</b>	<b>14</b>

## 1. **Background**

### 1.1 **Aims of the Project**

1.1.1 The project aims to provide a new, fit for purpose, world class Children and Young People's Hospital in Edinburgh providing a local service for Lothian, a regional service to the South East of Scotland and a national service for a selection of specialities.

The new hospital will accommodate the range of services currently provided on the RHSC site in Edinburgh, including A&E, Outpatients, Day Case facilities, Inpatient beds, Theatres, Critical Care and Diagnostic services.

The Child and Adolescent Mental Health Service and the Mental Health Young Peoples Unit, currently located elsewhere within the city, will also be included in the new development.

### 1.2 **Driving Force for the Project**

1.2.1 The key factors driving the need for change are;

- Inadequacy and unsuitability of existing premises and facilities to deliver sustainable specialist services whilst meeting the challenge of relatively small numbers of patients
- the confirmed need to deliver high quality and clinically effective services
- Please move the second bullet point to be the first point.
- desire for modernisation and development of support services to ensure the most efficient and effective use of resources
- Impact of Modernising Medical Careers, the Tooke Report and the European Working Time Directive on current workforce availability, particularly doctors in training.

### 1.3 **Procurement/Delivery Status**

1.3.1 In May 2006, the Scottish Government Health Department approved an Initial Agreement to develop an Outline Business Case and this has recently been submitted. Considerable work has been done to analyse and identify the business need and following consultation and involvement conclusions have been drawn on location and potential procurement routes for the new facility.

Early discussions have been held on securing the site and preparations are now being made to appoint project managers and a full advisory team to progress the building design process from the current embryonic stage.

### 1.4 **Current Position Regarding Gateway Reviews**

1.4.1 There have been no previous Gateway Reviews on this project.

## 2. **Purpose and Conduct of the Review**

### 2.1 **Purpose of the Review**

2.1.1 Gateway Review 1: Business justification. This is the first project Review, which investigates the Strategic Business Case and proposed way forward to confirm that the project is achievable and likely to deliver what is required. The Review checks that:

- stakeholders approve the intended benefits from the project
- linkage with programme and organisational objectives is clear
- the optimum balance of cost, benefits and risk has been identified.

2.1.2 A full definition of the purpose of a Gateway Review 1 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 1 was carried out on 18/06/2008 to 20/06/2008 at the Royal Hospital for Sick Children 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 Reprovision Project Team 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 The Review Team finds that considerable work has been done to achieve a very sound base from which to take this project forward. There have been various issues around stakeholder management and requirements for the outline business case but these have all been well managed and satisfactorily resolved.

Perhaps as a result of the heavy focus on completion of the OBC and the project team's relative inexperience in procurement of major capital projects, which has been recognised by Lothian Health and the SRO, there has been less attention to planning for the delivery phase. We therefore make a number of quite urgent recommendations that we believe will quickly strengthen the project and ensure more effective progress through the next stage.

3.2 The overall Report Status is Amber.

3.3 A summary of the Report Recommendations and a definition of the RAG categorisation is available at **Appendix B**.

## 4. **Findings and Recommendations**

### 4.1 **Policy and business context**

4.1.1 In addition to the inadequacies of the existing estate, the drivers for this project comprise a series of government reports and policies affecting the delivery of Children's Health Services in Scotland. The OBC and the discussions we have had, give good evidence of a clear awareness around the project of all of these influences and the effect they are likely to have on the design, construction and management of the new hospital.

Given the local, regional and national aspects of the services to be delivered at the new RHSC, the Reprovision project must have regard to Health policies originating not only from Scottish Government but also from the Modernisation and Change agendas of the Lothian NHS Board. This all takes the form of quite a complex network of Management Boards and Working Groups from which a project of this strategic importance must take direction and guidance, whilst also providing progress updates and other information.

To the Review Team, this all appears to present quite a major task and while it has been manageable so far, when development of the business requirement is at an early stage and can be easily flexed to answer these changes in direction, it needs to be recognised that as design and specification move into a more formal state, the opportunities for change will reduce and management will have to support the project by sifting out the issues that will not demand changes to the building and resolving those that do.

With a projected life of 60 years, the building will have to deal with many such changes and the answer will lie in the flexibility of the design to cope with the developing nature of Children's services.

Through the Project Board and other contacts, the project has established constructive relationships with a large number of internal and external stakeholders as the current schedule of space requirements has been developed. The great majority of those we interviewed expressed satisfaction with the flow of information and the opportunities they have had to input to the process.

One key external issue is the need to ensure that the complementary improvements in Children's Services in the local community and the continuing level of service provided by the SEAT Boards, anticipated in the design brief, are actually followed through and sustained. Although not within the direct control of the project this does represent a key risk and needs to be managed at an appropriate level.

There is a frequently expressed view around the project of the need not only to create a world-class Children's Hospital but also one that is identifiably and in its essence, for children and young people.

Consideration of environmental and local planning issues has not been particularly clear in the work done on option appraisal but NHS Lothian has secured explicit support from City Of Edinburgh Council of its support for the re-provision of RHSC

on the RIE site. However, we are assured that the Board's strong commitment and adherence to best practice in these areas will be carried through as the design progresses.

One policy area not recognised so far by the project is OGC's Achieving Excellence in Construction. It will be particularly important and useful for the project to take full account of this guidance as it moves through the next stage of developing a delivery strategy.

### **Recommendations:**

**Ensure that the best practice guidance in Achieving Excellence in Construction is applied as appropriate to the project. (GREEN)**

## **4.2 Business case and stakeholders**

4.2.1 The project team have worked well through this initial phase to produce a well justified and researched case for the new hospital. There has been an extensive round of briefings and meetings with key users and wider stakeholders to develop the initial schedule of space and service requirements and full account appears to have been taken of all current and future service delivery issues.

We understand advice has been taken at various stages in developing the OBC from Scottish Government, other Boards and external advisers and this has resulted in a comprehensive document for this stage in the project.

Although strong on the clinical and health needs for the Reprovision the case is less clear in presentation of appraisal of options and recognition of aspects like; the initial selection of options, the relative complexities of land acquisition at Little France and St John's and the appraisal of procurement options. We have heard that considerable work was carried out in these areas and we believe it would assist if this were reflected more fully in the ongoing development of the business case. This will allow initial assumptions to be tested more fully as the case progresses.

In assessing benefits to be derived from the project, The OBC identifies features such as collocation but does not follow on to develop the measurable benefits these features will produce. This is a key area in successful management of the project and for the next stage a full benefits management and realisation strategy should be produced.

Capital funding for the project is dependent upon a number of sources including charitable donations, from an appeal that is still in the planning stage, and receipts from the sale of property that will almost inevitably have a degree of uncertainty on timing and amount. These risks are recognised by the project team but we believe a greater degree of management and mitigation, including investigating Scottish Government brokerage, may be appropriate.

The OBC is also less explicit on plans for the next stage and there is an uncertainty around the team members on issues like the appointment of external advisers, the process for further development of the design brief and the procurement of



contractors, either independently or through the new NHS Frameworks Scotland Agreement. We refer later to measures to better plan and clarify these areas.

There is a large stakeholder community around this project and they are generally well integrated with good relationships having been established through the various levels of management and Partnership representatives.

In common with other Health projects of course, the greatest challenge has been around the correct level of communication and buy-in from clinicians and this has not been without its difficult periods. While we recognise the inevitable tensions in this area, we believe it will be crucial in the next phase of design development to maintain the best possible relationship with this community to ensure that the product of the re-provision fully meets the aspiration for a world-class facility capable of delivering maximum benefits and value for money. It should be noted however that there is full clinical commitment to the re-provision of RHSC.

It will be a key task for the team to devise a strategy that can achieve this goal by securing funding for release of key staff resource, continuing to facilitate and manage meetings, feeding back constructively and developing a common understanding and appreciation of how things will be in the new hospital and why. Stakeholder management and its extension into wider communications and PR is another area worthy of a dedicated role.

#### **Recommendations:**

**Mitigate risk on the impact of timing of capital receipts by liaising with Scottish Government on the potential for capital brokerage. (GREEN)**

**Prepare full benefits management plan. (AMBER)**

**Prepare a more detailed time plan for the remainder of the project. (AMBER)**

### **4.3 Risk Management**

4.3.1 A Risk Register has recently been developed for the project and we understand this will now be subject to regular review at Core Team meetings with escalation of Risks that move into the highest category.

From what we have seen of work in this area so far it is clearly at a very early stage and needs further work and understanding to become a fully effective project risk register. There then needs to be appropriate allocation of ownership, active mitigation and management with regular review.

Consideration should also be given to the initiation of an issues log.

#### **Recommendations:**

**Develop the Project Risk Register and Issues Log. (AMBER)**

#### 4.4 Readiness for next phase – delivery strategy

4.4.1 The current structure for governance of the project has a Project Board with a membership of more than 30, meeting quarterly to receive an update on progress and give comments. Our evidence is that this has worked effectively to date as part of the project's stakeholder management but clearly it is not an effective governing structure for a project of this size and complexity. This has been recognised by the SRO and a paper is currently in preparation to further develop the project structure and resourcing of this and a number of other capital projects under the banner of ICIC (Improving Care Investing in Change).

We are of the opinion that the current meeting should be continued as a stakeholder forum as it is generally welcomed by those we have interviewed. For better governance of the project however, we believe a new Project Board should be constituted for the next stage. This should have a much smaller membership, possibly not more than seven, representing key users and suppliers at a senior level. The User community would be ideally represented by the most senior clinician who is best able to represent the demands from that group and assist in decision making that will be respected. To provide the Supplier input it may be possible to secure the services on a non-exec basis of someone from the design or construction industry or experienced clients thereof. A member of a client team from another similar hospital development may be another source. Consideration can be given to whether this Board would be purely advisory to the SRO or be given a level of delegated authority.

The quality of the work done to date in gathering outline clinical requirements and building relationships brings credit to all of those involved at the working level. We have noted however that this has been achieved with a strong team ethos and work has been shared across the main sectors of clinical, capital planning and finance. No one below the level of SRO has been able to exhibit a detailed understanding or accountability for the whole project. While this has worked effectively in these initial stages when the work has been largely internal to the Health service and assisted by established relationships, our knowledge of best practice and experience of similar projects elsewhere leads us to the conclusion that it will not be an effective structure for the subsequent stages of the procurement.

There is widespread evidence of the need for an individual with good experience and appreciation of all aspects of project delivery, to operate as a single focal point, reporting directly to the SRO, fully dedicated to the project and taking full responsibility for the day-to-day management and delivery of the project. This would give leadership and clarity to the team and remove much of the ambiguity around roles and responsibilities.

We cannot over emphasise the importance we would place on securing the right individual for this post and the criticality we see to delivering a successful outcome.

The project team funding currently reported in the OBC to take the project through to the next stage is considered to be substantially less than we would have expected for a project of this size although it was explained that much of the resource currently

inputting to the project is costed to the support department and not the project.. We understand additional funding may be available internally and possibly from Scottish Government. However we believe it is important that there is full visibility of all costs necessary to deliver the project and these should be identified to establish the level of additional funding required.

The OBC does not contain a great level of detail on how the project plans to proceed through the next stage and we have not seen evidence other than a fairly high level and in our view unrealistic, schedule of actions and dates. We recognise that the project team do not have the technical experience and knowledge necessary to fully document the procurement and for this reason we make recommendations later on the appointment of advisers.

Once a reliable plan has been produced this should be circulated widely to ensure that all stakeholders understand what will be expected of them and are able to plan their availability.

The new NHS Framework Agreement currently being tendered seems a likely procurement option for this project and we would support the benefits of this route. However, at this stage there is little detailed understanding both nationally and locally of how this will work in practice and there is consideration of pursuing a more traditional route in tandem, until the Framework situation is clearer.

In our view the existing team do not have the capacity to progress this aspect without considerable external support and we make a strong recommendation for the early procurement of a project management service, possibly using the OGC Buying Solutions Framework, to assist in taking the project forward.

The appointment of full design team and other appointments can then be considered with the benefit of sound professional advice and full understanding of the current state of the construction industry. In progressing further briefing without these appointments the project runs the risk of work having to be duplicated once designers are on board.

In looking to strengthen the skills and experience of the project team we would commend the offer of assistance from Scottish Government, along with the opportunity for team members to meet with opposite numbers on other similar projects around the UK to compare approaches and learn lessons.

The project is also highly dependent on the quality of data analysis and there is concern over the level of resources dedicated to this important function.

We have seen the Optimism Bias calculation produced as part of the OBC along with the mitigation review carried out in accordance with departmental guidance. This has clearly been a collaborative process and reflects a genuine attempt to assess the level of risk to the current estimated costs. However, we have already referred to the relative lack of experience around the team of projects of this size and complexity. In our view this has been reflected in a somewhat optimistic view of the current level of risk to these figures and this may constrain future development of the design and specification.

## Recommendations:

**Within a period of three months, establish a new Project Board with appropriate user and supplier representation and clear levels of delegation and responsibilities. (AMBER)**

**Within three months take action to appoint a fully dedicated and experienced Project Director to take overall responsibility for delivery. (AMBER)**

**Within three months initiate procurement of consultancy support for a full project management service. (AMBER)**

**Review resourcing of the Core Team and identify the full resource implications of all project related activities. (AMBER)**

## 5. Previous Gateway Review Recommendations

5.1 Not appropriate

## 6. Next Gateway Review

The next Gateway Review Gate 2 is expected in late 2009

## 7. Distribution of the Gateway Review Report

7.1 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.

7.2 The Review Team Members will not retain copies of the report nor discuss its content or conclusions with others.

7.3 A copy of the report is lodged with the Scottish Government's Centre of Expertise (CoE) for Programme, Policy and Project Delivery so that it can identify and share the generic lessons learned from Gateway Reviews. The 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.

7.4 The 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.

7.5 Any other request for copies of the Gateway Report will be directed to the SRO.

## **Appendix A - Purpose of a Gateway Review 1: Business Justification**

- Confirm that the Business Case is robust – that is, in principle it meets business need, is affordable, achievable, with appropriate options explored and likely to achieve value for money
- Confirm that appropriate expert advice has been obtained as necessary to identify and/or analyse potential options
- Establish that the feasibility study has been completed satisfactorily and that there is a preferred way forward, developed in dialogue with the market where appropriate
- Confirm that the market's likely interest has been considered
- Ensure that there is internal and external authority, if required, and support for the project
- Ensure that the major risks have been identified and outline risk management plans have been developed
- Establish that the project is likely to deliver its business goals and that it supports wider business change, where applicable
- Confirm that the scope and requirements specifications are realistic, clear and unambiguous
- Ensure that the full scale, intended outcomes, timescales and impact of relevant external issues have been considered
- Ensure that the desired benefits have been clearly identified at a high level, together with measures of success and a measurement approach
- Ensure that there are plans for the next stage
- Confirm planning assumptions and that the Project Team can deliver the next stage
- Confirm that overarching and internal business and technical strategies have been taken into account
- Establish that quality plans for the project and its deliverables are in place
- Confirm that the project is still aligned with the objectives and deliverables of the programme and/or the organisational business strategy to which it contributes, if appropriate
- 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 (R.A.G.)
R1	<b>Policy &amp; business context</b>	Ensure that the best practice guidance in Achieving Excellence in Construction is applied as appropriate to the project.	Green
R2	<b>Business case &amp; stakeholders</b>	Mitigate risk on the impact of timing of capital receipts by liaising with Scottish Government on the potential for capital brokerage.	Green
R3		Prepare full benefits management plan.	Amber
R4		Prepare a more detailed time plan for the remainder of the project.	Amber
R5	<b>Risk management</b>	Develop the Project Risk Register and Issues Log.	Amber
R6	<b>Readiness for next phase</b>	Within a period of three months, establish a new Project Board with appropriate user and supplier representation and clear levels of delegation and responsibilities.	Amber
R7		Within three months take action to appoint a fully dedicated and experienced Project Director to take overall responsibility for delivery.	Amber
R8		Within three months initiate procurement of consultancy support for a full project management service.	Amber
R9		Review resourcing of the Core Team and identify the full resource implications of all project related activities.	Amber

Each recommendation has been given a Red, Amber or Green status. The definition of each status is as follows:-

**RED** - Critical for immediate action, i.e. to achieve success the project should take action immediately to address the following recommendations:

**AMBER** - 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:

**GREEN** - 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:	Frances Duffy
	Robert Stewart
	David McLuckie

#### List of Interviewees:

Name	Organisation/Role
Jackie Sansbury	SRO
Isabel McCallum	Project Director
Rose Byrne	Project Manager
Colin Briggs	Service Manager
Eddie Doyle	Clinical Director
Iain Graham	Head of Capital Planning
James McCaffery	Director of Acute Services
Neil McLennan	Project Capital Manager
Ron Finlay	Project Architect
Steve Cunningham	Chair of Medical Staff Committee
Scott Justice	Partnership Representative
Paula Johnston	Partnership Representative
Janice McKenzie	Chief Nurse
Moira Pringle	Head of Strategic Planning Finance
Mike Baxter	Head of Private Finance and Capital Group – Scot Gov.
Nuala Gormley	Chair of RHSC Family Council
Maureen Harrison	Director, Sick Kids Friends Foundation
Fiona Mitchell	Director of Operations
Dave Simpson	Associate Clinical Director

**GATEWAY REVIEW****Project: Reprovision of Royal Hospital For Sick Children Edinburgh****Date of Review: 30/06/08****RECOMMENDATIONS**

<b>Ref No.</b>	<b>Report Section</b>	<b>Recommendation</b>	<b>Status (R.A.G.)<sup>1</sup></b>	<b>Action</b>	<b>Action By</b>
R1	Policy & business context	Ensure that the best practice guidance in Achieving Excellence in Construction is applied as appropriate to the project.	Green	Agree this will be done at appropriate point in project. The preferred procurement route is through Framework Scotland, and therefore also follows these principals.	
R2	Business case & stakeholders	Mitigate risk on the impact of timing of capital receipts by liaising with Scottish Government on the potential for capital brokerage.	Green	Agree this will be done at appropriate point in project. Specialist heritage architects and property advisers have already been engaged to prepare a robust development brief for early engagement with the planning authority.	
R3		Prepare full benefits management plan.	Amber	Currently under preparation. Will be completed by end October 2008.	
R4		Prepare a more detailed time plan for the remainder of the project.	Amber	Will be produced once internal consultancy in place – see under readiness for next phase.	

<sup>1</sup> Each recommendation has been given a Red, Amber or Green status. The definition of each status is as follows:-

RED – Critical for immediate action.

AMBER – Critical before next review.

GREEN – Potential Improvements, i.e. the project is on target to succeed but may benefit from uptake of the recommendation.



Ref No.	Report Section	Recommendation	Status (R.A.G.) <sup>1</sup>	Action	Action By
R5	Risk management	Develop the Project Risk Register and Issues Log.	Amber	Currently under preparation. Will be completed by end September 2008.	
R6	Readiness for next phase	Within a period of three months, establish a new Project Board with appropriate user and supplier representation and clear levels of delegation and responsibilities.	Amber	I propose to keep the current Project Board as a stakeholder Board and augment the process by establishing a Core Project Board with smaller membership. This membership will include Medical Director, Project Sponsor, Project Director, Scottish Government representation and non-executive membership.	
R7		Within three months take action to appoint a fully dedicated and experienced Project Director to take overall responsibility for delivery.	Amber	Paper going to EMT to support new post 3 <sup>rd</sup> September.  Job description and advertisement preparation underway.	
R8		Within three months initiate procurement of consultancy support for a full project management service.	Amber	Underway. Informal discussions have taken place to develop a detailed specification.	
R9		Review resourcing of the Core Team and identify the full resource implications of all project related activities.	Amber	Paper going to EMT on 3 <sup>rd</sup> September covers this project and the whole ICIC programme.	

## **DRAFT** **NHSScotland: Proposed Construction Frameworks**

### **Questions and Answers - ~~June~~ July 2008**

#### **Introduction**

The procurement process for the Frameworks Scotland initiative was formally launched in January 2008 following Scottish Government approval of the Project Initiation Document and associated budget proposal on the 21<sup>st</sup> December 2007.

NHSScotland proposes to appoint a number of Principal Supply Chain Partners (PSCPs) to undertake Capital Projects on behalf of NHS Boards and Special Health Boards throughout Scotland. The framework will be a strategic and flexible partnering approach to procurement of publicly funded construction work and will complement other procurement initiatives in development such as HUB. The PSCP must therefore clearly demonstrate their willingness and capability to undertake capital projects in all areas of Scotland.

The PSCP may be engaged to undertake a variety of duties including service strategies, estate strategies, business planning, developing the brief, design development and construction works. In addition to the construction phase of a project, the PSCP can be appointed at various stages in the capital project planning process from the Initial Agreement stage, Outline Business Case stage or up to the Full Business Case stage. [Ideally the PSCP is appointed early in the process, typically between IA and OBC approval.](#)

A framework for professional services will also sit alongside the main PSCP framework to allow the NHS Boards to appoint technical advisors. This will help fulfil the roles of Project Manager, Supervisor and Cost Advisors (all required under the proposed NEC form of Contract), CDM Co-ordinators and Healthcare Planners.

At this time, the framework process is at tender stage. Tenders will be returned on 31<sup>st</sup> July 2008 and following this there will be a detailed evaluation period. PSCPs and PSCs will be appointed to the frameworks in late autumn 2008.

#### **1. Why change the traditional approach to construction procurement?**

There is overwhelming evidence that the traditional approach to construction procurement fails to satisfy clients and does not generate the efficiency improvements delivered in most other industries. This has a negative effect on the international competitiveness of the UK and uses resources that could be better utilised elsewhere in the economy. [In NHSScotland this means using available capital and revenue resources more effectively, delivering better outcomes and making best use of client side skills and capacity.](#)

#### **2. The new approach talks about partnering. What does this mean?**

Partnering is about better working relationships with contractors and suppliers to deliver better outcomes for all concerned. For the NHS in Scotland it will mean identifying and working with a selected group of supply chains for a period. It requires genuine commitment from all levels of all the organisations involved, including the client, and a clear understanding by all parties of

what is expected. This approach has already proved successful for the NHS in England (ProCure 21), Wales (Designed for Life) and in Northern Ireland (Performance Related Partnering - PRP).

### **3. What are the benefits of establishing long-term frameworks of integrated supply chain partners?**

The benefits are that the supply chains better understand the needs of the clients, and can offer continuous quality improvements in exchange for stronger working relationships. Partnering reduces the adversarial attitudes that make projects more difficult to deliver and get right. Partnering arrangements reduce waste (process and product), promote quality and with lessons learnt on one project being applied to another.

A process of continuous improvement will be established based on a set of key performance indicators that are important to the needs of the NHS in Scotland.

### **4. What are the key performance indicators commonly chosen?**

These can differ between sectors but reduction in capital/life cycle costs, reduction in defects, improved predictability of costs and programme, reduction in project duration, improvement in client satisfaction and reductions in the number of site accidents tend to be important for all clients. For the NHS in Scotland the issue of sustainability will also be a prominent factor.

### **5. Are there any short-term benefits?**

Once the Principal Supply Chain Partners are selected, the need to follow costly and time consuming EU procurement processes for each separate scheme is removed. For a typical hospital project, 3-6 months could be saved on the programme together with many of the associated costs.

### **6. What other benefits are likely to accrue to the Service through the introduction of integrated supply chain partners?**

The early involvement of an integrated supply chain supporting the local NHS Board will ensure that the design development work is far more robust than tends to be the case with the current system. This should improve the quality of decision-making and control risks in a better managed environment.

### **7. What are integrated supply chains?**

In the healthcare field an integrated team brings together the architect, mechanical and electrical engineers, structural engineer, quantity surveyor, main contractor, major sub contractors and health planners as Principal Supply Chain Members and is lead by a Principal Supply Chain Partner as the “contracting” partner to the framework agreement. The partnership is also likely to establish relationships with other specialist subcontractors and suppliers.

## **8. On what basis are Principal Supply Chain Partners appointed to the framework?**

Principal Supply Chain Partners are appointed on the basis of economically most advantageous not lowest price. Principal Supply Chain Partners will be required to demonstrate that they have the capacity, skills and experience to work in a collaborative way.

## **9. How long do the frameworks last?**

The frameworks will last 4 years with an option to extend up to another 2 years.

## **10. What happens if the Principal Supply Chain Partner fails to perform?**

Failure to demonstrate continuous improvement against key performance indicators will lead to the partner being removed from the framework.

## **11. How does the local NHS Board select the Principal Supply Chain Partner?**

The appointment is based on key criteria established by the NHS Board and a proposed process is currently being finalised. Guidance will be provided by Health Facilities Scotland to support Boards with this responsibility.

## **12. How can we demonstrate value for money?**

Selection to the framework and the individual projects is through competition. This includes cost and also a broad range of other factors such as expertise, resource capability, track record, ability to work flexibly and innovate and the quality of the Principal Supply Chain Partner's integrated processes and control systems. Partners will also need to demonstrate their commitment to the partnering ethos. It is through the analysis and evaluation of these factors and the ongoing control and monitoring of the Principal Supply Chain Partners that value for money can be demonstrated. The UK and Scottish Government support and promote this approach, as do HM Treasury and the Office of Government Commerce (OGC).

## **13. I've heard about Procure21 used in the NHS in England and Designed for Life in Wales. Is this the same thing?**

The Procure21 and Designed for Life models have been developed for the NHS in England and Wales respectively and respond to particular requirements in respect of geography, project pipeline and market capability. The construction turnover and market conditions in England and Wales are different to Scotland and consequently there are particular differences that will be inherent in the final model, associated processes and number of supply chain partners.

## **14. Can we use the experience gained through the introduction of Procure21 and Designed for Life to help us develop our model?**

Yes. The NHS in England has invested huge sums of money in developing tools to support Procure21 and these have been further developed in Wales for Designed for Life. Many of these tools are equally applicable to the model to be introduced in Scotland. The Department of Health and Welsh Health Estates have provided invaluable support and advice during the early stages of the work undertaken in Scotland and are prepared to continue to offer their support as the project develops. Health Facilities Scotland sits on a national group that meets regularly to ensure that wider lessons learned are shared for the benefit of all.

#### **15. Have other procurement models been reviewed?**

Yes. Health Estates in Northern Ireland has developed a model known as Performance Related Partnering. The early results from the PRP model appear to be very good and the model has been reviewed. The model does, however, require significant central support at a level beyond that which can be realistically delivered in Scotland without a major growth in resources at Health Facilities Scotland. ~~The structure of Health Estates is more in line with the old CSA function, as it existed prior to privatisation.~~ The ~~frameworks~~ Scotland Development Team did not believe that such a development was a realistic option. We will however continue to liaise with our colleagues in NI Health Estates and apply any lessons learnt.

Health Facilities Scotland has also liaised with other public sector bodies involved in partnering projects and has also taken advice from advisors who have been involved in both public and private sector framework and partnering contract initiatives.

#### **16. How many Principal Supply Chain Partners are required for the NHS in Scotland?**

It is anticipated that three to five PSCPs will be required to service the whole of Scotland. This is currently undergoing review in conjunction with the tender and tender evaluation process and it is likely that a final decision will be made within one month prior to award of contracts.

#### **17. How will the Principal Supply Chain Partners be managed?**

The framework under which the Principal Supply Chain Partners will operate will be managed by Health Facilities Scotland through the framework agreements.

#### **18. What organisations will be responsible for managing individual projects?**

NHS Boards will manage individual projects, PSCPs and PSCs as they do currently. The PSC frameworks will allow Boards to appoint suitably experienced and qualified consultants to assist them with their projects.

#### **19. What organisations will undertake the roles of Investment Decision Maker, Project Owner and Project Director?**

These responsibilities will not change from the current position. NHS Boards will fulfill these roles.

#### **20. How will the new arrangements affect the Scottish Capital Investment Manual?**

The Scottish Government Health Directorate is currently working on revising its Business Case processes and the SCIM will also be revised accordingly. The new guidance will also need to be consistent with the move away from traditional procurement to that based on the management of principal supply chain partnerships where applicable. [As a minimum the SCIM will reflect the early appointment of a PSCP prior to OBC approval.](#)

## 21. Will Business Cases still be necessary?

Yes. The new delivery model will improve certain aspects of the Business Case process but is not intended to replace it. Business Cases should be centred on [all aspects of](#) service planning [and delivery](#) issues [and](#) not [simply have an](#) estates [focus](#) issues. The new procurement model helps with the development and implementation of the estate solutions to these service planning issues. The broader issues with the Business Case process will need to continue to be driven forward by the NHS working in partnership with a range of stakeholders and across various procurement routes.

## 22. What type of scheme will be delivered through the new model?

It is anticipated that a broad range of projects will be delivered through the frameworks, but with a particular focus on acute sector refurbishment projects.

## 23. How will the system cope with changes to the brief by the Client and the typical upward cost pressures?

The greater emphasis on more detailed work earlier in the process is necessary to establish a target cost and this requirement will make any Client changes after this point more transparent. The nature of the contractual arrangement and the partnering relationship will however incentivise the Client and Principal Supply Chain Partner to work together to minimise the effect of such changes which stands in stark contrast to the traditional approach.

## 24. Will Architecture and Design Scotland be involved in this process?

Yes. The proposal will complement the current partnership between the Scottish Government Health Directorates and Architecture and Design Scotland in promoting Design Champions at NHS Board level to enhance design quality and standards throughout the procurement process.

## 25. What affect will the EU regulations have on these proposals?

The model can be accommodated within the EU regulatory framework.

## 26. Will the framework be mandatory for all NHS Boards?

~~It will be very difficult to manage the framework if NHS Boards can opt out of the process.~~ Maintaining sufficient work flow for each Principal Supply Chain Partner is very important and this could be difficult without the full support of all Boards. [Whilst the](#) Scottish Government has not set a mandatory threshold for use of Frameworks Scotland [the presumption is that for](#)

projects within its' scope, Frameworks Scotland will be the preferred procurement route. Where an NHSScotland body proposes to use another procurement route for public capital works within the scope of the Framework, -but has confirmed that any a Business Case must substantiate the basis for doing so. Such cases should be referred to the SGHD Private Finance and Capital Unit prior to the award of contract regardless of whether the value of the project is within the NHSScotland body's delegated limit.any reasons for not using the initiative.- In addition every PSCP must make themselves available to service projects for all NHS Boards in Scotland.

## **27. Are management overheads greater with the proposed model?**

No. The model does however shift resources to the front end of the project where the greatest benefit can be achieved at the lowest cost.

A detailed cost model makes all direct resource costs overhead and profit transparent.

## **28. Will Scottish Government need to change to support the new model?**

Principal supply chain partnering arrangements need turnover to provide the incentive for continuous development and ongoing investment in the relationship. It is important that NHS Boards and the Scottish Government streamlines its approval processes to ensure, as far as is possible, that the NHS capital programme flows steadily through the system. The new delivery model will help this process but only if there is some clarity and general agreement on the service planning drivers underpinning the business cases.

## **29. What about HUB and Scottish Futures Trust initiatives?**

Frameworks ScotlandThe new arrangements are is aimed at improving the performance of public capital funded projects and with a focus on acute sector projects. The Scottish Government is currently working on new procurement models to replace previous private finance delivery solutions with the -default PPP model now being the Non Profit Distributing Model. PSCP's can be appointed to develop projects up to the point of procuring a PPP solution on a management consultancy basis. The hub initiative is being taken forward as a strategic partnership across the public sector to develop and procure community based premises. The hub initiative will be rolled out over the next couple of years. Until NHS Boards are participating in hub, Frameworks Scotland can be used for community based premises development.- HUB and the Scottish Futures Trust. Each procurement stream- will be complimentary to one another and to Frameworks Scotland over the short, medium and long term.is being developed with this requirement as a key driver.

## **30. The PSCPs are likely to be contractors. Isn't this just glorified design and build?**

No. It is a far superior process because it involves all the relevant suppliers as well as the designers working as an integrated team to develop design solutions, and the costs associated with that design, in conjunction with the client and service providers.

## **3031. Who is involved in setting up the frameworks?**

**Health Facilities Scotland**

Health Facilities Scotland will act as the Framework Manager and is responsible for the day-to-day organizational support for the PQQ and tender stages in addition to setting up the management framework for the delivery phase of the initiative. Peter Haggarty is the Project Director and also sits on the Procurement Task Group and Project Board. Peter is supported by an in-house team which also includes professional advisors.

### **The Project Board**

The Project Board is chaired by Mike Baxter, Head of the Scottish Government Health Directorate's Private Finance and Capital Unit. The Board includes key representatives from NHS Boards across Scotland and Health Facilities Scotland.

### **The Procurement Task Group**

The Procurement Task Group is chaired by David Browning, General Manager of Property and Support Services at NHS Lanarkshire. The Group includes key representatives from NHS Boards across Scotland, Health Facilities Scotland and professional advisors.

### **30. Is the Framework Mandatory for NHS Boards?**

#### **Contact:**

For further information, please contact Peter Haggarty at Health Facilities Scotland

[peter.haggarty@hfs.scot.nhs.uk](mailto:peter.haggarty@hfs.scot.nhs.uk)



**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

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**OUTLINE BUSINESS CASE**

This version has been edited to reflect commercial sensitivity. The unedited version will be available once financial close has been achieved.

Readers are also asked to note that the information contained in this document will continue be refined and validated as part of developing the Full Business Case. The detail should therefore only be considered indicative.

**NHS Lothian  
 REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
 EDINBURGH  
 OUTLINE BUSINESS CASE**

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	<b>Contents</b>	<b>Page No.</b>
1.	<b>TITLE OF THE PROJECT</b>	3
2.	<b>EXECUTIVE SUMMARY</b>	3
3.	<b>INTRODUCTION AND PURPOSE</b>	13
4.	<b>BACKGROUND</b>	15
5.	<b>THE CASE FOR CHANGE</b>	17
6.	<b>FUTURE SERVICE PROVISION</b>	33
7.	<b>BED MODELLING</b>	45
8.	<b>INFORMATION MANAGEMENT AND TECHNOLOGY</b>	53
9.	<b>WORKFORCE</b>	55
10.	<b>OPTION IDENTIFICATION AND APPRAISAL</b>	59
11.	<b>BENEFITS APPRAISAL</b>	65
12.	<b>ECONOMIC APPRAISAL</b>	69
13.	<b>FINANCIAL ANALYSIS</b>	73
14.	<b>RISK ANALYSIS</b>	87
15.	<b>PREFERRED OPTION</b>	91
16.	<b>PROCUREMENT STRATEGY</b>	105
17.	<b>PUBLIC INVOLVEMENT AND CONSULTATION</b>	115
18.	<b>PROJECT MANAGEMENT AND TIMETABLE</b>	117
19.	<b>GLOSSARY OF ABBREVIATIONS</b>	127
20.	<b>FULL REFERENCE LIST</b>	129
21.	<b>FIGURES</b>	131
22.	<b>LIST OF APPENDICES</b>	133

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

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**1. TITLE OF THE PROJECT**

'The Reprovision of the Royal Hospital for Sick Children, Edinburgh'

**2. EXECUTIVE SUMMARY**

**2.1 Introduction**

2.1.1 The purpose of this Outline Business Case (OBC) is to present proposals for:

- A new, fit for purpose, Children and Young People's (C&YP's) Hospital in Edinburgh providing a local service for Lothian, a Regional service to the South East of Scotland and a National service for a selection of specialities;
- Reprovision of the range of services currently provided on the Royal Hospital for Sick Children (RHSC) site in Edinburgh, including A&E, outpatients, Day Case facilities, inpatient beds, Theatres, Critical Care services, and Diagnostic services;
- The Reprovision of the Child and Adolescent Mental Health Service (CAMHS) and the Mental Health Young Peoples Unit currently provided at the Royal Edinburgh Hospital.

2.1.2 The options available to NHS Lothian (NHSL) are appraised and the preferred option is identified. In addition, the financial and affordability analysis of the required capital and revenue expenditure is presented.

2.1.3 The proposals contained in this document are presented in the form of an OBC consistent with the requirements of the Scottish Government Health Department for Capital Investment (HDL (2002) 87). This is the second key stage in a three-stage process:

- The first step involved the preparation of an Initial Agreement, which was submitted by NHSL in April 2006.
- The final stage will be the preparation of a Full Business Case (FBC) that presents the preferred option in more detail for approval by the Scottish Government Health Department. The FBC is likely to be submitted in 2009.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

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## **2.2 The case for change**

2.2.1 The key factors driving the need for change in C&YP's 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 confirmed need to deliver high quality and clinically effective 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 impact of Modernising Medical Careers, the Tooke report and the European Working Time Directive on current workforce availability, particularly doctors in training.

2.2.2 Delivering on these drivers is challenging and new, innovative ways of providing hospital and community services are needed to enable services to meet the needs of the local and regional population.

2.2.3 National policy on the provision of paediatric services provides a framework for redesigning services, developing new models of care and in turn, identifying the facilities required to support the provision of high quality care to Children and Young People in fit-for-purpose accommodation. These are reflected in the redesigned models of care and the plans for the new Children & Young Peoples hospital.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

### 2.3 Anticipated Outcomes and Benefits

<b>In-patient &amp; Ambulatory Care Services</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Co-location with acute adult, maternity and Neonatal services where the support of clinicians from across different specialities will be available.</li> <li><input type="checkbox"/> The provision of a purpose-built state of the art C&amp;YP's Hospital with improved facilities and an appropriate environment for children, young people, families and staff.</li> <li><input type="checkbox"/> 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&amp;E.</li> <li><input type="checkbox"/> High quality clinical care for patients that is timely, accessible and consistently available.</li> <li><input type="checkbox"/> Sustainable core and specialist emergency and elective service and local regional and national services.</li> <li><input type="checkbox"/> Improved planning and processes for patient transition from Paediatrics to adult services leading to improved pathways of care for patients and families.</li> <li><input type="checkbox"/> The synergy of having co-located adult and Paediatric services providing significant additional research and development opportunities for Children's Services.</li> <li><input type="checkbox"/> 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.</li> </ul>
<b>Children &amp; Adolescent Mental Health Services</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Improved patient care for C&amp;YP with both mental health and physical illnesses. Physical co-location will support faster diagnosis and treatment.</li> <li><input type="checkbox"/> Professional benefits to Paediatricians and CAMHS staff of working alongside each other, reducing the risks of professional isolation and improving the dialogue between colleagues.</li> <li><input type="checkbox"/> Suitably designed premises enabling staff to work effectively when treating young people with serious mental illness.</li> <li><input type="checkbox"/> Reduction in the stigma young people associate with mental illness by being treated on the same site as all other children and young people.</li> </ul>
<b>Primary Care &amp; Community Services</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Provision of appropriate services as close as possible to patients own home.</li> <li><input type="checkbox"/> Improved multi disciplinary and multi agency integrated working.</li> </ul>

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

**2.4 Bed modelling, technology & workforce**

2.4.1 The proposed Reprovision of services will have a major impact on the workforce and the requirement for hospital facilities, including inpatient beds and information management and technology

2.4.2 The Project has undertaken a systematic review of the number of beds required and a high level assessment of the potential workforce requirements. Addressing the workforce requirements will be a major priority for NHS Lothian.

2.4.3 The planning requirements relating to the bed requirements for the new C&YP's hospital are summarised in the following figure.

Area	Total
Paediatric Acute Admission and Assessment Area	37
Inpatient area	63
Cancer unit	10
Critical Care	24
Medical, Surgical & Cancer day case	25
CAMHS Inpatients	16
<b>Total</b>	<b>175</b>

2.4.4 Technology is key to successful implementation of the redesigned pathways of care, providing sustainable paediatric services, as close to home as possible and supporting the regional and national role of the RHSC. The implementation of NHSL's IM&T strategy and the developing RHSC Informatics strategy will be central to this.

2.4.5 An outline review of future staffing requirements has been undertaken, primarily to help determine likely revenue costs as a result of the Reprovision project. The scope of the review included all groups of staff, including: Nursing, Medical, Scientists, Allied Health Professional & Technical grades and Administrative and Clerical grades.

2.4.6 The workforce predictions are based on the following:

- Changes in the hospital workforce as a result of the redesign of inpatient services but excluding the impact of MMC.
- The capacity and activity projections for the service.

2.4.7 In addressing the workforce impact of the outcome of redesign and the impact of MMC, NHSL will continue to work in partnership to:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- Carry out a skills audit/training needs analysis;
- Produce robust workforce plans for the Lothian C&YP's service;
- Work with other referring Health Boards in developing their workforce plans to meet the agreed plans of treating children and young people locally or supporting earlier transfer from the RHSC;
- Work with local education/training providers in developing relevant development programmes;
- Negotiate changes in working patterns to meet the needs of the future service abiding by any nationally agreed terms and conditions;
- Introduce new ways of working where possible prior to the completion of the new hospital build;
- Continue to apply agreed national/local policies pertaining to excess travel, redeployment and earnings protection as required;
- Allocate sufficient dedicated management and clinical time to manage the process of redesigning the workforce.

## 2.5 Option Identification

- 2.5.1 From a long list of six options, the board identified a short list of three to be taken through the formal option appraisal process as follows:

Option Description
Do Minimum – remain in current location utilising existing accommodation
New Build – Little France Site
New Build – St John's Site

## 2.6 The Preferred Option

- 2.6.1 The preferred option for the Reprovision of the new C&YP's Hospital is to build a new hospital on the site at Little France. This option has been selected because:

- 1) Only two of the sites in NHSL, the Little France and St John's options, meet the key recommendations of the Youngson Report that Children's specialist acute services should be co-located with acute adult, Maternity and Neonatal services and that new co-located Children's Hospitals should be created in Edinburgh and Glasgow.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- 2) The Little France option ranks as the best option in terms of the Benefits Appraisal, Financial Appraisal, Economic Appraisal and Risk Assessment.

## **2.7 Procurement Strategy**

- 2.7.1 SGHD guidance in assessing the qualitative aspects of the procurement options has been followed. Based on this assessment, the weighted PPP-ability score is 23.3%. In terms of the guidance, as the score is below 25%, this indicates that there is minimal prospect for PPP.
- 2.7.2 This is further confirmed by the outcome of the quantitative assessment stage of the PPP assessment process that indicates that public capital funding provides better value for money.
- 2.7.3 To capture the complexities of this project given the existing PFI contract at Little France, site constraints and project management issues (i.e. the difficulties of imposing a new PPP type contract into an existing PFI contract), further procurement development was undertaken in the form of a procurement workshop involving external, specialist advisors and senior NHSL representatives from Finance, Procurement, Estates and Capital Planning.
- 2.7.4 The highest ranked route for the capital build is a 'Develop and Construct' (2 stage) model. A close second is the partnering arrangement currently being promoted by SGHD as 'Framework Scotland'.
- 2.7.5 Following clarification from the Framework Scotland project delivery team, this second option, Framework Scotland, is confirmed as the recommended procurement route for the Reprovision of the new Children and Young Peoples.

## **2.8 Summary of Capital and Revenue Costs**

- 2.8.1 The total capital cost for the proposed new C&YP's hospital is £[REDACTED]. A number of sources of capital funding to support the capital position have been proposed as detailed below.



**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**

Expected source of capital funds	Indicative Contributions (Circa £m)
Disposal of NHS Lothian-owned land and release of assets.	█
Net NHS Lothian's CRL (balance)	█
<b>Total NHS Lothian contribution</b>	█
Scottish Government Health Department support for RHSC	█
Contribution from the Sick Kids Friends Foundation	█
Contribution from other charities, including Teenage Cancer Trust, CLIC Sargent, Trefoil House & Ronald McDonald House.	█
Contribution from NHSL Endowments	█
Contribution from the University of Edinburgh	█
<b>Total capital cost</b>	█

2.8.2 Expected sources of revenue funding to bridge the revenue shortfall are as follows:

Revenue	Total (Circa £m)
Projected net total cost of project	█
Baseline budget	█
<b>Revenue shortfall against budget</b>	█
less: Expected external developments funding	█
Expected internal UHD budget transfers from adult services to RHSC	█
Capital charges in relation to non NHS contributions based on current capital support assumptions e.g. charitable donations	█
Capitalisation of lifecycle costs on new build	█
<b>Net draft revenue gap</b>	█

2.8.2 It is proposed that the net revenue position will be managed across the SEAT Boards. Contributions will be shared equitably using agreed methodology<sup>1</sup> linked to 2005/06-baseline activity (grouped into HRGs and mapped to Tariffs). The table below details the proposed percentages to apportion costs across our SEAT partners.

<sup>1</sup> Agreed at North East Operational Planning Group, Finance sub group of SEAT

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

SEAT Boards	%	Recurring (£000)	Non-recurring <sup>1</sup> (£000)	Total (£000)
Borders				
Fife				
Lothian				
Tayside				
Forth Valley				

## 2.9 Statement of Affordability

2.9.1 All the neighbouring NHS partners recognise the financial risks that underpin the revenue position at this stage. However, each of the SEAT Boards accept the proposals and have signed off the OBC in principle. SEAT boards will be kept abreast of key significant developments post OBC stage.

## 2.10 Partnership Working

2.10.1 NHSL is committed to partnership working. Throughout the project and in developing the 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
- Partnership involvement in all working groups and workshops
- Regular briefing on the status of the project.

2.10.2 In implementing the preferred option, this commitment will continue throughout the project.

## 2.11 Public Involvement and Consultation

2.11.1 NHSL has demonstrated its commitment to working with stakeholders prior to the establishment of the reprovision project and will continue to inform, engage and consult stakeholders throughout the Project. A specific project sub group, the Children, Young People and Family Advisory Board, was established early in the project with wide representation, includes representatives from Health, RHSC Family Council, Sick Kids Friends Foundation, voluntary sector, local authorities, staff partnership and the Scottish Health Council.

<sup>1</sup> Non-recurring costs include double running costs and annual excess travel costs required for 4 years

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

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- 2.11.2 The remit of the group has been established using the National Standards for Community Engagement and is focused on ensuring effective involvement of children, young people and their carers, taking account of equality and diversity, in all key aspects of the project and with each of the project groups as relevant.
- 2.11.3 This process has provided information about the new hospital to a variety of different stakeholders including children, young people and their families as well as the general public. The process has also been used to the views of all key stakeholders. The process has developed further as the project progressed with the opportunity to validate proposals and to seek information and views on specific aspects of the plan.
- 2.11.4 The key themes from the responses include support for the following:
- Combination of Single Rooms and Bed Bays within the wards;
  - Overnight accommodation for parents (both by child's bed and in separate facility);
  - An adolescent facility;
  - Development of an Acute Admissions & Assessment Area;
  - Early evening outpatient clinics for Young People;
  - One Stop Clinics;
  - Separate dining facilities near the ward for families and access to snacks and refreshments over the 24hr period;
  - Play and Recreational Facilities both within the hospital and outside the hospital;
  - Car Parking that is accessible and affordable;
  - Green space outside the hospital;
  - Good public transport links.
- 2.11.5 This work has informed the development of the planning for the new hospital and will be ongoing for the duration of the project.

## **2.12 Project Management Arrangements**

- 2.12.1 The successful implementation of this project is vital to the continuing provision of safe and sustainable Children and Young Peoples Health Services in Lothian. Robust project management arrangements are in place to ensure the individual elements of the project meet all expected time, cost and quality criteria.

## **2.13 Timetable**

- 2.13.1 The detailed project plan will be updated following approval of the OBC and agreement of the procurement strategy. At this stage, the Board is aiming to achieve the milestones shown in the figure below:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

<b>Milestone</b>	<b>Complete</b>
OBC approval by NHS Lothian Board	June 2008
OBC approval by SGHD	July 2008
Site master planning complete	Aug 2008
Obtain outline planning consent	Oct 2008
Design	Aug 2009
Construction tender return	Oct 2009
FBC approval by NHSL & SEAT	Nov 2009
FBC approval by SGHD	Dec 2009
Construction	Aug 2012
Commence service	Dec 2012

## **2.14 Confirmation of Status**

- 2.14.1 Lothian Health Board confirms that the preferred option is valid and conforms with:
- a) National strategies for health provision
  - b) The outcome of the review of Specialist Children's Services
  - c) The current Lothian Local Health Plan, and Strategic Context
  - d) The NHS Lothian Property Strategy

## **2.15 Support**

- 2.15.1 The review of this Outline Business Case is endorsed by the NHS Lothian Finance and Performance Review Committee supported by NHS Lothian's Chief Executive, Director of Strategic Planning and Modernisation and the Director of Finance for submission to the Scottish Government whose approval is sought to develop a Full Business Case for the re-provision of the Royal Hospital for Sick Children.

<b>James Barbour, Chief Executive</b>	Dated.....2008
<b>Jackie Sansbury, Director of Strategic Planning &amp; Modernisation</b>	Dated.....2008
<b>John Matheson, Director of Finance</b>	Dated.....2008

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

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### **3 INTRODUCTION AND PURPOSE**

#### **3.1 Introduction**

3.1.1 The purpose of this Outline Business Case (OBC) is to present proposals for:

- A new, fit for purpose, Children and Young People's (C&YP's) Hospital in Edinburgh providing a local service for Lothian, a Regional service to the South East of Scotland and a National service for a selection of specialities
- Reprovision of the range of services currently provided on the Royal Hospital for Sick Children (RHSC) site in Edinburgh, including A&E, outpatients, Day Case facilities, inpatient beds, Theatres, Critical Care services, and Diagnostic services
- The Reprovision of the Child and Adolescent Mental Health Service (CAMHS) and the Mental Health Young Peoples Unit currently provided at the Royal Edinburgh Hospital.

3.1.2 NHS Lothian provides health services to a population of 800,000 in a geographical area covering Edinburgh and the Lothians. The RHSC hospital in Edinburgh provides regional services to the South East of Scotland and Tayside

3.1.3 The options available to NHS Lothian (NHSL) are appraised and the preferred option is identified. In addition, the financial and affordability analysis of the required capital and revenue expenditure is presented.

#### **3.2 Outline Business Case Process and Structure**

3.2.1 The proposals contained in this document are presented in the form of an OBC consistent with the requirements of the Scottish Government Health Department for Capital Investment (HDL (2002) 87). This is the second key stage in a three-stage process:

- The first step involved the preparation of an Initial Agreement, which was approved by the Scottish Government in May 2006.
- The final stage will be the preparation of a Full Business Case (FBC) that presents the preferred option in more detail for approval by NHSL and the Scottish Government Health Department. The FBC is likely to be submitted in 2009.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

3.2.2 The structure and content of this OBC is summarised in the figure below. The Appendices to the OBC are contained in a separate volume. This structure reflects the current Scottish Government Health Department guidance and accepted 'best practice' in business case presentation.

Section	Title
4	<b>Background:</b> provides the background to the project and an over view of the vision and objectives for Children and Young Peoples services in NHS Lothian
5	<b>The Case for Change:</b> summarises the case for change and explains the rationale for the requirement to reprovide the RHSC. The strategic direction given by National policy and NHS Lothian's strategies and objectives are also identified
6	<b>Future Service Provision:</b> provides an overview of the redesign process and a description of the proposed future models of care
7	<b>Bed Modelling:</b> explains the methodology through which the bed numbers required have been determined
8	<b>Information Management and Technology:</b> gives an overview of the IM&T strategy for the project
9	<b>Workforce:</b> provides a profile of the existing workforce and explains the assumptions made in relation to the impact of the proposed new models of care
10	<b>Option Identification and Appraisal:</b> sets out the option appraisal process and summarises the long-list and short-list of options
11	<b>Benefits Appraisal:</b> identifies the anticipated non-financial benefits for each of the short-listed options, measured against the weighted criteria
12	<b>Economic Appraisal:</b> presents the economic appraisal using the Department of Health Generic Economic Model
13	<b>Financial Analysis:</b> presents the capital and revenue costs for each short-listed option and confirms the affordability of the project
14	<b>Risk Analysis:</b> sets out the probability and impact of the projected risks for each option.
15	<b>Preferred Option:</b> sets out the detail of the preferred option, together with the reasoned justification for the choice.
16	<b>Procurement Strategy:</b> explains the proposed approach to procuring the new Children and Young Peoples Hospital including an assessment of the PPP-ability for the project.
17	<b>Public Involvement and Consultation:</b> describes in detail the approach the project has taken to involving stakeholders.
18	<b>Project Management and Timetable:</b> presents an overview of how the project intends to manage the various phases of the project and includes an outline project timetable.

**Figure 3.1: Structure and Content of OBC**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

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## **4. BACKGROUND**

### **4.1 Background**

4.1.1 The RHSC was 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.

4.1.2 In 1995, following a major public appeal to raise the necessary funds, a New Wing was built which replaced previous staff and parental accommodation. The new building included two children's wards with integral parental accommodation and a suite of four theatres with recovery facilities.

4.1.3 The vacated clinical areas were rebuilt within the external structure, creating a new Paediatric Intensive Care Unit, (6 PICU beds, 6 HDU beds and 3 Neonatal Surgical cots), and a new Day Case Unit, with an adjacent Day Case Theatre.

4.1.4 Following a formal visit to the Lothian Children's Services in March 2003, the Scottish Child Health Support Group (CHSG) stated that:

*'The CHSG would urge early consideration of the long-term future of RHSC. Continued reinvestment to maintain the fabric of this institution seemed at first sight to be unproductive in the long term and it is clearly no longer fit for the purpose originally designed, although continued viability of the institution is essential in the short term.....Its relative isolation within the city of Edinburgh makes access a problem for some services, particularly those requiring physical transfer of items such as theatre trays.'*

4.1.5 In September 2005, NHSL gave approval to the development of a business case for the reprovision of the RHSC and the Initial Agreement to develop an OBC was approved by the Scottish Executive Capital Investment Group in May 2006.

### **4.2 Vision & Objectives**

4.2.1 NHSL approved the C&YP Health Strategy at the Board Meeting in November 2006 after a period of public consultation from June until September of that year. The Strategy focused on planning Children's Services in Lothian for the next 10 to 15 years.

4.2.2 A new C&YP Hospital is seen as a crucial element for the provision of 21<sup>st</sup> century services in Lothian for Children and Young People and the Strategy highlights the criteria that have been emphasised as essential for a C&YP's hospital in Kennedy, the Kerr and Youngson reports.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

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- 4.2.3 The national policies outlined in section 5.5 have been referred to throughout the planning process for re-providing the new children and young peoples hospital and are reflected in the proposed service provision.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

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## **5. THE CASE FOR CHANGE**

### **5.1 Overview**

5.1.1 The key factors driving the need for change in C&YP's services in Lothian are the:

- Need to deliver sustainable specialist services whilst meeting the challenge of relatively small numbers of patients
- Challenge of delivering sustainable specialist services with a small number of expert clinicians
- The confirmed need to deliver high quality and clinically effective services
- Inadequacy and unsuitability of existing premises and facilities
- Modernisation and development of support services to ensure the most efficient and effective use of resources
- Impact of Modernising Medical Careers, the Tooke report and the European Working Time Directive on current workforce availability, particularly doctors in training

5.1.2 The combination of these issues significantly compromise the ability of the service to provide high quality, modern services to Children and Young People in Lothian and the Health Boards within the South East and Tayside Region (SEAT). New, innovative ways of providing hospital and community services are needed to meet the needs of the local and regional population.

### **Summary of Current Services Provided**

5.2.1 NHSL Children's services span the complete patient pathway for children requiring both short-term episodes of care and long-term and complex care.

5.2.2 NHSL currently provides inpatient acute Children's services on 2 sites, the RHSC (up to 13<sup>th</sup> birthday for new patients attending A&E) & St John's Hospital Children's Ward (up to 16<sup>th</sup> birthday). Young people aged 13 years and over attending A&E in Edinburgh are cared for in adult facilities.

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH OUTLINE BUSINESS CASE

### *Royal Hospital for Sick Children*

5.2.3 Secondary and Tertiary services on the RHSC site are routinely provided in a wide range of specialities to a Lothian and South East of Scotland patient group and with highly specialist referrals from across Scotland.

5.2.4 The following figure identifies the current number and configuration of staffed beds:

Type	Number	Notes
Inpatients	109	All specialities Includes change in bed numbers in winter
Day case	26	Surgical, Medical & Cancer
Critical Care	17	8 PICU, 6 HDU & 3 Surgical Neonatal
CAMHS	12	Tier 4 services
<b>Total</b>	<b>164</b>	

**Figure 5.1: RHSC & CAMHS Current Bed Numbers and Configuration**

5.2.5 A wide range of services are provided including:

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)
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
Gastro-enterology	Out patient services	Theatres
Services shared with adult service but provided on site at RHSC		
Dentistry	Neurosurgery	Orthotics
Dermatology	Orthopaedics	Plastic surgery
ENT		
Services shared with adult service provided off site		
Paediatric Pathology (RIE)	Virology (RIE)	Ophthalmology out patients (PAEP)
Spinal deformity surgery outpatients (RIE)	Microbiology (RIE)	HSDU (RIE)
Neuropathology (WGH)		

**Figure 5.2: Range of Services Provided**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

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5.2.5 A number of these are national services, including:

- Paediatric Spinal Deformity Surgery (nationally funded)
- PICU Retrieval service (nationally funded)
- Paediatric Intensive Care (nationally funded until 2012)
- MCN for Cleft Lip & Palate Surgery

5.2.6 There is an on-site Pharmacy, Radiology department with MRI and CT scanners, Haematology and Biochemistry laboratory services and Therapy department (Physiotherapy, Occupational Therapy, Speech and Language Therapy and Dietetics). As shown in the figure above, other clinical services are provided off-site from the Royal Infirmary of Edinburgh at Little France, PAEP, WGH and the Lauriston building.

***St John's Hospital at Howden, Livingston***

5.2.7 Paediatric inpatient services on St John's site are provided from a total of 18 beds (12 beds for General Medical, ENT, Ophthalmology, Dental Services and 6 beds for a GP referral service).

***Children & Young People's Services in the Community***

5.2.8 Outpatient services for children and young people are provided out with the RHSC with clinics currently provided in Roodlands, Edenhall, Leith Community Treatment Centre, St Johns Hospital, Royal Infirmary of Edinburgh, Lauriston building and the Western General Hospital as well as a number of Medical Centres across Lothian. Speech & Language Therapists, Physiotherapy and Occupational Therapy services are also provide services in various locations throughout Lothian, in schools and nurseries as well as Medical Centres.

5.2.9 Dedicated Community Paediatric Services provided from the RHSC include 2 Respite and Residential Units for children with complex health care needs, an Outreach, Specialist Nursing service, Community Children's Nursing, Community Paediatrics, Child Protection, the Special Schools Nursing team and Community Allied Health Professions. Community services are delivered in diverse settings and from a number of different bases within the community and working with a range of interagency/agency partnerships across Edinburgh, East and Midlothian.

5.2.10 Community Paediatric Services in West Lothian include a number of general Paediatric outpatient sessions held at Medical centres such as Carmondean, Broxburn and Fauldhouse. Additionally there is a child development centre at the Beatlie Campus in Livingston where children with complex needs are seen by a range of professionals facilitating integrated practice.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

***Child and Adolescent Mental Health Services (CAMHS)***

5.2.11 CAMHS provides a tiered service delivery model involving outpatient, day patient and inpatient facilities for children and adolescents up to their 18<sup>th</sup> birthday. The latter age-range came into effect in 2005 with the enactment of the new Mental Health Act that states that children and young people with mental health problems should have services that are age appropriate to their needs.

5.2.12 The following figure identifies the 4 tiers of service provision:

<b>Tier 1</b>
Provision of liaison, consultation and training to wide range of staff supporting the mental health and well being of Children & Young People
<b>Tier 2</b>
Provision of support and advice to primary care, community health, education & child care staff with a special interest in mental health and well being to allow them to address identified needs and problems in children and young people
<b>Tier 3</b>
Specialist CAMH Sector teams who are multi-disciplinary & multi-agency who specialise in assessing, diagnosing and treating children and young people with more complex mental health needs.
<b>Tier 4</b>
The provision of intensive specialist diagnosis, treatment of children and young people with complex conditions.

***Figure 5.3: CAMHS Tiers of Service Provision***

5.2.13 The Tier 3 teams are locality-based with one in each Local Authority area except in Edinburgh where there are 2. Most referrals to CAMHS are dealt with by one of these teams. Tier 4 services include day programmes, inpatient care and a number of tertiary speciality teams. There are currently 12 regional inpatient beds with a planned and nationally agreed increase to 16 by the end of 2008/09.

5.2.14 The current 12-bed 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 is built along a corridor with 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.

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH OUTLINE BUSINESS CASE

5.2.15 CAMHS outpatient services are divided into two distinct areas. Firstly, geographically based generic CAMHS teams in the various sectors in Lothian and secondly, specialist services serving particular high-risk groups. These include Learning Disability, the Child Sexual Abuse Team, the Paediatric Psychology and (Psychiatric) Liaison Service (PPALS) and Edinburgh Connect (the advice and consultation service for 'Looked After Children'). There are also specialist services for Attention Deficit & Hyperactivity Disorder and for children with emotional and behavioural difficulties.

### Royal Hospital for Sick Children Baseline Activity

Activity Type	Episodes
Day cases	6,920
Elective inpatients	2,342
Non-elective inpatients	6,622

**Figure 5.4: Royal Hospital for Sick Children 2005/06**

### Waiting Time Performance – Paediatric Service 2007/08

Standard	Timescale	Performance
Maximum wait for inpatient treatment – 18 weeks	Dec 2006	Achieved
Maximum wait for out patient treatment – 18 weeks	Dec 2007	Achieved
A&E 4 hours target – achieve 98%	Dec 2007	Achieved

**Figure 5.5: Waiting Time Performance – Paediatric Service 2007/08**

### CAMHS Baseline Activity

5.2.16 Activity data within CAMHS was reviewed for the three year period from 2003/04 to 2006/07. The activity over this period has been averaged giving the following baseline figures:

Activity Type	Episodes
Day Programme Attendances	2,300
Inpatients	45
Inpatient Average Length of Stay	76 days

**Figure 5.6: Child and Adolescent Mental Health Services**

## 5.3 Sustaining Clinical Services

5.3.1 Changes in clinical practice and the organisation of clinical services, together with the advances in medical technology and treatments, produce conflicting pressures. The growing trend towards sub-specialisation requires sufficient critical mass of clinical activity to maintain the skills and knowledge of clinical teams. This is a particular challenge in Paediatric services, where groupings of clinical activity are often small.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- 5.3.2 Conversely, other advances in specialist diagnostic and clinical treatment have led to a reduction in the need for certain forms of acute care to be centralised in an inpatient hospital setting. This is demonstrated by the growth in day surgery and day treatments that have reduced the need for an inpatient stay.
- 5.3.3 Achieving the right balance between these two conflicting factors is seen as critical to the success of the reprovision project and has been, and will continue to be, the focus of the work associated with clinical redesign and planning the future provision of Paediatric services.

### **Workforce Sustainability**

- 5.3.4 Sustainability of services is dependent on a reliable supply of suitably qualified doctors, nurses and allied health professionals. This is another particular challenge for specialist Paediatric services where the critical mass of these clinicians is small and there are critical interdependencies within specialities. In addition, the recruitment and retention of staff in specialist areas (particularly nursing and AHP's) has become more challenging over recent years due to the cost of living, housing and transport issues in Edinburgh.
- 5.3.5 Services in Lothian and the other South East of Scotland Health Boards are working together to achieve and maintain compliant junior doctor rotas post 2009. The implementation of Modernising Medical Careers (MMC) adds a further challenge to sustaining services and the full impact of this is currently unclear. This presents significant challenges and will require a fundamental change to working practice in the future although these will need to be in place before the new hospital opens. These will impact on the medical workforce but will also have significant implications for the current working practices of all other clinical and support staff, which require to change to ensure the provision of sustainable services. The working assumptions in the OBC are outlined in section 9.

### **5.14 Functional Suitability of Current Facilities**

- 5.4.1 The NHSL Property and Infrastructure Strategy published in 2007 recognised that the RHSC requires to be significantly modernised to ensure an appropriate environment for the provision of high quality paediatric 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 site.
- 5.4.2 The hospital is currently 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

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

and, in terms of functional suitability, 13% is deemed to be unfit for its present purpose. 6% of the hospital is recorded as overcrowded.

- 5.4.3 The Estates Building Survey identifies the costs of upgrading the building to ensure compliance of the existing hospital with statutory requirements as [REDACTED].
- 5.4.4 The age and fabric of the building and the layout of patient facilities makes it difficult to achieve the required infection control standards, to provide adequate isolation or barrier nursing facilities and to maintain standards of cleanliness.
- 5.4.5 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, Medical Photography 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.
- 5.4.6 Reprovision on another site would provide an opportunity to market the current hospital site and associated support accommodation, thus releasing significant capital from the property assets.
- 5.4.7 With regard to the Millerfield/Rillbank properties (a mixture of ownership by NHSL & NHSL Endowment accommodation), steps have been taken to reinstate aspects of the building necessary under the Historic Scotland Category "B" Listing. The recent Statutory Notice imposed by the City of Edinburgh Council has reinforced this. Within the main hospital site the interior of the Chapel of Rest is Historic Scotland Category "A" Listing. Discussions are in the early stages to ensure this facility is included in the City of Edinburgh Council, Planning Authority Local Plan.

## **National Context**

### **5.5 National Policies**

- 5.5.1 The delivery of children and young people's services is influenced by a number of national policies and strategies, which set the national context. These are reflected in the OBC and are:
- *Bristol Royal Infirmary Inquiry* (Kennedy 2001)
  - *Review of Tertiary Services for Children in Scotland* (Youngson 2004)
  - *Building a Health Service 'Fit for the Future'* (Kerr 2005)
  - *Delivering for Health*, Scottish Executive Response to Kerr (2005)

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- *The Mental Health of Children and Young People, a Framework for Promotion, Prevention and Care (Scottish Executive 2005)*
- *Psychiatric Inpatients Services in Scotland, Report on the Inpatient Working Group (Scottish Executive 2005)*
- *Emergency Care Framework (Scottish Executive 2006)*
- *MCN Strategy for Specialist Services (Scottish Executive 2007)*
- *Delivering a Healthy Future, An Action Framework for Children & Young Peoples Health in Scotland (Scottish Executive 2007)*
- *Better Health, Better Care Action Plan (Scottish Government 2007)*

5.5.2 The combined recommendations in these publications provide the framework for redesigning services, developing new models of care and in turn, identifying the facilities required to support the provision of high quality care to Children and Young People in fit-for-purpose accommodation.

5.5.3 **Youngson's Report** in 2004, informed the work of the Specialist Paediatric Sub group of the **National Framework for Service Change** (Kerr Report 2005). Their recommendations included:

- Children's specialist acute services should be co-located with adult, maternity and neonatal services; however the distinct nature of children's services as highlighted by the Bristol Inquiry (Kennedy Report). should be protected and preserved; and
- This should be progressed as a matter of urgency in Edinburgh and Glasgow where new, co-located C&YP's hospitals in Edinburgh and Glasgow are recommended.

5.5.4 **Delivering for Health** reiterated the main recommendations of the Youngson report, including;

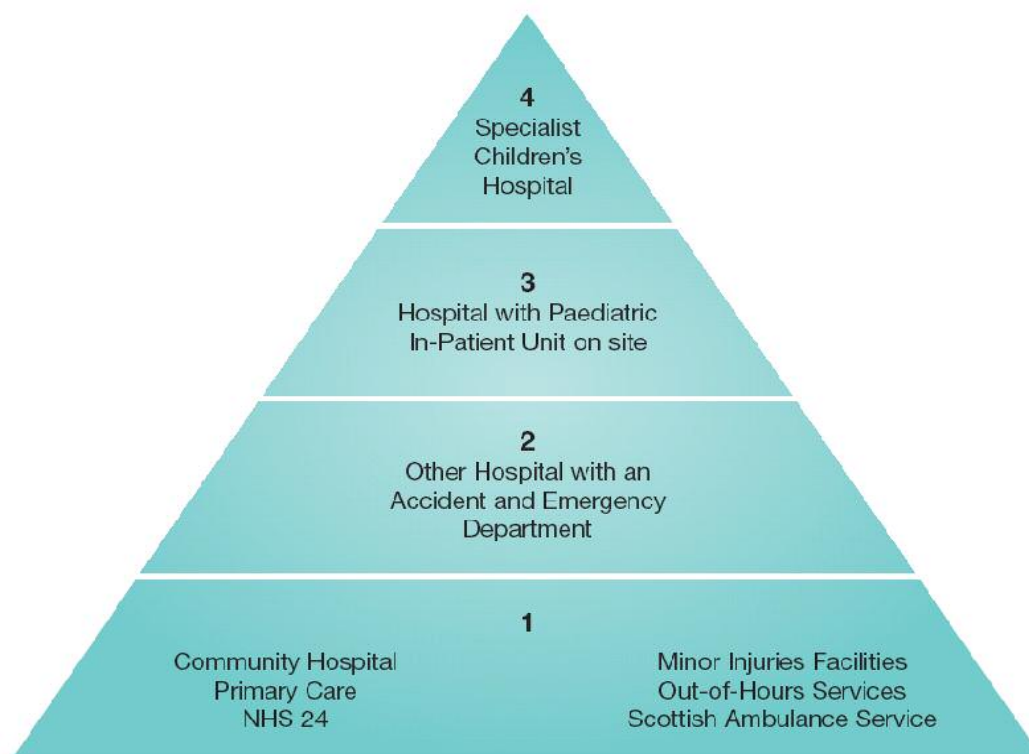
- Development of Managed Clinical Networks (MCN's) at regional and national level;
- Redesign of services using a 4 level model of care describing how services could be provided and organised at local, DGH and regional and national levels;
- An increase in specialist staff to meet the working time regulations and service gaps;
- Development of specialist / consultant roles for nursing and AHP staff; and



## NHS Lothian Reprovision of Royal Hospital for Sick Children - Edinburgh Outline Business Case

- Development of regional and national planning and commissioning of services.

5.5.5 **The Emergency Care Framework** provides a template for optimal emergency care provision for C&YP based on a four level model of care summarised as follows:



**Figure 5.7: Tiered Framework for Emergency Care for Children & Young People**

5.5.6 The recommendations noted in this section are further supported by the ***Delivering a Healthy Future, An Action Framework for Children & Young Peoples Health in Scotland*** and the '***Better Health, Better Care: Action Plan***'. Better Health, Better Care also states a clear policy presumption against centralisation as well as placing emphasis on ensuring best value by maximising efficiency and productivity to ensure sustainable services. There is also emphasis on:

- Patients and carers being genuine partners in the delivery of their care
- Expanding and strengthening Managed Clinical Networks to implement improvements in neurosurgery and specialist children's services.

5.5.7 In addition, the decision of the Specialist Children's Services Steering Group in Scotland will inform the future configuration of Paediatric services. The report from this group, the ***National Delivery Plan for Children & Young People's Specialist Services in Scotland*** is out for consultation

## NHS Lothian

### REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH

#### OUTLINE BUSINESS CASE

---

until the end of May 2008. In it, the Scottish Government has committed a total of £20 million, recurring, phased over the next three years to support its implementation. The report identifies that further work is currently underway to refine the criteria and processes for prioritising this investment in specialist children's services. Consideration of the priority areas for services in Lothian and SEAT has taken place as part of the clinical redesign process described later in section 6.

- 5.5.8 The findings of both the *Mental Health of Children and Young People, a Framework for Promotion, Prevention and Care* and the *Psychiatric Inpatients Services in Scotland, Report on the Inpatient Working Group* imply significant redesign of many parts of the Child and Adolescent Mental Health Services. This includes an increase in the number of inpatient beds from 12 to 16 in the South East of Scotland Region.

#### Local policy context

#### 5.6 NHSL Children and Young People's Health Strategy

- 5.6.1 As highlighted in section 4.2, NHSL's Children & Young People's strategy focuses on planning Children's services in Lothian for the next 10 to 15 years. The proposal to reprovide the acute hospital services from the RHSC in fit-for-purpose accommodation is key to this strategy. A continuous process of involvement and engagement with patients and parents and with the public has informed the strategy. Feedback from patients, parents and the public during this process included:

- Strong support for C&YP's health services to be as local as possible.
- Support for Little France as the preferred site for the new C&YP Hospital, alongside the Maternity Hospital, tertiary Neonatal Unit and major Adult Acute Facilities. Feedback included the need for robust transport plans and this will be progressed with council colleagues over the next few years.
- A request for provision of age-appropriate services at the C&YP Hospital,

- 5.6.2 This process of involvement and engagement continues as part of the Reprovision Project and details are outlined in section 17.

- 5.6.3 The C&YP Health Partnership has been established to support the implementation for the strategy with a number of work streams focusing on:

- Vulnerable children,
- Children and Adolescent Mental Health,
- Disabilities and complex care,

## NHS Lothian

### REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH

#### OUTLINE BUSINESS CASE

---

- The healthy child
- Developing Children and Young People's Services in the Community
- Acute hospital services and the Re provision of the C&YP's hospital (this project).

5.6.4 The Lothian C&YP's Health Partnership provides overall direction to each work stream, with the work of each group feeding into the C&YP's planning groups in each Local Authority area. Two of these work streams are progressing their reviews for both the Children & Young People's Health Partnership and the Re provision Project. These are:

- ***Children & Adolescent Mental Health Services***

This group has led the work stream to include the re provision of Tier 3 & 4 services in the new C&YP's hospital. This integration of the Children & Adolescent Mental Health Service (CAMHS) and the acute services for Children and Young People builds on the recognition of the complementary roles and shared interests of the Paediatric and Mental Health specialities in assessing and treating children and young people with serious health problems.

- ***Developing Children's & Young People's Services in the Community***

The work to develop C&YP's services in the community is being progressed by health partners working closely with four Local Authorities in Lothian. This includes progressing and co-ordinating the joint asset management required to ensure the co-location of services to facilitate integrated practice and 'building the team around the child'.

The NHSL C&YP Health Strategy identifies clear direction for providing care as close to home as possible and proposes the use of community treatment centres and other local facilities to support this agenda. Additionally, the establishment of child development centres in each Local Authority area is advocated to deliver a range of health and partner agency services for C&YP in settings that are easily accessible to local communities.

## 5.7 Integrated Children's Services Plans

5.7.1 The Integrated Children's Services Plans for each of the Local Authority areas in Lothian specifically refer to the re provision of RHSC and reflect the commitment to deliver services locally wherever appropriate. These Service Plans include changes in the health services in the community to reflect this shift in clinical activity from the hospital to more local settings.

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH OUTLINE BUSINESS CASE

---

The need to develop the skills and competencies of multi-agency community staff to support this agenda is also recognised.

### 5.8 Improving Care, Investing in Change

5.8.1 After public consultation in 2004, the NHSL's strategic change programme '*Improving Care, Investing in Change*' received ministerial approval in July 2005. *Improving Care, Investing in Change* (ICIC) includes the following projects:

- Better Acute Care in Lothian (BACiL)
- Older Peoples Services
- Mental Health and Well-being Strategy

5.8.2 The Initial Agreement for the reprovision of the new C&YP's Hospital was approved by the Scottish Executive in May 2006 and is now part of the ICIC programme.

### 5.9 Other Relevant NHS Lothian Policies

5.9.1 There are a number of policies and procedures that apply to all plans for major change in NHSL. These are:

- The Equality and Diversity strategy that requires all strategies and plans to be subject to an Equality and Diversity Impact Assessment.
- Health Improvement – working with partners in education and social services to promote and encourage a healthy lifestyle amongst the population is a fundamental objective of NHSL. The new C&YP's hospital will continue to be a WHO Health Promoting Hospital.
- Patient Focus and Public Involvement strategy – the strategy for the project to ensure involvement and engagement is embedded in the project is discussed more fully in section 17.
- Sustainable Development Strategy, requires all new builds to ensure the use of cost effective and efficient energy sources and minimise waste during construction.

### 5.10 Clinical Drivers for Change

5.10.1 The impact of the recommendations provided by the publications outlined in section 5.5 on services in Lothian and the South East of Scotland are that:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- Clinical services are planned to ensure provision of age-appropriate care up to 16 years, and up to 18 years if clinical need or patient choice, with effective transition from child to adolescent service and adolescent to adult service;
- Further development of Ambulatory Care with supporting facilities is encouraged to reduce the need for inpatient care and provide more care closer to home;
- Paediatric General Surgery will be planned and organised on a regional basis, with the establishment of a larger group of Paediatric Surgeons in Lothian, providing an outreach surgical service within other hospitals in the region;
- High Dependency Units (HDUs) are developed into regional HDU centres within a national Critical Care Network. The capacity required will be informed by the national HDU audit that is currently underway via NSD;
- The two Paediatric Intensive Care Units (PICU) in Lothian and Glasgow are managed as a single national PIC service within the Critical Care Network (established in April 2007 with the National Services Division managing a single PICU on two sites);
- NHS Scotland's IT Strategy will support the roll out of technologies such as telemedicine and digital image transmission to support the delivery of sustainable specialist services for Scotland in partnership with local services.

5.10.2 These recommendations are reinforced by the outcome of the work of the National Steering Group for Specialist Children's Services in Scotland in the publication of the draft National Delivery Plan (NDP) for Children and Young People's Service in Scotland that is being consulted on until the end of May 2008.

5.10.3 The National Delivery Plan also recognises that, in future, models of care for specialist children's services are likely to be based on a network approach, planned and delivered at two levels – regional and national.

5.10.4 The following specific recommendations are also highlighted:

- A National MCN should be established for children's cancer services with level 4 provision in both Edinburgh and Glasgow.
- National MCN's should also be established for Cystic fibrosis and Inherited Metabolic Diseases

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- The following services should be planned on a regional basis:
  - Dermatology
  - Emergency Care
  - Endocrinology
  - Gastroenterology
  - General surgery
  - Respiratory
  - Rheumatology
  - High Dependency

5.10.5 In addition, the report of the Neuroscience Implementation Group (Glennie 2008) on adult neuroscience services recommends the establishment of a single national structure for neuroscience, with a neurosurgical Managed Service Network in close association with all other neuroscience disciplines.

5.10.6 This group supports the concept of a single service for elective paediatric neurosurgery but is not currently in a position to determine the location of a single site. The status quo is therefore maintained. Maintenance of neuroscience services in Edinburgh is seen as important both to support national policy and to ensure sustainability of PICU services.

5.10.7 Other drivers for change include:

- The need to redesign services and develop staffing models that sustain specialities whilst meeting the constraints of the European Working Time Regulations on all staff groups, the required legislative reduction in Junior Doctor hours and the impact of Modernising Medical Careers on the availability of doctors-in-training.
- The challenge associated with sustaining highly specialist Children's services due to the relatively small numbers of patients, the small numbers of clinical specialists and the necessity of delivering a sufficient 'critical mass' of clinical activity;
- An increasing number of support services have been amalgamated within the single system of NHSL to provide increased effectiveness of service provision. These are located on adult service sites – e.g. laboratory services for Pathology, and core Biochemistry / Haematology services, and HSDU service for sterilisation of theatre trays.
- Acknowledgement of anticipated demographic changes in the population in the South East of Scotland, which is expected to see an increase in population, as well as the improved survival of children with complex clinical needs. It is anticipated that this will lead to an

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

increased demand on hospital facilities that cannot be delivered within the constraints of the current hospital building.

- Recognition of the increasing birth rate in Lothian where recent data (from 2006/07 onwards) for Simpsons Centre for Reproductive Health shows an annualised increase of 9.3%. This equates to 550 births per year. As it is known that currently 43% of acute Paediatric activity in the RHSC relates to those aged 4 or younger and, that this age group accounts for 53% of occupied bed days, this will have a significant impact on the number of beds required. Data from Glasgow shows a similar relationship between patients aged 4 years or younger and the number of occupied bed days.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

## **6. FUTURE SERVICE PROVISION**

### **6.1 Overview**

- 6.1.1 Services for children and young people have changed significantly over the last 15 years. These changes are across Lothian & SEAT as well as nationally and have been driven by the areas identified in section 5. It is acknowledged that these changes have often been made without recognising the impact on other specialities and services, particularly at regional and national level.
- 6.1.2 The redesign process for the new hospital has worked towards addressing this, by meeting and working with regional partners to support planning services on a more regional basis to ensure equitable access and care provision to children and families. This in turn has helped inform National planning. This has been achieved by involving Executives and clinicians from each of the SEAT NHS Boards, by linking closely with the Glasgow Reprovision Project and via the SEAT C&YP's Planning Group. The outcome of the National Review of Specialist Children's Services currently out for consultation will inform this.
- 6.1.3 As outlined in sections 5.3, sustaining clinical services within paediatric services is challenging in terms of:
- Critical mass of clinical activity
  - Small numbers of specialist clinicians
  - Maintaining skills and knowledge within specialist teams
  - Achieving the balance between sustaining services locally and the need to centralise some services
  - Recruiting and retaining sufficient, experienced clinical staff with specialist skills
- 6.1.4 The following chapter outlines the outcome of the redesign process and the proposed new models of care to address these challenges to support the provision of sustainable clinical services in the future.
- 6.1.5 The redesign process has been inclusive: involving Lothian acute Children's Services, Primary Care, Lothian Unscheduled Care Service, South East of Scotland District General Hospitals Children's Services, specialist Children's Services, staff partnership and young people and families, including the RHSC Family Council.
- 6.1.6 The principles of redesign are outlined in appendix 6.1.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

## 6.2 Assumptions for Future Service Delivery

6.2.1 A number of assumptions were articulated in the Initial Agreement, and these are as follows:

*'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 NSD 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.*

6.2.2 These assumptions are supported by the recommendations in the report on the outcome of the work of the National Steering Group for Specialist Children's Services in the publication of the draft National Delivery Plan (NDP) for Children and Young People's Service in Scotland as outlined in section 5.5. Once the consultation is complete, and the final recommendations confirmed, the implications of the specific recommendations will be built into the plans for future service provision. In addition, as also identified in section 5.10.5, the Glennie report confirms that paediatric neuroscience services will continue to be provided in the RHSC.

6.2.3 In the meantime, the new C&YP's Hospital continue to be planned based on the assumptions outlined in point 6.2.1 above and on the basis that secondary / acute, tertiary regional and highly specialist national services will be provided from RHSC.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

### 6.3 Service Specification

6.3.1 The proposed model of care for C&YP's services in Lothian has been developed as a 'whole system' integrated service recognising the interdependencies between:

- Acute Paediatric and adult services;
- Paediatric, maternity and neonatal services;
- Community, Health and Social Care services;
- Children's services in District General Hospitals in the South East of Scotland; and
- Tertiary Children's services in the 4 C&YP's hospitals in Edinburgh, Glasgow, Aberdeen and Dundee.

6.3.2 It is against this background of partnership working and improved integration that NHSL seeks to develop and redesign services to ensure manageable and sustainable future provision of health care for C&YP's Services.

6.3.3 The developing models of care and plans for the new C&YP's hospital have also been supported by the fundamental principles provided by the RHSC Family Council. These are:

- *'The new hospital will be a beautiful place with C&YP at the centre of a nurturing, engaged and safe community.'*
- *'It will provide systems and spaces that recognise the healing capacity of sustaining everyday lives and provide parallel pathways of care for parents, carers and families.'*

6.3.4 These principles are reflected in the Principles of Redesign outlined in appendix 6.1 and the Capital Planning Assumptions outlined in appendix 15.1. In these assumptions it is highlighted that the design approach will reflect age appropriate care, clinical requirements and a supportive environment for patients, parents, visitors and staff.

6.3.5 Key benefits of good design include:

- Use of light
- Views out-with and within to offer interest and diversion
- Accessibility into and from the hospital for all, including access to recreation and "green space" and other support services in addition to clinical requirements.
- Safety and security for all users of the building and its environment.
- The hospital in context of the locality and a developing community in the wider Little France area.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

#### **6.4 Delivery of New Models of Care**

6.4.1 The following section gives an overview of the proposed models of care. The complete redesign report is attached as appendix 6.2.

##### ***General Principles***

6.4.2 The models of care identified in the redesign process will support and inform the ongoing development of a single, combined paediatric service provided on two sites at the RHSC and St Johns.

6.4.3 The outcome of service redesign identifies the following key principles:

- The RHSC 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 for patients unless there is a sound reason for it to be provided centrally.
- Unscheduled / emergency care will be managed separately from scheduled care during the initial 48 hour period.
- Age appropriate facilities will be embedded in the design of the hospital as a whole, including the establishment of an adolescent inpatient facility.
- 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.

##### ***Unscheduled Care – 'The Front Door'***

6.4.4 A&E in RHSC will receive patients up to 16 years of age in age-appropriate facilities that will be close to the adult A&E service. This will be supported by the establishment of a Paediatric Acute Admissions and Assessment (PAA) area close to A&E where emergency patients will be admitted and stay for no longer than 48 hours. The area will be configured with a medical, surgical, adolescent and short stay observation area. It will be

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

lead by senior, experienced Paediatric medical, nursing and AHP staff, who are skilled in making early decisions and planning treatment. There will be easy access to diagnostic and therapy services to support improved efficiency, decision making and the pathway of care.

- 6.4.5 This proposal will focus the initial unscheduled clinical activity in one area and will support the delivery of the 'Hospital at Night' concept providing the opportunity to reduce the need for multiple rotas and establish safe, effective, 24/7 emergency services, which will be sustainable into the future.
- 6.4.6 Consideration is also being given by NHSL to the establishment of an Out-of-Hours (OoH) Treatment Centre for adults and children and young people adjacent to the adult and Paediatric A&E departments. This co-location would mean that paediatric A&E staff will be able to support the OoH Treatment Centre staff in providing a service to C&YP. This would support the provision of care to the large number of children who are most appropriately managed within primary care, but who currently often self-present at RHSC A&E dept.

***Outpatients & Medical Day Care***

- 6.4.7 Outpatient facilities will be configured in one department co-located with the Medical Day Case unit, close to the 'front door' facilities identified above to avoid duplication of the required support facilities. An Assessment and Treatment Centre will be established as part of the new outpatient area to support multi-speciality and multidisciplinary clinics for patients with complex needs. This will be adjacent to the therapy suite.
- 6.4.8 The clinic day has been reconfigured to support extended-day working and the establishment of late afternoon and early evening clinics, particularly for adolescents.
- 6.4.9 A number of Paediatric outpatient services, currently provided out-with the RHSC, will be relocated in the new outpatient facility. These are:
- Spinal Deformity Surgery
  - Paediatric Audiology
  - Paediatric Dermatology
  - Paediatric Ophthalmology
  - Cleft lip and palate surgery
- 6.4.10 The Medical Day Case Unit will provide facilities for nurse/ AHP led pre-planned investigations and daytime treatments and will be co-located with the outpatient facilities.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

6.4.11 The redesign of outpatient services has progressed along side NHSL's, Children & Young People's Health Partnership, and Children and Young Peoples Services in the Community group, to identify outpatient activity that had the potential to be provided in the community.

***Scheduled Inpatients***

6.4.12 Inpatient facilities will be provided for five main care groups:

- Medical (incorporating all medical subspecialties, sleep studies and a 'home in hospital')
- Surgical (incorporating all surgical subspecialties)
- Neuroscience (incorporating video telemetry)
- Cancer (including inpatients, day patients and teenage cancer patients)
- Adolescents

6.4.13 Ability to flexibly manage inpatient facilities will be key to ensuring beds are available for patients in the right place and the right time. This will minimise movement of patients between specialties both on a day-to-day basis and when managing known seasonal variations in activity. It is intended that that the bed envelope for Medical, Surgical, Neuroscience and Adolescents will be designed without defined demarcation of ward areas to support this required flexibility.

6.4.14 The importance of retaining sub-specialty teams is recognised and the workforce plan will be predicated on ensuring that multi-professional staff with the required specialist skills are available to care for patients.

6.4.15 It is proposed to establish a 'home in hospital' facility as part of the inpatient bed area. This facility will support the care of stable patients with complex health care needs, for example complex respiratory patients requiring long term ventilation support, as part of preparing patients and families for discharge and providing ongoing review after discharge in a less technical environment.

***Theatres & Day Surgery***

6.4.16 All scheduled surgical patients will routinely be admitted on the 'day of surgery' unless there is a clinical reason for an earlier admission. This will be supported by nurse led pre-assessment and the family hotel for those requiring pre-operative investigations or to travel to Edinburgh prior to the day of surgery.

6.4.17 The theatre complex will be configured as a single clinical area including the day surgery unit and the facility will be configured to support separate pre and post-operative patient 'flows'.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

6.4.18 It is proposed that for the majority theatre sessions will be complete by 5 p.m. However, there are currently some sessions that run until 7 p.m. due to the complexity of surgery e.g. spinal deformity and cleft surgery. The opportunity to increase the number of extended operating days is being explored as part of the overall redesign of clinical services.

***Critical Care***

6.4.19 The Critical Care facility will include the:

- Paediatric Intensive Care Unit (PICU)
- Intensive Care Retrieval Service
- Medical High Dependency Unit and Surgical and Burns High Dependency Unit (HDU)
- Surgical Neonatal Unit

6.4.20 These facilities will be located together and in close proximity to the theatre complex to facilitate ease of transfer of patients between facilities and flexible effective working of senior medical, nursing and theatre staff.

***Child and Adolescent Mental Health Services (CAMHS)***

6.4.21 It is proposed that Tier 4 inpatient and day patient services will be accommodated together in the new RHSC with the nationally agreed increase of inpatient beds from 12 to 16. This will afford the opportunity to provide an integrated care pathway for this group of severely mentally ill patients supported by acute paediatric specialities when required. This is particularly important 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.

6.4.22 Day patient services will continue to be delivered in West Lothian and in the RHSC for Edinburgh, East and Midlothian. Outpatient services will continue to be delivered in the community in a variety of sites across Lothian. The role of non-medical members of CAMHS teams will be expanded to include, for example, the introduction of nurse specialists with prescribing skills in sector teams.

***Children and Young Peoples Services in the Community***

6.4.23 As part of the implementation of the NHSL Children & Young People's Health Strategy it is proposed to establish a network of Lothian-wide C&YP's Community Care units, developing and expanding on the principles established by the Beatlie Campus in West Lothian, to provide integrated service provision and taking appropriate specialist services closer to home.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- 6.4.24 The location of these units across Lothian has not yet been fully identified. The Joint Directorate of Health and Social Care in Edinburgh is fully committed to the provision of joint premises development that will support paediatric service in the community. Agreement in principle has been reached that care closer to home in Edinburgh will be delivered through providing community services in five partnership centres in Leith, Muirhouse, Westerhailes, Craigmillar and Firrhill. The details of these will be addressed in the business cases for each. This work will continue to be progressed as part of the ongoing work of the NHSL C&YP Strategy for Children and Young Peoples Services in the Community.
- 6.4.25 The facilities provided for these centres will be to an agreed standard specification that ensures they are quality assured, age-appropriate and clearly 'sign posted' as services for Children & Young People, aligned to the RHSC. This will support the transfer of activity currently being undertaken in the RHSC although the details are still to be worked through.

***Regional Working Assumptions***

- 6.4.26 It is assumed that:
- IT & telecom links will support the moving of images & information between DGH's and the regional centre, and not the patient - unless there is a clinical need.
  - Paediatric General Surgeons will 'out-reach' to Fife, Borders and St John's Hospital in West Lothian, working closely with local clinicians to undertake day case surgery and clinics in these areas. This assumption is based on agreement with each SEAT Board to this proposal.
  - Patients will be repatriated to their local DGH if the required service can be provided locally and they no longer require clinical management in a specialist / highly specialist environment.
  - Formal and informal clinical networks will be developed that will support sustainability of local services.

**6.5 Room Configurations**

- 6.5.1 The question of single rooms or multiple bed bays has been specifically explored as part of the consultation for the initial plans for the new C&YP's Hospitals in Edinburgh and Glasgow. The main findings of both projects are that children, young people and their families want a mixture of single and four bedded bays. These findings were forwarded to the author of an early draft report on single room provision in Scotland produced by the Scottish Government Nurse Directors Group.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

6.5.2 A report summarising the outcome of the Edinburgh project consultation is attached as appendix 6.3. The key points identified are:

- Children, young people and their families have stated a desire for a mixture of single and four bedded bays
- Children as part of their development require social interaction and for those unable to mobilise and confined to bed, particularly for long periods, benefit from being cared for with other children
- Nurse: patient ratio's would require to be higher with 100% single rooms due to the dependence of babies and young children for all of their care

6.5.3 This additional information has been taken account of in the recently circulated draft 5 of the report identified in point 6.5.1. The consensus of this more recent report is that 100% single rooms should be the starting point with a risk assessment undertaken to identify why this should not be the case in some specialities. Based on an initial assessment, feedback from clinical staff and from children, young people and their families, a working assumption of at least 50% single rooms is planned for the new C&YP's hospital.

## **6.6 Clinical Services & Non-Clinical Support**

6.6.1 An outline of proposed clinical services and non-clinical facilities is provided in section 15.11.

## **6.7 Anticipated Outcomes and Benefits**

6.7.1 Within the context of the overall improvement in healthcare services that will be delivered through the NHSL C&YP's Health Strategy, it is anticipated that the proposals set out in this business case will deliver a range of benefits for patients, families and staff. The main expected benefits are summarised as follows:

### **6.7.2 Inpatient & Ambulatory Care Services**

- Co-location with acute adult, Maternity and Neonatal services where the support of clinicians from different specialities will be available, thus supporting the recommendations of the reports outlined in section 5. This includes increased peer support, improved access to adult services where clinicians provide both adult and paediatric services e.g. orthopaedics, and to support the transition of patients from paediatric to adult services.
- The provision of a purpose-built 'state of the art' hospital with improved facilities and an appropriate environment for children, young people,

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

families and staff to support delivery of 21<sup>st</sup> century paediatric care in a number of ways, including:

- The expanded 'front door' service linking with primary and unscheduled care services to support sustaining national targets for reduced waits in A&E and improved care for patients out with the hospital setting
- Sustainable local, regional & national core and specialist emergency and elective service;
- The synergy of having co-located adult and paediatric services providing development opportunities for children's services and significant additional research, which is strongly supported by the Universities;
- 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.

### **6.7.3 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 Paediatricians and CAMHS staff 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.
- The opportunity to provide the additional 4 beds required by the future service model as an integral part of the new unit, rather than an unsatisfactory 'add on' to the current unit.
- Reduction in the stigma young people associate with mental illness by being treated on the same site as all other children and young people.

### **6.7.4 Primary Care & Community Services**

- Provision of appropriate services as close as possible to patients own home;

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- Improved multi disciplinary and multi agency integrated working to improve services to C&YP and their families.

#### **6.7.5 Whole System Impact**

A number of benefits will also be generated for NHSL as a whole and these include:

- Improved 'value for money' through improved productivity in modern, fit-for-purpose facilities. Detailed assumptions are outlined in section 7;
- Continued and improved achievement of mandatory employment legislation;
- Coherence with national policy and direction;
- Improved opportunity to recruit and retain staff to work in improved facilities and in turn, improved, redesigned services; and
- Opportunity to provide a sustainable, environmentally friendly building.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**

---

## **7. BED MODELLING**

### **7.1 Overview**

7.1.1 This section of the document provides an overview of the process used to calculate the bed requirements for the new C&YP's hospital. Full details of the process are outlined in appendix 7.1. An overview of the CAMHS bed requirements based on the recommendations in the Scottish Government documents outlined in section 5.2. is also provided. The SEAT C&YP's Health Services Planning Group supports these recommendations.

### **7.2 Methodology**

7.2.1 The methodology for calculating the proposed bed provision is described below. The process identified the impact of redesign – which reduced the current bed number by 9%, through a range of changes described in appendix 7.1, section 5.

7.2.2 The final proposed bed provision was then increased due to the transfer of adolescent activity from the adult service and demographic changes. No change has currently been assumed for the decisions from the Specialist Services Review, National Delivery Plan that is currently completing a consultation period.

#### ***Establishing the baseline of inpatient and day case activity***

7.2.3 A baseline database of inpatient and day case episodes of care relating to activity was produced. It included all children's activity in the RHSC, other hospitals in Lothian and activity from other SEAT Board areas (Borders, Fife, and Tayside). Using this data, a series of planning assumptions about the proposed activity for the new hospital were built in. These are based on the outcome of the redesign process outlined in section 6.

#### ***Apply the baseline data to the expected changes to the under-16 population in demographic projections***

7.2.4 Population trends are influenced by birth and death rates and migration. GRO data from 2006 suggest that the childhood population in the Lothian will increase by 7% over the next 20 years. Death rates are expected to remain unchanged.

7.2.5 However, review of the most up-to-date maternity data from NHSL's Maternity Units suggests that there has been a sudden increase in maternity activity in Lothian. For example, in Simpson's Centre for Reproductive Health, the larger Maternity Unit in Lothian, the average number of births per month in the calendar year 2007 was 541, compared with an average of 495 per month for the five-year period

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

2001-05 inclusive. This equates to an annualised increase of 9.3% and 550 births per year.

- 7.2.6 GRO population rates are based on a series of assumptions and reviewing the 2006 predictions with the actual birth rate in Lothian as noted above suggest that there is an underestimate of population growth in this age group in Lothian.
- 7.2.7 The early impact of this on the required number of beds in the new hospital could be significant, given the high percentage of occupied bed days in a C&YP's hospital accounted for by children in the lower age bands (53% of bed days are for children under the age of four years, with 23% aged one year and under).
- 7.2.8 This area therefore requires further work with GRO and Public Health colleagues during the development of the FBC. In the meantime, a working assumption of 2 additional beds has been identified by:
- Reviewing the 2006 GRO population predictions for 2006 to 2015
  - Identifying the percentage uplift on RHSC activity by each age year for Lothian and each of the other referring health boards.
  - Applying this percentage uplift of activity to the daily occupied bed days for all patients in the 2005/06 database

***Establishing that the baseline activity is accurate and representative in relation to historical data***

- 7.2.9 Review of trend data for RHSC for the six-year period for April 2001 to March 2007 confirmed that the number of inpatient discharges has been steady and the number of occupied bed days has remained relatively constant. However there is evidence of the level of seasonal variation that would be expected of this indicator. This analysis confirms that 2005-06 is a representative year.
- 7.2.10 The one indicator that shows evidence of a clear trend is the steady increase in day case activity throughout the six-year period, from around 1,290 per quarter at the beginning of the period to around 1,970 per quarter at the end of the period, an increase of 53%. Further review demonstrates that this relates to a significant shift of patients from in-patient to day care.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

***Comparing the baseline activity with key performance indicators from other specialist C&YP's hospitals***

7.2.11 Key performance indicators were benchmarked with comparable specialist C&YP's hospitals in the UK. Details of this review are outlined in appendix 7.1. section 2.4. Overall the analysis shows that RHSC has:

- Day Case rates that are among the 'best in class' when compared with other C&YP's hospitals.
- Mean 'length of stays' which benchmark very well against other hospitals. Any areas where it appears less efficient coincide with specialties where the Day Case rate is higher than other hospitals.
- Average bed occupancy consistent with other C&YP's hospitals.

***Modelling bed complements and occupancy to inform the proposed bed numbers in specialty.***

7.2.12 An extract of activity for each of the proposed areas was analysed to assess the fluctuating levels of activity in the differing services. Detailed time-series charts are shown in appendix 7.1, section 2.6. The relatively small critical mass of beds within the C&YP's hospital in Edinburgh make this particularly relevant when planning the proposed bed numbers and level of occupancy and emphasises the need for the planned facility to be configured to support flexible management of beds. For this reason it is proposed that the bed envelope will be designed without demarcation of ward areas. In addition, the overall occupancy level needs to be at a level that enables the hospital to accommodate these fluctuating levels of activity.

### **7.3 Child and Adolescent Mental Health Service Bed Requirements**

7.3.1 The number of inpatient beds required for CAMHS tier 4 services has been determined nationally and agreed within the SEAT C&YP's Planning group as 16 beds. It is proposed that this number of beds will be established in NHSL in 2009. This will support the statutory requirement set out by the Mental Health (Care and Treatment) (Scotland) Act 2005 that states that C&YP with mental health problems should have services that are age appropriate to their needs. The Act effectively means the need to end admissions of patient's under 18 into adult services.

### **7.4 Redesign and impact on efficiency**

7.4.1 The proposed bed numbers are based on the following assumptions and include the impact of new models of care outlined in section 6.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- A&E will receive emergency patients up to the age of 16 years
- Patients up to 18 years who have known or pre-existing chronic illness will be given the option of admission to the paediatric or adult service (approx 30%).
- All emergency admissions will be admitted to the PAA (exceptions as identified below)
- All emergency admissions with an anticipated length of stay of more than 2 days will be transferred to the appropriate inpatient area as soon as clinically appropriate and within 48 hours of admission.
- Patients with long-term conditions, who are known to the service will be admitted directly to specialist areas from A&E e.g. Haematology/oncology and neurology patients.
- Burns patients will transfer directly from A&E to the burns facility in surgical HDU.
- All clinically stable scheduled inpatients will be admitted on the day of surgery or will be accommodated in the family hotel if they require to arrive at the hospital earlier due to travelling long distances or requiring routine pre-operative investigations
- Day case general surgery will be undertaken in St Johns, Fife and Borders for 75% of the patients from these postcode areas currently treated in the RHSC. This model is already in place for Tayside patients. Increasingly complex surgery is undertaken as day cases and therefore 25% of day case general surgery from these centres will continue to be undertaken in Edinburgh where there is 24/7 surgical back up.
- Outpatients will be planned to provide capacity for the required activity, with varying lengths of clinic and 3 session days finishing in the early evening as part of the service model

7.4.2 The rationale and impact of clinical redesign are outlined in appendix 7.1, Section 5 and in appendix 7.2. Those that are anticipated to reduce the number of beds required by 9% are summarised as follows:

- Reduction in length of stay e.g. due to day of surgery admissions – equates to reduction by 2 beds
- Repatriation of 75% of general surgery day case activity to parent Boards – (Fife -139 episodes & Borders – 64 episodes)



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- Establish day case general surgery lists in St Johns – 147 episodes
- Streamlining of the patient pathways within the inpatient areas

The modelling shows that the number of beds required, taking into account the above efficiencies, would be 159.

7.4.3 Those areas that result in an increase in the number of beds are identified as follows:

- Increase in age to 16 years – this equates a total to 11 additional beds worth of activity transferring from NHSL adult services
- Increase in proportion of patients aged 16-18 years – this equates to a total of 3 inpatient beds transferring from NHSL adult services
- Impact of increased birth rate – equates to 2 additional inpatient beds

Incorporating these changes into the bed model takes the proposed number of beds up to 175.

7.4.4 In addition, there are a number of areas that have not yet been quantified in terms of their impact on the number of beds required but will have an impact on the patient pathway and quality of care. These include:

- Earlier and more senior decision-making for emergency patients
- Reduction in cross infections due to number of single rooms<sup>1</sup>
- Reduced transfer and boarding between different clinical areas due to increased access to single rooms and flexible use of the bed envelope to support fluctuations in activity.
- Improved theatre and outpatient throughput
- Increase in new to review outpatient ratio's
- Improved use of clinic space and increased patient choice due to extended clinic day
- More timely investigations and interventions

Further work is required to inform the full impact of these changes and this will be taken forward as the project progresses.

## **7.5 Proposed Bed Complement**

7.5.1 Based on the modelling undertaken, the following bed model and occupancy rates are proposed for the new hospital:

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<sup>1</sup> There is currently no robust data that shows the effects of single rooms alone on the reduction of cross infection. Berry et al (2004) showed a reduction in the nosocomial infection rate by 10.1% in 2 years after a move to facilities with 100% single rooms. An assessment of the impact of the increase in single room availability will be undertaken as part of the evaluation of the project.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

Area	Total	Single rooms	Beds in 2 bed bay	Beds in 4 bed bay	Occupancy	Comments
<b>PAA</b>						
Med ca	16	12		4		
Surg ca	8	2	2	4		
Ado escent	4	4				
Short stay observat on	4			4	67%	
Seasona ct v ty capac ty	5	5				
<b>Sub total</b>	<b>37</b>	<b>23</b>	<b>2</b>	<b>12</b>		
<b>Inpatient area</b>						
Med ca	18	12	2	4	74%	includes 'Home in Hospital' + sleep studies
Surg ca	20	8		12	73%	
Neurosc ence	12	4		8	69%	
Ado escent	13	13			85%	
<b>Sub total</b>	<b>63</b>	<b>37</b>	<b>2</b>	<b>24</b>		
<b>Cancer Unit</b>						
Inpat ent	8	8				
Ado escent	2	2			59%	
<b>Sub total</b>	<b>10</b>	<b>10</b>				
<b>Critical Care</b>						
PICU	8	4		4		
Med ca HDU	6	2	4			Confirmation of HDU capacity will be produced by national HDU Audit
Surg ca HDU	6	3		3		
Surg ca NNU	4	1		3		
<b>Sub total</b>	<b>24</b>	<b>10</b>	<b>4</b>	<b>10</b>		
<b>Day Case</b>						
Surg ca	15					15 post op theatre trolleys
Med ca	5	2		3		
Onco ogy	5			5		
<b>Total</b>	<b>25</b>	<b>2</b>		<b>8</b>		
<b>CAMHS Inpatients</b>	<b>16</b>	<b>16</b>			<b>80%</b>	
<b>Grand total</b>	<b>175</b>	<b>98</b>	<b>8</b>	<b>54</b>		<b>+ 15 post op theatre trolleys</b>

**Figure 7.1: Proposed bed model**

7.5.2 There is currently no nationally agreed recommended occupancy levels for paediatric services. The National Bed Inquiry undertaken in England found that the expected level of occupancy in paediatric services is 65%, a lower level than of adult services to allow for the effect of variation on a lower number of beds. The overall occupancy level proposed for the new hospital is 70%, which is above the English level of 65%. This is equivalent to the bed occupancy proposed for the new children's hospital in Glasgow (65% non-elective; 85% elective).

## 7.6 Planned additional bed-modelling post OBC

7.6.1 As indicated previously there are some aspects of modelling that require further work beyond OBC and these will be taken forward as the project progresses. These include:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- Refining and validating the assumptions made relating to the impact of demographic changes
- Validation of the proposed HDU capacity once the outcome of the national HDU audit is known, taking account of current activity in RHSC and possible future activity from neighbouring boards when a national critical care network is established.
- The potential impact of the final recommendations from the National Delivery Plan once the current consultation period is complete
- Detailed consideration of anticipated / planned developments of tertiary specialist services that will be undertaken in Edinburgh in future.
- Working with the SEAT C&YP's planning group to model the future delivery of DGH children's services across the region to confirm that there will be no planned increase in transfers of patients requiring secondary care to the regional centre.
- Review of the data regarding the number of non Lothian patients who stay in hospital longer than 3 weeks shows there may be potential to repatriate a small proportion of patients to their referring hospital sooner than is currently the case.
- Assessing the impact on efficiency and effectiveness of the areas identified in section 7.4.4.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

**8. INFORMATION MANAGEMENT AND TECHNOLOGY**

**8.1 NHS Lothian IM& T Strategy**

- 8.1.1 NHSL eHealth strategy is informed by Building a Health Service, 'Fit for Future' (Kerr 2005) and Delivering for Health (Scottish Executive 2005). One of the key objectives is the provision of a secure, Electronic Health Record (EHR) supporting healthcare professionals to provide optimal health and social care. Another is to achieve the convergence of systems and processes on to a common platform to achieve integration and sharing of data more easily.
- 8.1.2 The strategy supports improved access to information and encourages the use of electronic media to support decision-making. The advances in medical science combined with rapid advances in technology and communications, will see a major change in how services are delivered in the future. The strategy supports interagency data and information sharing and will underpin national priorities in relation to joint working with our local authority and other partners.

**RHSC Informatics Strategy**

- 8.1.3 Progressing the NHSL IM&T Strategy within the Paediatric service is key to supporting the delivery of the redesigned pathway of care outlined in section 6. The principle of supporting regional working and maintaining are as close to home as possible by moving images and information between DGH's and the regional centre and not patients wherever clinical needs allow is dependent on IM&T implementation. This is supported by the recommendations from the recently published report: Paediatric Telemedicine to Support Specialist Children's Services (Archer & Morgan 2007). A specific work-stream has therefore been established to progress this area and to ensure the future reprovided service maximises the opportunity for technological support of clinical services.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**

## 9 WORKFORCE

### 9.1 Overview

9.1.1 This section includes:

- The current workforce position
- Key drivers
- Expected developments
- Assumptions within the OBC
- Management of Change

### 9.2 Current Staffing Position

9.2.1 The baseline for the workforce plan is the establishment as at December 2007. A summary of the baseline position for planning purposes is shown below:

<b>Staff</b>	<b>WTE</b>	<b>Budget (£000)</b>
NHS Lothian	18556.37	669,838
RHSC & Community Paediatrics	1160.18	42,786
CHCP Children's Service	44.56	2,424
CAMHS	65.05	2,384
<b>Total</b>	<b>19826.16</b>	<b>717,432</b>

**Figure 9.1: NHSL Baseline Workforce**

9.2.2 A more detailed workforce profile is attached as appendix 9.1.

### 9.3 Key Drivers

9.3.1 The key national drivers affecting the workforce are: -

- Better Health, Better Care December 2007
- Modernising Medical Careers and the 'Tooke Report' – impact on children and young people and maternity services and role change/development
- European Working Time Regulations
- The outcome report of the national review of Specialist Children's Services group which is out for consultation until the end of May 2008.

9.3.2 Local workforce drivers include:

- The impact of MMC and EWTR on surrounding Maternity, C&YP's services as well as within NHSL
- Local demographic changes affecting the workforce

## NHS Lothian

### REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH

#### OUTLINE BUSINESS CASE

---

- Increases in the potential supply of workforce through increases in European migrants
- The cost of living/perception of cost of living in Edinburgh
- Transport – locally and regionally

#### 9.4 Expected Developments

9.4.1 There are a number of workforce initiatives that are being developed by the service which will be implemented regardless of this Reprovision Project. For the purposes of the OBC workforce financial assumptions they have been excluded because they are either not yet confirmed or the impact has yet to be finalised. These include:

- Investment in specialist services as a result of the National Review of Specialist Children's Services
- Introduction of 'Hospital at Night' at RHSC
- 'New role' development in additional posts as a result of MMC:
  - Specialist/advanced nursing and AHP roles
  - Associate practitioner roles with skills relating to patient dependency
- Administration and Clerical services review
- "Care closer to home"

9.4.2 There are also a number of NHSL reviews that are not workforce specific but may have an impact on the workforce e.g. the storage of health records, speech recognition/digital dictation etc. The outcomes of these are awaited and the implications for the workforce still need to be worked through, therefore they have been excluded from any financial assumptions.

#### 9.5 Assumptions within the OBC

9.5.1 The following assumptions have been made for the purpose of completing the OBC.

- Posts have been counted at their confirmed grade.
- Changes in hospital workforce as a result of the redesign of inpatient services but excluding the impact of MMC
- No economies of scale for Clinical Support departments working alongside RIE services have been factored in because 'enabling' capital works would need to be undertaken in the new build options and the precise location and equipment has yet to be determined. The 'status quo' has therefore been assumed for the workforce in these areas.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- In non-clinical support services (facilities), the existing provision arrangement for each of the sites has been assumed.
- Work will continue to refine workforce projections based on national, local and redesign drivers.
- No costs have been determined for creating new roles or training staff in undertaking new roles.
- No costs have been determined for providing care “closer to home”. These will be identified as part of the business case for each development.

## **9.6 Management of Change**

9.6.1 Workforce planning assumptions are attached as appendix 9.2. These will inform the process of addressing the future workforce requirements to support the redesigned service. NHSL will continue to work in partnership to:

- Produce robust workforce plans for the Lothian C&YP’s service.
- Work with referring Health Boards to develop their workforce plans to meet the requirement to treat children and young people locally, or supporting earlier discharge from the RHSC.
- Carry out a skills audit and training needs analysis.
- Work with local education and training providers to develop relevant training programmes.
- Negotiate changes in working patterns to meet the needs of the service and any nationally agreed terms and conditions.
- Where possible, implement new ways of working prior to the completion of the new hospital build.
- Further develop a recruitment strategy incorporating a social inclusion policy.
- Continue to apply agreed national and local policies pertaining to excess travel, redeployment and earnings protection.
- Allocate sufficient dedicated management and clinical time to manage the process.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

## **10. OPTION IDENTIFICATION & APPRAISAL**

### **10.1 Introduction**

10.1.1 The scope and configuration of services planned to be provided in the new C&YP's hospital have been determined by the national and local strategies outlined in section 5 and these have informed the benefits criteria outlined in section 11. These include the ability to:

- Achieve sustainable, co-location with maternity, neonatal and acute adult services
- Support effective use of staff expertise and resource to ensure sustainability of specialist services while meeting the challenges presented by the small critical mass of specialist activity and staff
- Provide and maintain staff rota's 24/7

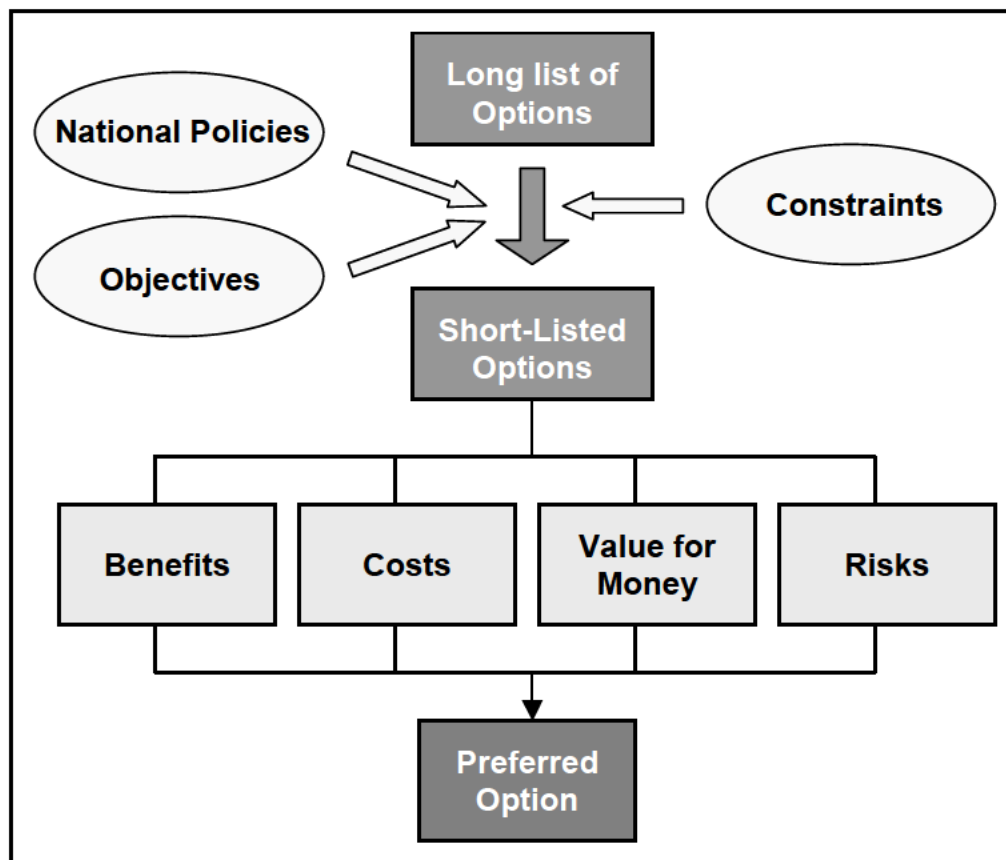
10.1.2 These are reflected in NHSL's Children & Young People's Strategy which focuses on planning Children's services in Lothian for the next 10 to 15 years. The proposal to reprovide the acute hospital services from the RHSC in fit-for-purpose accommodation is key to this strategy

10.1.3 The option appraisal looked at the potential options to delivering services on a site that supports achievement of sustainable services for C&YP.

### **10.2 Overview**

10.2.1 The option identification and appraisal process adopted for this OBC is in line with the recommendations in the Scottish Capital Investment Manual (SCIM) as follows:

**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**



### 10.3 Long List of Options

10.3.1 The long list of options identified in the Initial Agreement is as follows:

Option Description
Do Minimum – remain in current location utilising existing accommodation
Reconfiguration / Refurbishment on current site
New Build – WGH Site
New Build – Little France Site
New Build – St John's Site
New Build – Other NHS Site

**Figure 10.1: Long List of Options**

### 10.4 Short List of Options

10.4.1 Review of this long list of potential options against the required national policies for the provision of new C&YP's hospitals was undertaken by a sub group of the core project team. This process identified that the only options that meet the basic criteria are New Build on the Little France Site and New

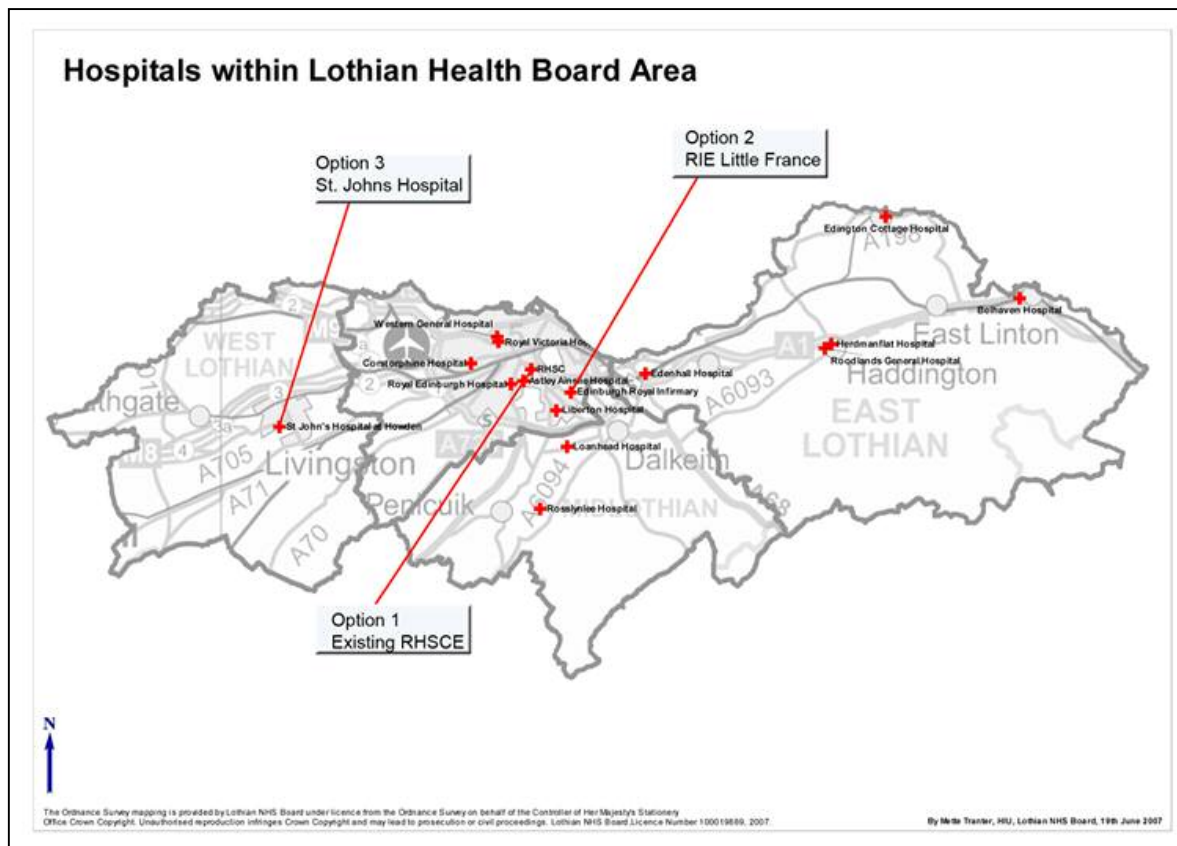
# NHS LOTHIAN

## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH

### OUTLINE BUSINESS CASE

Build on the St John's Hospital Site. Full details of these policies are articulated earlier in section 5 but the key issues are that children's specialist acute services should be co-located with acute adult, maternity and neonatal services.

- 10.4.2 The proposed shortlist was presented and validated at the non-financial benefits evaluation workshop detailed in section 11.3. Details of the agreed criteria are outlined in section 11.2 and appendix 10.1
- 10.4.3 The Scottish Capital Investment Manual advises that Health Boards are required to consider a 'Do Minimum' option as a baseline. Three options were therefore short-listed for the non-financial, site Option Appraisal. The locations of the three options are shown in the following image:



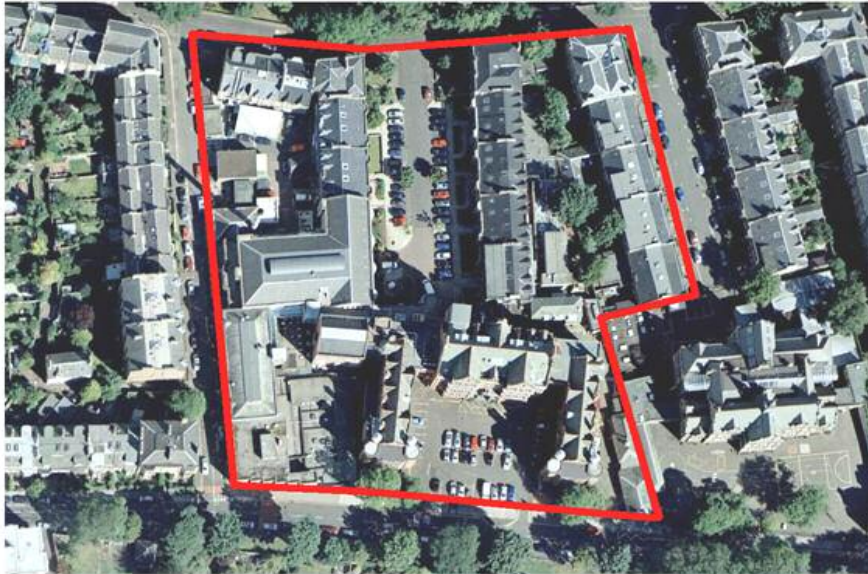
**Figure 10.2: Image showing the location of the 3 options**

#### Option 1 – Do Minimum

- 10.4.4 This assumes that the RHSC will remain on its existing site in buildings (B-listed), which are retained, in their current configuration. Only upgrading, necessary to ensure the buildings comply so far as is reasonably practicable with statutory requirements, would be undertaken. The existing site is illustrated below:

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---



**Figure 10.3: Image showing boundaries of current RHSC (Option 1)**

**Option 2 – Reprovision of RHSC on Little France Site**

10.4.5 This assumes the relocation of the RHSC (in a new build facility) to Little France, the site of the Royal Infirmary of Edinburgh. The building would be a dedicated stand-alone facility physically linked (at some point) to the adult acute hospital.



**Figure 10.4: Image showing boundary of current Little France Site (Option 2)**



**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**

---

**Option 3 – Reprovision of RHSC on St John’s Hospital Site**

10.4.6 This assumes the relocation of the RHSC (in a new build facility) to Livingston to the site at St John’s Hospital. Due to the configuration of land available for development it is unlikely that a single stand-alone facility could be provided linked to the adult hospital without the demolition and reprovision elsewhere of the Howden Health Centre building.



***Figure 10.5: Image showing boundary of current St Johns site (Option 3)***

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---



**NHS Lothian**  
**Reprovision of Royal Hospital for Sick Children -**  
**Edinburgh**  
**Outline Business Case**

## 11. Benefits Appraisal

### 11.1 Overview

11.1.1 The benefits appraisal process had three main stages:

- Identification of the benefits criteria
- Weighting of the benefits criteria
- Scoring of the options against the benefits criteria

### 11.2 The Benefits Criteria and Weighting

11.2.1 The process of developing the headline criteria and weighting was undertaken by a small sub-group of the RHSC Reprovision Project Board. The Reprovision Project Board was asked to provide comments after their meeting on the 22<sup>nd</sup> March 2007 and the ICIC Executive approved the criteria and weighting on the 29<sup>th</sup> March 2007.

11.2.2 The benefits criteria were developed based on current national policy and recommendations for the provision of a new C&YP's hospital. These were then weighted to reflect the relative importance of each criterion in terms of the provision of safe and appropriate services informed by recent strategic policy and clinical evidence. The importance and appropriateness of these policies was discussed at length during the public consultation period of the NHSL C&YP's Health Strategy in 2006.

<b>Benefits Criteria</b>	<b>Weighting</b>
Clinical effectiveness, integration of service & meeting national guidance	35
Sustainability	20
Accessibility for patients, relatives and staff	15
Quality of physical environment	10
Ability to implement options	10
Research and education	10
<b>Total</b>	<b>100</b>

**Figure 11.1: Benefits Criteria and Weighting**

11.2.3 Each criterion has a headline statement followed by a number of sub-criteria that were used in the evaluation of each option. These are attached as appendix 10.1.

### 11.3 The Non-financial Evaluation Workshop

11.3.1 A workshop was held to undertake the scoring of the options against the weighted criteria and sub criteria. A total of 23 members were invited to take part in the workshop and included representation from:

## NHS Lothian

### REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH

#### OUTLINE BUSINESS CASE

---

- RHSC Family Council (parent representatives)
- Youth representatives
- SEAT Children & Young People's Planning Group
- Staff Partnership
- Clinical and Management team from NHSL Children's Services
- NHSL Strategic Planning
- Higher Education and Research

11.3.2 The workshop was planned to ensure that all participants had the opportunity to have a full understanding of the benefits criteria and the process before undertaking the scoring exercise. This involved a process of building and validating information in an incremental way in preparing for and during the event. The information provided is outlined in appendix 10.2.

11.3.3 This process was further supported by the opportunity to 'break out' into smaller groups with a facilitator for further discussion and clarification before undertaking the actual scoring. The objective of this session was to provide participants with the opportunity to ensure they fully understood the benefits criteria and the Option Appraisal process before completing the scoring exercise. The scoring was then completed by each individual on their own, with their scoring sheets then handed back to a facilitator in an envelope.

#### Scoring the Options

11.3.4 Each of the sub-criteria was scored from 0 to 4, based on the ability of the Option to meet the requirements on the following basis:

Fully able to meet requirements	4
Meets nearly all of the requirements	3
Meets some of the requirements	2
Meets few of the requirements	1
Completely fails to meet requirements	0

11.3.5 At the completion of the exercise, the scores for each of the sub-criteria were totalled and divided by the number of sub-criteria to give a total score for the Headline Criteria. This was then multiplied by the weighting to produce the final score for each option.

#### Benefits Scores

11.3.6 The following figure illustrates the total averaged weighted scores from all participants and the ranking for each of the options:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

<b>Benefits Criteria</b>	<b><u>Weighting</u></b>	<b>Option 1 Do Minimum</b>	<b>Option 2 Little France</b>	<b>Option 3 St John's</b>
Clinical Effectiveness	35	33	131	79
Sustainability	20	34	68	50
Accessibility	15	23	46	36
Quality of environment	10	10	34	28
Ability to implement	10	7	34	27
Research & Education	10	12	36	19
<b>Score</b>		<b>119</b>	<b>349</b>	<b>239</b>
<b>Rank</b>		<b>3</b>	<b>1</b>	<b>2</b>

**Figure 11.2: Scores and Ranking of the 3 Options**

- 11.3.7 Option 1 is unacceptable as it does not deliver any of the headline criteria and, as noted above, was included as a baseline.
- 11.3.8 Option 3 does not deliver the benefits to the same degree as Option 2. In particular, co-location with a significant number of major clinical services could not be achieved, including: major emergency general surgery and trauma, MRI and interventional radiology & neonatal intensive care.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

## 12. ECONOMIC APPRAISAL

### 12.1 Economic Appraisal

12.1.1 To arrive at the preferred option, a discounted cash-flow for all three options was undertaken (25 years for refurbishment and 60 years for new build) using a discount rate of 3.5%. Both the Net Present Cost (NPC) and Equivalent Annual Cost (EAC) have been calculated. As the different options are over different life spans, the EAC converts the NPC to an annual figure for better comparison of options. The following key financial data pertinent to each option were used in the analysis:

- Capital outlay<sup>1</sup> for each option excluding Value Added Tax
- Estimated proceeds from sale of land and buildings
- Lifecycle costs of building and engineering works (based on £22 per square metre)
- Revenue costs including core RHSC workforce costs, clinical support costs, non-clinical support costs and RHSC non-pay costs.
- Double running costs
- Discount rate used is 3.5% years 1-30 and 3% for years 31 and beyond
- Capital charges are excluded from analysis

12.1.2 The Department of Health's Generic Economic Model (GEM) was used as a basis to perform the economic appraisal. This was populated with the base-line financial data for each option. The key outputs from the model can be found in appendix 12.1.

12.1.3 Results of the economic appraisal are summarised in Figure 12.1 below.

	Option 1 Do Minimum	Option 2 Little France	Option 3 St John's Hospital
Net Present Cost (NPC) (£)	████████	████████	████████
Benefits Criteria Scoring	119	349	239
NPC per Benefit Score (£)	██████	██████	██████
Ranking	3	1	2
Equivalent Annual Cost (EAC) (£)	████████	████████	████████
EAC per benefit point	313	134	197
Ranking	3	1	2

**Figure 12.1: Economic Appraisal**

<sup>1</sup> For the purpose of appraising the options at this stage to arrive at a preferred option, the capital outlay is the total cost incurred in constructing the building.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

12.1.4 Based on NPC alone, the Do Minimum has the lowest NPC and would rank the best, however, this option does not deliver the required benefits and fit-for-purpose model of care, and therefore needs to be rejected.

12.1.5 To further assess the NPC more appropriately, it can be weighted accordingly by applying the non-financial benefit scores derived in section 11 to identify the 'NPC per benefit score'.

12.1.6 Figure 12.1 summarises the NPC per benefit score and EAC and indicates that Option 2 (site at Little France) achieves better value for money than option 3 (St Johns site).

## 12.2 Sensitivity Analysis

12.2.1 The results of the economic appraisal have been subjected to a sensitivity analysis to examine the potential financial impacts at a high level as shown in figure 12.2 below.

12.2.2 The following factors were reviewed:

- Plus/minus 20% capital costs
- Plus/minus 10% on operation costs
- Plus/minus 15% to proceeds from sale of land and buildings
- One year delay in capital programme

	Option 1 Do Minimum	Option 2 Little France site	Option 3 St John's site
Baseline NPC (£)	■	■	■
Ranking	1	2	3
Increase capital costs by 20% (£)	■	■	■
Ranking	■	■	■
Reduce capital costs by 20% (£)	■	■	■
Ranking	■	■	■
Increase service costs by 10% (£)	■	■	■
Ranking	■	■	■
Reduce service costs by 10% (£)	■	■	■
Ranking	■	■	■
Increase land sale proceeds by 15% (£)	■	■	■
Ranking	■	■	■
Reduce land sale proceeds by 15% (£)	■	■	■
Ranking	■	■	■
One year delay in capital programme (£)	■	■	■
Ranking	■	■	■

**Figure 12.2: Sensitivity Analysis**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

12.2.3 The outputs from the sensitivity analysis demonstrate that the relative ranking for each option remain unaffected due to changes in capital and revenue costs.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

## **13 FINANCIAL ANALYSIS**

### **13.1 Overview**

- 13.1.1 This chapter explains the methodology used to calculate the capital and revenue implications of the three short-listed options identified in section 11 - Benefits Appraisal.
- 13.1.2 All current guidance has been followed in constructing the financial and economic appraisal, principally: *Scottish Capital Investment Manual (SCIM) and HDL(2002)87 – Revised Interim Capital Guidance and HDL(2003)13* to cover the requirements of the HM Treasury Green Book.
- 13.1.3 A financial model was established to identify the different components of the proposed cost structure of each option. It utilises the output from a number of other key elements of the OBC, including workforce planning, capacity planning and design to establish the capital and revenue implications for each of the short-listed options.

### **13.2 Key Financial Assumptions and Analysis**

- 13.2.1 The financial model is driven by key assumptions that potentially have a material effect on the overall operating costs of the new facility, such as;
- 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 Reprovision;
  - Variations in revenue costs (pay and non-pay) associated with each of the short-listed options;
  - Projected capital charges.
  - All relevant costs include VAT where not recoverable by NHSL.
- 13.2.2 The figures below summarise the main outcomes of the financial appraisal:

### **13.3 Capital**

#### **Methodology and Approach**

- 13.3.1 The capital costs largely consist of the outlays to the existing buildings to meet minimum statutory standards (option 1) or the cost of the new building either based at Little France site or St John's site (option 2 and option 3 respectively).

# NHS Lothian

## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH

### OUTLINE BUSINESS CASE

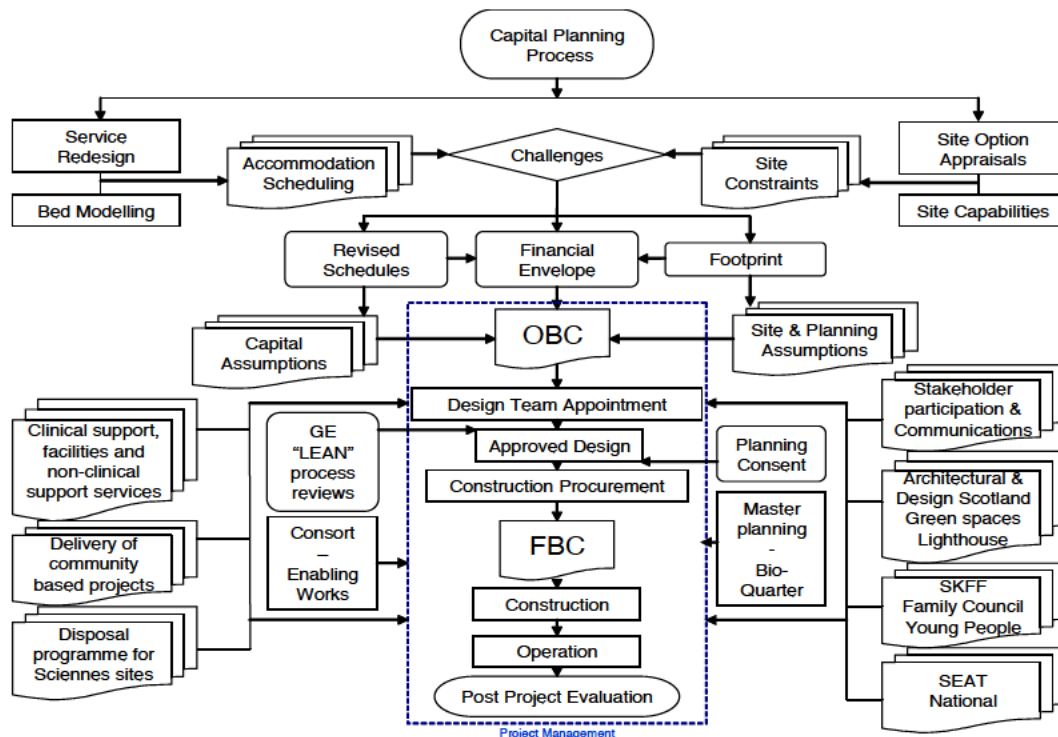
13.3.2 For option 1 these are based on £■■■■<sup>1</sup>. For option 2 and 3 they have been derived from the agreed schedule of accommodation, using a square metre rate to ascertain anticipated capital costs.

13.3.3 Within these estimates, the key capital assumptions are:

- Costs include group 1 equipment and the fitting of group 2 equipment;
- Capital costs include the provision of parking spaces on site<sup>2</sup> to facilitate the requirements for this development and to replace the existing car parking lost as a result of the construction.
- There will be at least 50% single rooms

### Capital Costs

13.3.4 The Capital Projects Manager and the Project Architect have worked as part of the Reprovision project team and leading Group 3, Infrastructure, Design & Construction. The role of the capital planning process in the preparation of the OBC and project delivery is illustrated below:



**Figure 13.1: Role of Capital Planning Process**

<sup>1</sup> Estimated costs of ensuring the B-listed buildings comply so far as is reasonably practical with statutory requirements. Estimate based on NHSL Estates Building Survey

<sup>2</sup> Option 2 (Little France) 450 spaces and option 3 (St John's Hospital) 200 spaces

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

13.3.5 The scheduling of accommodation for options 2 & 3 has considered the outputs of the service redesign process, against original and development requirements, broken down to show net departmental areas for comparison purposes. Comparison schedule is attached as appendix 13.1. At this stage, planning, engineering, circulation and hospital street allowances have been maintained pending commencement of detailed design at the next stage of the project. The overall accommodation schedule for options 2 & 3 is attached as appendix 13.2.

### Capital Implications

13.3.6 External advisors, Thomson Gray, Cost Consultants, has based capital costs on an appraisal of the capital requirements of each option. Figure 13.2 below summarises the key capital assumptions made within these estimates:

Capital Aspects	Key Assumptions
General	<ul style="list-style-type: none"> <li><input type="checkbox"/> Costs are current at 1<sup>st</sup> quarter 2008 and adjusted for inflation to mid-point of construction, 2nd quarter of 2011.</li> <li><input type="checkbox"/> All costs are inclusive of VAT where applicable. NHSL will work with VAT Liaison to explore the rules in more detail to ensure best utilisation of public money.</li> </ul>
Capital Costs - Building	<ul style="list-style-type: none"> <li><input type="checkbox"/> Capital costs include an allowance for optimism bias pertinent to each option (see section 13.5)</li> </ul>
Capital Costs - Equipment	<ul style="list-style-type: none"> <li><input type="checkbox"/> Based on evidence and experience in NHS Lothian, additional and replacement equipment will normally be required as part of a new build. This has been estimated at 15% of net capital build cost (excluding fees). Any moveable equipment, which has not reached the end of its useful life will be moved. This has been applied to option 2 and option 3.</li> <li><input type="checkbox"/> For option 1, the capital cost of c.£1.30m represents the cost of replacing currently donated Gamma Camera and CT scanner (note: this is subsumed within the 15% estimate for option 2 and 3).</li> </ul>
Enabling Works Costs	<ul style="list-style-type: none"> <li><input type="checkbox"/> Based on estimate of works required within the RIE and associated car parking.</li> </ul>
Write off / Disposals	<ul style="list-style-type: none"> <li><input type="checkbox"/> The existing RHSC site will be disposed of at open market value in option 2 and option 3.</li> <li><input type="checkbox"/> Surplus buildings and those to be replaced are written off in accordance with the Capital Asset Manual</li> </ul>

**Figure 13.2: Key Capital Planning Assumptions**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

### Capital Costs

13.3.7 Capital costs for each option based on assumptions highlighted above are summarised in the figure below:

Element	Option 1 Do Minimum £000	Option 2 Little France £000	Option 3 St John's £000
Net Building Cost as at 1 <sup>st</sup> quarter 2008			
VAT on 1 <sup>st</sup> quarter 2008 Building Cost *			
Fees on 1 <sup>st</sup> quarter 2008 Building Cost			
<b>Gross Building Cost as at 1<sup>st</sup> quarter 2008</b>			
Inflation to 2 <sup>nd</sup> quarter 2011 (gross)			
Optimism Bias (gross)			
<b>Gross Building Cost as at 2<sup>nd</sup> quarter 2011</b>			
Equipment Cost (gross)			
<b>Project Team Costs</b>			
<b>Total Capital Cost</b>			
* Total VAT included in building & equipment costs			

*Option 1 is based on the current hospital footprint*

*Options 2 & 3 are based on a scheduled area of 30,000 m2 gross including enabling work and car parking reprovision*

**Figure 13.3: Summary Capital Costs**

### Capital Spending Profile of building

13.3.8 Thomson Gray Partnership, Cost Consultants, have provided a forecast of the annual cash-flows for the building works. This forecast is detailed in figure 13.4 below.

Financial Year	Option 1 Do Minimum £000	Option 2 Little France £000	Option 3 St John's £000
2008/2009			
2009/2010			
2010/2011			
2011/2012			
2012/2013			
<b>Gross Building Cost</b>			

**Figure 13.4: Summary of capital expenditure**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

13.3.9 Figure 13.5 indicates how total project team costs and equipment costs may be phased based on current information.

	2008/09	2009/10	2010/11	2011/12	2012/13
	£000	£000	£000	£000	£000
<b>Project Team</b>	■	■	■	■	■
<b>Equipment Costs</b>					■

*Figure 13.5: Phasing of project team costs and equipment*

### Sources of Capital Funding

13.3.10 The following sources of funding have been explored as part of the traditional procurement route:

- Additional capital support from SGHD
- NHSL Capital Resource Limit
- Disposal of existing fixed assets
- Contribution from Sick Kids Friends Foundation
- Contributions from other charities, including Teenage Cancer Trust, CLIC Sargent, Ronald McDonald House and Trefoil Charities
- Contribution from Lothian NHS Endowments
- Contribution from University of Edinburgh

### Capital Receipts

13.3.11 NHSL have appointed Montagu Evans, Edinburgh, as professional valuers and property advisers, to assist with the marketing strategy for the disposal of the existing premises at Sciennes.

13.3.12 Given the nature of the properties and in particular the statutory listings in place, discussions have been undertaken 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, a development brief will be prepared in conjunction with the City of Edinburgh Council Planning Department. Montagu Evans (with supporting architectural, master-planning, and historic building expertise if appropriate) are progressing this development. Timing and approach to marketing will be confirmed as part of the ongoing project.

13.3.13 The RHSC as currently configured is owned partly by the NHS and partly by NHSL Endowment trustees. The latter includes properties in the

<sup>1</sup> £560k includes costs incurred pre 2008/09



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

“terraces” leading towards the Meadows from the main hospital and therefore is integral to the prospects of the whole redevelopment. The owning Trustees (RHSC Endowments and Lothian Health Endowments) are in agreement in principle to dispose of their interests as part of a single marketing exercise. The respective interests are scheduled in appendix 13.3.

- 13.3.14 In order to ensure marketing and disposal is “clean” in respect of title and associated issues, the Central Legal Office has been appointed to review titles and marketability from a legal perspective. It is recognised that given the historic site and piecemeal development of the RHSC over a long period that there may be title anomalies identified as part of this work. However, it is envisaged that any such issues will be addressed with the Keeper of the Land Registry in advance of formal marketing.
- 13.3.15 As part of the reprovision, the existing land and buildings will be disposed of at the latest open market value in option 2 and 3. Subject to the preferred procurement option, NHSL may utilise the proceeds to help fund part of the capital costs. The open market value as of May 2007 is detailed below:

Element	NHS Estate £000	Endowments £000
<b>Land and Buildings</b>	[REDACTED]	[REDACTED]

*Open Market Value data as at May 2007, reconfirmed Nov 2007*  
*Professional fees associated with the sale of assets including other related costs to bring the asset to the market have been estimated at 3% of sale proceeds*

**Figure 13.6: Estimated Proceeds from Sale of Land and Buildings**

### Impact of Impairments

- 13.3.16 Based on professional valuer’s initial assessment, expected proceeds will be greater than the write down value of the existing RHSC’s land and buildings. Therefore, no impairment is envisaged on existing assets. Most up to date value<sup>1</sup> of land and buildings taken from NHS Lothian’s asset register can be found in appendix 13.4.
- 13.3.17 The professional valuer has also evaluated at a high level the value added aspects of the new RHSC building. The financial implications have not been incorporated into the OBC but will be further reviewed at Full Business Case. The impact of impairments will not be charged against the Boards Revenue Resource Limit in accordance with the SGHD Capital Accounting Manual.

<sup>1</sup> Prior to receipts of valuations for 2007/08, April 2006 values extracted from the asset register for associated land and buildings have been indexed by 2.5% and 5% respectively. Estimates correct at time of writing OBC

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

### 13.4 Equipment

13.4.1 The financial appraisal includes provision for new equipment. All group 1 assets are included within the construction costs. Equipment estimates for all group 2, 3 & 4 assets are determined through previous recent builds in NHSL.

13.4.2 Based on the experience of previous builds a transfer rate of 30% is assumed. As per SGHD guidance, the cost of equipment should be calculated at 15% of net capital build cost (excluding fees). 15% is at the upper end of the allowance but takes into consideration the specialist nature of the project and the need for specialist equipment and installation. One third of this allowance assumes non-medical equipment.

### 13.4 Optimism Bias

13.5.1 The non-financially quantifiable risks for each option were determined using Optimism Bias in accordance with the Supplementary Green Book Guidance. Optimism Bias refers to the tendency when evaluating publicly funded projects to overestimate the benefits and underestimate the costs. The tendency for Optimism Bias to occur was identified in a study carried out by Mott MacDonald of 50 major projects in 2002.

13.5.2 The process used was as follows:

#### Building Costs

##### Step 1

13.5.3 The upper bound for Optimism Bias for the costs for each of the options was calculated using the spreadsheet 'Optimism Bias Upper Bound Calculation'. The upper bounds for each option are as follows:

Option	Upper Bound %
Do Minimum	45
Little France	31
St John's	36

The detailed calculations are shown in appendix 13.5.

##### Step 2

13.5.4 The degree of mitigation to the upper bounds for each of the options was calculated using the spreadsheet 'Optimism Bias Mitigation Calculation'. The mitigation risk factors for each of the options is as follows:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

<u>Option</u>	<u>Mitigation Risk Factors %</u>
Do Minimum	49.3
Little France	51.5
St John's	51.5

The mitigation factors and scores are shown in appendix 13.5.

### Step 3

- 13.5.5 The mitigating factors were then applied to the upper bound percentage. Based on the figures calculated above the upward adjustment to capital costs for each of the options for Optimism Bias is as follows:

<u>Option</u>	<u>Mitigated Optimism Bias %</u>
Do Minimum	22.19
Little France	15.97
St John's	18.54

## 13.6 Revenue Costs

### Methodology and Approach

- 13.6.1 In order to assess the revenue implications for current services it was necessary to establish a baseline cost from which any changes could be considered. The high level assumptions used in the revenue cost model for each of the short listed options are set out in figure 13.7. This is supported by a more detailed analysis which models all the baseline costs in association with the key assumptions.
- 13.6.2 Revenue costs are the costs of running the service on an ongoing basis. To calculate the revenue impact of each of the options a 2-stage approach was adopted.

**Stage One** - establish and agree baseline costs for services currently on the RHSC site;

**Stage Two** - estimate the provisional costs of each option on a "bottom up basis", according to the agreed manpower requirements, space utilisation and other relevant factors.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

<b>Cost type</b>	<b>Key Revenue Assumptions</b>
<b>General</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> All costs are at 2007/08 prices</li> <li><input type="checkbox"/> Only relevant and attributable costs are included, all clinical and service changes not directly resulting from the reprovision are assumed to be cost neutral.</li> <li><input type="checkbox"/> Age related increases to Children's Services currently provided, as part of adult services will continue to be managed within existing NHS Lothian budgets.</li> </ul>
<b>Workforce Costs</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Pay costs are inclusive of full 'on costs'</li> <li><input type="checkbox"/> Where possible pay costs are derived from the workforce plan using a "bottom up" approach, which takes account of the model of care and the key capacity changes.</li> </ul>
<b>Clinical Support</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> All current configurations of services will remain the same with the exception of Pharmacy which is planning to extend the introduction of "one stop dispensing" to all areas in the new RHSC to support the new models of care.</li> </ul>
<b>Non-pay Costs</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Includes non-capitalisable equipment based on 4% of capital build cost (within option 1)</li> <li><input type="checkbox"/> Includes non-recurring 'excess travel' costs for 1 year pertinent to option 2 and 3. (current policy requires support for up to 4 years).</li> </ul>
<b>Supplies and Drugs</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Included in non-pay costs.</li> <li><input type="checkbox"/> Supply costs include VAT where not recoverable.</li> </ul>
<b>Non-clinical Support</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Hard and soft FM services will be provided in-house subject to value for money procurement option.</li> </ul>
<b>Capital Charges</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Baseline capital charges are derived from the fixed asset register for 2006/07 – indexed by 2.5% and 5% to land and buildings respectively.</li> <li><input type="checkbox"/> Movements in capital charges have been calculated using the schedules of accommodation and site development plans.</li> </ul>

**Figure 13.7: Key Revenue Cost Model Assumptions**

### **Baseline Costs – Current Services**

13.6.3 The baseline cost is the cost of the current service provision. In order to assess the revenue implications of the proposed service changes, it is initially necessary to establish this baseline.

13.6.4 The baseline costs have been modelled in accordance with the assumptions laid out above and are shown in figure 13.8 below.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

Item	Pay £000	Non-Pay £000	Total £000
Service Costs	■	■	■
Clinical Support Costs	■	■	■
Non-clinical Support Costs	■	■	■
Contract Income		■	■
Capital Charges	■	■	■
Total	■	■	■

**Figure 13.8: Baseline Costs for Royal Hospital for Sick Children Services**

### 13.7 Capital Charges

13.7.1 Capital charges represent the revenue impact of the capital cost of the options. They are made up of an annual depreciation charge and a 3.5% rate of interest calculated on the net asset base.

13.7.2 Projected capital charges have been calculated for each of the options by applying the following assumptions;

- Baseline capital charges are based on the fixed asset register. Prior to receipt of valuations for 2007/08, April 2006 values have been used with indexation of 2.5% applied to land and 5% to buildings respectively
- An expected useful life of 50 years has been used for the calculation of depreciation on new buildings. The cost of capital has been calculated on a straight-line basis
- An expected useful life of 10 years has been used for the calculation of depreciation on equipment. The cost of capital has been averaged to mitigate peaks and troughs throughout the life of the asset

13.7.3 The results are shown in figure 13.9

Item	Baseline £000	Option1 Do Minimum £000	Option 2 Little France £000	Option 3 St John's £000
Depreciation	■	■	■	■
Interest (3.5%)	■	■	■	■
Total	■	■	■	■
Increase over baseline		■	■	■

**Figure 13.9: Capital Charge Implications**

### 13.8 Service Costs

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

13.8.1 The costs of implementing the new model of care were calculated for each option and compared to the baseline.

13.8.2 Only proposed changes to existing services specifically required to deliver the new model of care have been costed and included as part of this business case. Any potential additional service developments will be treated as part of the ongoing financial and service planning process and are specifically excluded.

13.8.3 Figure 13.10 summarises the net financial impact of implementation of the new models of care

Item	Baseline (£000)	Option 1 Do Minimum (£000)	Option 2 Little France (£000)	Option 3 St John's (£000)
Pay	██████	██████	██████	██████
Non Pay	██████	██████	██████	██████
Contract Income	██████	██████	██████	██████
Total	██████	██████	██████	██████
Difference to baseline		██████	██████	██████

*Figure 13.10: Service Costs*

### 13.9 Summary of Revenue Consequences

13.9.1 Figure 13.11 summarises the revenue implications

Element	Baseline Budgets (£000)	Option 1 Do Minimum (£000)	Option 2 Little France (£000)	Option 3 St John's (£000)
Workforce Costs	██████	██████	██████	██████
Clinical Support	██████	██████	██████	██████
Non-clinical Support	██████	██████	██████	██████
Non-pay Costs	██████	██████	██████	██████
Capital Charges	██████	██████	██████	██████
Contract Income	██████	██████	██████	██████
Expected income from developments/transfers e.g. associated with additional PICU & CAMHS (see 13.9.2)	█	██████	██████	██████
Total	██████	██████	██████	██████
<b>Estimated Revenue Impact</b>		██████	██████	██████

*Figure 13.11: Estimated Revenue Impact*

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

### **Overall Estimated Revenue Impact**

13.9.2 The overall revenue impact is summarised above in Figure 13.11. Compared to the baseline budgets, option 1 has revenue impact of [REDACTED]; option 2 a difference of [REDACTED] and option 3 a difference of [REDACTED]. Despite arriving at the lowest cost compared to baseline budgets, option 1 unfortunately does not meet clinical need and the model of care is therefore deemed inappropriate. Of the remaining options, option 2 is expected to deliver the model of care at lower cost compared to option 3.

### **Sources of expected additional income**

13.9.3 National and regional service developments with inherent costs will help shape the future of the children's service. In support of specific developments funding sources have been identified for Paediatric Intensive Care Unit and Child Adolescent Mental Health Service.

13.9.4 Other identified funding sources include the following:

- Adolescent service
- Spinal deformity service
- Specialist children hospital services

13.9.5 All the above will be further refined as the project progresses.

### **Lifecycle costs**

13.9.6 Lifecycle costs which have been included, as part of non-clinical support costs will be capitalised as part of NHS Lothian's capital plan in accordance with Capital Accounting Manual. This will further reduce RHSC's revenue impact by c [REDACTED] on a recurring basis.

### **13.10 Double Running Costs**

13.10.1 A high level assessment of double running costs was undertaken at a meeting held with key members of the project and operational management teams. These non-recurring costs are incorporated into the discounted cash flow and affordability test as part of the preferred option appraisal. (up to £500k). It is proposed that the service would move over a period of a maximum of 5 days with the objective to discharge as many patients from the old site as possible and therefore minimise the number of patients moved. More detailed planning will take place at a later date and will be done in collaboration with the Glasgow project team and other children's services in Aberdeen and Dundee to ensure robust contingency

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

plans are in place to ensure safe provision of emergency and PICU service during the period of the move.

### **13.11 Conclusion**

13.11.1 The outcomes from the financial and economic appraisal demonstrate that option 2, a new build at Little France, is the preferred option. It offers best value for money out of the three options. Option 1 is most affordable but it is used for benchmarking purposes only. Moreover it would not be implemented as this does not meet nor have the capacity to deliver the revised model of care for the East of Scotland. Option 2 demonstrates that it offers greater level of benefits in return for the investment.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

## 14. RISK ANALYSIS

### 14.1 Overview

14.1.1 Risk analysis has been undertaken for 2 purposes:

- To assess the relative level of risk associated with shortlisted options
- To identify risks associated with the project, assess their likelihood and impact and allow controls to be put in place to mitigate risks

14.1.2 A qualitative risk assessment has been undertaken for each of the 3 short listed options and the results of this have been used to assess the overall level of project risk.

### 14.2 Risk Identification and Analysis

14.2.1 The project risks for each of the options were identified at a workshop involving the project team and clinical staff. The likelihood and impact of each of the identified risks was assessed at the workshop through a process of discussion and debate until a consensus was reached. The likelihood and impact 'scores' were derived from the Risk Matrix shown below:

RISK RATING MATRIX						
PROBABILITY	Almost Certain (5)	Medium (5)	High (10)	High (15)	Very High (20)	Very High (25)
	Likely (4)	Medium (4)	Medium (8)	High (12)	High (16)	Very High (20)
	Possible (3)	Low (3)	Medium (6)	Medium (9)	High (12)	High (15)
	Unlikely (2)	Low (2)	Medium (4)	Medium (6)	Medium (8)	High (10)
	Rare (1)	Low (1)	Low (2)	Low (3)	Medium (4)	Medium (5)
		Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Extreme (5)
		<b>IMPACT</b>				
		<b>Low: 1-3</b>	<b>Medium: 4-8</b>	<b>High: 10-16</b>	<b>Very High: 20-25</b>	

**Figure 14.1: Risk Rating Matrix**

14.2.2 Finally at the initial workshop actions to manage each of the risks were identified.

14.2.3 The initial draft resulting from this workshop was then disseminated to a wider group of staff for comments, additions and suggested revisions. Based on these comments a revised draft was produced and two further workshops were held to produce the Risk Register for the OBC stage of the project.

14.2.4 The methodology used to carry out the risk assessment was derived from the Treasury "Green Book – Appraisal & Evaluation in Central



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

Government". This methodology categorises risks under two broad headings:

- Risks that cannot be quantified financially.
- Risks that can be measured and quantified financially.

14.2.5 As described above all of the risks, both those that could be quantified financially and those that could not be quantified financially were scored for probability and impact. In summary this analysis showed that the Little France option was the lowest risk option. The overall risk scores for the three options are:

<u>Option</u>	<u>Score</u>
Do Minimum	567
Little France	448
St John's	485

14.2.6 The risks identified as '**VERY HIGH**' for each of the options are as follows

**Do Minimum – current hospital site**

<u>Risk Category</u>	<u>Risk Description</u>
Adverse Publicity	Planned facilities do not meet expectations.
Financial	If single room provision required to be 100%, bed envelope would require to significantly reduce within the current site.
Financial	Fit out funding insufficient.
Financial	Existing services etc disrupted by building works.
Project Risk	Impact on RHSC specialist services of failure to co-locate with Department of Clinical Neurosciences.
Project Risk	Lack of space on site for required facility.

**Little France**

<u>Risk Category</u>	<u>Risk Description</u>
None	

**St John's**

<u>Risk Category</u>	<u>Risk Description</u>
Adverse Publicity	Planned facilities do not meet expectations.
Project Risk	Impact on RHSC specialist services of failure to co-locate with Department of Clinical Neurosciences.

14.2.7 The full Risk Register is shown in appendix 14.1.



**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

***Risks that cannot be Quantified Financially (Optimism Bias)***

14.2.8 The non-financially quantifiable risks for each option were quantified using Optimism Bias in accordance with the Supplementary Green Book Guidance. Full details of this are outlined in section 13.5.

**Risk Management**

14.2.9 As the project progresses, identified risks will be assigned to a responsible manager to manage and mitigate where possible. A system of formal review will be established and the Risk Register will be maintained and updated to reflect the changing risk profiles throughout the life of the project. Regular update reports will be provided to the Project Board. An initial assessment of the actions identified to manage both the high and very high risks for the preferred option is shown in appendix 14.2.

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

## 15. PREFERRED OPTION

### 15.1 The Preferred Option

15.1.1 The preferred option for the Reprovision of the new C&YP's Hospital is to build a new hospital on the site at Little France. This option has been selected because:

- Only the Little France and St John's options meet the key recommendations of the Youngson Report that Children's specialist acute services should be co-located with acute adult, Maternity and Neonatal services and that new co-located C&YP's hospitals should be created in Edinburgh and Glasgow.
- The Little France option ranks as the best option in terms of the Benefits Appraisal, Financial Appraisal, Economic Appraisal and Risk Assessment.

### 15.2 Selection of the Preferred Option

15.2.1 The results of the Benefits Appraisal (Section 11), Economic Appraisal (Section 12), Financial Analysis (Section 13) and Risk Assessment (Section 14) are shown in the Figure below. A comparison of Net Present Cost is also included.

Option Appraisal Measure	Option 1	Option 2	Option 3
	Do Minimum	Little France site	St John's site
Benefit Points	119	349	239
Capital Cost (£000)	██████	██████	██████
Annual Revenue Impact (£000)	██████	██████	██████
Net Present Cost (NPC) (£000)	██████	██████	██████
Equivalent Annual Cost (£000)	██████	██████	██████
Risk Assessment Points	██████	██████	██████
NPC (£000) per Benefit Point	██████	██████	██████
EAC (£000) per Benefit Point	██████	██████	██████
Ranking	3	1	2

**Figure 15.1: Net Present Cost Comparison**

15.2.2 Therefore the ranking of the options with regard to the Benefits Appraisal, Financial Appraisal, Economic Appraisal and Risk Assessment is as follows:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

Option Appraisal Measure	Option 1 Do Minimum	Option 2 Little France	Option 3 St Johns
Benefit Points	3	1	2
Financial Appraisal	1	2	3
Economic Appraisal	3	1	2
Risk Assessment	3	1	2

*Figure 15.2: Ranking of Options*

### 15.3 Description of the Preferred Option

- 15.3.1 The proposed configuration of service provision is as outlined in Section 6 although the final configuration of tertiary services will be informed by the outcome of the work of the Specialist Children's Services Steering Group in Scotland. The assumptions on the level of activity are as outlined in Section 7.
- 15.3.2 The new hospital requires a physical link to the Royal Infirmary of Edinburgh at some point in order to achieve the clinical linkages and adjacencies. If practical this will be directly to the hospital street or a reconfigured layout readily accessing the hospital street. Major reconfiguration of the existing RIE layout of clinical services is considered not to be practical or cost effective. The footprint and massing of the hospital will be constrained by existing buildings, services and infrastructure.
- 15.3.3 The final positioning will be explored further in the development of the FBC and will be subject to a full Option Appraisal process. A masterplan for the RIE / Little France site has been commissioned to bring together the RHSC requirements, other potential developments and longer-term site capacity opportunities (with links to the adjoining Bio-Medical Quarter masterplans). This exercise will be completed in mid-2008 and facilitate the submission for planning consent to assist the RHSC development process.
- 15.3.4 The capital assumptions for the project, which will form the basis of the design brief at the next stage, have been included at appendix 15.1. The key approach is as follows.
- 15.3.5 Subject to design and site constraints, the hospital will be on 3 floors:
- Principal clinical adjacencies proposed following the redesign are:
- **Ground Floor:** Front door: A&E, Paediatric Admissions and Assessment area (PAA), Medical Day Case unit, Out patients, Therapy suite, Radiology & Pharmacy

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- **First Floor:** Theatre suite, Surgical Day Case Unit, & Critical Care (includes HDU, Burns & SNU)
- **Second Floor:** Inpatient facilities: Surgical area, Medical area, Neuroscience area, Adolescents area & Cancer Unit
- It is proposed to reprovide the CAMHS Young Peoples Unit and Forteviot Day Unit within the C&YP's hospital. The YPU requires an external secure recreation area.

15.3.6 A sustainable development will be delivered, making best use of cost effective and efficient energy sources, waste will be minimised during construction and operation but reflecting the requirements of the clinical environment of an advanced teaching hospital. The opportunity exists for the Reprovision to adapt operational processes to meet the sustainable strategy.

15.3.7 The design approach will be to reflect age appropriate care, clinical requirements and a supportive environment for patients, parents, visitors and staff. Key benefits of good design include:

- Use of light
- Views out-with and within to offer interest and diversion
- Accessibility into and from the hospital for all, including access to recreation and "green space" and other support services in addition to clinical requirements.
- Safety and security for all users of the building and its environment.
- The hospital in context of the locality and a developing community in the wider Little France area.
- Taking account of all infection control policies and procedures.

15.3.8 An assessment of the capital costs associated with the preferred option using the standard format of SCIM forms OB1 to OB4 is shown as appendix 15.2.

#### **15.4 Assessment of 'PPP-ability'**

##### **Qualitative Assessment**

15.4.1 SGHD guidance in assessing the qualitative aspects of the procurement options has been followed by NHSL. Based on this assessment, the weighted 'PPP-ability' score is 23.3%. In terms of the guidance, as the score is below 25%, this indicates that there are minimal prospects for Public Private Partnership. It was acknowledged however that this assessment does not fully capture the complexities of the project given the existing PFI contract at Little France, site constraints and project

## NHS Lothian Reprovision of Royal Hospital for Sick Children - Edinburgh Outline Business Case

---

management issues. A procurement workshop was therefore held to inform the most appropriate procurement route. This will be further informed by the completion of the quantitative assessment stage of the PPP assessment process (see below).

### Quantitative Assessment

- 15.4.2 In accordance with SGHD advice, the next stage of the process was to quantitatively assess which procurement route delivers best value for money. Financial advisors (Ernst and Young) were appointed to assist with this process.
- 15.4.3 The financial advisors, using their knowledge of the current financial climate and market forces, developed a 'shadow bid model' (SBM). One key purpose of the SBM is to assist with the assessment of this against NHSL's Public Sector Comparator (PSC) previously used to determine the preferred option which is expected to deliver the best value for money.
- 15.4.4 In following the SGHD guidance a SBM was developed under a Non-Profit Distributing (NPD) model of the Public Private Partnership arrangement. Further explanations about this procurement route can be found in section 16. It is important to understand that all core clinical service provision will remain with NHSL regardless of procurement route. Essentially, the quantitative test in this OBC focuses only on the non-clinical<sup>1</sup> aspects of hospital provision.

### Value for Money

- 15.4.5 Based on the developed unitary charges (see figure 15.4) E&Y provided NHSL with the net present cost (NPC). The NPCs for NPD was then compared to the NPC for NHSL's PSC. However, as previously highlighted, because the NPD arrangement only concentrate on non-clinical service provision factors such as timescales need to be aligned and all clinical service areas need to be excluded from NHSL's preferred option to ensure we are comparing like for like. The resulting NPCs for both procurement options can be found in Figure 15.3. This demonstrates that quantitatively the publicly procured option offers better value for money.

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<sup>1</sup> Non-clinical provision includes hard and soft facilities management costs, development costs and construction costs.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

	Procurement via public funds (preferred option)	Procurement under NPD
Net Present Cost (£000)	████████	████████
Ranking	1	2

**Figure 15.3 – Procurement Option – Value for Money**

### Affordability

- 15.4.6 The SBM gives an informed outlook of what the annual ‘unitary charge’ might be if the non-clinical aspects of the hospital provision are provided under a NPD arrangement.
- 15.4.7 As shown in Figure 15.4 below, annual unitary charge and the equivalent annual cost for the public procurement route are then compared against NHS Lothian’s baseline hard and soft FM revenue budget to give an indication of the potential revenue shortfall.
- 15.4.8 The table indicate that the public procurement route is more affordable against baseline budgets.

	Public Procurement	Under NPD
Equivalent Annual Cost / Unitary charge per annum - £000	████████	████████
Baseline hard and soft FM budget - £000	████████	████████
Net Revenue Shortfall - £000	████████	████████
Ranking	1	2

**Figure 15.4: Annual Equivalent Cost / Unitary Charge under NPD procurement**

### 15.5 Public Procurement Route

- 15.5.1 Based on the results of the value for money (figure 15.3) and affordability (figure 15.4) tests, the public procurement route is the more favourable option.

<sup>1</sup> Full discounted cash flow for public procurement can be found in appendix 15.3



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

### Impact on Capital

- 15.5.2 The capital cost of RHSC Reprovision is [REDACTED] as detailed in figure 13.3 and following key outcomes of the business case process, a range of funding options have been identified and agreed under the public funded procurement route.
- 15.5.3 Charitable fundraising by the Sick Kids Friends Foundation (SKFF) has been established. The SKFF was founded in 1992 and is a mature and well-established charity in Lothian. The Foundation is committed to working with NHSL to raise funds for the new C&YP's hospital. To support this work, a feasibility study has been undertaken to inform the decision-making process and this indicated that the Foundation could raise [REDACTED].
- 15.5.4 A number of other charities have also indicated that they will support the capital expenditure associated with the project. All charitable contributions will be utilised in accordance with principles agreed with each charity. The indicative contributions are outlined in the following table:

Indicative sources of charitable contribution towards capital cost (inclusive of building and equipment where applicable)	£000
Sick Kids Friends Foundation	[REDACTED]
Ronald McDonald House Charities House – part of Family Hotel	[REDACTED]
Teenage Cancer Trust	[REDACTED]
CLIC Sargent (North British Hotels Trust)	[REDACTED]
Trefoil	[REDACTED]
NHS Lothian Endowments	[REDACTED]
<b>Total</b>	[REDACTED]

**Figure 15.5: Charitable contributions**

- 15.5.3 Other funding source for specific capital expenditure include:

- University of Edinburgh for their usage of scheduled accommodation [REDACTED]

	£000
Total Capital Costs	[REDACTED]
less:	
Charitable donations	[REDACTED]
University of Edinburgh	[REDACTED]
<b>Net Capital Gap</b>	[REDACTED]

**Figure 15.6: Summary of capital position**

- 15.5.4 In line with the 10 Year Capital Plan, NHS Lothian will fund the remaining balance of capital costs [REDACTED] from their Capital Resource Limit (CRL). The CRL would include specific anticipated increases as detailed below:



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

- Scottish Government Health Department (SGHD) has committed to inject additional capital funding of [REDACTED] towards the RHSC reprovision.
- Expected proceeds from the sale of current RHSC properties [REDACTED] (as detailed in Figure 13.6).

15.5.6 Lifecycle costs will be capitalised from year 6 onwards once the hospital is in operation ([REDACTED] full year cost).

15.5.7 The following table summarises the final capital position for the project:

	£000	£000	£000	£000
<b>NHS Lothian Source:</b>			Yr 1 – Yr 5	Year 6+
Asset sale of NHS Estate			[REDACTED]	
SGHD support for RHSC			[REDACTED]	
Net NHS Lothian's CRL (balance)			[REDACTED]	[REDACTED]
			[REDACTED]	[REDACTED]
	Capital Build	Equipment	Total	Total
<b>NHS Lothian Application:</b>				
Remaining RHSC capital cost <sup>1</sup> - NHS Lothian	[REDACTED]	[REDACTED]	[REDACTED]	-
NHS Lothian capitalisation of lifecycle costs	-	-	-	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

**Figure 15.7: Sources and applications of capital funding**

## 15.6 Impact on revenue

15.6.1 Revenue implications of [REDACTED] as detailed in Figure 15.1 have largely been driven by increased costs associated with increased activity plus capital charges inherently linked to capital build costs.

15.6.2 As capital donations from SKFF, other charities and capital contributions from University of Edinburgh can be classed as donated assets<sup>2</sup>, these would not attract capital charges. This would further reduce the revenue impact of capital charges associated with the capital build by c [REDACTED]

<sup>1</sup> Remaining RHSC capital cost is [REDACTED] less contributions charity partners and University of Edinburgh.

<sup>2</sup> Scottish Government Health Department's Capital Accounting Manual

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

15.6.3 As explained in section 13.9.6, lifecycle costs will be capitalised as part of NHS Lothian's capital plan, thus further reducing the revenue impact by £0.660m

15.6.3 The revenue position is summarised below:

Revenue	£000
Projected net total cost of project	[REDACTED]
Baseline budget	[REDACTED]
Revenue shortfall against budget	[REDACTED]
less: expected 'developments' Funding (see section 13.9.4)	[REDACTED]
Capital charges in relation to non NHS contributions e.g. charitable donations	[REDACTED]
Capitalisation of lifecycle costs on new build	[REDACTED]
<b>Net draft revenue gap</b>	[REDACTED]

*Figure 15.8: Summary of revenue position*

15.6.5 Participating NHS Boards will work closely together to manage any interim impacts of RHSC costs including the linkages with National Tariffs (see section 15.7).

## 15.7 SEAT Methodology

15.7.1 The net revenue impact of £[REDACTED]m will be managed across SEAT partners and will be equitably distributed across each of the boards using agreed methodology<sup>1</sup> linked to 2005/06 baseline activity (grouped into HRGs applied to Tariffs).

15.7.2 Figure 15.8 below details the proposed percentages and share of costs across our SEAT partners.

SEAT Boards	%	Recurring (£000)	Non-recurring <sup>2</sup> (£000)	Total (£000)
Borders	5.19%	[REDACTED]	[REDACTED]	[REDACTED]
Fife	15.84%	[REDACTED]	[REDACTED]	[REDACTED]
Lothian	69.74%	[REDACTED]	[REDACTED]	[REDACTED]
Tayside	4.17%	[REDACTED]	[REDACTED]	[REDACTED]
Forth Valley	5.06%	[REDACTED]	[REDACTED]	[REDACTED]
	100.00%	[REDACTED]	[REDACTED]	[REDACTED]

*Figure 15.9: SEAT % share based on HRG linked to tariffs*

<sup>1</sup> Agreed at North East Operational Planning Group, Finance sub group of SEAT

<sup>2</sup> Non-recurring costs include double running costs and annual excess travel costs required for 4 years

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

**15.8 Statement of Affordability**

- 15.8.1 All the neighbouring NHS partners recognise the financial risks which underpin the revenue position at this stage. SEAT boards accept the proposals and have signed off the OBC in principle. NHS Lothian has agreed to keep all SEAT partners abreast of key significant developments post OBC stage.
- 15.8.2 NHS Lothian confirms that the financial consequences will be managed as part of their financial and capital plan process.

**15.9 Site Assessment**

- 15.9.1 Over the last decade, the 130,000 sq.m. Royal Infirmary of Edinburgh has been developed at Little France on the south side of Edinburgh along with substantial University of Edinburgh facilities. The development is part of a Private Finance Initiative signed in 1998 in partnership with Consort Healthcare, part of Balfour Beatty plc under a 30 year contract.
- 15.9.2 Within the NHS / Consort campus, the University of Edinburgh developed the Chancellor's Building linked directly into the RIE building. Subsequently, and linked to the Chancellor's Building by pedestrian bridge, the University developed the Queen's Medical Research Institute. Both these facilities are integral to the teaching hospital role of RIE. 1,700 surface level car parking spaces are also provided on the site, managed by Consort within the contract. Servicing and power are provided from a separate facilities and energy centre. A further on site facility is a commercially operated Nursery.
- 15.9.3 Scottish Enterprise Edinburgh and Lothian (SEEL) obtained planning permission and developed infrastructure in the adjoining site to the RIE for a BioMedical Research and Development Park. They are currently in the process of contracting with specialist developer Alexandria Real Estate, Inc. In addition, the draft Local Development Plan has allocated an additional area for expansion of the BioMedical park to the south. SEEL, University of Edinburgh and NHSL are working in partnership to develop a masterplan for this expansion area which will also encompass the wider benefits for the Little France area. This presents opportunities to work in partnership to address infrastructure and servicing issues, and planning a framework to develop a world class and sustainable community with healthcare provision at its heart.

**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**

---



**Figure 15.10: Overview of the proposed site with the proposed developments identified**

15.9.4 As part of the wider area developments, EDI Group Ltd are working with residential developers on infrastructure and related projects between the Little France Campus and Craigmillar. These projects include the provision of structured and informal parklands and woods. NHSL representatives, together with Family Council members have participated in the consultation exercise for the development, which should bring enhanced access to greenspace and recreation areas for staff, patients and visitors to Little France.

15.9.5 The University of Edinburgh is planning further development within the Bio Medical Quarter further strengthening the relationship with RIE and the site.

## **15.10 Transport Assessment & Travel Plan**

15.10.1 There is recognition of the specific needs of children, young people and families attending paediatric services. In particular, in relation to attendance with 'families attached', accessibility, modes of transport,

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

frequency of attendances and for some families the distances travelled. The importance of maintaining normal family life as much as possible for families who regularly attend the hospital is recognised. These issues will be explored more fully as the project progresses and plans will be put in place to address them as appropriate.

- 15.10.2 An overall traffic impact assessment will be undertaken as part of the master planning process to fully understand the implications of co-locating the new Children & Young People's Hospital on the Little France site.
- 15.10.3 The National Transport Strategy published in December 2006 by the Scottish Government supports improved journey times and connections leading among other things to improved social inclusion, better links between and integration of, the regional and local transport issues. This has been progressed in Lothian by the development of a Green Travel Plan under the auspices of NHSL's Sustainable Development Strategy.
- 15.10.4 Close working with the Transport Services in the four Local authority areas means that NHSL is able to maximise all current and future opportunities to achieve more sustainable travel facilities for staff and patients. Relocation to Little France site affords the opportunity to improve the current travel situation for patients, families and staff. Parking on the current RSHC site is very restricted and public transport is limited with only 3 buses per hour passing close to the site. There are significant access issues associated with parking and traffic congestion.
- 15.10.5 The situation is significantly better on the Little France site which is served by approximately 70% more buses an hour. Most of the buses stop at the site's RIE stand and provide links to the city centre to enable interchanging between different modes of transport. The site also benefits from better parking and public transport links including a bus link from West Lothian and Park and ride sites.
- 15.10.6 NHSL, in partnership with Consort already implements a Green Travel Plan under the planning consent for the current Little France Developments. Services include a shuttle bus service between sites for staff, prioritised car parking permits and related support. It is anticipated that the further developments at Little France, including the BioQuarter, will facilitate greater sustainable travel planning and car park management on an integrated basis. NHSL participates in the joint transport group and joint masterplanning already established with adjoining owners and stakeholders.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

## **15.11 Clinical Services & Non-Clinical Support**

### ***Imaging***

15.11.1 Review of the current imaging service in the RIE indicated that there is insufficient capacity to accommodate paediatric services. It is therefore proposed to provide all Paediatric Radiology services in purpose-built facilities within the footprint of the new hospital. This will support the new models of care within a clinically safe environment for children, young people and their families and with equipment specifically calibrated for children and young people. It will also support timely responses to emergency paediatric patients without disruption to adult services.

### ***Laboratory Services***

15.11.2 It is proposed to integrate Paediatric laboratory activity within the existing laboratories in the Royal Infirmary of Edinburgh (RIE). The RIE laboratory will be redesigned and modified to establish the required Paediatric specific facility. This will be supported by a robust pneumatic tube system between the C&YP's Hospital and the Laboratories.

### ***Pharmacy***

15.11.3 Medicines storage and procurement, inpatient dispensing, distribution, pre-packing and medicines information services will be provided from the main Pharmacy suite in the RIE. Dispensary services to the PAA, outpatients and day case patients will be provided from a smaller dispensary in the new Children & Young People's Hospital. The currently limited 'One Stop Dispensing' will be extended to all clinical areas - a development that is key to supporting the new models of care. It will support:

- Reducing wastage of drugs
- Minimising delays on discharge
- Reduction of potential duplication and consequent errors

15.11.4 The location, and the final configuration, of the aseptic facility will be informed by the outcome of a NHS- wide review of aseptic services due to report in the coming months and will be determined by an option appraisal exercise which will take place once this report is available. An allowance for a dedicated aseptic facility in the new C&YP's hospital has been built into the accommodation schedules should this be required.

## **15.12 Non-clinical Support Services (Facilities)**

15.12.1 The service delivery plan for the Facilities Directorate has been developed to support the redesigned model of care. The objective is to provide a hospital environment in which effective and efficient healthcare can be

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

delivered to C&YP and their families. Full details are attached as appendix 15.4.

***Potential for Shared Service Provision at Little France***

15.12.3 In recognising the potential for shared service provision at Little France with Consort Healthcare, as PFI provider, the principle in terms of co-operation and participation in a positive manner has been agreed at a strategic level. The detailed specification and contractual basis will be negotiated as part of the development of the project.

15.12.4 The potential sharing of service provision for cleaning, portering and maintenance has been defined through non-clinical support reviews. In order to ensure value for money, the option of expansion of RIE existing services or maintaining a separate in-house service at RHSC will be considered.

15.12.5 It is proposed that some service provision, such as heat and power, will be provided through the existing infrastructure on the Little France site and capacity will be tested through an engineering review of services as part of the development process. An allowance for provision of engineering/infrastructure has been built into the accommodation schedules in case it is required.

**15.13 Impact on Scottish Ambulance Service**

15.13.1 The Scottish Ambulance Service has undertaken an initial assessment of the proposed changes. This indicates that the changes will have limited impact as the potential increase in activity due to the geographical change is balanced by the benefits from the co-location with adult services. A more detailed impact assessment will be undertaken once the outcome of the National Specialist Children's Service Review is known.

**15.14 Partnership Working**

15.14.1 NHSL continues to be committed to partnership working. Throughout the project and in developing the 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
- Partnership involvement in all working groups and workshops
- Regular briefing on the status of the project.

15.14.2 In implementing the preferred option, NHSL will remain committed to partnership working throughout the project. The project management

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

arrangements outlined in section 18 clearly show a commitment to ongoing partnership working.

**15.15 Impact on health inequalities**

15.15.1 An equality and diversity rapid impact assessment was undertaken on the preferred option. A copy of the summary report of this assessment is attached as appendix 15.5.

15.15.2 This assessment indicated that there was no need to undertake a full impact assessment at this stage in the project. Plans are already in place to address some of the areas identified and the remainder will be addressed via the design of the new facility. Further assessments will take place at key stages of the project



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

## **16. PROCUREMENT STRATEGY**

### **16.1 Overview**

16.1.1 The consideration of procurement strategies for the capital build is ongoing but for the preferred option site, a limited range of options is considered appropriate, given the existing PFI relationship with Consort Healthcare, part of Balfour Beatty. Procurement rules, however, prohibit Consort treating the RHSC Reprovision, as an extension to their existing contract.

16.1.2 NHS Lothian has undertaken a procurement strategy workshop involving legal, finance, project management and procurement input from experienced consultancies. The aim of the workshop was to:

- Identify the most appropriate procurement route for the RHSC Reprovision Project at Little France, to address the existing PFI contract, site constraints and project management issues.
- Review the potential different procurement requirements for the three main elements of the construction project; enabling works, RHSC build and shared build requirements.
- Review the range of procurement procedures required, construction techniques and marketability of the project all designed to ensure that best value for money and deliverability is achieved.
- Identify the balance between programme, cost and quality for the options.

### **16.2 Procurement options**

16.2.1 The Workshop evaluated a range of both private and publicly funded procurement options following an outline of the business case proposals as they currently stand.

#### **Long list of options**

16.2.2 The initial long list of options was:

- Traditional Construction procurement
- Additional works order
- Design and Build (one stage)
- Design and Build (two stage)
- Management contracting and construction management
- Alliancing

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- Design Build Manage and Operate
- Non-profit distributing model of public private partnership
- Prime contracting (Framework Scotland as the Scottish successor to Procure 21)
- Private Finance Initiative based on the existing PFI contract at Little France.

### Short list of options

16.2.3 The following options were not taken forward to the shortlist of options:

#### Traditional Construction Procurement

Traditional Construction Procurement was considered and only retained on the shortlist option as the benchmark for cost, programme, quality and risk analysis. As a linear process it is not efficient and does not achieve early cost certainty or risk transfer. Retained for benchmarking purposes only.

#### Additional works order or new PFI

MacRoberts Solicitors presented an overview of the existing PFI contract and public procurement issues to be considered. In particular, it was recognised that the contract and public procurement rules would not allow for the new hospital to be reprovided under an additional works order from Consort Healthcare (and this had been conveyed to them). In addition, a new interposed PFI contract was not considered attractive to the market and was not taken forward for formal scoring. However, it was recognised that a significant interface is required, revisions to the existing Consort contract will be necessary and that enabling work will be undertaken through this contract.

#### Design and Build (one stage)

Design and Build (one stage) was reviewed and ruled out because the programme timetable and current stage which has been reached meant that it was not viable. It was also noted that there was no market appetite for this approach.

#### Management contracting and construction management

Management contracting and construction management – closely linked procurement routes but agreed to be inappropriate because of the complexity of the project and significant cost uncertainty. It was recognised as being difficult to manage alongside the Consort relationship.

#### Alliancing

Alliancing – as there was no definitive continuous workflow, this was not felt to be appropriate to be used for a single project, given establishment costs and other factors.

## NHS Lothian Reprovision of Royal Hospital for Sick Children - Edinburgh Outline Business Case

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### Critical Success Factors

16.2.4 Critical Success Factors were identified around the headings of cost, programme, quality and risk. Cost was prioritised and some concern was raised regarding the impact of perception and public concerns over NPD differentials. This was due to the “installation” of a development within an existing PFI project with established “negative perceptions”. The application of non-profit distributing model, public private partnership into this situation was noted to be difficult, particularly in securing the level of charitable funding anticipated by the project. This was ultimately reflected in part of the elemental scoring of the procurement options.

### Weighting

16.2.5 It was agreed to weight the respective elements as follows:

- Cost – the priority in terms of critical success factor in relation to costs certainty and matching cashflow needs was given a weighting of 30%.
- Programme Priority in terms of delivery timescale and the ability to work with the existing PFI contract etc was weighted at 25%.
- Quality was held to be of high priority in terms of meeting the design criteria (following the Architectural and Design engagement in terms of enabling masterplanning and construction), sustainability and positive public perception to support or be supported by fund raising. This was weighted at 23%.
- Risk and flexibility was weighted at 15%.
- Other elements around the marketability, early involvement of the contractor and availability of the stakeholder pool was worthy of weighting at 7% as these issues were not fully covered by the other criteria.

### Short-listed Options and Scoring

16.2.6 The following options were scored on a scale of 0-4:

- Traditional (as benchmark)
- Design and Build (two stage) – preferred option being Develop and Construct (two stage)
- Design Build Manage and Operate
- Non-profit distributing model of public private partnership
- Prime contracting (focused as Scottish successor to procure 21)

### Scoring Results

16.2.7 A group of external advisors and the NHSL Finance and Capital Planning Teams members who attended the workshop undertook scoring. The

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

scores were combined to provide a robust scoring mechanism and ranked the preferred options as:

1. Develop and Construct
2. Prime
3. Design, Build, Manage and Operate
4. NPD
5. Traditional

16.2.8 The following provides an explanation of the two top ranking options:

*Develop and Construct*

With this approach, the contractor is appointed once the design is complete to RIBA Stage C or D. The Design Team is then novated to the main contractor prior to a fixed price being agreed. The client retains the services of a project manager, employer agent, cost manager and Construction, Design & Management co-ordinator. The contractor, the design team, client and the client's advisors then develop a procurement strategy jointly. This sets out how the interactions between the client, stakeholder, specialist sub-contractors and designers will be managed and, in particular, the frequency and procedures for design review and project sign offs.

*Prime*

This procurement route appoints a single contractor to act as sole point of responsibility for the management and delivery of an integrated design and construction project on time, within budget and fit for purpose. Initial cost models, guaranteed target prices and key performance indicators ensure that the contractor leading the supply chain delivers value for money. Health Facilities Scotland is currently leading on a national framework procurement (branded as 'Framework Scotland') utilising this method.

16.2.9 As the overall scoring for the top ranking options was close, the workshop panel noted that it would be for the procuring authority, NHS Lothian, to review and agree the recommended route.

16.2.10 Further clarification has been obtained from the Framework Scotland project delivery team, managed through Health Facilities Scotland and the Scottish Government Health Department Chair of the Framework Scotland Project Board. The framework Principal Chain Suppliers (main contractors and their respective design team members) have been shortlisted (from pre-qualification submissions) and tender documents will be issued shortly. The clarification meetings have confirmed the appropriateness of this procurement model for this project, in line with the procurement workshop and will deliver framework principal supply chain contractors and technical advisors in place by the fourth quarter of 2008.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- 16.2.11 The value for money demonstration and key performance indicators are essential components to the delivery of the Framework Scotland model.
- 16.2.12 This procurement model has the full backing of the Health Department and is therefore in line with national direction whilst also achieving the project's specific procurement requirements.
- 16.2.13 It should be also that the value for money and affordability tests undertaken as part of the financial appraisal support publicly funded procurement routes as the more favoured option.

**The recommended approach for the procurement of the RHSC**

- 16.2.14 It is proposed that the Reprovision of the new C&YP's hospital adopts the Framework Scotland agreements that should be in place by the fourth quarter of 2008 enabling NHSL to minimise the public procurement period and bring design and contractors on board earlier to achieve cost certainty. NHSL will maximise the pre-design preparation period to progress masterplanning to secure outline planning consent in relation to the Little France site thereby mitigating any initial period slippage through a focused use of current internal and external resources and available client input.
- 16.2.15 NHSL will secure relevant training from Health Facilities Scotland as part of the introduction of Framework Scotland.
- 16.2.16 The interaction with Consort and the existing site, infrastructure services, can be managed through the Principal Supply Chain contractor appointed with associated technical advisers appointed directly by the Health Board.

**Competitive Dialogue**

- 16.2.17 Irrespective of the procurement route chosen, one of the methods of implementation is Competitive Dialogue. This is designed to assist the public sector in securing a clear and best solution for large, complex projects. The RHSC Reprovision project may fall into this category, however the use of Framework Scotland removes this requirement. The main focus is not on delivery of a project solution to a known specification but to enable the bidders to bring forward solutions to the descriptive requirements.
- 16.2.18 This presents great opportunity to secure innovation but evidence suggests that bidder costs are substantially higher with some market reservations about giving too much information too early and thereby losing corporate intelligence to the marketplace. For the project, however, this presents issues of resource and time management. The use of Framework Scotland mitigates these issues.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

### **Other projects**

16.2.18 In reviewing the requirements for potentially related projects at Little France, it was identified that the procurement route will require to take these into account should their business cases be approved. Flexibility in terms of any OJEU notice is required.

### **Consort relationship**

16.2.19 Regardless of procurement option, NHSL are engaging with Consort Healthcare to provide:

- Contract amendment – land and service contracts require to be amended to reflect any new provision;
- Preservation of existing service provision at Little France during construction works;
- Project management interaction to link the provisions together;
- The provision of displaced car parking provision or contractors areas and infrastructure amendments;
- The services consolidated / expanded within RIE and associated additional works; and
- Masterplanning of the site for additional services and / or interaction with the Bio-medical Quarter.

## **16.3 Enabling Works**

16.3.1 In order to masterplan and bring forward associated design issues to a stage for interaction with the appointed Design Team, Consort and their existing Design Team are being used for the feasibility and planning work. This will include engineering site investigation, road access and land issues and will effectively define the footprint and connections and associated works.

16.3.2 The reprovision of car parking will be included as part of the enabling works either on the site or in conjunction with the Bio-sciences Quarter. The recommendation would be to pursue planning and design and build within the site and this could in fact be progressed as an additional works order. The issues associated with car parking will be any changes to the charging regime and the impact of the adjoining developments (in terms of obtaining planning and traffic flow levels). Costs would require to be benchmarked to provide evidence of value for money.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

#### **16.4 RHSC Build**

- 16.4.1 The new build hospital will follow the design aspirations and guidance laid out in the Policy on Design Quality for NHS Scotland (2006) to which NHSL subscribes and implements through its Design Champions. The design brief will address these requirements and also the specification and site constraints outlined in section 16.8.
- 16.4.2 The physical link to RIE will require to be jointly appointed with Consort for either construction and collateral warranties from the Design Teams.

#### **16.5 Potential Shared Build**

- 16.5.1 There are a number of areas included within the RHSC scheduling that could be shared and the clinical / non-clinical and clinical support work that has been done has reduced this to a number of key areas:
- Pharmacy – the aseptic suite at RIE would require to be expanded or alternatively provided in the RHSC. This is subject to an NHSL wide review which is due to report soon.
  - Laboratories – assumed to be within the RIE with appropriate reconfiguration.
  - Catering, Restaurants, – it is assumed that coffee rooms and food outlets will be provided within the new hospital with central dining room and associated facilities provided on the Little France campus
  - Retail Space – limited retail space within identified for the charitable interests only.
  - Health Records – a pan-Lothian review of Health Records requirements is being initiated and this will inform the future requirements in the reprovided RHSC. In the meantime, a working assumption that only active notes for hospital and community paediatrics will be stored on the hospital site has been agreed.

#### **16.6 Construction Market Commentary - Thomson Gray Partnership**

- 16.6.1 Thomas Gray Partnership, Cost Consultants (see section 18.8) have provided an assessment of the construction market and their views are as follows:
- 16.6.2 Official statistics of construction industry output continue to show steady growth. However the outlook appears to be flattening out with a reduction

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- into 2008. New orders for housing and public works have been somewhat erratic over the last six months, a trend that we consider will continue for the near future. Bank lending rates are putting pressure on repayments in the housing sector, consequently reducing first-time buyer demand and therefore the requirement for new build construction.
- 16.6.3 In Scotland we have seen evidence of commercial sector projects being cancelled or put on hold as viability is stalled by increased construction costs and a pessimistic view on rents and values being at the top end of the market. We believe this will be compounded by more difficult lending criteria following recent issues in the banking sector, ultimately leading to a reduction in the volume of new commercial orders.
- 16.6.4 Given the time for pricing trends and economic factors to work their way through the system, we anticipate that tender price increases are likely to show a drop during 2008 and 2009, continuing, (as far as we can forecast) through 2010 at around 5%. Whilst the UK is focused on the 2012 Olympics and its possible effect on the UK construction industry, Poland and the Ukraine host the 2012 UEFA European Football Competition. This requires eight new sports stadia, and some 2,500 km of motorways and expressways. There will inevitably be an increase in construction demand in Poland with competition for resources from within Europe including the estimated 400,000 Polish construction workers currently in the UK.
- 16.6.5 Clearly, each project needs to be reviewed on its own merits - the quality of design and end product, procurement route, delivery and timescales and desire of contractors to tender are all factors, which affect and shape tender returns. The above forecasts are predicated on the averages of various projects across the region based on our own market research and direct experience of the tendering climate. We believe that a general easing in upward price pressure will begin to permeate the industry through 2008. Even at this early stage in the year we are experiencing a significant increase in enquiries and interest from contractor organisations keen to establish the source and extent of potential projects in the coming 12 - 18 months. Order books are not currently as full as at this time in recent years.
- 16.6.6 For projects coming on stream from 2008 onwards, the tendering outlook appears to suggest that the industry is moving into slightly calmer waters, which will provide clients with a degree of stability and some respite from the volatility and "premium" bids which have been a major feature of the market over the past few years. We expect that margins will moderate and that competition for work packages among sub contractors will increase.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

## **16.7 Equipment & IT Procurement**

- 16.7.1 The retention, transfer, procurement and commissioning of new and existing equipment will be a complex project which will require to be funded early in the project to be managed effectively by the project team. This will include all double running and transfer/move procurement.
- 16.7.2 The financial appraisal includes provision of new equipment. This includes the procurement of Group 1 equipment.
- 16.7.3 All IT equipment will be procured against existing NHSL contracts. The costs for the required systems have been included in the financial appraisals, except where national funding is anticipated.
- 16.7.4 NHSL will develop its preferred approach to the procurement of equipment and information technology following approval of the OBC. The strategy will be as flexible as possible so as to ensure best value for money.

## **16.8 Site Constraints**

- 16.8.1 The footprint and massing of the hospital will be constrained by existing buildings, services and infrastructure. These include:
- Physical link – connection to the hospital street and existing services required
  - 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 priority will be to utilise the capacity and accessibility of the existing power plant and servicing. Existing routes for drainage, water, gas, electricity and communications should be maintained, or diverted with no capacity downtime.
  - Niddrie Burn and Other Water Courses – a key constraint to the south and east of the site, together will 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 in operation of sufficient car parking will require taking cognisance of the neighbouring developments and planning restrictions. Fully accessible and, where

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

appropriate, managed car parking for the RHSC 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 sight lines from Old Dalkeith Road and maintaining the uninterrupted ridges of Craigmillar Castle and Edmonston. Any variation will require clear benefits in design.
- Emergency Helicopter Landing Pad – building and associated restrictions will require to be maintained.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

**17. PUBLIC INVOLVEMENT AND CONSULTATION**

**17.1 Public Involvement Strategy**

17.1.1 NHSL has demonstrated its commitment to working with stakeholders prior to the establishment of the re-provision project and will continue to involve, engage and consult stakeholders throughout the duration of this Project. Young people and representative groups were involved both at the drafting stage of NHSL's Children & Young People's Health Strategy and at the consultation phase. This strategy incorporated the plan for the re-provision of the RHSC.

17.1.2 A specific sub-group, the Children, Young People and Family Advisory Board, was established in October 2006. The Chief Nurse - Children's Services and a parent member of the RHSC Family Council, jointly chair this group. The membership of the group includes representatives from Health, RHSC Family Council, Sick Kids Friends Foundation, voluntary sector, local authorities, staff partnership and the Scottish Health Council.

17.1.3 The remit of the group has been established using the National Standards for Community Engagement and is to ensure: -

- Effective involvement of children, young people and their carers, taking account of equality and diversity, in all key aspects of the project and with each of the project groups as relevant;
- That the issues that involvement should address are clearly identified and defined and that the options for how to tackle them are clarified.
- The planned environment reflects the emotional, spiritual, and physical needs of children, young people, their carers and siblings
- The re-provided service reflects the importance of the physical, spatial environment and the development of 'healing' space, and
- The redesigned models of care are child, young people and family centred.

17.1.4 In addition to the above the group also has responsibility for evaluating: -

- How information from the involvement and engagement process was used to inform decisions
- Each method used from both the perspective of the effectiveness of the process and the experience of the people involved.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

17.1.5 The group is working closely with the Scottish Executive & NHS Education Scotland (NES) Young People's Advisory Group, (supported by the Head of Participation from the Scotland's Commissioner for Children & Young People's Office) and they are committed to being involved for the duration of the project. Four teenage members of the Scottish Executive Young People's Advisory Group have been identified to work with the Project and have supported the establishment of a Young People's Group to work with the Project. The first meeting of this group was held in October 2007.

17.1.6 Methods of consultation and the stakeholders identified are outlined in appendix 17.1.

## **17.2 Outcomes from the Consultation Process**

17.2.1 A Record of Involvement has been maintained collating all activities in relation to engaging and consulting with children, young people, their families and the public that have been undertaken. This records who was involved, the type and outcome of involvement and to whom and how the information was fed back. This is attached as an appendix 17.2.

17.2.2 This process has provided information about the new hospital to a variety of different stakeholders including children, young people and their families as well as the general public and to seek their views. This process has developed further as the project progressed with the opportunity to validate proposals and to seek information and views on specific aspects of the plan.

17.2.3 The key themes from the responses include support for the following:

- Combination of single rooms and multiple bed bays within the wards
- Overnight accommodation for parents (both by child's bed and in separate facilities)
- An adolescent facility
- Development of an Paediatric Admissions & Assessment Area
- Early evening outpatient clinics for Young People
- One Stop Clinics
- Separate dining facilities near the ward for families and access to snacks and refreshments over 24hr period
- Play and Recreational Facilities both within the hospital and outside the hospital
- Car Parking that is accessible and affordable
- Green space outside the hospital
- Good public transport links

17.2.4 This work has informed the development of the planning for the new hospital and will be ongoing for the duration of the project.

# NHS Lothian

## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH

### OUTLINE BUSINESS CASE

## 18. PROJECT MANAGEMENT & TIMETABLE

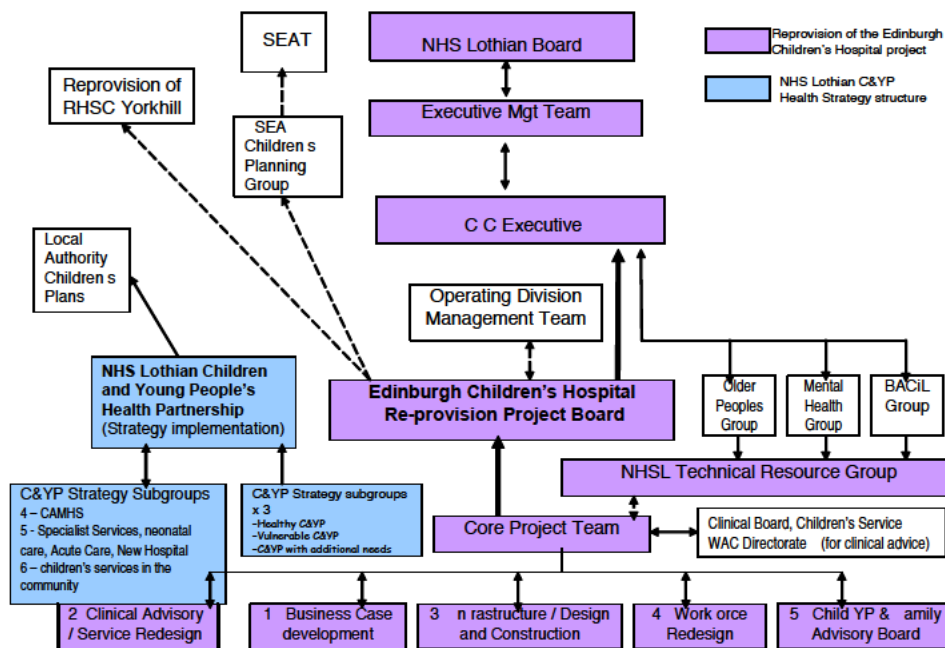
### 18.1 Overview

18.1.1 The successful implementation of this project is vital to the continuing provision of sustainable Children and Young Peoples Health Services in Lothian. Robust project management arrangements are in place to ensure the individual elements of the project meet all expected time, cost and quality criteria.

18.1.2 The project is managed within the NHSL 'Improving Care, Investing in Change' (ICIC) programme, as a defined project, reporting to NHSL Executive Management Team, via the Strategic Change Programme Board (SCPB). It uses standard project management methodology, and will be delivered by:

- Operationally managing the project via the Core Project Team with 5 Project Groups developed to address the key strands of work;
- Ensuring each group and sub group has clearly defined remits and timescales to support the process of redesign and capital planning; and
- Ensuring the Project Board has representation from all key stakeholders.

### 18.2 Organisational Structure



**Figure 18.1: Organisational Chart**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

### **18.3 Project Roles**

18.3.1 Within the management structure outlined above, there are a number of key designated roles. Each of the key project roles is defined below.

#### **NHS Lothian Board**

18.3.2 In its role of delivering the overall healthcare strategy for Children and Young People in Lothian, the NHSL Board will retain overall decision-making authority for the project.

18.3.3 A short 'CV' for the core project team members is attached as appendix 18.5. There is also recognition of the need to undertake a training needs analysis for the team and this will be undertaken in the initial period after submission of the OBC.

#### **Project Sponsor**

18.3.4 The Project Sponsor is a designated Director, who reports directly to the Board Chief Executive. The Sponsor's role is to:

- Appoint the Project Director to manage the project
- Ensure adequate resources are made available to the project
- Facilitate and resolve difficult issues
- Provide overall internal and external leadership for the project

#### **Project Board**

18.3.5 The complex nature of this project both in terms of the links and interdependencies with other redesign projects as well as the Local, Regional & National Strategic context is reflected in the membership of the Project Board. It has been established to ensure representation from all key stakeholders including members who can represent the views of adjacent SEAT Health Boards, partners from Education & Social as well as families and the voluntary sector.

18.3.6 The Project Board, chaired by the Project Sponsor, provides the overall direction, management and governance for the project. Its responsibilities include:

- Agree the levels of authority and lines of accountability for the Project Team;
- Make recommendations through delegated authority from NHSL Board;
- Pursue decisions with relevant executive directors, when they are out-with delegated authority;

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

- Direct, support and monitor the progress of the Project Groups towards achieving their objectives in a timely manner;
- Approve the resources required to support the project and submit to the ICIC Executive for approval and ensure the resources secured for this project are appropriately used.

### **Project Director**

18.3.7 The role of the Project/Clinical Director encompasses overseeing the project as a whole, including:

- Leading the redesign of the pathways of care in C&YP's services to support the provision of safe clinical care
- Developing the workforce plan, in conjunction with the clinical management team for the service to support the provision of the redesigned models of care, including development of education programmes to ensure staff are competent to deliver the proposed future service
- Directing the project to ensure:
  - The new hospital building plan provides the facilities required to deliver the vision for future Children's Services;
  - Robust appropriate stakeholder involvement from the beginning of the project, including:
    - Clinical and managerial staff, and partnership representation;
    - Parents, children and young people, public;
    - Local authority social work and education;
    - Voluntary organisations; and
    - Robust communication plans established early in the project.

### **Project Manager**

18.3.8 The role of the Project Manager is to operationally manage the project and ensure all key milestones are met. This includes ensuring a robust Project Management structure is in place with all members of the team and Project Groups having clear goals and remits. The role encompasses:

- Developing a robust Project Management structure
- Preparing all formal project documents, including Project Initiation Document, OBC & FBC
- Developing high-level Project Plan/timetable
- Managing the Project Team
- Monitoring progress against the Project Plan, identifying exceptions and ensuring corrective action is taken if needed
- Reporting progress to Project Director

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN - EDINBURGH OUTLINE BUSINESS CASE

---

### Capital Project Manager

18.3.9 The role of the Capital Project Manager is to manage the project design and construction to ensure that the project requirements are delivered as specified and that transition from construction to commencement of the service is effective and efficient. The role encompasses:

- Providing input to the OBC and FBC
- Leading the Project Team in drawing up design brief
- Leading the Project Team in procurement of consultants & contractors
- Leading the development of and delivering commissioning strategy for systems
- Assisting with development of equipment requirements
- Assisting with development of training packages for the project
- Assisting with development of migration plans & managing their implementation

### Core Project Team

18.3.10 The role of this team is to manage the project operationally to ensure that the various work streams are progressing to the required standard and within the determined constraints of time and cost. This team will be led by the Project Manager and is responsible for:

- Monitoring and controlling the progress of the work plans for the various sub groups within the agreed remits and timescales;
- Acting as a focus for connecting the work of all the sub groups, ensuring that all interlinks and interdependencies are identified and acted on;
- Ensuring that the work of all groups supports the effective utilisation of NHS resources and value for money;
- Monitoring deviations from the agreed work plans and identifying issues that require to be escalated to the project board;
- Collating the sub group risk registers to establish an overall risk register for the project;
- Managing risks within agreed contingencies and tolerances, and
- Identifying risks to be escalated to Project Board.

### Working Groups

18.3.11 A number of groups have been established to support the project structure. These groups are:

1. Business Case Development – meets weekly during business case development phases
2. Clinical Advisory/Service Redesign



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

3. Infrastructure/Design & Construction
4. Workforce Redesign
5. Children, Young People & Family Advisory Board

#### **18.4 Arts Strategy**

- 18.4.1 Work has been initiated to develop an arts strategy to support the development of a framework for influencing the design of the hospital towards ensuring the space within and around the hospital supports health and well-being. This strategy will be developed to support parallel working with other partners for example, Architecture + Design Scotland.

#### **18.5 Links with Glasgow Reprovision Project**

- 18.5.1 The RHSC, Yorkhill have a similar project to reprovide the West of Scotland C&YP's hospital. Both projects are working closely to ensure a consistent approach to the provision of specialist services, especially those that will require national planning. The Medical Director and Project Manager of the Glasgow Reprovision Project are both members of the RHSC Reprovision Project Board. There has been active sharing of project assumptions with the Project Boards holding a joint meeting in May 2007. More recently, regular meetings have been established with key project leads and redesign subgroups to share and understand redesign assumptions and where they differ, articulate the reasons why.

#### **18.6 Links with National Specialist Childrens Services Steering Group**

- 18.6.1 This process is further informed by the work of the 'Specialist Children's Services Steering Group in Scotland', chaired by Malcolm Wright (Chief Executive, NHS Education, Scotland), reporting to the Deputy Minister for Health and Community Care via the C&YP's Health Support Group (CYPHSG). Both the CYPHSG and the Specialist Children's Steering Group (and its subgroups) have membership from the Lothian Children's Service and the Reprovision Project.

#### **18.7 Stakeholder Involvement**

##### **General**

- 18.7.1 Stakeholder involvement in the Reprovision of the RHSC is assured in a number of ways. Firstly through the composition of the Children, Young People and Family Advisory Board as identified in section 17. This is further supported by a project communications strategy that adds to the wider communication strategy in place for NHSL (attached as appendix 18.1).

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

18.7.2 The project communication strategy outlines a series of approaches for ensuring key messages are communicated to stakeholders. This includes regular Intranet and Internet updates, a project newsletter and staff briefing sessions. Stakeholders include patients, parents and carers, their representatives, charities, other NHS organisations, councils and political representatives such as MSPs, MPs and councillors.

### **NHSL C&YP's Health Partnership**

18.7.3 NHSL C&YP's Health Partnership is chaired by the Child Health Commissioner and the project links with a number of work-streams within this group, including:

- The Project Director leading the work associated with the reviewing acute hospital service provision.
- The Clinical Director for NHSL Children's Services leading the work associated developing community services for C&YP

### **Regional**

18.7.4 The project has worked closely with SEAT partners throughout the development of the OBC. This included the Project Director as a member of the SEAT C&YP Planning group. An overview of the meetings held with SEAT members is attached as appendix 18.2

## **18.8 Role of External Advisors**

### Cost Consultancy & Procurement

18.8.1 In the preparation of the OBC, Thomson Gray, Cost Consultants, have provided professional capital cost and programming advice throughout. The detailed cost analysis of the proposed floor space at Little France and for other options is at appendix 18.3.

### Legal

18.8.2 MacRoberts, Solicitors have provided advice to the Project Directors regarding procurement and Consort contract amendments given their experience of the existing PFI contract.

18.8.3 The Central Legal Office (CLO) have been consulted in relation to the property issues for the existing site and will be involved in any property related work in respect of the preferred option.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

Design

18.8.4 NHSL's Capital Planning and Premises Development project architects and planners have brought together the scheduling and site appraisal, block planning and exemplar layouts. Upon approval of the OBC process, external appointments will be progressed. These include:

- Architectural + Design Scotland have been engaged through the NHS in Scotland / Scottish Government Health Department design champions network for enabling purposes on the Project design and site Masterplanning stages. Preliminary briefings and site inspections have been undertaken.
- General Electric (GE) Healthcare, who have worked with NHSL to deliver LEAN process improvements on a number of clinical and support services throughout the acute services. GE Healthcare have similarly been engaged to work to support the design stage, with a focus on key processes and clinical pathways to further challenge adjacencies and overall net departmental floor space by making most effective use of space.

Procurement / Project Management

18.8.5 Ernst & Young have provided NHSL with strategic advice on procurement options and market presentation given the preferred option site and associated procurement regulations.

18.8.6 Post OBC, independent construction project management appointments are considered essential to support the in house teams given the range of stakeholder interests and construction complexities working alongside the existing acute hospital.

**18.9 Gateway Review**

18.9.1 The project will be subject to the recently introduced OGC (Office of Government Commerce) Gateway review process governance process for the project. A recent planning meeting held with SG colleagues reached agreement that the process will start at Review 2. Plans are underway to complete the assessment by the end of June. Further reviews will then be undertaken at the appropriate stages of the project.

**18.10 Full Business Case development**

18.10.1 Development of the FBC will progress once the OBC has been approved. This document will focus on how the preferred option identified in the OBC

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

will be implemented and how it will be delivered to ensure best value for money for the public purse.

18.10.2 The process will build on the work undertaken to date, including developing the design brief, procuring and progressing the design and obtaining planning permission. Appendix 18.4 provides a diagram outlining an exemplar ward drawing.

### **18.11 Post Project Evaluation**

18.11.1 The purpose of Post Project Evaluation (PPE) is to improve briefing, design management and implementation of future projects. An evaluation report will be produced and approved for issue by the Project Director.

18.11.2 It is proposed that the PPE process will be divided into four stages summarised below:

#### ***Stage 1 – Planning***

Initial planning of the PPE process, involving identifying the scope, timing and cost of the exercise will begin during the FBC stage.

#### ***Stage 2 – Building Completion***

Towards the end of the construction process, an initial evaluation of the building will be undertaken against the design brief and other relevant information. The building will be reviewed, with specific reference to the performance of materials, energy usage and space utilisation. The project will be subject to regular progress reporting.

Once the project has been completed, its construction record and functional suitability will be reviewed through an evaluation workshop involving a cross selection of stakeholders.

#### ***Stage 3 – Service Outcomes***

This will comprise an evaluation of the service provisions and will concentrate on service delivery and their implications once they have been operational for an appropriate period.

At this stage a more wide ranging evaluation of the costs and benefits of the project in service delivery terms will be undertaken. It will involve reviewing the performance of the Project in terms of the project objectives.

**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**

---

**Stage 4 - Overall Conclusions**

This will bring together and up date the evaluations undertaken in stages 2 and 3 and include a review of the project with reference to the likely outcomes had the Project not been undertaken. Details of the lessons learnt from the experience will be included.

**18.12 Project Plan/Timetable**

18.12.1 A detailed project plan will be produced following approval of the OBC and agreement of the procurement strategy. At this stage, the Board is aiming to achieve the milestones shown in figure 18.2 below.

<b>Milestone</b>	<b>Complete</b>
OBC approval by NHS Lothian Board	June 2008
OBC approval by SGHD	July 2008
Site masterplanning complete	Aug 2008
Obtain outline planning consent	Oct 2008
Design	Aug 2009
Construction tender return	Oct 2009
FBC approval by NHSL & SEAT	Nov 2009
FBC approval by SGHD	Dec 2009
Construction	Aug 2012
Commence service	Dec 2012

**Figure 18.2: Indicative Project Timetable**

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

**GLOSSARY OF ABBREVIATIONS**

<b>A&amp;E</b>	Accident & Emergency
<b>AHP</b>	Allied Health Professional – including <ul style="list-style-type: none"> <li>• Arts therapists,</li> <li>• Dieticians,</li> <li>• Drama therapists,</li> <li>• Music therapists,</li> <li>• Occupational therapists,</li> <li>• Orthoptists,</li> <li>• Orthotists,</li> <li>• Physiotherapists,</li> <li>• Prosthetists,</li> <li>• Podiatrists,</li> <li>• Diagnostic radiographers,</li> <li>• Therapeutic radiographers,</li> <li>• Speech and language therapists</li> </ul>
<b>BACiL</b>	Better Acute Care in Lothian
<b>BCIS</b>	Building Cost Information Service
<b>CAMHS</b>	Child and Mental Health Services
<b>CHSG</b>	Child Health Support Group
<b>CLO</b>	Central Legal Office
<b>CT (scanner)</b>	Computerised Tomography
<b>CV</b>	Curriculum Vitae
<b>C&amp;YP('s)</b>	Children and Young People('s)
<b>CYPHSG</b>	Children and Young People's Health Support Group
<b>DGH</b>	District General Hospital
<b>EAC</b>	Equivalent Annual Cost
<b>EHR</b>	Electronic Health Record
<b>ENT</b>	Ear, Nose and Throat Surgery
<b>EWTD</b>	European Working Time Directive
<b>E&amp;Y</b>	Ernst and Young
<b>FBC</b>	Full Business Case
<b>GE</b>	General Electric
<b>GEM</b>	Generic Economic Model
<b>GP</b>	General Practitioner
<b>GRO</b>	General Office for Scotland
<b>HDU</b>	High Dependency Unit
<b>HSDU</b>	Hospital Sterilisation and Disinfection Unit
<b>IA</b>	Initial Agreement
<b>ICIC</b>	Improving Care, Investing in Change
<b>IM&amp;T</b>	Information Management and Technology
<b>IT</b>	Information Technology
<b>LMERG</b>	Lothian Equipment Replacement Group
<b>MCN('s)</b>	Managed Clinical Network('s)

**NHS Lothian  
 REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
 EDINBURGH  
 OUTLINE BUSINESS CASE**

<b>MMC</b>	Modernising Medical Careers
<b>MRI</b>	Magnetic Resonance Imaging
<b>NDP</b>	National Delivery Plan
<b>NEC3</b>	National Engineering and Construction Contract
<b>NES</b>	NHS Education Scotland
<b>NHS</b>	National Health Service
<b>NHSL('s)</b>	National Health Service Lothian('s)
<b>NPC</b>	Net Present Cost
<b>NSD</b>	National Services Division
<b>OBC</b>	Outline Business Case
<b>OGC</b>	Office of Government Commerce
<b>OJEU</b>	Official Journal of European Union
<b>OOH</b>	Out of Hours
<b>PAA</b>	Paediatric Acute Admissions and Assessment Area
<b>PAEP</b>	Princess Alexandra Eye Pavilion
<b>PICU</b>	Paediatric Intensive Care Unit
<b>PFI</b>	Private Finance Initiative
<b>PPALS</b>	Paediatric Psychology and (Psychiatric) Liaison Service
<b>PPE</b>	Post Project Evaluation
<b>PPP</b>	Private Public Partnership
<b>PSC</b>	Public Sector Comparator
<b>REH</b>	Royal Edinburgh Hospital
<b>RHSC</b>	Royal Hospital for Sick Children
<b>RIE</b>	Royal Infirmary of Edinburgh
<b>SBM</b>	Shadow Bid Model
<b>SCIM</b>	Scottish Capital Investment Manual
<b>SCPB</b>	Strategic Change Programme Board
<b>SEAT</b>	South East of Scotland & Tayside Regional Planning Group
<b>SEEL</b>	Scottish Enterprise Edinburgh and Lothian
<b>SGHD</b>	Scottish Government Health Department
<b>SKFF</b>	Sick Kids Friends Foundation
<b>TUPE</b>	Trade Union Protection of Earnings
<b>VAT</b>	Value Added Tax
<b>WGH</b>	Western General Hospital
<b>WTE</b>	Whole Time Equivalent
<b>YPU</b>	Young People's Unit

*Note – throughout the document the term 'clinician' refers to all clinical staff*



**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -  
EDINBURGH  
OUTLINE BUSINESS CASE**

---

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**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

**Figures**

Figure 5.1: RHSC & CAMHS Current Bed Numbers and Configuration	18
Figure 5.2: Range of Services Provided	18
Figure 5.3: CAMHS Tiers of Service Provision	20
Figure 5.4: Royal Hospital for Sick Children 2005/06	21
Figure 5.5: Waiting Time Performance – Paediatric Service 2007/08	21
Figure 5.6: Child and Adolescent Mental Health Services	21
Figure 5.7: Tiered Framework for Emergency Care for Children & Young People	25
Figure 7.1: Proposed bed model	50
Figure 9.1: NHSL Baseline Workforce	55
Figure 10.1: Long List of Options	60
Figure 10.2: Image showing the location of the 3 options	61
Figure 10.3: Image showing boundaries of current RHSC (Option 1)	62
Figure 10.4: Image showing boundary of current Little France Site (Option 2)	62
Figure 10.5: Image showing boundary of current St Johns site (Option 3)	63
Figure 11.1: Benefits Criteria and Weighting	65
Figure 11.2: Scores and Ranking of the 3 Options	67
Figure 12.1: Economic Appraisal	69
Figure 12.2: Sensitivity Analysis	70
Figure 13.1: Role of Capital Planning Process	74
Figure 13.2: Key Capital Planning Assumptions	75
Figure 13.3: Summary Capital Costs	76
Figure 13.4: Summary of capital expenditure	76
Figure 13.5: Phasing of project team costs and equipment	77
Figure 13.6: Estimated Proceeds from Sale of Land and Buildings	78
Figure 13.7: Key Revenue Cost Model Assumptions	81
Figure 13.8: Baseline Costs for Royal Hospital for Sick Children Services	82
Figure 13.9: Capital Charge Implications	82
Figure 13.10: Service Costs	83
Figure 13.11: Estimated Revenue Impact	83
Figure 14.1: Risk Rating Matrix	87
Figure 15.1: Net Present Cost Comparison	91
Figure 15.2: Ranking of Options	92
Figure 15.3: Procurement Option – Value for Money	95
Figure 15.4: Annual Equivalent Cost / Unitary Charge under NPD procurement	95
Figure 15.5: Charitable contributions	96
Figure 15.6: Summary of capital position	96
Figure 15.7: Sources & applications of capital funding	97
Figure 15.8: Summary of revenue position	98
Figure 15.9: SEAT % share based on HRG linked to tariffs	98
Figure 15.10: Overview of the proposed site with the proposed developments identified	100
Figure 18.1: Organisational Chart	117
Figure 18.2: Indicative Project Timetable	125

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children -  
Edinburgh  
Outline Business Case**

---

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN -**  
**EDINBURGH**  
**OUTLINE BUSINESS CASE**

---

**List of Appendices**

Appendix 6.1	Principles of Redesign
Appendix 6.2	Full Redesign Report
Appendix 6.3	Single Room Accommodation Report
Appendix 7.1	Activity Data Overview
Appendix 7.2	Impact of Clinical Redesign
Appendix 9.1	NHS Lothian Workforce In Profile
Appendix 9.2	Workforce Planning Assumptions
Appendix 10.1	Non-Financial Benefits Criteria Detail
Appendix 11.1	Process for Validation
Appendix 12.1	Economic Appraisal – Discounted Cash Flow
Appendix 13.1	Current 'v' Proposed Accommodation Schedule Comparisons
Appendix 13.2	Accommodation Schedule Summary
Appendix 13.3	Outline of Trustee Interests and Schedules
Appendix 13.4	Existing Asset Profile
Appendix 13.5	Optimism Bias Calculation
Appendix 14.1	Risk Register
Appendix 14.2	Risk Register – Management Actions
Appendix 15.1	Capital Planning Assumptions
Appendix 15.2	SCIM Forms OB1 to OB4
Appendix 15.3	Full Discounted Cash Flow for Public Procurement Route
Appendix 15.4	Facilities Overview
Appendix 15.5	Rapid Impact Assessment Summary Report
Appendix 17.1	Methods of Consultation and Identified Stakeholders
Appendix 17.2	Record of involvement
Appendix 18.1	Communication Strategy
Appendix 18.2	SEAT Involvement
Appendix 18.3	Capital Cost Detail (Thomson Gray)
Appendix 18.4	Ward Exemplar Drawing
Appendix 18.5	Project Team Profile

**NHS Lothian  
Reprovision of Royal Hospital for Sick Children  
Edinburgh  
Appendices**

**Outline Business Case**

**Appendices**

This version has been edited to reflect commercial sensitivity. The unedited version will be available once financial close has been achieved.

Readers are also asked to note that the information contained in this document will continue be refined and validated as part of developing the Full Business Case. The detail should therefore only be considered indicative.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

<b>APPENDICES</b>	<b>Page No.</b>
<b>SECTION 6 – FUTURE SERVICE PROVISION</b>	
6.1 Principles of Redesign	4
6.2 Full Redesign Report	6
6.3 Single Room Accommodation Report	22
<b>SECTION 7 – BED MODELLING</b>	
7.1 Activity Data Overview	26
7.2 Impact of Clinical Redesign	44
<b>SECTION 9 – WORKFORCE</b>	
9.1 NHS Lothian Workforce In Profile	50
9.2 Workforce Planning Assumptions	66
<b>SECTION 10 – OPTION IDENTIFICATION &amp; APPRAISAL</b>	
10.1 Non-Financial Benefits Criteria Detail	70
<b>SECTION 11 – BENEFITS APPRAISAL</b>	
11.1 Process for Validation	72
<b>SECTION 12 – ECONOMIC APPRAISAL</b>	
12.1 Economic Appraisal – Discounted Cash Flow	74
<b>SECTION 13 – FINANCIAL ANALYSIS</b>	
13.1 Current 'v' Proposed Accommodation Schedule Comparisons	80
13.2 Accommodation Schedule Summary	88
13.3 Outline of Trustee Interests and Schedules	92
13.4 Existing Asset Profile	94
13.5 Optimism Bias Calculation	96
<b>SECTION 14 – RISK ANALYSIS</b>	
14.1 Risk Register	106
14.2 Risk Register – Management Actions	112

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 15 – PREFERRED OPTION**

<b>15.1</b>	Capital Planning Assumptions	116
<b>15.2</b>	SCIM Forms OB1 to OB4	122
<b>15.3</b>	Discounted Cash Flow for Public Procurement Route	128
<b>15.4</b>	Facilities Overview	132
<b>15.5</b>	Rapid Impact Assessment Summary Report	136

**SECTION 17 – PUBLIC INVOLVEMENT AND CONSULTATION**

<b>17.1</b>	Methods of Consultation and Identified Stakeholders	140
<b>17.2</b>	Record of involvement	142

**SECTION 18 – PROJECT MANAGEMENT & TIMETABLE**

<b>18.1</b>	Communication Strategy	150
<b>18.2</b>	SEAT Involvement	152
<b>18.3</b>	Capital Cost Detail (Thomson Gray)	154
<b>18.4</b>	Ward Exemplar Drawing	162
<b>18.5</b>	Project Team Profile	164



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## **SECTION 6: FUTURE SERVICE PROVISION**

### **6.1 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 Reprovision Project Group 5 - The Children, Young people and Family Advisory Board has developed 'Principles that are important to Patients, Families and Public'.

These are that:

- 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.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- 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.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

**SECTION 6: FUTURE SERVICE PROVISION**

**6.2 Report of proposed Redesign of Patient Pathways**

**1.1. 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 care will be managed separately from scheduled care during the initial 48 hour period. This will enable all the unplanned workload to be managed in one area 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, including the establishment of an adolescent Inpatient facility.
- 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.

**1.2. Front Door / Unscheduled Care**

- Consideration should be given to having an Out-of-Hours Treatment Centre for children and young people adjacent to the RHSC A&E department working closely with primary care, an Edinburgh Service which would provide advice and support to other OoH services across Lothian.
- A&E in RHSC will receive patients up to 16 years of age, in age-appropriate facilities, and should be close to the RIE A&E, both departments having easy access for emergency services and the public.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- Patients will remain in A&E 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 an Paediatric Admissions and Assessment Area (PAA) adjacent to A&E where 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 PAA will be one flexible unit, with 4 main patient groups and should include:
  - An area for short stay observation, which will support 100% compliance with the 4-hour target for A&E (at present sitting at an average of 99%), by caring for children who require a short period of observation following treatment in A&E, 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). – (2227 emergency admissions identified in activity database). If the area was planned for 24 hour stays, the number of patients who would complete their admission in this area would be significantly less (just 905 patients in the baseline data)
  - An area for unscheduled surgical patients (up to 48 hours), with patient (1824 admissions) transferring to theatre and returning if early discharge (within 48 hours) is anticipated. If the area was planned for 24 hour stays, the number of patients who would complete their admission in this area would be significantly less (just 425 patients in the baseline data)
  - An area for young people attending as emergencies, including those who self harm, or with drug and alcohol intoxication. From studies carried out at RIE, over a year in 04-05, 3675 people aged under 16 attended the adult hospital – of which 207 were diagnosed with substance abuse, overdose or deliberate self-harm. In a follow up study over 3 months in 2006, of 1309 under 16 attendees, 53 had a diagnosis of substance abuse. In both studies, the majority of presentations were due to trauma (80.5% in 2004-5 and 74% in 2006)
  - Sufficient cubicles in the whole PAA to support appropriate infection control / isolation facilities with 12 of 16 medical beds, 2 of 8 surgical and 4 of 4 adolescent beds
- Senior paediatric medical, nursing and AHP staff will be integral to the staffing of the PAA. 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, either

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

paediatrician, surgeon or emergency medicine consultant (in future this should also include nurses or AHPs).

- 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 PAA will have appropriate accommodation to support the many specialty teams that will be using it.
- For the direct support they require, A&E and PAA 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**

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 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.

### **1.3. 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 vision is for Community Care Centres to be established in each local authority area to deliver a range of health a partner agency services children and families. This is part of a separate

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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 cardiology and ECG dept and Respiratory Specialists and the Respiratory lab
- 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

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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.

- o 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 recently 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.
  - o 'Ward attenders' are not robustly recorded, as they are not formally reported to ISD. (1566 attendances in 05/06)
  - o There are large numbers of patients in this category, particularly in certain specialities, including neurology. In future 'ward attenders'

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

will be accommodated in the medical day case unit or in outpatients.

- 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.

**1.4. Scheduled patients:**

- 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 (general surgery, plastic surgery, elective and trauma orthopaedics, spinal deformity surgery, ENT)
  - (3) The strength of the current amalgamation of neuroscience services (neurology / neurosurgery / neurophysiology / academic dept) should also be preserved.
  - (4) Cancer unit that will manage day patients, inpatients, day patients and teenage cancer patients.
  - (5) Adolescent facilities
- Specialist medical services and will be co-located with essential physiological investigation services enabling smoother access to specialist care, for example Neurology and the neurophysiology dept.
- 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, adjacent to, or within an established 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.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- 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 '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 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 immediately adjacent to the hospital unless there is a clinical reason for earlier admission. This would reduce the surgical bed requirement by 2.
- 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 would have the choice of management in adult or the adolescent 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.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**1.5. Theatres / day surgery**

- It is proposed to have 6 theatres, incorporating CEPOD (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. The current 5 theatres have had over 85% utilization over the past 2 years, with 90.8% utilization in 07-08 year to date.
- 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.
- At present some children travel from other Health Board areas to Edinburgh for day surgery. It is proposed that in future these children would have their surgery in their local hospital, with Edinburgh surgeons attending for the surgery and the immediate postoperative management, with the child discharged home before the end of the normal working day. (Fife – 139 episodes, Borders – 64 episodes & St Johns – 147 episodes).
- 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 will be further developed, 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.
- All day case surgical patients and all those other day 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)

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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.

**1.6. 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 for at least 5 years (from 2007) by the National Services Division at the Scottish Government, as a single service on 2 sites (Edinburgh and Glasgow).
- It has been agreed that the number of beds in PICU in Edinburgh will increase in 2008 from 6 to 8 due to the present 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. It is proposed to develop senior and advanced nurse practitioners that, with increased support from consultant staff, will in future make up the team. It is

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

essential that this development starts very soon, to ensure that there are staff in place when the impact of MMC and EWTD occurs.

- A national High Dependency Audit is currently underway (2006-7), collating detailed information of all patients under 16 years of age requiring high dependency care in all hospitals in Scotland. This audit will provide the detailed information on how many beds will be required in future for HDU patients in Edinburgh. It is anticipated that the audit will provide the evidence 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 is
  - i) 96 occupied bed days in 2006
  - ii) 122 occupied bed days in 2007
- It is planned to separate medical and surgical High Dependency Services, as the patient groups 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. It is planned in future to provide a Burns dressing facility, including a 'Burns bath' adjacent to surgical HDU, on the same floor as theatres, where these children can be managed effectively.
- 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.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**1.7. 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 18<sup>th</sup> 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 at the Royal Edinburgh Hospital will move to Little France with RHSC. There has been national agreement, supported by SEAT for an increased number of inpatient beds, from 12 to 16, to provide a service for young people from across South-east Scotland.
- 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.
- It is proposed that the Child Sexual Abuse Service should be part of the overall specialist Child Protection Services, to ensure robust and joined up care and support to the child. This service works closely with the CAMHS inpatient and day programmes – which it is anticipated will be provided in future in the new children and young people's hospital.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- 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.

**1.8. 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 the 'Team around the child' - taking a holistic approach that listens to the child and family and develops multi-disciplinary and multi-agency services around the child.
- Children and Young Peoples Community Care Centres should be established that are Lothian-wide and located to support easy access by public and private transport and focused on more deprived areas, which will assist in shifting the balance of care to closer to patients' homes. These would potentially also provide a good and appropriate base for community staff
- The Centres should 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.
- The development of these centres will be to an agreed standard specification that ensures facilities are quality assured, age appropriate and clearly 'sign posted' as services for Children & Young People.
- The proposed location of these centres has not yet been identified. This will be planned in partnership with Local Authorities and the Voluntary Sector and will include how these clinical developments can link with current and future new builds, what core services should be provided in these centres and what additional services will be provided in some centres.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- The new Children and Young People's hospital should provide these proposed facilities for the south-east wedge of Edinburgh.

**1.9. Adolescent / age-appropriate care:**

- Young people up to 16 years with acute or emergency problems who attend A&E 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.
- Improved transition from paediatric to adult services will be introduced which will include formal planning with young people and their parents. To support this, it is proposed to agree a quality standard for providing good transition between children and adult services across Lothian. It is proposed to identify a clinical lead for each paediatric and adult specialty group who will be responsible for assessing the current and future transition processes.
- The change in age range offers an opportunity for new ways of working between adult and paediatric services.
- Specific young people's facilities will be provided, and specific training will be provided for all staff that work with young people. This will result in mixed medical and surgical admissions and consideration will be given to nurse recruitment and retention and how other centres have managed this ensuring that there is retention of skills required for the clinical subspecialties.
- Facilities will be provided to help young people keep up with their schoolwork and keep in touch with their friends.
- In some circumstances it will be appropriate for young people to be managed within their specialty area, in age appropriate accommodation, however the additional support facilities available for young people will be available to them.

**2. Regional Assumptions**

- It is assumed that IT & telecom links will support the moving of images & information, and not the patient- unless there is a clinical need.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- 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. Further work is underway to clarify the types of patient that this would involve, to agree with the local health board that they have the facility and expertise to accept these patients back.
- Developing networks will ensure that specialist advice is available to DGH services.
- General paediatric surgeons will '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 section 7

#### **3.1. Critical Care**

PICU is now a nationally commissioned service by NSD. PICU have been submitting data to PICANET since December 2004, and have used the quantitative and qualitative information in our debate with NHSL Executives and latterly NSD re future configuration of PIC in Scotland. Almost all the PICU's in the UK are now included, (with Yorkhill submitting data shortly). As a required standard for national commissioning all Scottish PICU patients will be included in this externally verified audit and quantitative (activity) and qualitative (outcome) information. By 2008 this should have been achieved, with the possible exception of children treated in specialist units e.g. neurosurgery at the Institute in the Southern General, and any remaining 13-16 year olds treated out with Yorkhill and RHSC.

#### **3.2. Paediatric Acute Assessment Area (PAA)**

The proposal to establish a PAA will be a new clinical area. At present there is a medical admissions unit, which is as close to A&E as possible in the current



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

building. This new area would propose to include all emergency medical /surgical and adolescent admissions, with patients discharged as soon as appropriate.

Any emergency admissions with hospital length of stay of 48 hours or less will spend the duration of their stay in PAA, including patients who require surgery. Those emergency admissions that require to stay in hospital for over 48 hours will be transferred to the inpatient unit, 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 PAA with an average occupancy of around 65%, (which is the same assumption as Yorkhill has made).

### **3.3. Inpatient Beds**

The inpatient unit 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, of about 75% which mirrors the benchmarking in the UK benchmarking group. It is planned that no day cases or ward attenders will be managed within this area. No assumption has been made about changes in activity due to national specialist services review – this will require to be addressed when the decisions are known.

### **3.4. Haematology/Oncology – Future Cancer Unit**

In the activity modelling it was planned that the IP cancer unit will operate at 60% occupancy. 104 of the paediatrics day patients that were assigned in the data to 'medicine' have been reassigned to haematology /oncology day beds following analysis of associated OPCS codes which clearly indicated that they had been Cancer patients. These patients had been boarded out from the Cancer ward into other clinical areas, either due to lack of capacity in the cancer ward, or lack of available cubicles. The modelling to date has taken no account of any activity changes due to national review of paediatric cancer services.

The anticipated clinical activity for patients over 12 years old has been identified, as there is an assumption that we will in future 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.

### **3.5. Day Bed**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**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.

Ward attendances are not reported activity to ISD and so were not included in the activity data. This mainly impacts on medical day case activity. The RHSC 4D data does include recorded ward attenders over recent years, and from this it is known that in 05-06 there were 1566 medical ward attenders, in addition to the reported 1707 medical day cases. The high number of ward attenders is mainly related to lack of capacity of rooms in outpatients, or lack of availability of clinic appointments for patients who require more urgent review.

**Surgical**

Similarly, 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.

**3.6. 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 16 (at present 12 available in YPU).

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 6: FUTURE SERVICE PROVISION**

**6.3 Single Room Accommodation Report**

**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 that was 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 children who responded were taken from the following groups: -

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- 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.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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.

At a recent meeting of senior nurses across the U.K (Association of Chief Children's Nurses) there was discussion about 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.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## **SECTION 7: BED MODELLING**

### **7.1 Activity Data Overview**

#### **1 Introduction**

The following report gives full details of the methodology used to calculate the number of beds required for the new C&YP's Hospital. It also gives an overview of the CAMHS bed requirements based on the recommendations in the SG documents outlined in section 5.2 of the main document.

#### **2 Methodology**

The methodology adopted to calculate the required number of beds for the new hospital has several stages. These are:

1. Establishing a baseline quantity of inpatient and day case activity that is likely to be delivered in the new hospital in the first years it is open.
2. Applying to the baseline data the expected changes to the under-16 population in demographic projections
3. Establishing that this baseline activity is accurate and representative in relation to historical data.
4. Comparing the baseline activity with key performance indicators from other specialist Children's Hospitals.
5. Analysing the baseline activity data to reflect the redesigned models of care that will be going through the proposed separate areas of the new hospital.
6. Modelling bed complements and occupancy to inform the proposed bed numbers in each broad specialty grouping.

##### **2.1 Establishing the baseline of inpatient and day case activity**

A large database of children's service hospital activity was compiled with the assistance of SEAT Boards. The baseline year of 2005-6 has been used throughout the bed modelling exercise - the most recent financial year for which data was complete when this exercise commenced.

The database includes inpatient and day case episodes of care relating to activity in the Royal Hospital for Sick Children (RHSC), plus 0-18 age group activity from the Royal Infirmary of Edinburgh (RIE) and the Western General Hospital (WGH), St John's Hospital and other SEAT Board areas – Borders, Fife, Forth Valley and Tayside.

Using this data, a series of planning assumptions about the likely activity for the new hospital were made. These assumptions are based on the outcome of the redesign process and are:

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- Include all of the activity – regardless of the age of the patient - going through **RHSC** in 2005-06. This amounted to 15,884 episodes and 27,668 occupied bed days.
- Add activity delivered at **RIE and WGH** in 2005-06 that related to children under the age of 16. (The majority were children aged 14 and 15).
- Add activity delivered at **St Johns Hospital** in 2005-06 that related to Orthopaedic Surgery and General Surgery episodes for children under the age of 16. These services were transferred to the Royal Infirmary after this date.
- Add activity delivered in **Borders and Fife** hospitals in 2005-06 that related to Plastic Surgery and General Surgery elective inpatient and day case episodes for children under the age of 16.

An additional step has been included to add a selected proportion of NHSL patients aged 16-18 years with known or pre-existing chronic illness.

The final quantity of inpatient activity that resulted from applying these planning assumptions was 17,179 inpatient and day case episodes and 29,828 occupied bed days – as shown in the table below.

*Figure 7.1*

	Day case episodes	Elective inpatient episodes	Non-elective inpatient episodes	All episodes	Occupied bed days
RHSC 2005-06 baseline	6,920	2,342	6,622	15,884	27,668
Plus:					
RIE <16	85	33	493	611	852
WGH <16	113	53	200	366	474
St John's	19	11	11	41	8
Borders	0	0	0	0	0
Fife	0	2	0	2	1
<b>Sub total</b>	<b>7,137</b>	<b>2,441</b>	<b>7,326</b>	<b>16,904</b>	<b>29,003</b>
RIE & WGH 16 & 17	37	21	217	275	825
<b>Total</b>	<b>7,174</b>	<b>2,462</b>	<b>7,543</b>	<b>17,179</b>	<b>29,828</b>



**NHS LOTHIAN**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

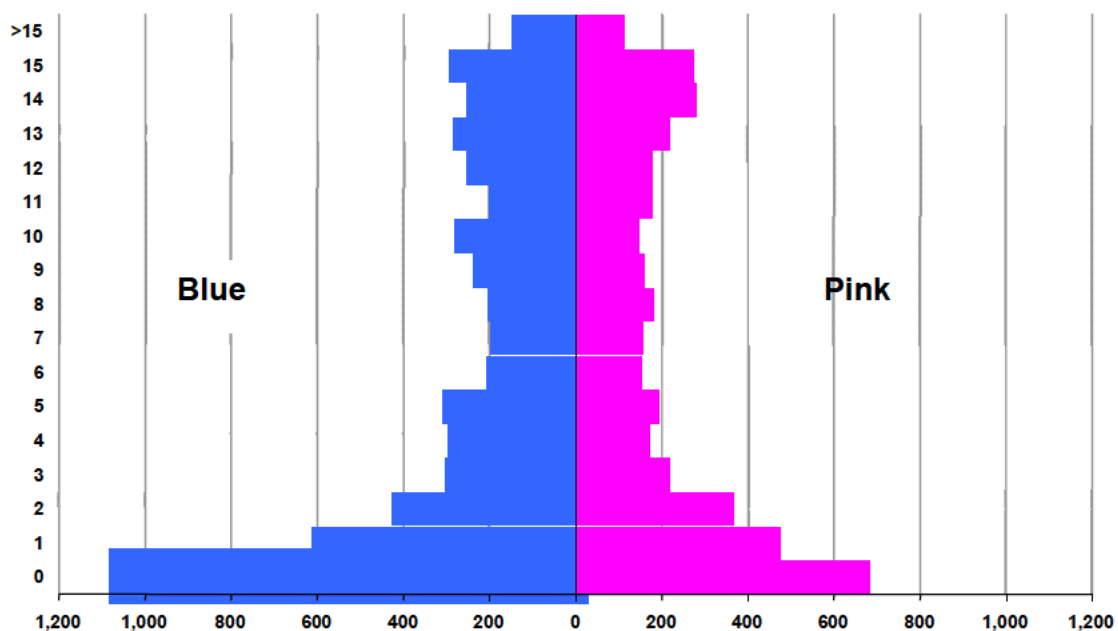
The breakdown of this activity by NHS board of residence is shown in the table below\* *\*excludes 16-18 years activity*

*Figure 7.2*

Health Board of Residence	Daycase	Elective IP	Non-elective IP	All episodes
No HB recorded	136	27	148	311
Ayrshire & Arran	18	11	26	55
Borders	320	143	214	677
Argyll & Clyde	12	15	18	45
Fife	791	353	597	1,741
Greater Glasgow	22	40	49	111
Highland	22	39	40	101
Lanarkshire	73	52	68	193
Grampian	8	31	90	129
Orkney	1	3	8	12
Lothian	5,357	1,456	5,723	12,536
Tayside	120	111	147	378
Forth Valley	177	122	136	435
Western Isles		1	1	2
Dumfries & Galloway	43	44	52	139
Shetland	37	3	9	49
<b>Total</b>	<b>7,137</b>	<b>2,451</b>	<b>7,326</b>	<b>16,914</b>

The 2005-06 baseline activity broken down by age and sex (males in blue; females in pink) *\*Excludes 16-18 years activity*

*Figure 7.3*



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

**2.2 Applying the expected changes to the under-16 population in demographic projections to the baseline data**

Population trends are influenced by birth and death rates and migration. GRO data from 2006 suggest that the childhood population in the Lothian will increase by 7% over the next 20 years. Death rates are expected to remain similar to now.

However, review of the recent maternity data from NHSL's Maternity Units suggests that there has been a sudden increase in maternity activity in Lothian. For example, in Simpson's Centre for Reproductive Health, the larger Maternity Unit in Lothian, the average number of births per month in the calendar year 2007 was 541, compared with an average of 495 per month for the five-year period 2001-05 inclusive. This equates to an annualised increase of 9.3% and 550 births per year.

GRO population rates are based on a series of assumptions and reviewing the 2006 predictions with the actual birth rate in Lothian as noted above suggest that there is an underestimate of population growth in this age group in Lothian.

The impact of this on the required number of beds in the new hospital could be significant given the high percentage of occupied bed days in a Children's Hospital accounted for by children in the lower age bands (53% of bed days for children under the age of four years, with 23% of these aged one year and under).

This area therefore requires further work with GRO and Public Health colleagues during the development of the FBC. In the meantime, a working assumption of 2 additional beds has been identified by:

- Reviewing the 2006 GRO population predictions for 2006 to 2015
- Identifying the % uplift on RHSC activity by each age year for Lothian and of each of the other referring health boards.
- Applying this % uplift of activity to the daily occupied-bed days for all patients in the 2005/06 database.

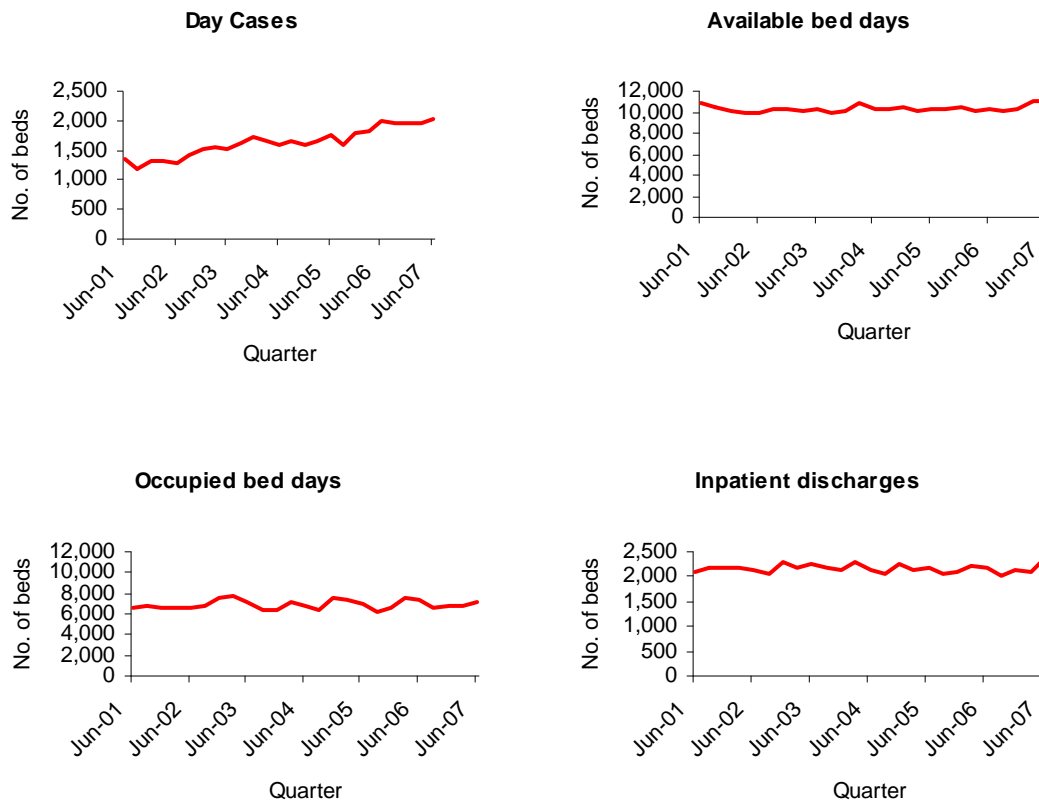
**2.3 *Establishing that the baseline activity is accurate and representative in relation to historical data***

It was important to establish that the financial year 2005-06 was representative of the level and case mix of activity that had been going through the RHSC and if there were any significant recent trends in activity patterns that needed to be taken account of in forecasting activity levels for the new hospital. To support this ISD (Scotland) provided quarter-by-quarter trend data for RHSC for a six-year period from April 2001 to March 2007.

The results of an analysis of the high level indicators of day case percentages, inpatient discharges, and occupied bed days are shown in the charts below:

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

**Figure 7.4**  
Trends in Key Performance Indicators, April 2001 to March 2007



The one indicator that shows evidence of a clear upward trend is the day case activity indicator. The number of day cases carried out at RHSC increased steadily throughout the six-year period, from around 1,290 per quarter at the beginning of the period to around 1,970 per quarter at the end of the period, an increase of 53%. Further investigation shows that the increase relates to a significant transfer of patients to day care who would have previously been managed as inpatients.

The remaining indicators have been stable over the last six years. In particular, the number of occupied bed days (with zero length of stay not being counted) has remained relatively constant at around 6,900 per quarter and the number of inpatient discharges has held steady at around 2,150 per quarter. This is despite the transfer of inpatient to day case activity as indicated above and indicates an underlying increase in referrals. There is also evidence of the level of seasonal variation that would be expected within a children’s hospital.

The above outcomes do not identify anything unusual about 2005-06 in comparison to previous years. It is therefore conclude that that planning inpatient beds using the 2005-06 baseline was reasonable.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**2.4 Comparing the baseline activity with key performance indicators from other specialist children's hospitals**

Once the baseline was established, key performance indicators were benchmarked with other specialist children's hospitals in the UK. ISD (Scotland) undertook an analysis using SMR01 and SMR00 data (for Scotland), and HES data (for England) to build up tables that compared RHSC performance with that of a group of comparable hospitals.

The indicators used for comparison were:

- Day cases as a percentage of all elective inpatient admissions
- Mean length of inpatient stay
- Average percentage bed occupancy

The data was split into specialty groupings that most closely resembled the specialty groupings for the redesigned pathways of care planned for the new hospital.

The following tables show the comparisons: Firstly, day cases as a percentage of all elective inpatient discharges:

*Figure 7.5*

**Number of day cases as a percentage of elective admissions** by specialty for Scottish and English Children's Hospitals 2005/06

	% of day case admissions			
	Haem/onc	Medical	Neuro	Surgical
Royal Aberdeen Children's Hospital	45.31	56.04	81.13	51.02
Royal Hospital for Sick Children (Edinburgh)	89.74	81.07	61.06	66.98
Royal Hospital for Sick Children (Glasgow)	74.59	47.60	35.07	54.73
Bristol Royal Hospital For Children	5.98	72.72	78.62	54.07
Great Ormond Street Hospital Central London Site	82.87	43.05	52.48	38.55
Royal Liverpool Children's Hospital	-	67.55	32.17	61.21
Royal Manchester Children's Hospital	89.66	67.19	47.72	31.83
Sheffield Children's Hospital	95.24	36.45	33.03	47.85

The RHSC day case rates compare very favourably and are often much better than most other children's hospitals in the benchmark group.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

*Figure 7.6*

**Average length of stay** (spell based) by specialty for Scottish and English Children's Hospitals 2005/06

	Average length of stay			
	Haem onc	Medical	Neuro	Surgical
Royal Aberdeen Children's Hospital	7.52	2.82	3.44	2.24
Royal Hospital for Sick Children (Edinburgh)	5.06	3.86	6.69	3.95
Royal Hospital for Sick Children (Glasgow)	9.31	4.77	11.28	3.79
Bristol Royal Hospital For Children	9.56	3.45	4.85	3.33
Great Ormond Street Hospital Central London Site	12.87	6.10	5.98	3.67
Royal Liverpool Children's Hospital	-	3.59	5.61	2.91
Royal Manchester Children's Hospital	7.40	6.21	6.87	3.60
Sheffield Children's Hospital	2.99	3.10	3.18	2.96

**Notes**

1 Length of stay for patients who are seen in more than one specialty during a spell is counted in the specialty of their first episode.

2 Hospitals for England have been identified using the variable sitetret (site code of treatment).

Source: SMR01 database, HES.

RHSC continues to benchmark well against other hospitals. Areas where it appears less efficient, coincides with specialties where the day case rate is higher than other hospitals.

*Figure 7.7*

**Average number of available and occupied beds** in Scottish and English children's hospitals, 2005/06

	Total available beds	Total occupied beds	% occupied
Royal Aberdeen Children's Hospital	63.57	36.34	57.17
Royal Hospital for Sick Children (Edinburgh)	112.84	74.85	66.33
Royal Hospital for Sick Children (Glasgow)	241.17	163.22	67.68
United Bristol Healthcare NHS Trust	132.12	96.48	73.03
Great Ormond Street Hospital Central London Site	271.62	214.51	78.97
Royal Liverpool Children's NHS Trust	265.43	181.50	68.38
Manchester Children's Hospital NHS Trust (2007-8)	243.8	169.8	69.6
Sheffield Children's NHS Trust	148.74	98.94	66.52

**Notes**

Source: ISD(S)1, KH03.

The occupancy rates in RHSC are similar to other children's hospitals in the benchmarking group. The exception is Great Ormond Street that has a different case mix to other paediatric hospitals with only tertiary referrals and no emergency activity.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

**2.5 *Analysing the baseline activity data in such a way that it reflects the activity that will be going through the proposed separate areas of the new hospital***

The baseline activity from 2005-06 was analysed so that it reflected the way in which services would be organised in the new hospital. One of the difficulties of ISD-generated and PAS-generated data is that it depicts patient activity according to 'conventional' specialty headings such as General Surgery and it can be difficult to separate out new types of groupings of clinical services such as those envisaged for the new hospital.

Two changes in particular are of relevance here.

1. The new hospital is intended to have a Paediatric Acute Admission & Assessment Area (PAA), which will accommodate all emergency inpatient admissions to Surgical and Medical specialties.

The 'rules' for allocating patients to PAA activity as opposed to IP Surgical or IP Medical are that:

- All emergency medical and surgical admissions with a length of stay of two days or less would have their whole stay allocated to PAA.
  - Emergency medical and surgical admissions with lengths of stay longer than 2 days would spend the first two days of their stay in PAA, then be transferred to IP Surgical or IP Medical.
2. Because of the significant expansion of Critical Care facilities proposed for the new hospital – it was important to be able to separate out Critical Care activity from 'general specialty' activity. This has proven to be extremely difficult in practice since High Dependency Unit activity has usually been attributed to the 'host' specialty on Patient Information Systems.

The National Services Division is carrying out a National HDU Audit with the report expected in mid 2008. This will inform the bed modelling process and will provide the evidence for the proposed number of HDU beds.

**2.6 *Modelling bed complements and occupancy to inform the proposed bed numbers in each specialty.***

The potential bed complement for each of the new areas of the hospital was identified by taking an extract of activity for each of the proposed areas (Acute Assessment Area, Inpatient Medical, Inpatient Surgical, Neurology / Neurosurgery and Haematology / Oncology) and analysing it to see how many beds were occupied at midnight on each night of the year.

# NHS LOTHIAN REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

This analysis allowed (a) plotting the day-to-day occupancy on a line graph in turn assess daily, weekly and seasonal fluctuation, and (b) assess the fluctuating patterns of bed occupancy against various bed complements. The time-series charts showing day-to-day bed occupancy for the whole year 05-06 in the five areas is shown as follows:

Figure 7.8

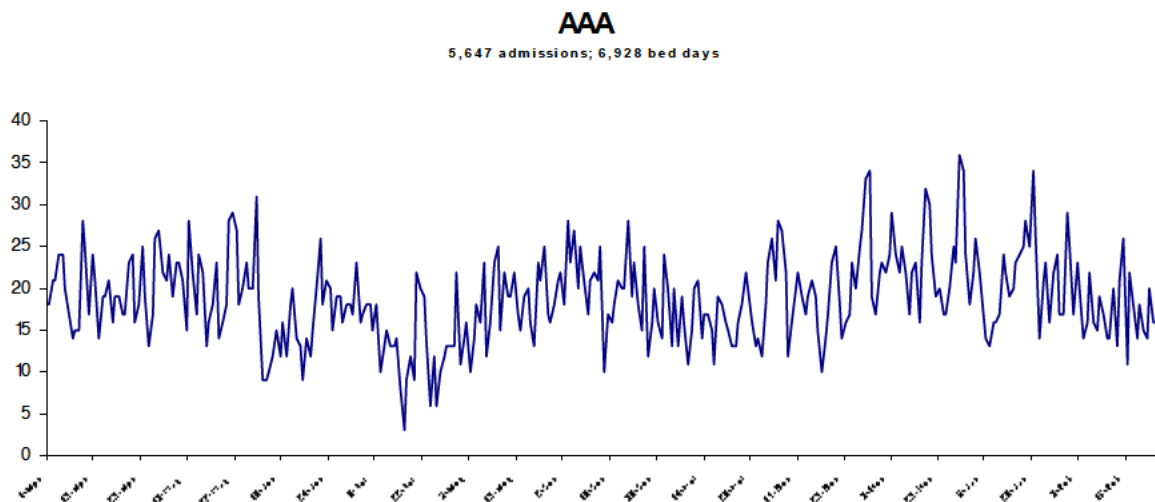


Figure 7.9

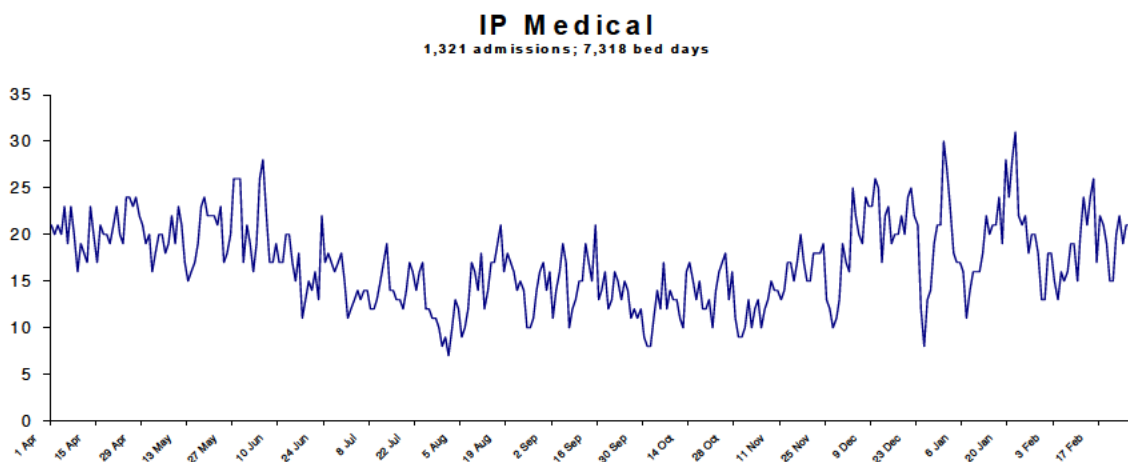


Figure 7.10

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**IP Surgical**  
2,255 admissions; 7,619 bed days

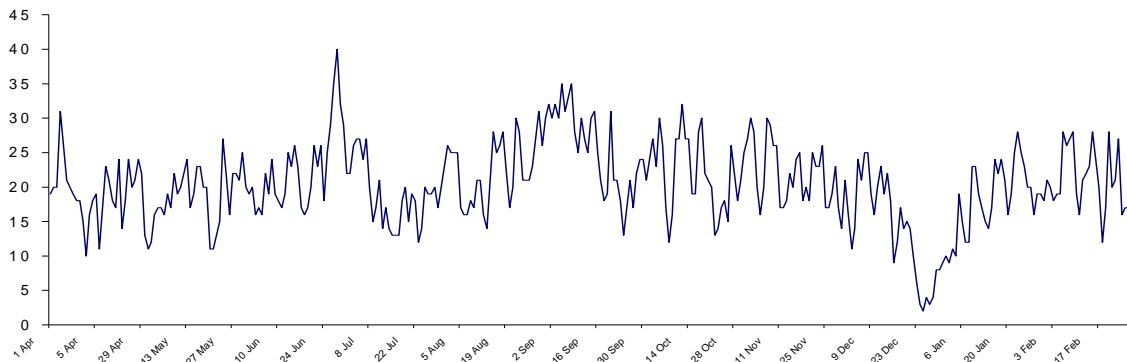


Figure 7.11

**IP Neuro**  
445 admissions; 2,921 bed days

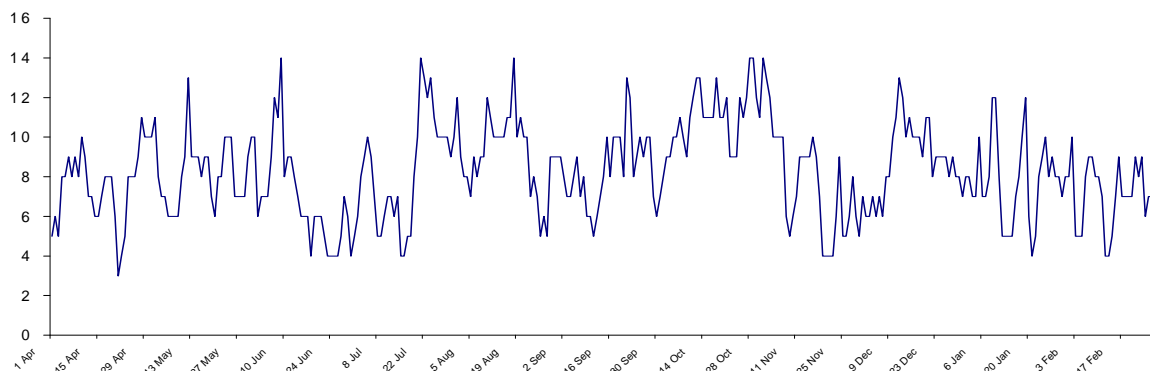
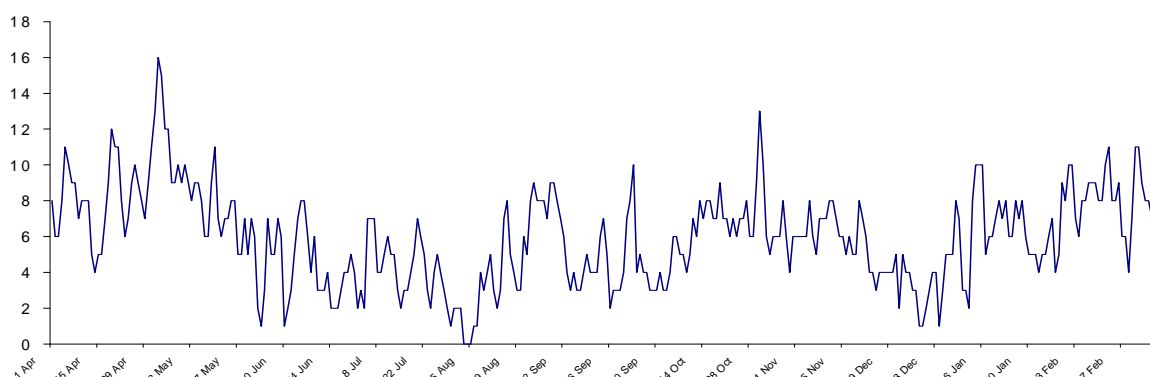


Figure 7.12

**IP Haem Onc**  
444 admissions; 2,125 bed days



The following 2 time-series charts show the day-to-day occupancy in all inpatients areas and then the hospital as a whole – including critical care. (excluding day cases)



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Figure 7.13

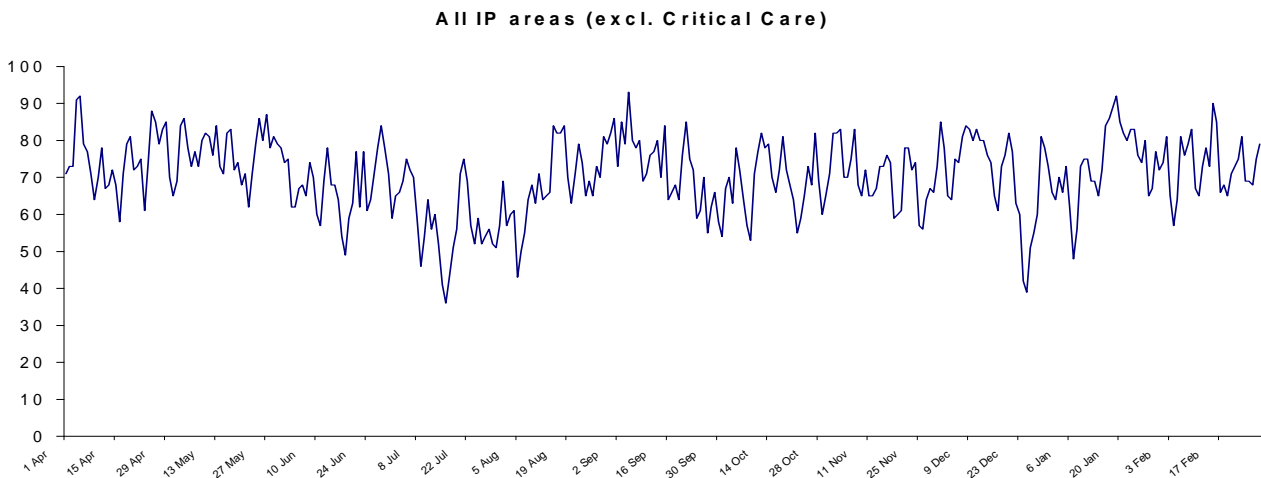
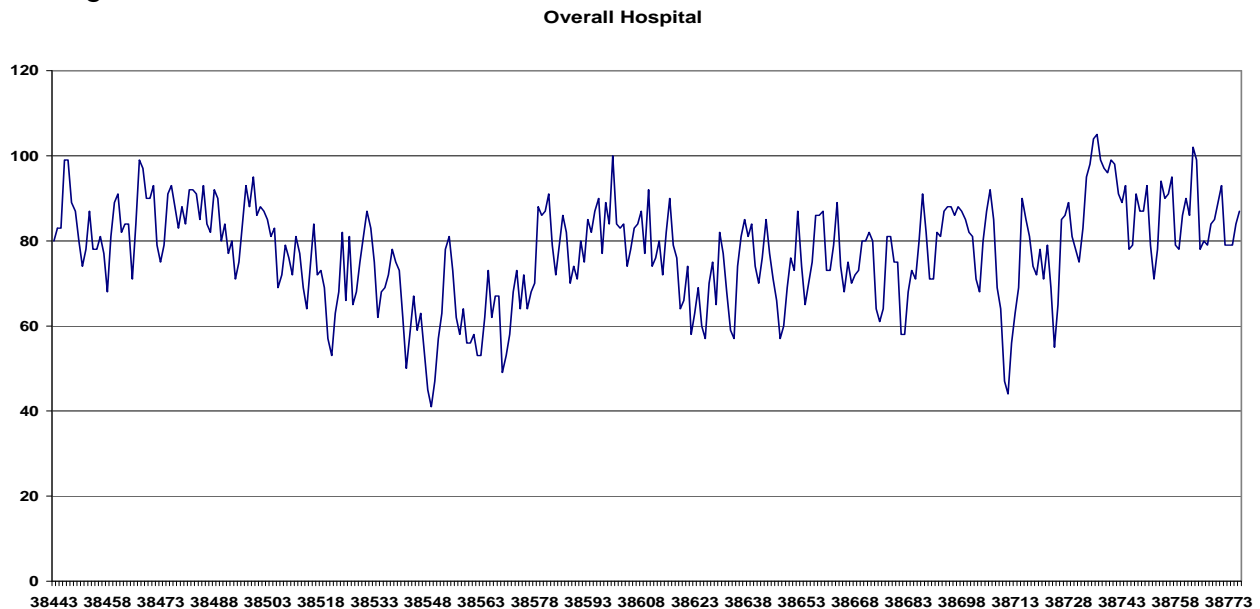


Figure 7.14



These graphs demonstrate the fluctuating levels of occupancy in the differing services. The relatively small critical mass of beds within the C&YP's hospital in Edinburgh make 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.

This will be key to ensuring beds are available for patients in the right time and the right place and will minimise the need for boarding of patients between specialities on a day-to-day basis and when managing seasonal variations. It is therefore intended that the bed envelope will be designed without demarcation of ward areas to support this required flexibility.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

In addition, the overall occupancy level for the acute hospital has to be at a level that enables the hospital to accommodate the fluctuations identified in the above tables, particularly during peaks of activity.

### 3 Child and Adolescent Mental Health Service Bed Requirements

The number of inpatient beds required for CAMHS tier-4 services has been determined nationally and agreed within the SEAT C&YP's Planning group as 16 beds. It is proposed that this number of beds will be established in 2008-9. Further modelling will be undertaken as the project progresses to confirm that the proposed bed number will support the future needs of the service.

### 4 Proposed Bed Complement

The following table identifies the **current** number of beds used in the service:

*Figure 7.15 - Current Bed Capacity*

Area	Total	Notes
<b>In patient beds</b>		
Medical/surgical	93	
Acute admissions & assessment	16	Annual average – medical only
Additional seasonal capacity	7	
<b>Sub Total</b>	<b>116</b>	
<b>Critical Care</b>		
ITU	8	National service
HDU	6	
SNNU	3	
<b>Sub Total</b>	<b>17</b>	
<b>Day case capacity</b>		
Surgical day case	17	
Medical day case	5	
Day case oncology	4	
<b>Sub total</b>	<b>26</b>	
CAMHS – tier 4	16	
<b>Sub Total</b>	<b>16</b>	
<b>Total</b>	<b>175</b>	

### 5 Redesign and impact on efficiency and bed capacity

The bed numbers proposed are based on the following assumptions and include the impact of new models of care.

- A&E and all other services will receive patients up to the age of 16 years
- Patients aged 16-18 years who have known or pre-existing chronic illness will be given the option of admission to the paediatric or adult service

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**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- Emergency admissions will be admitted to the PAA (exceptions as identified below)
- All emergency admissions with an anticipated length of stay of more than 2 days will be transferred to the appropriate inpatient area when clinically appropriate, within 48 hours of admission.
- Patients with long term conditions, who are known to the service will be admitted directly to specialist areas from A&E e.g. Haem/onc and neurology patients.
- Burns patients will transfer directly from A&E to the burns facility in surgical HDU.
- All clinically stable scheduled inpatients will be admitted on the day of surgery or will be accommodated in the family hotel if they require to arrive at the hospital earlier due to travelling long distances or requiring routine pre-operative investigations.
- Day case general surgery will be undertaken in St Johns, Fife and Borders for 75% of the patients from these postcode areas currently treated in the RHSC. This model is already in place for Tayside patients. Increasingly complex surgery is undertaken as day cases and therefore 25% of day case general surgery from these centres will continue to be undertaken in Edinburgh where there is 24/7 surgical back up.
- Outpatients will be planned to provide capacity for the required activity, with varying lengths of clinic, 3 session days finishing in the early evening as part of the service model

The impact of redesign that are anticipated to reduce the number of beds required are summarised as follows:

- Reduction in length of stay e.g. due to day of surgery admissions – equates to reduction by 2 beds
- Repatriation of 75% of general surgery day case activity to parent Boards – (Fife -139 episodes & Borders – 64 episodes)
- Establish day case general surgery lists in St Johns – 147 episodes

The modelling shows that the number of beds required, taking account of the above efficiencies would be 159.

Those areas that result in an increase in the number of beds are identified as follows:

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**EDINBURGH**  
 APPENDICES

- Increase in age for the service from 13 to 16 years – this equates a total to 11 beds worth of activity transferring from NHSL adult services.
- Increase in a proportion of patients aged 16-18 years (a small number (275) of known patients with chronic or life long illness who are likely to remain for longer by choice with the C&YP services)– this equates to a total of 3 inpatient beds
- Impact of increased birth rate – equates to 2 additional inpatient beds

Incorporating these changes into the bed model takes the proposed number of beds up to 175.

In addition, there are a number of areas that will not have a direct impact on the number of beds required but will have an impact on the patient pathway and the quality of care. These include:

- Earlier and more senior decision-making in the patient pathway for emergency admissions
- Reduction in cross infections due to number of single rooms<sup>1</sup>
- Reduced transfer and boarding due to increased access to single rooms and flexible use of the bed envelope to support fluctuations in activity.
- Improved theatre and outpatient throughput
- Increase in new: review outpatient ratio's
- Improved use of clinic space and increased patient choice due to extended clinic day
- More timely investigations and interventions

Further work is required to inform the full impact of these changes and this will be taken forward as the project progresses.

Figure 7.16 below demonstrates the changes to the current bed provision due to planned redesign, as well as the additional bed capacity required for new activity due to change in age range or anticipated demographic changes

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<sup>1</sup> There is currently no robust data that shows the effects of single rooms alone on the reduction of cross infection. Berry et al (2004) showed a reduction in the nosocomial infection rate by 10.1% in 2 years after a move to facilities with 100% single rooms. An assessment of the impact of the increase in single room availability will be undertaken as part of the evaluation of the project.

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Figure 7.16

	Current RHSC bed model		OBC Bed Model	
		Comments		Comments
<b>Inpatient Capacity</b>				
Medical / Surgical wards	93		63	Redesigned service admission on day of surgery increase in single rooms
Acute admissions and Assessment (PAA)	16	Annual average / medical patients only	22	Medical / surgical unscheduled activity (LOS –max 48hrs)
Short stay assessment / obs	0		4	5000 patients with LOS <24 hours + 4 hour UCC standard
Seasonal additional bed capacity	7		5	
<b>Sub Total</b>	<b>116</b>		<b>94</b>	
<b>Critical Care</b>				
ITU	8	(National service)	8	Including 16-18 activity in RIE / WGH
HDU	6		12	National audit will validate additional beds from current inpatient capacity
SNNU	3	Inadequate capacity for current activity	4	
<b>Sub Total</b>	<b>17</b>		<b>24</b>	
<b>Day Case Capacity</b>				
Day Case Surgery	17		15	Repatriation to SEAT Boards improved patient flow in purpose built facility
Medical Day Care Unit	5		5	will accommodate ward attenders (05-06 activity 1566 through all hospital wards)
Day Case Oncology	4	Inadequate capacity for current activity	5	
<b>Sub Total</b>	<b>26</b>		<b>25</b>	
<b>CAMHS Capacity</b>				
CAMHS Tier 4 inpatients currently in REH	12		16	2008 increase as agreed by SEAT with permanent facility
	4	2008 temporary solution		
<b>Sub total</b>	<b>16</b>		<b>16</b>	
<b>Current Activity Grand Total</b>				
	<b>175</b>		<b>159</b>	
<b>New Activity</b>				
PAA Adolescent Area	0		4	Increase in age range - current activity in RIE / WGH - these are 4 additional beds in PAA
Additional beds for new adolescent inpatients	0		5	Increase in age range - current activity in RIE / WGH - additional capacity in inpatient area - these beds will be in the adolescent unit
16-18 patients with Long term conditions	0		3	Currently managed in RIE / WGH - additional adolescent inpatient capacity - these beds will be in the adolescent unit
Additional Teenage Cancer patients	0		2	Due to increase in age range
Demographic Change			2	From GRO predictions of change for each Health Board applied to 0-16 by age - additional capacity in PAA
<b>Sub total</b>	<b>0</b>		<b>16</b>	
<b>Grand Total</b>	<b>175</b>		<b>175</b>	

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**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## 6 Proposed Bed Model

Based on the modelling undertaken, the following bed model and occupancy is proposed for the service:

Figure 7.17

Area	Total	Single rooms	Beds in 2-bed bay	Beds in 4-bed bay	Occupancy	Comments
<b>PAA</b>						
Medical	16	12		4	67%	
Surgical	8	2	2	4		
Adolescent	4	4				
Short stay observation	4			4		
Seasonal activity capacity	5	5				
<b>Sub total</b>	<b>37</b>	<b>23</b>	<b>2</b>	<b>12</b>		
<b>Inpatient area</b>						
Medical	18	12	2	4	74%	includes 'Home in Hospital' + sleep studies
Surgical	20	8		12	73%	
Neuroscience	12	4		8	69%	
Adolescent	13	13			85%	
<b>Sub total</b>	<b>63</b>	<b>37</b>	<b>2</b>	<b>24</b>		
<b>Cancer Unit</b>						
Inpatient	8	8			59%	
Adolescent	2	2				
<b>Sub total</b>	<b>10</b>	<b>10</b>				
<b>Critical Care</b>						
PICU	8	4		4		
Medical HDU	6	2	4			Confirmation of HDU capacity will be confirmed by national HDU Audit
Surgical HDU	6	3		3		
Surgical NNU	4	1		3		
<b>Sub total</b>	<b>24</b>	<b>10</b>	<b>4</b>	<b>10</b>		
<b>Day Case</b>						
Surgical	15					15 post op theatre trolleys
Medical	5	3	2			
Oncology	5			5		
<b>Total</b>	<b>25</b>	<b>3</b>	<b>2</b>			
<b>CAMHS Inpatients</b>	<b>16</b>	<b>16</b>			<b>80%</b>	
<b>Grand total</b>	<b>175</b>	<b>98</b>	<b>8</b>	<b>54</b>		+15 post op theatre trolleys

There is currently no nationally agreed recommended occupancy levels for paediatric services. The National Bed Inquiry undertaken in England found that the expected level of occupancy in paediatric services is 65%, a lower level than

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**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

of adult services to allow for the effect of variation on a lower number of beds. The overall occupancy level proposed for the new hospital is above the English level at 70%. This is equivalent to the bed occupancy proposed for the new children's hospital in Glasgow (65% non-elective; 85% elective).

## **7 Planned additional bed modelling post OBC**

There are some aspects of modelling that require further work beyond OBC and these will be taken forward as the project progresses. These include:

- Refining and validating the assumptions made relating to the impact of demographic changes
- Validation of the proposed HDU capacity once the outcome of the national HDU audit is known, taking account of current activity in RHSC and possible future activity from neighbouring boards when a national critical care network is established.
- The potential impact of the final recommendations from the National Delivery Plan once the current consultation period is complete.
- Detailed consideration of anticipated / planned developments of tertiary specialist services that will be undertaken in Edinburgh in future.
- Working with the SEAT C&YP's planning group to model the future delivery of DGH children's services across the region to confirm that there will be no planned increase in transfers of patients requiring secondary care to the regional centre.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## SECTION 7: BED MODELLING

### 7.2 Impact of Clinical redesign

Activity database collated data from across SEAT for all 0-18 patient activity

		<b>Rationale</b>	<b>Supporting data</b>									
<b>Generic Issues</b>	Population changes will be taken into account	Significant increase in birth-rate in Lothian	9% increase in deliveries in 06-08 Full impact still to be identified once population analysis data available. Working assumption of 2 additional beds has been agreed pending further work as the project progresses									
<b>A&amp;E</b>	Patients will be discharged / admitted within 4 hours, except in exceptional circumstances	Improves quality of care. Supports consistent sustainability of S.G. 4-hour target.										
<b>PAA</b>	Admit emergencies for up to 48 hours	Large number of emergency patients will be able to have a complete admission in only one clinical area	<table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>Up to 24hrs</td> <td>Up to 48hours</td> </tr> <tr> <td>Medical</td> <td>905</td> <td>2227</td> </tr> <tr> <td>Surgical</td> <td>425</td> <td>1824</td> </tr> </table>		Up to 24hrs	Up to 48hours	Medical	905	2227	Surgical	425	1824
	Up to 24hrs	Up to 48hours										
Medical	905	2227										
Surgical	425	1824										
	Senior clinical staff will be integral to staffing of PAA	To ensure experienced decision-making, and early treatment / discharge.										
	Radiology and pharmacy will be sited close to PAA / A&E	To provide easy access for investigations, and discharge medication. Supports early decision-making in PAA.										
	Medical area will have approx 70% single rooms	To assist in managing infections of emergency admissions and reduce the need for boarding										
	Adolescent area will manage new patient group for this	To facilitate management of different clinical presentations + sex segregation of patients	Average Edinburgh emergency activity for 13-16 yrs = 3.3 patients, 4-bedded									

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

	service 100% single rooms will be provided		area will function at 82% occupancy, however with major peaks and troughs of activity.
	Single rooms available in surgical (30%) areas	Fewer patients in this group require isolation for infection control purposes	
<b>OPD</b>	Facility will be divided into several suites of clinic rooms, with supporting facilities	To facilitate speciality clinics, and deliver efficient and effective clinic management	
	Spinal deformity clinics will transfer to RHSC from RIE	To provide appropriate facilities, including privacy and dignity to large numbers of adolescents	5 clinic sessions per week anticipated by 2012
	Paed Audiology will transfer in from the Lauriston building	Joint clinics with other specialities – e.g. ENT, cleft surgery, neurology, oncology	11-14 clinic sessions per week utilising 3 specialist clinic rooms and mould room
	Paed Ophthalmology will transfer in from PAEP	Appropriate environment for children + review of future adult service underway	4 clinic sessions per week in main OPD with additional clinics in specialist orthoptic facilities used to full capacity.
	Dermatology specialist clinics will transfer in from the Lauriston building	Enable minor surgery in paediatric environment with appropriate clinical backup, access to specialist nursing, phlebotomy, radiology and photography in the children's service	3 daily dressings clinics in OPD treatment room + 3 weekly clinics, 1 monthly clinic & 1 quarterly clinic in main OPD
<b>Scheduled patients</b>	At least 50% of beds will be in single rooms, with ensuite facilities and room for parents bed		Anticipate reduction in the level of boarding between specialities due to the availability of increased number of single rooms
	Pathway for medical sub specialities	Medical area including sleep studies, and 'Home in Hospital'	
	Pathway for all surgical sub specialities	Surgical area will accommodate all inpatient scheduled patients	
		All patients will be admitted on day of surgery, unless clinical need for earlier admission. If arrival earlier is	In 2005-06, 526 patients had at least 1 pre-op day = 2 beds less than current

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

		necessary – child will stay with parent in family hotel	
		Anticipated increase in spinal deformity surgery in 2012, to 4 full days operating when additional theatre capacity available - 2 x 2 session days and 2 x 3 session days. Increase in activity each year to date – further increase is limited by available theatre capacity. Anticipate activity will stabilise to 200 operating cases per year	National contract for 3 years – annual activity 140 / 170 / 240. Increase in theatre patients from 6 to 8 per week, with average stay of 1 week = 2 additional beds required
	Pathway for neuroscience patients	'Frequent attenders' will be 'fast-tracked' to inpatient area thus improving quality of care	
		All neuroscience specialities will be provided within one area.	
	Pathway for adolescents	Adolescent unit (with 10 beds) will provide additional facilities that will be available to all 13+ patients, from whichever inpatient area they are based.	Average activity in RHSC / WGH / RIE is 9.3 patients, with peak of patients of 23, and trough of 1. average medical pts = 3.5 Average surgical pts = 5.8
	16-18 year old admissions to RHSC	From review of RIE and WGH activity in this age group it was anticipated that the long term speciality patients with life long illness would be likely to remain with RHSC services for majority of the normal transition period	Of 1206 patients, it was considered that 275 patients would remain with RHSC services until 18 (481 inpatient bed days+ 216 emergency bed days) = 3 additional beds
	Pathway for cancer patients	Will be managed within one area, providing day case (5 beds), inpatient (8 beds) and adolescent facilities (2 beds)	
<b>Theatres and Day surgery</b>	Sufficient capacity to deliver future activity	6 theatres in the new hospital, compared with 5 in current hospital. Additional theatre required to support maintaining 18 week total wait from referral to treatment, increase in age range and increase in	Current theatres have over 85% utilisation in last 2 years – 90.8% in 2007-8 year to date



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Appendix 7.2

		spinal surgery	
	Maximise the use of day case surgery	Minimal increase in conversion to day case from inpatient, as current day case ratio benchmarks well against other children's services in UK	Average of 65% day case surgical activity across all specialities with 74% in general surgery
		Will review those specialities where day case activity lower than other centres as part of the next stage of the project	Orthopaedics = 49% 'v' 62% CHKS target Plastic surgery = 57% 'v' 76% CHKS target
	Repatriation of 75% of day case activity to adjacent Health Boards	Unplanned drift of activity over recent years. Plan for Edinburgh surgeon to operate with local surgeons in Fife and Borders (and W Lothian)	Fife – 139 episodes Borders – 64 episodes West Lothian – 147 episodes
	Transfer of 13-16 year olds from RIE and WGH		977 episodes
	Patient pathway will be efficient and effective	Nurse led clerking will ensure timeous admission, which is not dependent on doctors in training	
<b>Critical Care</b>	PICU will have 8 beds, as per increase provided in 2008		
	Increase in HDU capacity by 100%, separated into medical and surgical	2007/8 high dependency activity is much higher than can be accommodated in current 6 beds. Patient groups will be better defined, with supporting facilities – e.g. increased single rooms in medical HDU	Activity will be confirmed from national HDU audit
	Burns patients should be managed in one area	Facilities will be provided within the surgical HDU, where burns patients will be managed, until any thermal injury is no longer exposed. Other thermal injury treatment facilities will be sited adjacent to surgical HDU	24 major and 170 minor thermal injuries in 2 years (06/07 & 07/08)
<b>CAMHS</b>	Specialist services will be	Tier 3 and tier 4 patient services will be delivered in	

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

	provided in the children's hospital	appropriate facilities with the other children's specialities.	
		Patients with anorexia nervosa have physical health severely compromised by their illness – and will benefit from proximity to other services.	Currently account for 50% of acute, long-term admissions to inpatient unit
	Paediatric psychology and psychiatric liaison service will expand.	Due to the increase in patient age range, including additional specialities, where there is mental health impact of physical illness	
	Nurse prescribing will be established for patients with ADHD	Introduction will reduce patients attendance to see consultant. Will improve care for this group of patients and reduce waiting time for clinic appointment for other patients however it is too early to fully articulate the anticipated impact	
<b>Children's services in the community</b>	Care will be delivered as close to patients homes as is possible and appropriate	To improve equity of access for children and families and avoid unnecessary journeys to specialist hospital.	The full impact of these changes is not yet clear as the work is in the early stages. Initial work shows that can anticipate a 10% reduction in attendance to the RHSC for review appointments
	C&YP Community Care Centres will be established.	To support a team approach within co-located, age appropriate paediatric environment	
	Opportunities to link with current and future NHS & joint venture capital developments will be maximised	To promote integrated practice and corroborative working with partner agencies	

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## **SECTION 9: WORKFORCE**

### **9.1 NHS Lothian Workforce in Profile**

NHS Lothian produce an annual workforce plan in line with the NHS's Health Directorate guidance, which provides an overview of the National and Local Strategic Service and Workforce Planning. The plan also provides detail around the current workforce structure and also future workforce projections for all staff groups for 3, 5 and 10-year timescales, with reference to affordability, achievability and adaptability.

On a quarterly basis NHS Lothian also publishes a detailed workforce report, which covers the following areas:

- In post staffing trends
- Vacancies under recruitment
- Fixed/term contracts
- Gross Workforce costs
- Supplementary Staffing costs
- Absence monitoring
- Employee conduct
- Diversity Monitoring

The following sections provide detail of the NHS Lothian workforce profile at the following levels:

1. Overall NHS Lothian
2. RHSC based staff
3. West Lothian Children's Services
4. Child & Adolescent Mental Health Service

All figures are derived from payroll information and as such may not include all staff working in these site/services as they may be employed by other organisations such as Edinburgh University.

# NHS Lothian

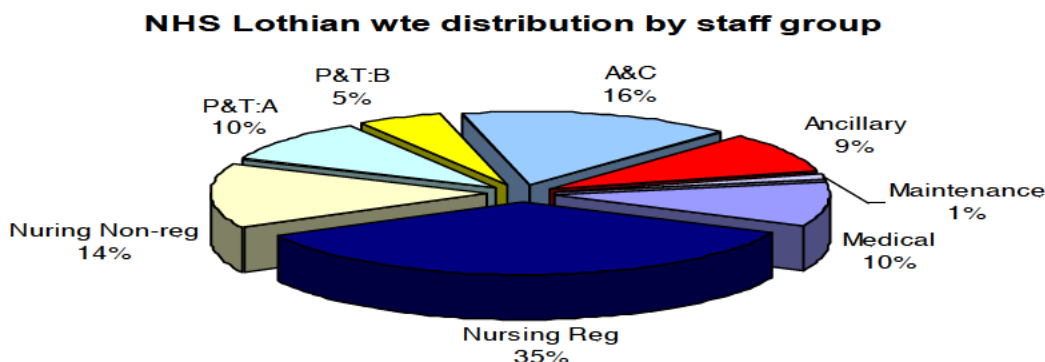
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### APPENDICES

## 1 NHS Lothian Workforce Profile

### 1.1 Distribution of NHS Lothian Workforce by Staff Group as at September 2007

The following chart provides the percentage distribution of the 18,631wte workforce of NHS Lothian by staff group.



Within this overall workforce 74% provide either direct clinical care or clinical support with the remaining 26% providing A&C/management, or facilities services. Within all these staff groups there are a range of other subdivisions/specialisms, which are integral to the provision of service.

### 1.2 Vacancies

The following table details the level of vacancies actively under recruitment within NHS Lothian in September 2007.

Staff Group	Sep-07	% Vacancies
Medical	34.12	1.9%
Nursing Reg	173.29	2.6%
Nuring Non-reg	50.30	1.9%
P&T:A	92.54	5.2%
P&T:B	29.07	3.2%
A&C	81.30	2.7%
Ancillary	4.13	0.3%
Maintenance	2.81	1.3%
<b>TOTAL</b>	<b>467.56</b>	<b>2.5%</b>

In-post WTEs and vacancies fall within the overall funded establishments level and as such where vacancies exist within clinical roles these are actively recruited to as part of a strategy to eradicate the use of agency utilisation and reduce bank utilisation.

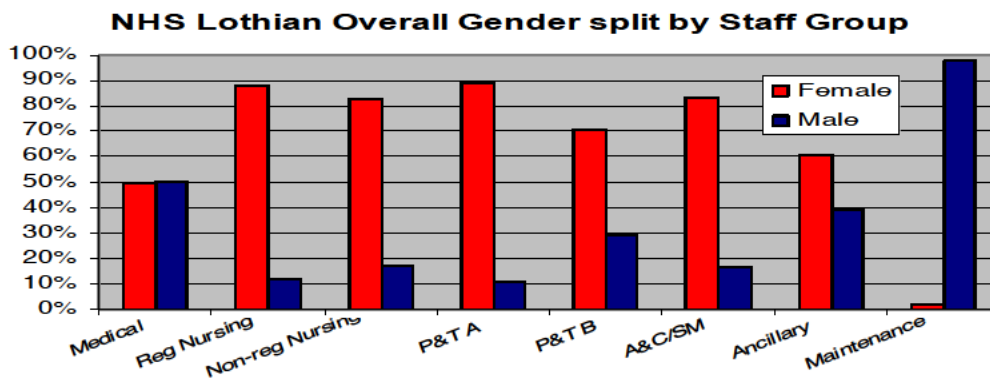
### 1.3 Gender Distribution

The overall gender distribution of the NHS Lothian workforce is as follows:

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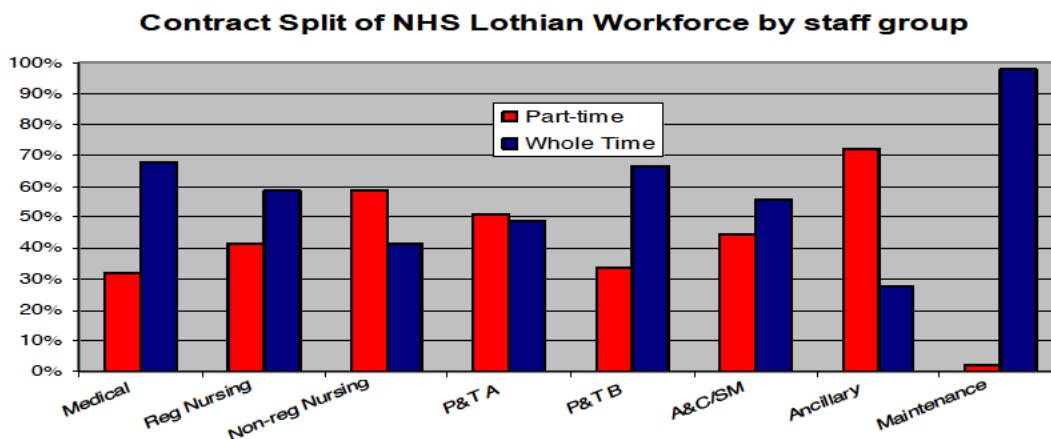
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Within all areas of the workforce females make up the majority of the workforce with the exception of maintenance, which is 98% male, and in medical where the current position is 50:50. Within the medical workforce in particular this balance has shifted considerably over the last 10 years with an increasing proportion of females across all specialties. This trend will continue with closer to 70% likely as this reflects the mix within medical training currently.

### 1.4 Working Patterns

Within NHS Lothian a wide range of shifts/working patterns exist to both support the service and reflect the requirements of staff. The following chart details the proportion of staff that are employed on either a full or part-time basis:



Excludes Nurse Bank

The majority of the workforce is employed on a full-time basis – 54% overall and within the largest staff groups the majority are also full-time, with the exception of non-registered nursing and ancillary. There is still however a very large minority employed on a part-time basis; given the gender profile of the workforce this reflects the role of a significant number of staff as carers.

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

It is expected that as the medical workforce becomes predominantly female there will be an overall increase in maternity leave and an increase in part-time working.

### 1.5 Sickness Absence

Within NHS Lothian the Northgate Empower HR System has been rolled out across all areas and as a result accurate sickness absence information is available for all staff groups. The following table details the position for NHS Lothian at the end of the second quarter of the financial year in 2007.

Staff Group	Corporate and Facilities		East Lothian	Edinburgh	Mental Health	Mid Lothian	West Lothian	Total
	Acute	Facilities	CHP	CHP		CHP	CHP	
Medical	0.39	0.18	0.53	1.24	0.92	3.13	3.77	0.65
Nurs. Reg	5.04	1.61	3.91	4.88	8.24	4.40	5.16	4.89
Nurs. Non Reg	10.21	0.46	7.73	10.02	12.05	9.01	11.51	8.93
P&T A	3.70	2.80	5.87	3.31	1.51	3.05	1.25	3.18
P&T B	4.02	0.86	-	-	-	7.09	13.16	4.43
A&C/SM	4.70	3.57	2.37	4.25	6.24	5.08	5.19	4.15
Ancillary	8.74	7.08	-	3.35	-	8.39	1.37	7.13
Maintenance	-	5.32	-	-	-	-	-	5.29
<b>Total</b>	<b>4.70</b>	<b>4.38</b>	<b>4.52</b>	<b>5.33</b>	<b>7.21</b>	<b>5.31</b>	<b>6.09</b>	<b>4.93</b>

NHS Lothian currently has the lowest level of sickness absence of NHS Teaching Boards; however it still remains outside the 4% national target due to achieved by March 2009.

### 1.6 Staff Turnover

The following table below details the headcount of staff who have left employment within NHS Lothian between the months of April and September 2007 as a percentage of the staff in post within each staff group during the month of September 2007, split by Division/CHP.

Staff Group	Corporate & East Lothian		Edinburgh	REAS	Midlothian	West Lothian	Grand Total	
	Acute	Facilities	CHP	CHP	Chp	Lothian CHP		
Medical	7.56%	7.89%	3.75%	2.22%	18.18%	1.27%	2.84%	6.43%
Nursing - Reg	4.92%	21.77%	3.81%	4.04%	2.52%	2.90%	3.39%	5.18%
Nursing - Non Reg	7.87%	5.62%	2.40%	7.41%	8.94%	6.70%	4.95%	7.10%
P&T A	5.77%	4.55%	10.53%	6.26%	11.32%	6.25%	6.64%	6.63%
P&T B	4.95%	2.86%	0.00%	3.57%	0.00%	50.00%	1.40%	4.09%
A&C/SM	6.38%	6.92%	11.93%	6.44%	4.26%	5.26%	6.81%	6.80%
Ancillary	3.31%	10.16%	4.65%	4.00%	0.00%	0.00%	16.67%	9.57%
Maintenance	0.00%	6.22%	0.00%	0.00%	0.00%	0.00%	0.00%	6.19%
<b>Total</b>	<b>5.82%</b>	<b>9.51%</b>	<b>5.52%</b>	<b>5.34%</b>	<b>6.96%</b>	<b>4.30%</b>	<b>4.14%</b>	<b>6.38%</b>

Note in areas where levels appear to be high this may be because of small numbers of staff.

It is difficult to determine the true reason for this turnover at a high level as reasons for leaving are not consistently given. Action to improve the intelligence is underway in a number of areas via exit interviews. However it is

# NHS Lothian

## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH

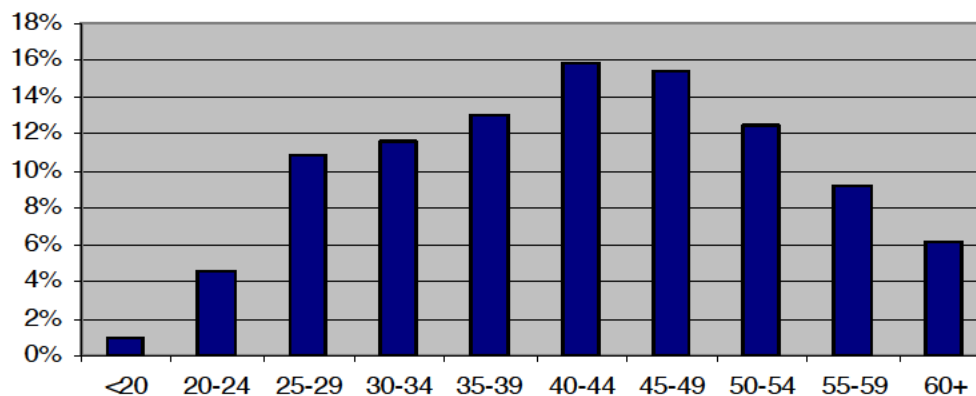
### APPENDICES

known that retirements and resignation on grounds of health accounts for 18% of all turnover and voluntary resignation for other reasons represents 48%.

#### 1.7 Demographic Profile

The following chart and table detail both the overall workforce demographic profile and also within each staff group.

**NHS Lothian Workforce Demographic Profile**



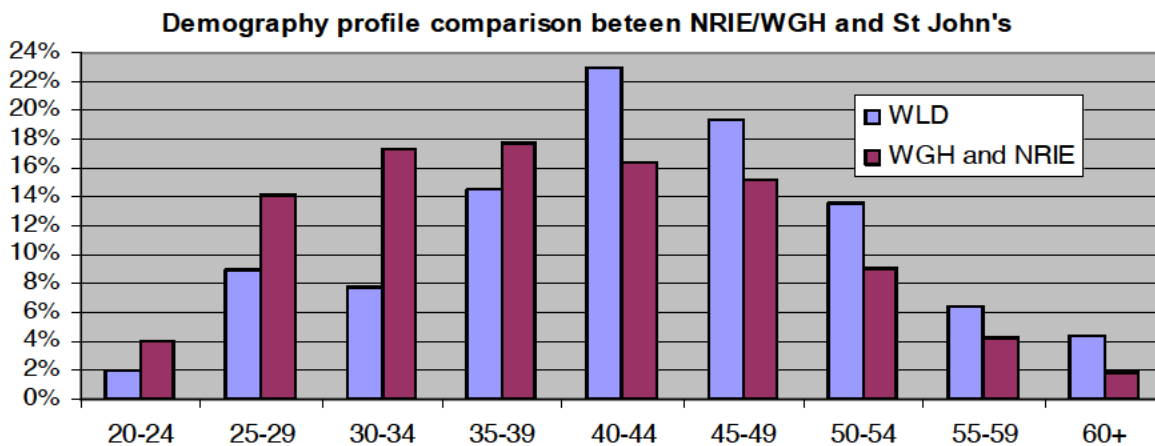
#### Excludes Nurse Bank

Staff Group	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
Medical		114	519	458	392	330	274	196	154	86
Nursing Reg		255	844	1,022	1,219	1,504	1,354	937	477	214
Nursing Non Reg	53	196	222	221	315	453	489	367	371	248
P&T A	3	93	414	410	366	326	312	274	159	89
P&T B	13	81	128	116	126	172	169	148	103	66
A&C/SM	49	138	220	270	412	575	642	601	540	374
Ancillary	101	187	177	198	182	309	317	321	308	311
Maintenance	1	3	2	9	13	13	30	51	40	51
<b>Grand Total</b>	<b>220</b>	<b>1,067</b>	<b>2,526</b>	<b>2,704</b>	<b>3,025</b>	<b>3,682</b>	<b>3,587</b>	<b>2,895</b>	<b>2,152</b>	<b>1,439</b>

There is clear evidence of the ageing of the workforce with 28% aged over 50 years of age, which reflects both the wider population demographic and the extensive level of service that many staff have. There will be an impact on workforce supply within the next 5-10 years in non-registered nursing and A&C and facilities as significant proportions of the workforce will be eligible to retire at a time when the numbers within the traditional working age bracket fall.

There are also significant differences between specialties and sites, which will have implications for recruitment and retention in the future. The following chart details a comparison of the combined NRIE and WGH registered nursing workforce with St John's hospital in West Lothian.

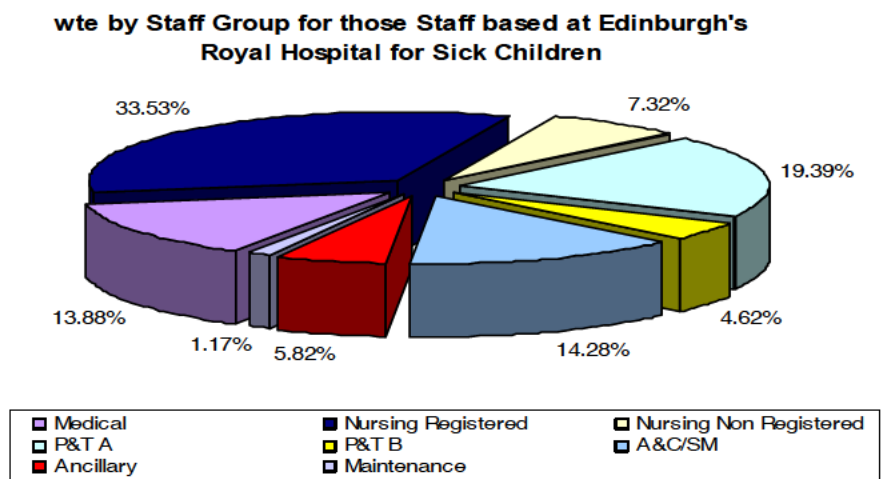
# NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES



## 2 Edinburgh Royal Hospital for Sick Children Workforce Profile

### 2.1 Distribution of Workforce based at RHSC as at September 2007

The chart below provides the distribution of staff based at Royal Hospital for Sick Children by Staff Group (%).



Within this overall workforce 78% provide either direct clinical care or clinical support with the remaining 22% providing administrative/management services. The medical workforce is made up of 45% training grade staff (FY1 – SPR) and 55% at either consultant or SAS level.

### 2.2 Vacancies

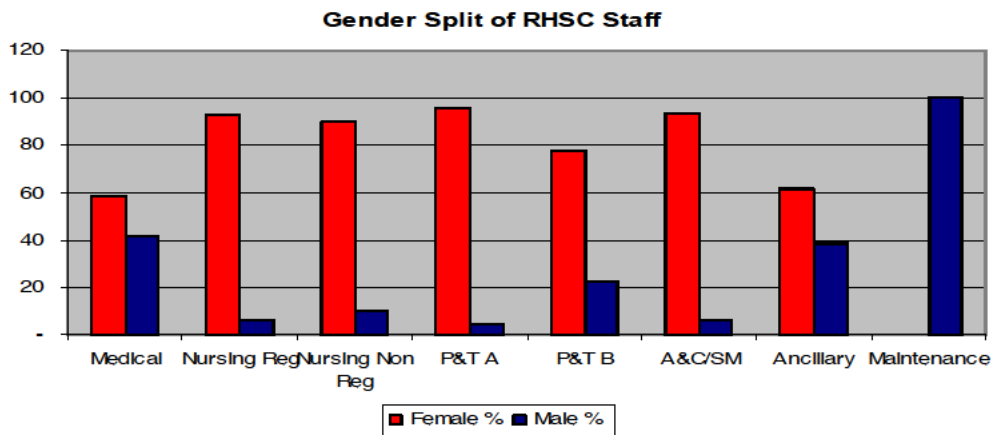
Overall in-post and funded establishment figures align closely, with vacancies in September 2007 at 2.9% of the overall in-post figures. All nursing posts are

# NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

actively recruited to where vacancies arise, in order to eliminate the requirement for agency staffing and reduce utilisation of bank staffing.

## 2.3 Gender Distribution

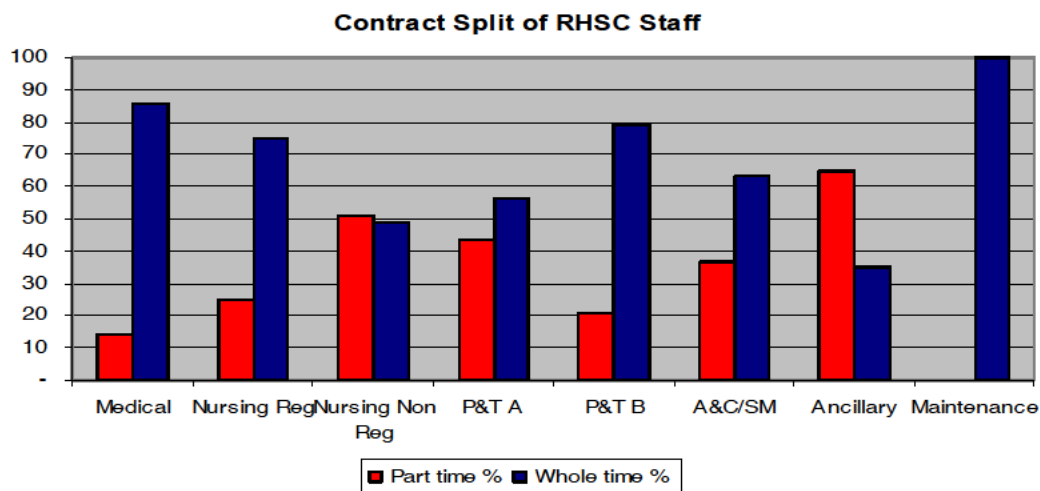
The following chart details the gender distribution within the RHSC workforce:



In-line with most areas of the NHS the workforce is predominantly female (85%) with some variation by staff group. The medical workforce has been one area in the past where the majority of the workforce was male this has however changed with 58% of the workforce now female and this is expected to change further.

## 2.4 Working Patterns

The following chart details the proportion of staff that works on either a full or part-time basis:



The majority of the workforce is employed on a full-time basis – 68% overall and within each of the staff groups employing the majority of the workforce. There is however a significant minority employed on a part-time basis; given



# NHS Lothian

## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH

### APPENDICES

the gender profile of the workforce this reflects the role of a significant number of staff with as carers. Understanding the motivations of this area of the workforce will be important prior to any reprovion as these groups can be particularly sensitive to change given their dual roles.

However within the RHSC the 12 hour shift work pattern would appear to enable a higher proportion of staff to work full time in contrast to Nursing workforce overall. It is likely that as the medical workforce becomes predominantly female there will be an overall increase in areas such as maternity leave and a reduction in overall hours worked.

### 2.5 Sickness Absence

Following the implementation of a single HR system across Lothian sickness absence is recorded for all staff within RHSC. The table below details the breakdown of sickness absence levels by staff group for the month of September 2007:

Staff Group	% Sickness Absence
Medical	2.26
Nursing Registered	4.13
Nursing Non Registered	10.51
P&T A	3.39
P&T B	2.06
A&C/SM	2.09
Ancillary	25.50
Grand total	4.00

Note in areas where levels appear to be high this is because of small numbers of staff.

RHSC has some of the lowest levels of sickness absence within Lothian and in this period was meeting the national target of 4%. Of all occurrences of sickness absence within this time period 5.6% were related to staff on long term sick.

### 2.6 Staff Turnover

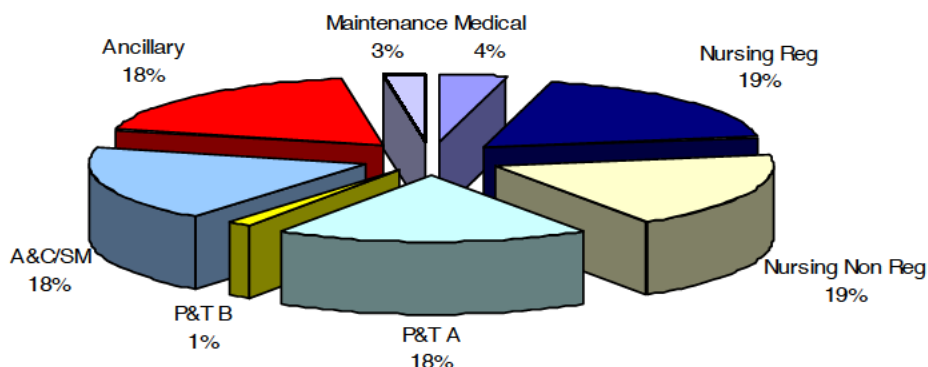
The table below shows the percentage of staff within each staff group who left between the months of April and September.

Staff Group	% of RHSC Workforce Left between April and September 2007
Medical	3.16
Nursing Registered	3.28
Nursing Non Registered	12.28
P&T A	4.23
P&T B	1.82
A&C/SM	6.64
Ancillary	15.22
Maintenance	14.29
Grand total	5.68

# NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

The chart below details the proportion of the leavers for this period for each Staff Group as a percentage of overall turnover for the 6 month period:

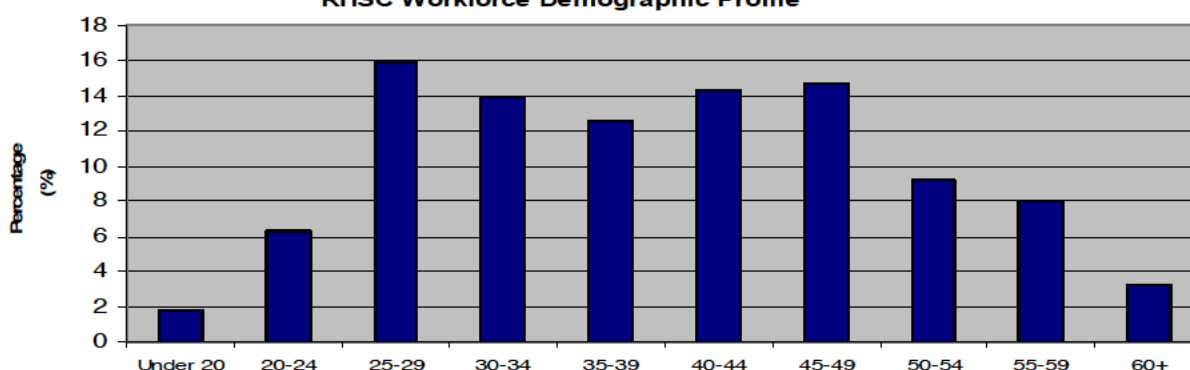
**Number of Leavers between April and September 2007 RHSC**



## 2.7 Workforce Demography

The following chart and table detail both the overall workforce demographic profile and the profile within each staff group.

**RHSC Workforce Demographic Profile**



### Demographic profile by staff group (%)

Staff Group	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
Medical	-	2.79	18.99	17.88	19.55	13.97	11.17	7.82	6.15	1.68
Nursing Reg	-	9.84	21.55	16.16	12.88	15.93	11.94	7.73	3.51	0.47
Nursing Non Reg	5.77	5.77	16.35	13.46	5.77	11.54	14.42	9.62	11.54	5.77
P&T A	-	2.01	19.13	17.45	14.43	13.42	16.11	9.40	6.04	2.01
P&T B	-	11.11	14.81	3.70	9.26	11.11	14.81	12.96	16.67	5.56
A&C/SM	5.83	5.34	3.40	3.40	10.19	14.56	22.33	12.62	13.11	9.22
Ancillary	6.67	12.22	4.44	15.56	7.78	13.33	12.22	7.78	16.67	3.33
Maintenance	6.67	-	-	6.67	-	26.67	13.33	13.33	20.00	13.33
Grand Total	1.82	6.34	15.95	13.91	12.53	14.35	14.64	9.25	8.01	3.20

Overall the demographic profile for the RHSC workforce is sustainable as there is good balance between the across the age range, with a median age of approximately 35 years old. However within A&C & P&T:B areas the profile is markedly different with a median age between 47 and 44 respectively. The

# NHS Lothian

## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH

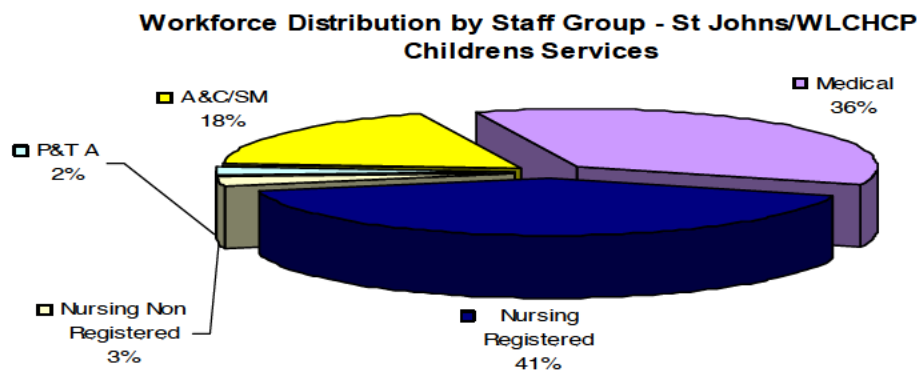
### APPENDICES

profile within these areas will have important workforce planning implications for the development of the Full Business Case.

### 3 West Lothian Children’s Services – St Johns Hospital

#### 3.1 Distribution of Workforce based at St John’s as at September 2007

The chart below provides the distribution of the 71wte of staff within Children Services based at St Johns/West Lothian CHP by Staff Group (%).



Within this overall workforce 82% provide either direct clinical care or clinical support with the remaining 18% providing administrative/management services.

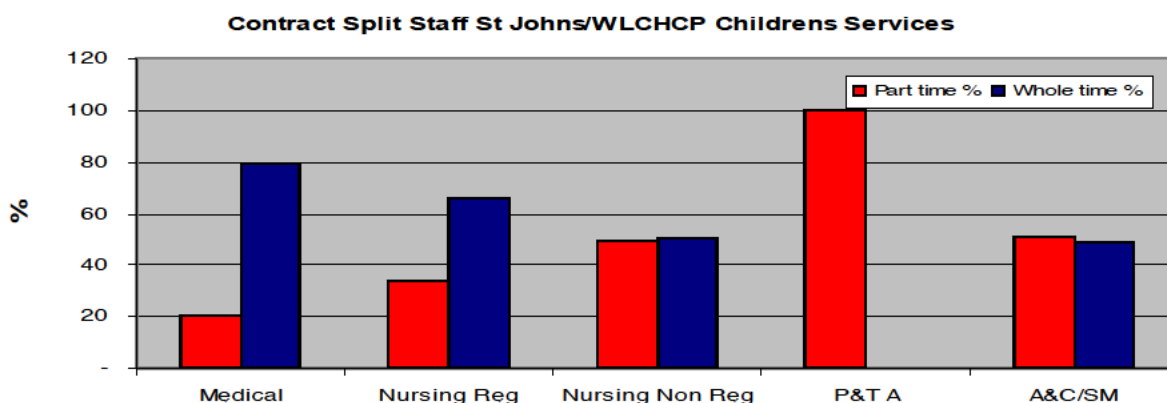
The corporate and facilities workforce are not detailed in the figures above, as they are part of the corporate facilities directorate and it is difficult to disaggregate the specific element associated with the areas associated with Children’s services.

#### 3.2 Vacancies

There were no vacancies within Children’s Services based at St Johns’ within the month of September 2007.

#### 3.3 Gender Distribution

The following chart details the gender distribution within Children’s Services based at St Johns workforce.



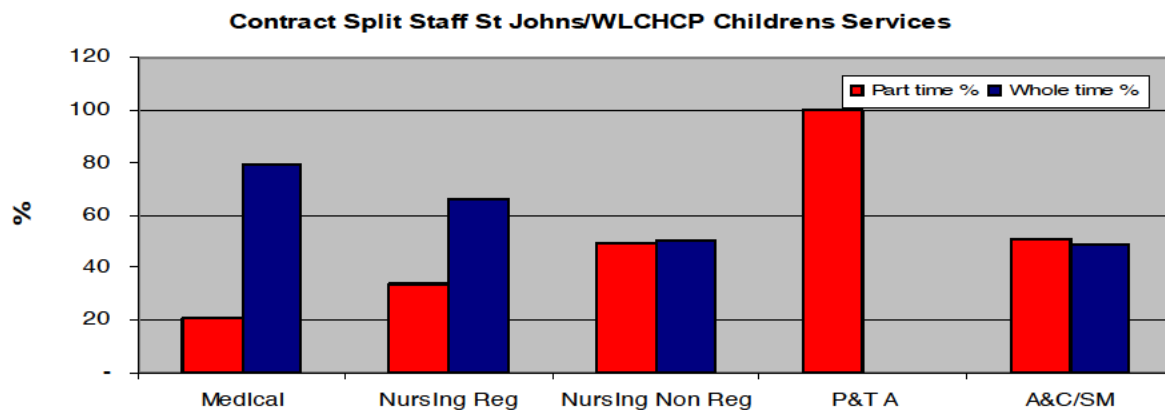


**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

The workforce is predominantly female (81%) with some variation by staff group. The majority of the medical workforce is female (54%) again reflecting the shift within both the paediatric and wider medical workforce.

### 3.4 Working Patterns

The following chart details the proportion of staff employed on either a full or part-time basis:



The majority of the workforce is employed on a full-time basis – 66% overall, the majority within the each of the staff groups are also full-time, with the exception of A&C staffing.

### 3.5 Sickness Absence

The table below details the breakdown of sickness absence levels by staff group for the month of September 2007:

Staff Group	% Sickness Absence
Medical	-
Nursing Registered	1.53
Nursing Non Registered	-
P&T A	25.27
A&C/SM	8.91
Grand total	2.75

Note in areas where levels appear to be high this is because of small numbers of staff.

Sickness absence within Children Services was very low in September 07 and significantly below the national target of 4%. There were no occurrences of long-term sickness absence within the September 2007 period.

### 3.6 Staff Turnover

The table below details the percentage of staff within each staff group who left between the months of April and September.

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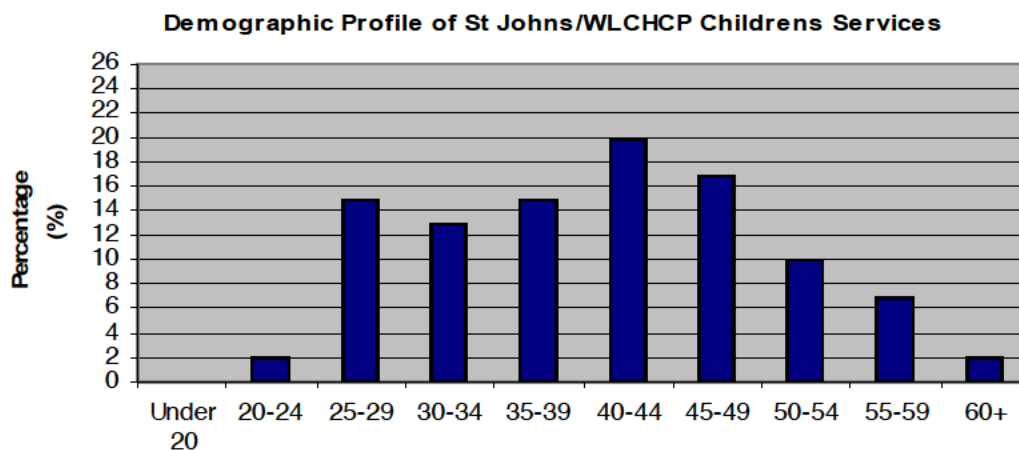
**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
**APPENDICES**

Staff Group	% of Children Services at St Johns Workforce Left between April and September 2007
Medical	0.00
Nursing Registered	3.95
Nursing Non Registered	25.00
P&T A	9.09
P&T B	0.00
A&C/SM	8.33
Ancillary	0.00
Grand Total	5.96

Note in areas where levels appear to be high this is because of small numbers of staff.

### 3.7 Workforce Demography

The following chart and table detail both the overall workforce demographic profile and the profile within each staff group.



#### Demographic profile by staff group (%)

Staff Group	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
Medical	-	2.13	19.15	21.28	21.28	17.02	2.13	8.51	4.26	4.26
Nursing Reg	-	3.13	15.63	9.38	6.25	28.13	28.13	9.38	-	-
Nursing Non Reg	-	-	25.00	-	25.00	-	-	25.00	25.00	-
P&T A	-	-	-	-	-	-	-	-	100.00	-
A&C/SM	-	-	-	-	-	-	-	-	-	-
Grand Total	-	1.98	14.85	12.87	14.85	19.80	16.83	9.90	6.93	1.98

Overall the demographic profile for the Children's Services based at St Johns/WLCHP workforce is sustainable however within nursing and A&C the average age is 42 and 46 respectively, which is above average.

# NHS Lothian

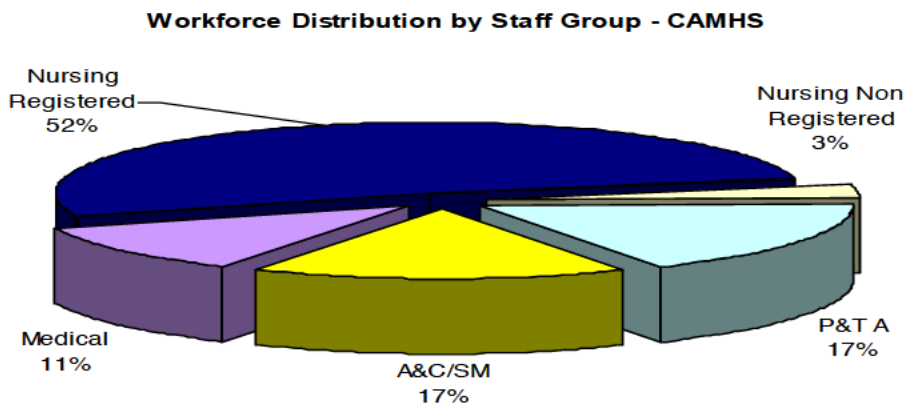
## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH

### APPENDICES

#### 4 Children and Adolescent Mental Health Service Workforce Profile

##### 4.1 Distribution of Workforce based within CAMHS as at September 2007

The chart below provides the distribution of the 127wte workforce based within Children and Adolescent Mental Health by Staff Group (%).



Within this overall workforce 83% provide either direct clinical care or clinical support with the remaining 17% providing administrative/management services. The medical workforce is made up of 100% at either consultant or SAS level.

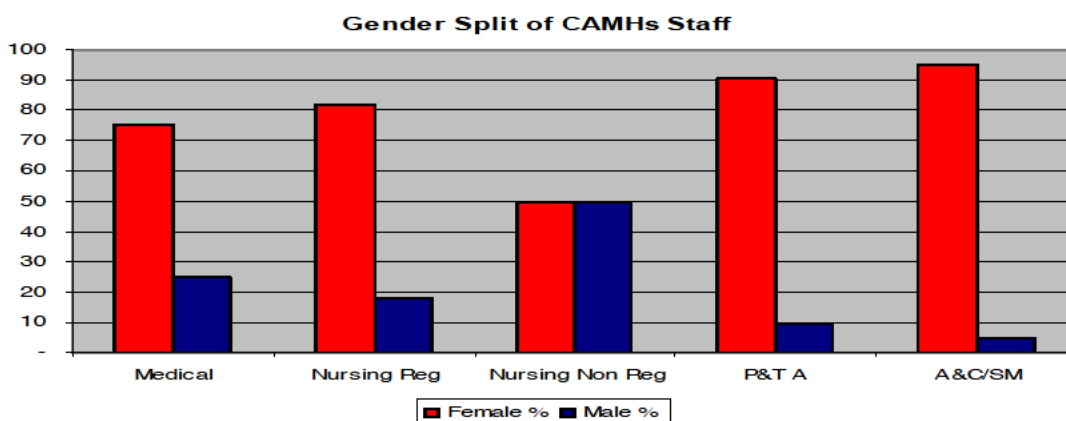
The corporate and facilities workforce are not detailed in the figures above, as they are part of the corporate facilities directorate and it is difficult to disaggregate the specific element associated with the areas associated with CAMHS services.

##### 4.2 Vacancies

Overall in-post and funded establishment figures align closely with vacancies in September 2007 at 5.63% of the overall in-post figures. All nursing posts are actively recruited to where vacancies arise, in order to eliminate the requirement for agency staffing and reduce utilisation of bank staffing.

##### 4.3 Gender Distribution

The following chart details the gender distribution within the CAMHS workforce:



# NHS Lothian

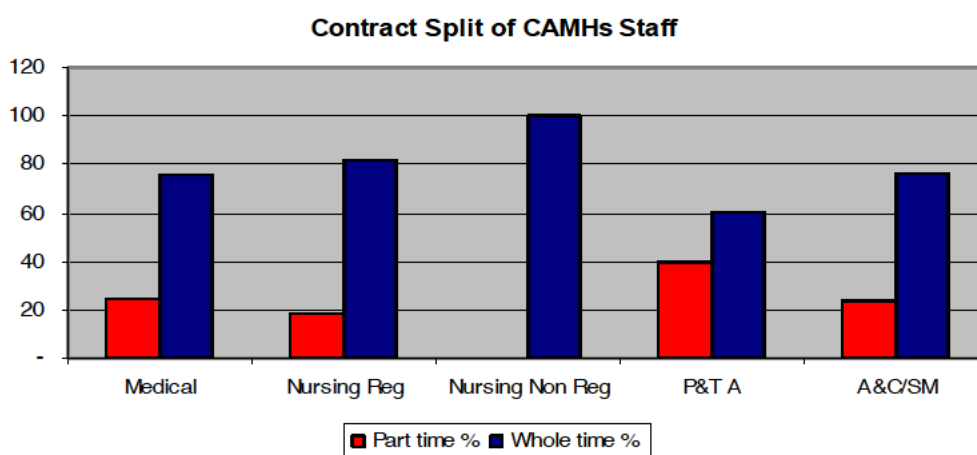
## REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH

### APPENDICES

The CAMHS workforce is predominantly female (84%) with the exception of non-registered nursing where there is a 50:50 split. Within the medical workforce 74% of the workforce are now female, this represents the likely future profile for medical workforce as a whole.

#### 4.4 Working Patterns

The following chart details the proportion of staff that works on either a full or part-time basis:



The majority of the workforce is employed on a full-time basis – 77% overall and also within each staff group. There is however a significant minority employed on a part-time basis who are predominantly female.

#### 4.5 Sickness Absence

Following the implementation of a single HR system across Lothian sickness absence is recorded for all staff within CAMHS. The table below details the breakdown of sickness absence levels by staff group for the month of September 2007:

Staff Group	% Sickness Absence
Medical	-
Nursing Registered	10.37
Nursing Non Registered	21.92
P&T A	0.37
A&C/SM	5.22
Grand total	7.02

Note in areas where levels appear to be high this is because of small numbers of staff.

CAMHS has some of the highest levels of sickness absence within Lothian and in this period was over the national target of 4%. Of all occurrences of

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

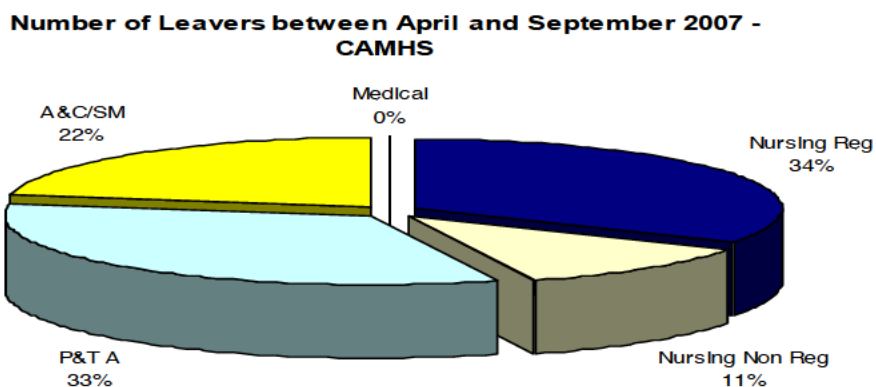
sickness absence within this time period 20% were related to staff on long term sick.

#### 4.6 Staff Turnover

The table below details the percentage of staff within each staff group who left between the months of April and September.

Staff Group	% of CAMHS Workforce Left between April and September 2007
Medical	-
Nursing Registered	3.95
Nursing Non Registered	25.00
P&T A	9.09
P&T B	-
A&C/SM	8.33
Ancillary	-
Grand Total	5.96

The chart below shows the proportion of the leavers for this period each Staff Group represents:

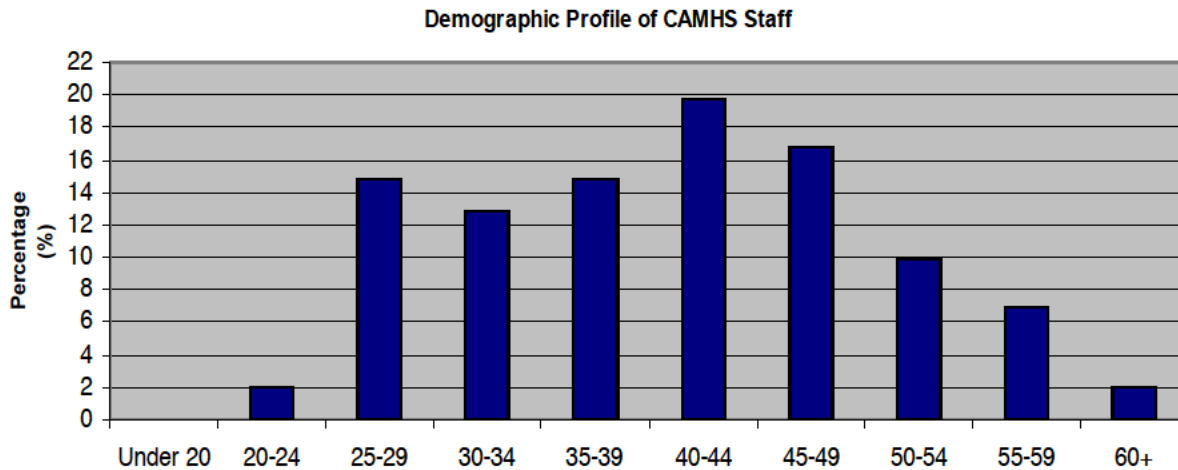


#### 4.7 Demographic Profile

##### Workforce Demography

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

The following chart and table detail both the overall workforce demographic profile and the profile within each staff group.



**Demographic profile by staff group (%)**

Staff Group	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
Medical	-	-	6.67	13.33	13.33	26.67	26.67	6.67	6.67	-
Nursing Reg	-	2.63	7.89	13.16	26.32	17.11	15.79	10.53	3.95	2.63
Nursing Non Reg	-	-	75.00	25.00	-	-	-	-	-	-
P&T A	-	-	3.13	25.00	31.25	15.63	12.50	12.50	-	-
A&C/SM	-	8.33	4.17	-	16.67	25.00	25.00	12.50	4.17	4.17
Grand Total	-	2.65	7.95	13.91	23.84	18.54	17.22	10.60	3.31	1.99

Overall the demographic profile for the CAMHS workforce is sustainable as there is good balance across the age range, with a median age of approximately 40 years old.

The profile of all the services associated with the reprovion project will be monitored on an on-going basis.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## **SECTION 9: WORKFORCE**

### **9.2 Workforce Planning Assumptions**

The Workforce Plan related specifically to the reprovision of RHSC will include those changes that are required due to moving to a new facility, and delivering services using the redesigned model of care.

There are a wide range of other changes that are required to be delivered, which are not directly related to the new hospital however it is proposed to bring these two work streams together to deliver in a robust and sustainable plan.

The workforce will be redesigned to support the new models of care identified through the clinical redesign of services – elements of which will assist in delivering the changes required due to ‘non-reprovision’ drivers that have to be resolved.

Overall approach to developing the workforce plan will:

- Ensure Staff Partnership involvement is integral to all aspects
- Ensure compliance with working time regulations, through facilitating the delivery of services within larger teams
- Recognise the importance of the subspecialty teams, and models of workforce management (particularly nursing) will ensure that staff with the required specialist skills are available to care for patients.
- Include robust succession planning especially in specialities with very small numbers of clinicians, to ensure sustainability of that service in future
- Maximise the synergy of having co-located adult and paediatric services and additional research and development opportunities for Children’s Services.

#### **Impact of Clinical Redesign on the Workforce**

The establishment of an Acute Admissions and Assessment area will provide the opportunity to develop efficient and dependable decision-making by experienced, senior medical, nursing and AHP staff within a well-organised team. This will include the further development of ‘Criteria-led discharge’ by nursing staff to reduce unnecessary delays.

The implementation of TRAKhealth will result in:



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

- A single electronic patient record accessible from PC at ward / dept level
- Reduction in lab tests as the previous results will be available electronically, and duplication of investigations will be avoided

Implementation of Hospital at Night will be supported by separating emergency and elective admissions, with senior nurse practitioners (SNPs) predominantly managing inpatient / longer stay patients overnight. SNPs will be competent to perform clinical assessment and decision-making.

Surgical nursing staff will provide nurse-led pre – assessment clinics and will undertake the pre-operative clerking of patients previously undertaken by doctors in training, and will have the skills and competencies required.

### **Modelling future workforce requirements**

A detailed 5 year recruitment and workforce plan will be developed as part of the next stage of the project. It will focus on the following targeted areas:

Adequate consultant general paediatrician workforce to provide safe, efficient and effective cover for unscheduled activity 24/7, some will have specialist interests, to support delivery of specialist services

Adequate specialist consultant workforce, to deliver a sustainable service, and including succession planning. Some of these posts will require to provide service within the general paediatrician rota.

Advanced roles – there is a 5-year window of opportunity to develop staff (nursing and AHP) with the required skills and competencies to support the sustainability of specialties jeopardized by reduction of doctors in training. These roles are required in the following specialties:

- PICU – senior and advanced nurse practitioners, who will work within a team of doctors / nurses to provide the service previously delivered by PICU fellows
- 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. It is proposed to develop senior and advanced nurse practitioners that, with increased support from consultant staff, will in future make up the retrieval team.
- Front Door – emergency nurse practitioners, with further expansion of their roles
- Inpatient areas, including:



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- Adolescents – a specialist nurse / nurse consultant to work across children's and adult services, and support the development of robust transition processes, ensuring staff have the skills and competencies for managing the adolescent patients.
- Hospital at Night – senior nurse practitioners to work within the HAN team, and provide the majority of the supervision in the inpatient areas overnight.

New roles- will also be developed in the following disciplines:

- AHP roles:  
There are plans to develop additional specialist and advanced roles in the various therapy professions, which will help to provide a more robust, improved infrastructure for specialist teams.
- Registered Nursing:  
Nursing roles will continue to evolve and develop to enhance a holistic approach to care, and to meet the impact of MMC and EWTR. The following roles have already developed within some areas of the service:
  - Nurse-led clerking for general daycare surgery
  - Nurse prescribing
  - Nurse-led clinics (e.g. asthma, Urinary Tract Infections, enuresis etc)
  - Criteria led discharge

The skill mix of the future nursing team will change, with registered nursing staff enhancing their traditional role, with support from unregistered nurses whose skills and competencies will have been further developed, with some of their traditional roles delivered by experienced and competent, unregistered staff.

- Unregistered staff  
As the Workforce Plan develops it is proposed to develop new and expanded roles for unregistered nursing and AHP staff. This will build on the current developments at SVQ2 and 3, and provide opportunities to consider appropriate support roles at A4C Band 4 – where there is currently very few clinical roles in place, and increase the number of roles at A4C Band 3, which will provide an improved support infrastructure for the continued delivery of high quality clinical care.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**Other workforce drivers**

A number of issues do not relate directly to the reprovision of the new hospital, however it is recognised that they have influenced the proposed models of care. These include:

European Working Time Regulation

Currently in the RHSC approximately 40% of the trainees are on EWTD compliant rotas with the remainder working between 48-56 hours.

Modernising Medical Careers

The changes in the structure of medical training as a result of MMC have had a major impact on the services within NHS Lothian in the following ways:

- Reduced service contribution - trainees spend more time in a supervised learning environment therefore will be less time to spend on providing direct service delivery, this further compounds the reduced contribution associated with reduction in hours to achieve EWTR target.
- Issues of FY2 capability – the changes in the duration of rotation placements for FY2 staff have meant that there may be less time to build the capability of these staff.
- Changes to GP training – as part of MMC the proportion of time spent by GP trainees in the hospital setting will change from the existing 24 months in a hospital and 12 months in a GP practice, to 18 months in GP practice and 18 months in the hospital setting. This is planned to take place from August 2008.
- Within the Southeast region there are 16 FTSTAs (fixed term speciality training) posts within Medical Paediatrics and 3 within Surgical Paediatrics. These posts are in place to ensure that there is no immediate impact on the service in the short term and to ensure that there are training opportunities for those not successful in securing a Specialty Training post in the 2007 recruitment process. However, it is expected that these posts will be phased out over the following years. It is anticipated that where the core funding for posts lies with NES a transfer of resources would take place to enable the Boards to provide alternative means of staffing.

Changes to Specialist Surgical training results in newly trained general surgeons in adult services no longer being experienced in operating on children.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

**SECTION 10: OPTION IDENTIFICATION & APPRAISAL**

**10.1 Non-Financial Benefits Criteria Detail**

The following headline statements and sub-criteria were used in the evaluation of each option in the non-financial benefits appraisal.

**Clinical effectiveness, integration of service and meeting national guidance**

- Ability to achieve sustainable, co-location with maternity, neonatal and acute adult services and collocation of co-dependent services
- Ability to provide an environment that facilitates good clinical pathways and interfaces between specialities, diagnostic and support services
- Ability to maximise the use of single system services e.g. laboratories, HSDU, while maintaining specialist facilities

**Sustainability**

- Ability to support effective use of staff expertise and resource to ensure sustainability of specialist services while meeting challenges presented by the small critical mass of specialist activity and staff
- Ability to provide and maintain medical staff rotas 24/7
- Ability to create a sustainable environment with due regard to green space, energy efficiency, scale, density, transport and working environment

**Accessibility for patients, relatives & staff**

- Enables patients, staff & visitors to easily access services by foot, public and private transport
- Allows adequate car parking provision to support the specific needs of patients, parents and carers
- Site supports rapid and ease of emergency access by land and air

**Quality of physical environment**

- Maximises the use of the site, building and land to optimise provision in terms of space, layout, functionality and working environment
- Supports compliance with disability, equality and diversity legislation

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- In-patient and out-patient accommodation sufficiently flexible to accommodate changes in practice and demand while maintaining effective clinical services
- Supports ability to create a child and young person friendly environment that provides systems and spaces that recognise the healing capacity of sustaining every day lives

**Ability to implement options**

- Minimises disruption to services for phasing/decanting during construction
- Feasibility in terms of physical constraints (including planning permission etc)

**Research and education**

- Facilitates close links with university and research facilities to support research, development and education.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 11: BENEFITS APPRAISAL**

**11.1 Non-Financial Benefits - Process for Validation**

<b>Headline Criteria &amp; Weighting</b>	
Pre-meeting	Participants were provided with an information pack which included: <ul style="list-style-type: none"> <li><input type="checkbox"/> A short paper on National Policies that impact on the provision of Children’s Services</li> <li><input type="checkbox"/> The Principles and Guidelines for the Clinical Redesign for the project</li> </ul>
At the meeting	Participants were provided with a: <ul style="list-style-type: none"> <li><input type="checkbox"/> Short presentation on each of the headline criteria, re-iterating and building on the information provided in advance of the meeting.</li> <li><input type="checkbox"/> ‘Question and answer’ session</li> <li><input type="checkbox"/> Copy of the slides presented</li> <li><input type="checkbox"/> Table identifying the clinical services provided on each site at present</li> <li><input type="checkbox"/> ‘Map’ illustrating the number and location of children currently travelling to the RHSC</li> </ul>
<b>Option Appraisal Process</b>	
Pre-meeting	A guidance paper on the Option Appraisal Process was included in the information pack
At the meeting	Participants were provided with a: <ul style="list-style-type: none"> <li><input type="checkbox"/> Short presentation on the Option Appraisal Process</li> <li><input type="checkbox"/> ‘Question and answer’ session</li> <li><input type="checkbox"/> Copy of the Scoring sheet and information</li> </ul>

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 13: FINANCIAL ANALYSIS**
**13.1 Current 'v' Proposed Accommodation Schedule Comparisons**

**1) Service Development** - this element represents the change in area required by department to meet latest legislation, building notes guidance, nationally agreed policy. It also includes the change in area required to manage current activity levels effectively e.g. patient boarding v cubicles and flexible beds.

**2) Service Redesign** - this element represents the changes in area identified in the redesign of RHSC services.

Department	CURRENT FACILITY		PLANNED	Difference	% Change	SERVICE DEVELOPMENT	SERVICE REDESIGN	
	Background	Area	Area			Explanation	Area	Explanation
<b>MAIN BUILDING</b>								
<u>Front Door / A&amp;E / Assessment</u> A&E SHPN22		280	898	618		Annual activity increase 3%. Current area not fit for purpose. Support areas inadequate e.g. No bereavement & family support facilities.	618	

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Department	CURRENT FACILITY		PLANNED	Difference	% Change	SERVICE DEVELOPMENT	Area	SERVICE REDESIGN	Area
	Background	Area	Area			Explanation		Explanation	
Paediatric Acute Assessment Area - (comprising Medical, Surgical, Adolescent & Short Stay Observation)	In Ward 6 ARU (medical only) which is not admission time limited	0	1,033	1,033				To separate scheduled from unscheduled care. Supports meeting 4 hour target. Unscheduled patients will stay here for first 48 hours. 37 beds planned including a dedicated adolescent bay. (Adolescent activity transferred from adult services).	1,033
<b><u>Critical Care / HDU / Neonatal Surgery</u></b> PICU / HDUs <b>HBN57</b>	<b>PICU</b> - 6 beds. <b>HDU</b> - 6 beds. <b>Neonatal</b> - 3 beds.	490	1,407	917		<b>PICU</b> - NSD has agreed increase to 8 beds. <b>HDU</b> - increase to 12 beds as current capacity is not adequate for current activity. <b>Neonatal</b> - increase to 4 beds as current capacity is not adequate.	917		

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Department	CURRENT FACILITY		PLANNED	Difference	% Change	SERVICE DEVELOPMENT		SERVICE REDESIGN	
	Background	Area	Area			Explanation	Area	Explanation	Area
<b><u>In Patient Pathway / Ward Care</u></b>									
Generic In Patient Accommodation (comprising Medical, Surgical & Neuroscience)	Currently 109 beds.	2,417	1,609	-808		Latest guidance states that minimum of 50% of beds should be single rooms with en-suite. Bed space area also increased by 53%.	1,300	Reduction to 46 beds plus Adolescent Area, 10 beds & Haematology/Oncology 10 beds. Redesigned pathway.	-2,108
Home in Hospital (within Medical Inpatient area)	No facility currently. Patients at present in HDU or inpatient beds.	0	109	109			0	To support rehab of children going home on respiratory support. 4 beds	109
Haematology / Oncology incl TCU	Currently 8 inpatient beds & 4 day case beds.	445	640	195		Creation of teenage cancer unit. Total - 10 inpatient beds & 5 day case beds for current activity. (Impact of National Delivery Plan still to be included). Current best practice as identified in Kerr report. 13 beds.	195		
Adolescent Accommodation	No facility currently.	0	465	465			465		
Neurophysiology		346	210	-136				Purpose built facility.	-136
Sleep Lab (1 bed + parent bed)		50	72	22			22		
School	Currently no school room in RHSC. Required to meet statutory obligations.	18	132	113			113		

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Department	CURRENT FACILITY		PLANNED	Difference	% Change	SERVICE DEVELOPMENT		SERVICE REDESIGN	
	Background	Area	Area			Explanation	Area	Explanation	Area
On-call Suite	Currently for doctors in training. In future provision will be for potential Consultant on Call/other professions.	298	72	-226					-226
<b><u>Out Patient Departments / Medical Day Care</u></b>									
Out Patient Departments <i>HBN23/12</i>	currently very inadequate facility	1,434	1,533	99			99	Three session day limits required clinic rooms.	
Therapies <i>HBN18</i>	inadequate / inappropriate facility at present	994	1,305	311			311		
Social Work Medical Day Case Unit	Currently 5 day case beds.	82 384	103 292	21 -92			21 -92		
						To accommodate ward attenders & support one-stop clinics. 5 day case beds with additional treatment facilities for non-bed patients.			
<b><u>Theatres / Anaesthetics / Day Surgery</u></b>									
Operating Theatres (6No.) + Surgical Day Case <i>SHPN52 &amp; HBN26</i>	Doesn't support "good" patient flows. SDCU not co-located with theatres. Currently 5 theatres & 17 day case beds. Patient flow poor as pre-op patients pass post-op patients.	1,555	1,830	275			275		
						Current area doesn't meet demand or address waiting time targets. 6 theatres & 15 day case beds & improved patient flows.			



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Department	CURRENT FACILITY		PLANNED	Difference	% Change	SERVICE DEVELOPMENT	Area	SERVICE REDESIGN	
	Background	Area	Area			Explanation		Explanation	Area
Dental	Not adequate to meet demand.	43	144	101		Increase from 2 to 4 surgeries.	101		
<b><u>Child and Adolescent Mental Health</u></b> Young Peoples Unit, including Forteviot	Currently 12 beds. Temporary arrangement to create additional 4 beds in 2008 as agreed by SEAT Boards.	1,759	1,412	-347		Nationally commissioned increase to 16 beds. <b>Facility not included in Initial Agreement.</b>	-347		
<b><u>Clinical Support</u></b> Radiology/Imaging <i>HBN06</i>	Current facility doesn't meet latest building & clinical standards.	533	1,109	576		Increase in age range to 16 partic. effects this dept. Shell MRI room to future proof for new modalities. Majority of service to be provided from existing RIE area.	576		
Pharmacy		339	156	-183					
Medical Photography Central Equipment Library	Storage inadequate.	67 25	82 45	14 20					
<b><u>C &amp; YP Services in the Community</u></b> Community Paediatrics	Residential accommodation used. This is inappropriate & an inefficient use of space.	775	367	-409					-409
<b><u>Academic</u></b> Child Life and Health (inc Lecture Theatre)		805	447	-358					-358

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Department	CURRENT FACILITY		PLANNED	Difference	% Change	SERVICE DEVELOPMENT		SERVICE REDESIGN	
	Background	Area	Area			Explanation	Area	Explanation	Area
Clinical Research		277	144	-134					-134
Library		70	76	6			6		
Clinical Skills & School of Comm Paeds		280	333	53		Central education RHSC facility, and as there is no facility available at Little France, this will be available to other staff, using agreed prioritisation process.	53		
<b>Office/Admin Support Services</b>									
Administration/Offices		1,703	1,203	-500			-500		
CAMHS - offices		168	91	-77			-77		
Community Childrens Nurses	Currently under review.	125	55	-70			-70		
Health Record Offices (inc storage)	Dispersed. Notional area.	322	522	199				Stated service requirement.	199
<b>Facilities/Infrastructure Support Services</b>									
Main Entrance / Public Spaces	Not fit for purpose.	174	201	27			27		
Main Kitchen	Out sourced. Poor service.	0	513	513			513		
Coffee Rooms	Not fit for purpose.	114	159	45		Provide space for staff outwith patient areas.	45		
E-Health	Partial amalgamation with RIE facility.	148	15	-133					-133
Domestic		36	50	14			14		
Materials Management			71	71			71		

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Department	CURRENT FACILITY		PLANNED	Difference	% Change	SERVICE DEVELOPMENT		SERVICE REDESIGN	
	Background	Area	Area			Explanation	Area	Explanation	Area
Staff Changing Estates	Not fit for purpose.	232 615	320 306	88 -309		Offices combined with existing RIE area.			88 -309
Bed Store	Area of existing facility not provided. Storage inadequate. Therefore some currently stored in corridors as well as basement store.	0	70	70			70		
<b>Patient/Family Support</b> Bereavement/Spiritual & Pastoral Care	Lack of bereavement facilities currently in split accommodation	52	115	63			63		
<b>MAIN BUILDING TOTALS</b>		<b>17,453</b>	<b>19,708</b>	<b>2,256</b>	<b>12.9%</b>		<b>4,821</b>		<b>- 2,565</b>
<b>FAMILY HOTEL</b> Parents Hotel	Dispersed. Not sufficient.	555	1,272	717			717		
Support Accommodation		372	409	37			37		
<b>FAMILY HOTEL TOTALS</b>		<b>927</b>	<b>1,681</b>	<b>754</b>	<b>81.3%</b>		<b>754</b>		
<b>OVERALL TOTAL</b>		<b>18,380</b>	<b>21,389</b>	<b>3,009</b>	<b>16.4%</b>				

All schedules have been based on relevant Health Building Notes (HBN) or Scottish Health Planning Notes (SHPN) where these are available

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 13: FINANCIAL ANALYSIS**
**13.2 Accommodation Schedule Summary**

Ref.	Department	Net Area (m <sup>2</sup> )	Planning (m <sup>2</sup> )	%	Engineering (m <sup>2</sup> )	%	Circulation (m <sup>2</sup> )	%	Total Area (m <sup>2</sup> )	Beds
	<b>MAIN BUILDING</b>									
<b>1.00</b>	<b>Front Door / A&amp;E / Assessment</b>									
	Accident & Emergency Dept (12 trolleys)	897.50	44.88	5	26.93	3	296.18	33	1,265.48	
	Assessment Ward	1,033.25	51.66	5	31.00	3	309.98	30	1,425.89	37
	<b>Sub-total</b>	<b>1,930.75</b>	<b>96.54</b>		<b>57.92</b>		<b>606.15</b>		<b>2,691.36</b>	
<b>2.00</b>	<b>Critical Care / HDU / Neonatal Surgery</b>									
	PICU / HDU's	1,406.50	70.33	5	42.20	3	421.95	30	1,940.97	24
	<b>Sub-total</b>	<b>1,406.50</b>	<b>70.33</b>		<b>42.20</b>		<b>421.95</b>		<b>1,940.97</b>	
<b>3.00</b>	<b>In Patient Pathway / Ward Care</b>									
	Generic In Patient Accommodation	1,608.75	80.44	5	48.26	3	434.36	27	2,171.81	46
	Home in Hospital	109.25	5.46	5	3.28	3	32.78	30	150.77	4
	Haematology / Oncology incl TCU	640.00	32.00	5	19.20	3	172.80	27	864.00	15
	Adolescent Accommodation	465.00	23.25	5	13.95	3	116.25	25	618.45	13
	Neurophysiology	209.50	10.48	5	6.29	3	52.38	25	278.64	
	Sleep Lab	72.00	3.60	5	2.16	3	19.44	27	97.20	
	School	131.50	6.58	5	3.95	3	32.88	25	174.90	
	<b>Sub-total</b>	<b>3,236.00</b>	<b>161.80</b>		<b>97.08</b>		<b>860.88</b>		<b>4,355.76</b>	

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Ref.	Department	Net Area (m <sup>2</sup> )	Planning (m <sup>2</sup> )	%	Engineering (m <sup>2</sup> )	%	Circulation (m <sup>2</sup> )	%	Total Area (m <sup>2</sup> )	Beds
<b>4.00</b>	<b>Out Patient Departments / Medical Day Care</b>									
	Out Patient Departments	974.40	48.72	5	29.23	3	302.06	31	1,354.42	
	ECG & Respiratory	163.00	8.15	5	4.89	3	40.75	25	216.79	
	Ophthalmology	153.50	7.68	5	4.61	3	38.38	25	204.16	
	Audiology	242.00	12.10	5	7.26	3	60.50	25	321.86	
	Therapies	1,305.00	65.25	5	39.15	3	287.10	22	1,696.50	
	Social Work	102.50	5.13	5	3.08	3	30.75	30	141.45	
	Medical Day Case Unit	291.75	14.59	5	8.75	3	72.94	25	388.03	5
	<b>Sub-total</b>	<b>3,232.15</b>	<b>161.61</b>		<b>96.96</b>		<b>832.48</b>		<b>4,323.20</b>	
<b>5.00</b>	<b>Theatres / Anaesthetics / Day Surgery</b>									
	Operating Theatres & SDCU	1,829.38	91.47	5	54.88	3	457.34	25	2,433.07	15
	Dental	144.00	7.20	5	4.32	3	36.00	25	191.52	
	<b>Sub-total</b>	<b>1,973.38</b>	<b>98.67</b>		<b>59.20</b>		<b>493.34</b>		<b>2,624.59</b>	
<b>6.00</b>	<b>Child and Adolescent Mental Health (CAMHS)</b>									
	Young Peoples Unit, including Forteviot	1,412.00	70.60	5	42.36	3	353.00	25	1,877.96	16
	<b>Sub-total</b>	<b>1,412.00</b>	<b>70.60</b>		<b>42.36</b>		<b>353.00</b>		<b>1,877.96</b>	
<b>7.00</b>	<b>Clinical Support</b>									
	Radiology/Imaging	1,108.50	55.43	5	33.26	3	299.30	27	1,496.48	
	Pharmacy	156.00	7.80	5	4.68	3	42.12	27	210.60	
	Medical Photography	81.50	4.08	5	2.45	3	22.01	27	110.03	
	Equipment Library	45.00	2.25	5	1.35	3	11.25	25	59.85	
	Bed Store	70.00	3.50	5	2.10	3	18.90	27	94.50	
	<b>Sub-total</b>	<b>1,461.00</b>	<b>73.05</b>		<b>43.83</b>		<b>393.57</b>		<b>1,971.45</b>	



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Ref.	Department	Net Area (m <sup>2</sup> )	Planning (m <sup>2</sup> )	%	Engineering (m <sup>2</sup> )	%	Circulation (m <sup>2</sup> )	%	Total Area (m <sup>2</sup> )	Beds
<b>8.00</b>	<b>C &amp; YP Services in the Community</b>									
	Community Paediatrics	366.50	18.33	5	11.00	3	91.63	25	487.45	
	<b>Sub-total</b>	<b>366.50</b>	<b>18.33</b>		<b>11.00</b>		<b>91.63</b>		<b>487.45</b>	
<b>9.00</b>	<b>Academic</b>									
	Child Life and Health	446.50	22.33	5	13.40	3	111.63	25	593.85	
	Clinical Research	143.50	7.18	5	4.31	3	35.88	25	190.86	
	Library	75.50	3.78	5	2.27	3	18.88	25	100.42	
	Clinical Skills & School of CP (NHS Lothian)	332.50	16.63	5	9.98	3	83.13	25	442.23	
	<b>Sub-total</b>	<b>998.00</b>	<b>49.90</b>		<b>29.94</b>		<b>249.50</b>		<b>1,327.34</b>	
<b>10.00</b>	<b>Office/Admin Support Services</b>									
	Consultant/Secy/CNS Offices	1,203.00	60.15	5	36.09	3	300.75	25	1,599.99	
	CAMHS - Offices	91.00	4.55	5	2.73	3	22.75	25	121.03	
	Community Children's Nurses	55.00	2.75	5	1.65	3	13.75	25	73.15	
	Health Record Workspace	71.50	3.58	5	2.15	3	17.88	25	95.10	
	Health Record Storage (live notes)	450.00	22.50	5	13.50	3	45.00	10	531.00	
	<b>Sub-total</b>	<b>1,870.50</b>	<b>93.53</b>		<b>56.12</b>		<b>400.13</b>		<b>2,420.27</b>	
<b>11.00</b>	<b>Facilities/Infrastructure Support Services</b>									
	Main Entrance / Public Spaces	200.50	10.03	5	6.02	3	50.13	25	266.67	
	Main Kitchen	513.00	25.65	5	15.39	3	128.25	25	682.29	
	Coffee Rooms	159.00	7.95	5	4.77	3	39.75	25	211.47	
	E Health	15.00	0.75	5	0.45	3	3.75	25	19.95	
	Domestic	50.00	2.50	5	1.50	3	12.50	25	66.50	
	Materials Management	70.50	3.53	5	2.12	3	17.63	25	93.77	
	Staff Changing	320.00	16.00	5	9.60	3	80.00	25	425.60	

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Ref.	Department	Net Area (m <sup>2</sup> )	Planning (m <sup>2</sup> )	%	Engineering (m <sup>2</sup> )	%	Circulation (m <sup>2</sup> )	%	Total Area (m <sup>2</sup> )	Beds
12.00	Estates	306.00	15.30	5	9.18	3	76.50	25	406.98	
	<b>Sub-total</b>	<b>1,634.00</b>	<b>81.70</b>		<b>49.02</b>		<b>408.50</b>		<b>2,173.22</b>	
	<b>Patient/Family Support</b>									
	Bereavement	42.75	2.14	5	1.28	3	10.69	25	56.86	
	Spiritual & Pastoral Care	72.50	3.63	5	2.18	3	18.13	25	96.43	
	On-Call Suite	72.00	3.60	5	2.16	3	18.00	25	95.76	
	<b>Sub-total</b>	<b>187.25</b>	<b>9.36</b>		<b>5.62</b>		<b>46.81</b>		<b>249.04</b>	
<b>Total Internal Floor Areas</b>	<b>19,708.03</b>	<b>985.40</b>	<b>5</b>	<b>591.24</b>	<b>3</b>	<b>5,157.93</b>	<b>26.2</b>	<b>26,442.60</b>		
	Add 5% for communication/ departmental circulation	26,442.60	0	0	0	0	1,322.13	5	1,322.13	
	<b>FAMILY HOTEL</b>									
	Family Accommodation (inc Family Support etc)	1,681.00	84.05	5	50.43	3	420.25	25	2,235.73	
	<b>Sub-total</b>	<b>1,681.00</b>	<b>84.05</b>		<b>50.43</b>		<b>420.25</b>		<b>2,235.73</b>	
	<b>OVERALL FLOOR AREA</b>	<b>21,389.03</b>	<b>1,069.45</b>		<b>641.67</b>		<b>6,900.31</b>		<b>30,000.46</b>	<b>175</b>



**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN  
EDINBURGH  
APPENDICES**

**SECTION 13: FINANCIAL ANALYSIS**

**13.3 Outline of Trustee Interests and Schedules**

**NHS Lothian, Children’s Services, RHSC – Properties: Main Site**

<b>No</b>	<b>NAME &amp; ADDRESS OF PROPERTY</b>	<b>OWNERSHIP</b>	<b>CURRENT USE</b>
1	Royal Hospital for Sick Children 9 Sciennes Road Edinburgh	NHS Lothian	Clinical Services
2	Royal Hospital for Sick Children 20 Sylvan Place Edinburgh	NHS Lothian	University of Edin – Child Life & Health – no formal lease in existence
3	<b>Rillbank Terrace (Terraced Properties)</b> 1 Rillbank Terrace (Basement, Ground & Second Floors) 8,9,14,15,16,17 &18 Rillbank Terrace Edinburgh EH9	NHS Lothian	Management Services, Support Services & Outpatients (8 & 9 RBT)
4	<b>Rillbank Crescent (Terraced Properties)</b> 2 Rillbank Terrace	NHS Lothian	Lab services
5	<b>Millerfield Place (Terraced Properties)</b> 12,16,17,18,19 & 21 Millerfield Place Edinburgh EH9	NHS Lothian	Support Accom
6	<b>Rillbank Terrace (Terraced Properties)</b> 1 Rillbank Terr – first floor 2,3,4,5,6 & 7 Rillbank Terr	RHSC Endowment Trustees	Therapy OPD & Offices, Admin
7	<b>Millerfield Place (Terraced Properties)</b> 11,13,14,15,20 Millerfield Place Edinburgh	RHSC Endowment Trustees	Support Accom, Parents Accom
8	<b>21A Millerfield Place</b> Basement Property	Lothian Health Endowments	Leased to Stepping Stones Nursery

**Outlying Properties**

1	10 Chalmers Crescent Edinburgh	NHS Lothian	Comm Child Health Admin
2	Forteviot 14 –16 Hope Terr Edinburgh	NHS Lothian	CAMHS + School served by CEC
3	25 Hatton Place Edinburgh, EH9	NHS Lothian	Comm Child Health Admin

**NHS Lothian  
 REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN  
 EDINBURGH  
 APPENDICES**

**Endowment Properties**

<b>Address</b>	<b>Use</b>	<b>Owner</b>
25 Hatton Place	Community Child Health Information Systems	RHSC Endowments Trustees
1 Rillbank Terrace – first floor only	Management Services (Directorate Nursing Admin/Medical Staffing/Conference Room)	RHSC Endowments Trustees
2&3 Rillbank Terrace	Child & Family Mental Health – LPCT Service	RHSC Endowments Trustees
4, 5,6 & 7 Rillbank Terrace	Therapy Dept (Physio, OT & Speech) offices & clinical accommodation	RHSC Endowments Trustees
1 & 3 Rillbank Crescent	Laboratories (Haematology & Biochemistry)	RHSC Endowments Trustees
4 Rillbank Crescent	Social Work	RHSC Endowments Trustees
11 Millerfield Place	RHSC Day Nursery	RHSC Endowments Trustees
13 Millerfield	Staff Changing	RHSC Endowments Trustees
14 Millerfield Place	Doctor’s Residency	RHSC Endowments Trustees
15 Millerfield Place	Parents Unit	RHSC Endowments Trustees
20 Millerfield – 1 <sup>st</sup> floor flat North 1 <sup>st</sup> floor flat South  2 <sup>nd</sup> floor flat North 2 <sup>nd</sup> floor flat South	IT Dept SKFF & Manual Handling Parents Flat IT Projects & Therapy Inclusion Team	RHSC Endowments Trustees
21A Millerfield Place (basement flat)	Stepping Stones Nursery – commercial business	Lothian Health Endowments Trustees

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 13: FINANCIAL ANALYSIS**

**13.4 Existing Asset Profile**

Information withheld in concurrence with  
Scottish Procurement Directorate Freedom of  
Information guidance (Dec 2004) - Page 11

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 13: FINANCIAL ANALYSIS**

**13.5 Optimism Bias Calculation**

**Optimism Bias - Upper Bound Calculation for Do Minimum Option**

Lowest % Upper Bound	13%
Mid %	40%
Upper %	80%
Actual % Upper Bound for this project	45%

**Build complexity**

*Choose 1 category* **X**

<i>Length of Build</i>	< 2 years		0.50%	0
	2 to 4 years	X	2.00%	2.00%
	Over 4 years		5.00%	0

*Choose 1 category*

<i>Number of phases</i>	1 or 2 Phases		0.50%	0
	3 or 4 Phases		2.00%	0
	More than 4 Phases	X	5.00%	5.00%

*Choose 1 Category*

<i>Number of sites involved (i.e. before and after change)</i>	Single site*	X	2.00%	2.00%
	2 Site		2.00%	0

**Scope of scheme**

*Choose 1 category* **X**

Facilities Management	Hard FM only or no FM	X	0.00%	0.00%
	Hard and soft FM		2.00%	0

*Choose 1 category*

Equipment	Group 1 & 2 only	X	0.50%	0.50%
	major Medical equipment		1.50%	0
	All equipment included		5.00%	0

*Choose 1 category*

IT	No IT implications		0.00%	0
	Infrastructure	X	1.50%	1.50%
	Infrastructure & systems		5.00%	0

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

More than 2 site	5.00% <sup>0</sup>
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\* Single site means new build is on same site as existing facilities

### Location

*Choose 1 Category*

New site - Green field	New build		3%		0
New site - Brown Field	New Build		8%		0
Existing site	New Build		5%		0
<i>or</i>					
Existing site	Less than 15% refurb		6%		0
Existing site	15% - 50% refurb		10%		0
Existing site	Over 50% refurb	X	16%		16.00%
					<b>25.00%</b>

*Choose more than 1 category if applicable*

External Stakeholders	1 or 2 local NHS organisations		1.00%		0
	3 or more NHS organisations		4.00%		0
	Universities/Private/Voluntary sector/Local government	X	8.00%		8.00%

### Service changes - relates to service delivery e.g. NSF's

*Choose 1 category*

Stable environment, i.e. no change to service		5%		0
Identified changes not quantified	X	10%		10.00%
Longer time frame service changes		20%		0

### Gateway

*Choose 1 category*

RPA Score	Low	X	0%		0.00%
	Medium		2%		0
	High		5%		0
					<b>20.00%</b>

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**Optimism Bias - Upper Bound Calculation for Little France Option**

Lowest % Upper Bound	13%
Mid %	40%
Upper %	80%
Actual % Upper Bound for this project	31%

**Build complexity**

*Choose 1 category* **X**

<i>Length of Build</i>	< 2 years	<input type="checkbox"/>	0.50%	2.00%
	2 to 4 years	<input checked="" type="checkbox"/>	2.00%	
	Over 4 years	<input type="checkbox"/>	5.00%	

*Choose 1 category*

<i>Number of phases</i>	1 or 2 Phases	<input checked="" type="checkbox"/>	0.50%	0.50%
	3 or 4 Phases	<input type="checkbox"/>	2.00%	
	More than 4 Phases	<input type="checkbox"/>	5.00%	

*Choose 1 Category*

<i>Number of sites involved (i.e. before and after change)</i>	Single site*	<input type="checkbox"/>	2.00%	2.00%
	2 Site	<input checked="" type="checkbox"/>	2.00%	
	More than 2 site	<input type="checkbox"/>	5.00%	

\* Single site means new build is on same site as existing facilities

**Scope of scheme**

*Choose 1 category* **X**

Facilities Management	Hard FM only or no FM	<input checked="" type="checkbox"/>	0.00%	0.00%
	Hard and soft FM	<input type="checkbox"/>	2.00%	

*Choose 1 category*

Equipment	Group 1 & 2 only	<input checked="" type="checkbox"/>	0.50%	0.50%
	major Medical equipment	<input type="checkbox"/>	1.50%	
	All equipment included	<input type="checkbox"/>	5.00%	

*Choose 1 category*

IT	No IT implications	<input type="checkbox"/>	0.00%	1.50%
	Infrastructure	<input checked="" type="checkbox"/>	1.50%	
	Infrastructure & systems	<input type="checkbox"/>	5.00%	

*Choose more than 1 category if applicable*

External Stakeholders	1 or 2 local NHS organisations	<input type="checkbox"/>	1.00%	0
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**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN  
EDINBURGH  
APPENDICES**

**Location**

*Choose 1 Category*

<i>New site - Green field</i>	New build		3%	0
<i>New site - Brown Field</i>	New Build		8%	0
<i>Existing site</i>	New Build		5%	0
<i>or</i>				
<i>Existing site</i>	Less than 15% refurb	X	6%	6.00%
<i>Existing site</i>	15% - 50% refurb		10%	0
<i>Existing site</i>	Over 50% refurb		16%	0
				<b>10.50%</b>

3 or more NHS organisations		4.00%	0
Universities/Private/Voluntary sector/Local government	X	8.00%	8.00%

**Service changes - relates to service delivery e.g. NSF's**

*Choose 1 category*

Stable environment, i.e. no change to service		5%	0
Identified changes not quantified	X	10%	10.00%
Longer time frame service changes		20%	0

**Gateway**

*Choose 1 category*

RPA Score	Low	X	0%	0.00%
	Medium		2%	0
	High		5%	0
				<b>20.00%</b>



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**Optimism Bias - Upper Bound Calculation for St John's Option**

Lowest % Upper Bound	<b>13%</b>
Mid %	<b>40%</b>
Upper %	<b>80%</b>
Actual % Upper Bound for this project	<b>36%</b>

<b>Build complexity</b>			
<i>Choose 1 category</i>		<b>X</b>	
<i>Length of Build</i>	< 2 years		0.50% <sup>0</sup>
	2 to 4 years	X	2.00% <sup>2.00%</sup>
	Over 4 years		5.00% <sup>0</sup>
<i>Choose 1 category</i>			
<i>Number of phases</i>	1 or 2 Phases		0.50% <sup>0</sup>
	3 or 4 Phases	X	2.00% <sup>2.00%</sup>
	More than 4 Phases		5.00% <sup>0</sup>
<i>Choose 1 Category</i>			
<i>Number of sites involved (i.e. before and after change)</i>	Single site*		2.00% <sup>0</sup>
	2 Site	X	2.00% <sup>2.00%</sup>
	More than 2 site		5.00% <sup>0</sup>
* Single site means new build is on same site as existing facilities			

<b>Scope of scheme</b>			
<i>Choose 1 category</i>		<b>X</b>	
Facilities Management	Hard FM only or no FM	X	0.00% <sup>0.00%</sup>
	Hard and soft FM		2.00% <sup>0</sup>
<i>Choose 1 category</i>			
Equipment	Group 1 & 2 only	X	0.50% <sup>0.50%</sup>
	major Medical equipment		1.50% <sup>0</sup>
	All equipment included		5.00% <sup>0</sup>
<i>Choose 1 category</i>			
IT	No IT implications		0.00% <sup>0</sup>
	Infrastructure	X	1.50% <sup>1.50%</sup>
	Infrastructure & systems		5.00% <sup>0</sup>
<i>Choose more than 1 category if applicable</i>			
External Stakeholders	1 or 2 local NHS organisations		1.00% <sup>0</sup>

**NHS Lothian  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN  
EDINBURGH  
APPENDICES**

**Location**

*Choose 1 Category*

<i>New site - Green field</i>	New build		3%	0
<i>New site - Brown Field</i>	New Build		8%	0
<i>Existing site</i>	New Build		5%	0
<i>or</i>				
<i>Existing site</i>	Less than 15% refurb		6%	0
<i>Existing site</i>	15% - 50% refurb	X	10%	10.00%
<i>Existing site</i>	Over 50% refurb		16%	0

**16.00%**

3 or more NHS organisations		4.00%	0
Universities/Private/Voluntary sector/Local government	X	8.00%	8.00%

**Service changes - relates to service delivery e.g. NSF's**

*Choose 1 category*

Stable environment, i.e. no change to service		5%	0
Identified changes not quantified	X	10%	10.00%
Longer time frame service changes		20%	0

**Gateway**

*Choose 1 category*

RPA Score	Low	X	0%	0.00%
	Medium		2%	0
	High		5%	0

**20.00%**

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**Mitigation Factors Calculation for Do Minimum Option**

Contributory Factor to Upper Bound	% Factor Contributes	% Factor Contributes after mitigation	Explanation for rate of mitigation
Progress with Planning Approval	4	4	Application not initiated.
Other Regulatory	4	4	Applications not initiated.
Depth of surveying of site/ground information	3	2	Existing site. Information available. No external changes.
Detail of design	4	3	Estates Survey report.
Innovative project/design (i.e. has this type of project/design been undertaken before)	3	1.9	Redesign of service will require some innovation.
Design complexity	4	1.5	Constrained by available space and layout of building.
Likely variations from Standard Contract	2	1.9	Very early stage in process. Procurement decisions to be made.
Design Team capabilities	3	1.9	Intelligent client. Brief/selection process should result in competent team.
Contractors' capabilities (excluding design team covered above)	2	1	Intelligent client. Brief/selection process should result in competent contractor.
Contractor Involvement	2	2	Very early stage in process. Procurement decisions to be made.
Client capability and capacity (NB do not double count with design team capabilities)	6	1.5	Very good in house experience and capability and full project team in place. Less complex project than other two options.
Robustness of Output Specification	25	10	Operational policies being developed. Less complex project than other two options.
Involvement of Stakeholders, including Public and Patient Involvement	5	1	Project management has emphasis on major involvement.
Agreement to output specification by stakeholders	5	2.9	Project management has emphasis on major involvement.
New service or traditional	3	1.9	Impact of redesign will change shape of service.
Local community consent	3	1	Lot of consultation to achieve buy-in.
Stable policy environment	20	5.8	Generally stable but national policies may have an impact.
Likely competition in the market for the project	2	2	Very early stage in process. Smaller scale may impact on level of competition.
<b>TOTAL</b>	<b>100</b>	<b>49.3</b>	

Therefore the optimism bias for the Do Minimum option is as follows:

49.3% of 45%

22.19%

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**Mitigation Factors Calculation for Little France Option**

Contributory Factor to Upper Bound	% Factor Contributes	% Factor Contributes after mitigation	Explanation for rate of mitigation
Progress with Planning Approval	4	4	Application not initiated.
Other Regulatory	4	4	Applications not initiated.
Depth of surveying of site/ground information	3	2	Existing site. Information available.
Detail of design	4	2.9	1:500 plans drawn up.
Innovative project/design (i.e. has this type of project/design been undertaken before)	3	1.9	Redesign of service will require some innovation.
Design complexity	4	1.9	Redesign of service will require some innovation.
Likely variations from Standard Contract	2	1.9	Very early stage in process. Procurement decisions to be made.
Design Team capabilities	3	1.9	Intelligent client. Brief/selection process should result in competent team.
Contractors' capabilities (excluding design team covered above)	2	1	Intelligent client. Brief/selection process should result in competent contractor.
Contractor Involvement	2	2	Very early stage in process. Procurement decisions to be made.
Client capability and capacity (NB do not double count with design team capabilities)	6	1.9	Very good in house experience and capability and full project team in place.
Robustness of Output Specification	25	11.6	Operational policies being developed.
Involvement of Stakeholders, including Public and Patient Involvement	5	1	Project management has emphasis on major involvement.
Agreement to output specification by stakeholders	5	2.9	Project management has emphasis on major involvement.
New service or traditional	3	1.9	Impact of redesign will change shape of service.
Local community consent	3	1	Lot of consultation to achieve buy-in.
Stable policy environment	20	5.8	Generally stable but national policies may have an impact.
Likely competition in the market for the project	2	1.9	Very early stage in process.
<b>TOTAL</b>	<b>100</b>	<b>51.5</b>	

Therefore the optimism bias for the Little France option is as follows:

51.5% of 31%

15.97%

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**Mitigation Factors Calculation for St John's Option**

Contributory Factor to Upper Bound	% Factor Contributes	% Factor Contributes after mitigation	Explanation for rate of mitigation
Progress with Planning Approval	4	4	Application not initiated.
Other Regulatory	4	4	Applications not initiated.
Depth of surveying of site/ground information	3	2	Existing site. Information available.
Detail of design	4	2.9	1:500 plans drawn up.
Innovative project/design (i.e. has this type of project/design been undertaken before)	3	1.9	Redesign of service will require some innovation.
Design complexity	4	1.9	Redesign of service will require some innovation.
Likely variations from Standard Contract	2	1.9	Very early stage in process. Procurement decisions to be made.
Design Team capabilities	3	1.9	Intelligent client. Brief/selection process should result in competent team.
Contractors' capabilities (excluding design team covered above)	2	1	Intelligent client. Brief/selection process should result in competent contractor.
Contractor Involvement	2	2	Very early stage in process. Procurement decisions to be made.
Client capability and capacity (NB do not double count with design team capabilities)	6	1.9	Very good in house experience and capability and full project team in place.
Robustness of Output Specification	25	11.6	Operational policies being developed.
Involvement of Stakeholders, including Public and Patient Involvement	5	1	Project management has emphasis on major involvement.
Agreement to output specification by stakeholders	5	2.9	Project management has emphasis on major involvement.
New service or traditional	3	1.9	Impact of redesign will change shape of service.
Local community consent	3	1	Lot of consultation to achieve buy-in.
Stable policy environment	20	5.8	Generally stable but national policies may have an impact.
Likely competition in the market for the project	2	1.9	Very early stage in process.
<b>TOTAL</b>	<b>100</b>	<b>51.5</b>	

Therefore the optimism bias for the St John's option is as follows:

51.5% of 36%

18.54%

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## SECTION 14: RISK ANALYSIS

### 14.1 Risk Register

Ref	Category	Risk Description	DO MINIMUM				LITTLE FRANCE				ST JOHN'S			
			Prob	Impact	Risk Rating		Prob	Impact	Risk Rating		Prob	Impact	Risk Rating	
1	ADVERSE PUBLICITY	<b>Management of Expectations</b> Planned facilities does not meet expectations of public, staff, clinicians, NHS and Council strategies, etc. Reputation & Service Delivery Impact.	5	4	20	VERY HIGH	3	4	12	HIGH	5	4	20	VERY HIGH
2	ADVERSE PUBLICITY	<b>Communication</b> Lack of awareness of project by general public and /or internal/external stakeholders.	3	3	9	MEDIUM	3	3	9	MEDIUM	3	3	9	MEDIUM
3	FINANCIAL	<b>Decision Making</b> Decision making process causes delays to timetable.	3	4	12	HIGH	3	4	12	HIGH	3	4	12	HIGH
4	FINANCIAL	<b>Medical Technology</b> Unexpected changes in medical technology	3	5	15	HIGH	3	4	12	HIGH	3	4	12	HIGH
5	FINANCIAL	<b>Infection Control</b> Change in infection control requirements causes delays and adds cost.	3	4	12	HIGH	3	4	12	HIGH	3	4	12	HIGH
6	FINANCIAL	<b>Single Room Provision</b> Current plan to have 50% single room provision is not accepted by SG. Proposed statutory change to 100% single rooms in all new hospital developments	4	5	20	VERY HIGH	3	4	12	HIGH	3	4	12	HIGH

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

7	FINANCIAL	<b>NHS Scotland - Funding</b> NHS Scotland (SEAT Boards) can no longer affords hospital development projects, or for other reasons cancels this project.	3	5	15	HIGH	1	5	5	MEDIUM	1	5	5	MEDIUM
8	FINANCIAL	<b>Charitable Funding</b> The budgeted level of charitable funding from SKFF and other sources is overstated or there is a delay in obtaining the budgeted level of funding.	2	4	8	MEDIUM	2	4	8	MEDIUM	3	4	12	HIGH
9	FINANCIAL	<b>Equipment Fit-Out Time Understated</b> The timetable for fit-out is not met due to the late delivery of equipment or protracted commissioning or other reasons.	1	4	4	MEDIUM	1	4	4	MEDIUM	1	4	4	MEDIUM
10	FINANCIAL	<b>Fit-Out Funding</b> Insufficient funds are available for fit-out due to equipment inflation being understated or assumptions re LMERG being too optimistic.	5	4	20	VERY HIGH	2	4	8	MEDIUM	2	4	8	MEDIUM
11	FINANCIAL	<b>Design Changes</b> Changes in design e.g. as a result of either NHS Lothian changes to the brief and/or external influences, including legislative and regulatory changes.	3	4	12	HIGH	3	4	12	HIGH	3	4	12	HIGH
12	FINANCIAL	<b>Statutory Approvals</b> Failure or delay in obtaining planning approval/building warrant/SEPA/Environmental or any other required approvals. Delay to start on site. Time and Cost Impact.	4	4	16	HIGH	3	4	12	HIGH	4	4	16	HIGH
13	FINANCIAL	<b>Contractor Approval</b> NHS Lothian and/or NHS Scotland delays tender approval leading to a delay in the start on site.	3	3	9	MEDIUM	3	3	9	MEDIUM	3	3	9	MEDIUM



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
**APPENDICES**

14	FINANCIAL	<b>Budget Costs - Site Conditions</b> Building cost understated due to discovering previously unknown underground services or contaminated ground etc.	3	4	12	HIGH	2	4	8	MEDIUM	2	4	8	MEDIUM
15	FINANCIAL	<b>Building Programme - Length</b> Building programme duration allowed is inadequate.	3	4	12	HIGH	2	4	8	MEDIUM	2	4	8	MEDIUM
16	FINANCIAL	<b>Building Programme - Road(s)</b> Building programme is delayed because of effect on existing site and/or need to divert road or upgrade link roads.	2	2	4	MEDIUM	4	2	8	MEDIUM	4	2	8	MEDIUM
17	FINANCIAL	<b>Building Programme - Existing Buildings</b> Existing services/patients/traffic/parking and/or programme are disrupted by creation of access and/or building works.	5	4	20	VERY HIGH	4	2	8	MEDIUM	4	2	8	MEDIUM
18	FINANCIAL	<b>Contractor Ceases Trading</b> Contractor or one of the sub-contractors ceases trading before building work is complete.	2	5	10	HIGH	2	5	10	HIGH	2	5	10	HIGH
19	FINANCIAL	<b>Design Team Member Ceases Trading</b> Member of design team ceases trading before building work is complete.	2	5	10	HIGH	2	5	10	HIGH	2	5	10	HIGH
20	FINANCIAL	<b>Car Parking</b> Building project delayed due to protracted discussions on replacement car parking provision.	2	4	8	MEDIUM	3	4	12	HIGH	4	4	16	HIGH
21	FINANCIAL	<b>Existing Facility Changes</b> Changes to existing facilities required to support new RHSC understated due to specification being inadequate or delay in reaching conclusion in Consort negotiations.	1	4	4	MEDIUM	3	4	12	HIGH	1	4	4	MEDIUM

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
**APPENDICES**

22	FINANCIAL	<b>Decant from Existing RHSC Site (Sale of Site)</b> Delay in site sale or not realising anticipated income due to abnormals and market forces.	1	1	1	LOW	2	4	8	MEDIUM	2	4	8	MEDIUM
23	FINANCIAL	<b>Decant from Existing RHSC Site - Double Running.</b> Incorrect time and cost estimates for decanting from existing buildings.	4	3	12	HIGH	2	3	6	MEDIUM	2	3	6	MEDIUM
24	FINANCIAL	<b>Cost Increases</b> Costs underestimated & increase compared to budget during construction / operational phase.	3	4	12	HIGH	3	4	12	HIGH	3	4	12	HIGH
25	FINANCIAL	<b>Tender Documentation</b> Cost levels & quantities do not reflect scope of work.	3	4	12	HIGH	2	4	8	MEDIUM	2	4	8	MEDIUM
26	FINANCIAL	<b>Tender Costs</b> Tenders higher than expected.	3	4	12	HIGH	3	4	12	HIGH	3	4	12	HIGH
27	FINANCIAL	<b>Legal</b> Outstanding legal issues cause delay to timetable.	2	3	6	MEDIUM	4	3	12	HIGH	2	3	6	MEDIUM
28	INJURY	<b>Personal Injury</b> Injury to contractor's staff/visitors/patients/staff accessing the site before, during and after the build.	2	5	10	HIGH	1	5	5	MEDIUM	2	5	10	HIGH
29	OBJECTIVES/ PROJECT RISK	<b>Full Business Case</b> Full Business Case is not acceptable.	1	5	5	MEDIUM	1	5	5	MEDIUM	1	5	5	MEDIUM
30	OBJECTIVES/ PROJECT RISK	<b>Service Demand Planning</b> Modeling/assumptions re of future service demand prove to be incorrect and therefore requirement for facilities is incorrect leading to an under or over-provision of required facilities.	3	5	15	HIGH	3	5	15	HIGH	3	5	15	HIGH
31	STAFFING & COMPETENCE	<b>Workforce Sustainability</b> Ability to sustain workforce within specialist services.	4	4	16	HIGH	3	4	12	HIGH	3	4	12	HIGH

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

32	OBJECTIVES/ PROJECT RISK	<b>DCN Project</b> Potential impact on RHSC specialist services of failure to co- locate with DCN.	5	5	25	VERY HIGH	3	5	15	HIGH	4	5	20	VERY HIGH
33	PATIENT EXPERIENCE	<b>Design Inadequacy</b> Building design does not meet required design such as HSE/CDM/DDA guidelines and/or low energy targets.	4	4	16	HIGH	1	4	4	MEDIUM	1	4	4	MEDIUM
34	PATIENT EXPERIENCE	<b>Commissioning/Defects</b> Teething problems in new build facilities.	2	3	6	MEDIUM	2	3	6	MEDIUM	2	3	6	MEDIUM
35	OBJECTIVES/ PROJECT RISK	<b>eHealth Strategy</b> Inadequate IT & telecoms strategy in terms of network capacity leading too inefficient service delivery.	3	5	15	HIGH	2	5	10	HIGH	3	5	15	HIGH
36	PATIENT EXPERIENCE	<b>Infection</b> Patient infection caused by poor design.	3	4	12	HIGH	1	4	4	MEDIUM	1	4	4	MEDIUM
37	PATIENT EXPERIENCE	<b>Transport</b> Inadequate transport arrangements to support patients, staff & visitor access to redesigned services.	3	4	12	HIGH	2	4	8	MEDIUM	4	4	16	HIGH
38	OBJECTIVES/ PROJECT RISK	<b>Space Constraints</b> Lack of space on site for required facility.	5	4	20	VERY HIGH	2	4	8	MEDIUM	3	4	12	HIGH
39	OBJECTIVES/ PROJECT RISK	<b>Unclear Roles &amp; Responsibilities</b> Project management procedures unsuitable for a smooth running project, potential for unclear roles and responsibilities.	2	4	8	MEDIUM	2	4	8	MEDIUM	2	4	8	MEDIUM
40	STAFFING & COMPETENCE	<b>Recruitment &amp; Retention</b> High cost of living, workforce demographics and major change associated with redesign may impact on ability to recruit & retain staff.	3	4	12	HIGH	2	4	8	MEDIUM	3	4	12	HIGH

## NHS Lothian REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN EDINBURGH APPENDICES

41	STAFFING & COMPETENCE	<b>Staff to Deliver Re-designed Services</b> Inability to retrain existing staff to undertake new roles required for new models of care. Potential impact on staff turnover.	2	4	8	MEDIUM	2	4	8	MEDIUM	2	4	8	MEDIUM
42	STAFFING & COMPETENCE	<b>Consultant Work Plans</b> Review of Consultant work plans will not fully address delivering new models of care.	3	4	12	HIGH	3	4	12	HIGH	3	4	12	HIGH
43	STAFFING & COMPETENCE	<b>Service Delivery</b> Sustaining 24/7 delivery of key services.	2	4	8	MEDIUM	1	4	4	MEDIUM	1	4	4	MEDIUM
44	PATIENT EXPERIENCE	<b>Clinical Major Incident</b> Risk of major incident at time of transfer of service from old to new to new facility.	2	4	8	MEDIUM	1	4	4	MEDIUM	1	4	4	MEDIUM
45	STAFFING & COMPETENCE	<b>Culture</b> Retention of children's hospital staff profile 'v' integration with wider hospital community	1	4	4	MEDIUM	3	4	12	HIGH	3	4	12	HIGH
46	OBJECTIVES/ PROJECT RISK	<b>External Advisers</b> Risk of delays, creation of conflicting views through employment of large number of external advisers & involvement of large number of stakeholders.	3	4	12	HIGH	3	4	12	HIGH	3	4	12	HIGH
47	FINANCIAL	<b>Market Interest</b> Ability to attract sufficient level of competition among contractors.	3	4	12	HIGH	2	4	8	MEDIUM	2	4	8	MEDIUM
48	FINANCIAL	<b>Financial Savings</b> Duplication of savings assumed within business cases counted elsewhere e.g. within operational budgets (e.g. CRES)	3	3	9	MEDIUM	3	3	9	MEDIUM	3	3	9	MEDIUM
49	FINANCIAL	<b>Financial Affordability</b> Project does not meet affordability test e.g. due to increased capital charges	3	5	15	HIGH	2	5	10	HIGH	2	5	10	HIGH
		<b>OVERALL RISK SCORES</b>			<b>567</b>				<b>448</b>				<b>185</b>	



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## SECTION 14: RISK ANALYSIS

### 14.2 Risk Register – Management Actions

<b>Risk Description</b>	<b>Management Action</b>
<b>Management of Expectations</b> Planned facilities do not meet expectations of public, staff, clinicians, NHS and Council strategies, etc.	Design process and brief development. Involvement and engagement processes. Comms strategy.
<b>Decision Making</b> Decision making process causes delays to timetable.	Programmed meeting schedules. Planned meetings with Execs.
<b>Medical Technology</b> Unexpected changes in medical technology	Horizon scanning. Engage with clinical staff.
<b>Infection Control</b> Change in infection control requirements causes delays and adds cost.	Follow national policy and have consistent approach. Involve 'experts' in planning.
<b>Single Room Provision</b> Current plan to have 50% single room provision is not accepted by SG. Proposed statutory change to 100% single rooms in all new hospital developments	Formal challenge initiated jointly with Glasgow Project. Based on outcome of involvement and engagement process.
<b>NHS Scotland - Funding</b> NHS Scotland (SEAT Boards) can no longer afford hospital development projects, or for other reasons cancels this project.	Robust business case.
<b>Design Changes</b> Changes in design e.g. as a result of either NHS Lothian changes to the brief and/or external influences, including legislative and regulatory changes specific to NHS	Project management. Horizon scanning.
<b>Statutory Approvals</b> Failure or delay in obtaining planning approval/ building warrant/ SEPA/	Project management.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Environmental or any other required approvals. Delay to start on site.	
<b>Contractor Ceases Trading</b> Contractor or one of the sub-contractors ceases trading before building work is complete.	Carry out commercial checks.
<b>Design Team Member Ceases Trading</b> Member of design team ceases trading before building work is complete.	Carry out commercial checks.
<b>Car Parking</b> Building project delayed due to protracted discussions on replacement car parking provision.	Project management. Early masterplanning. 'Early' discussions with Consort.
<b>Existing Facility Changes</b> Costs/time required for changes to existing facilities required to support new RHSC understated.	Project management. Early masterplanning. 'Early' discussions with Consort.
<b>Cost Increases</b> Costs underestimated & increase compared to budget during construction / operational phase.	Project management.
<b>Tender Costs</b> Tenders higher than expected.	Regular management review. Project management.
<b>Revenue Costs (Workforce)</b> Staffing cost estimates understated e.g. Impact of Modernising Medical Careers etc not yet quantified.	Workforce planning.
<b>Legal</b> Outstanding legal issues cause delays to timetable.	Early discussions with Consort.
<b>Service Demand Planning</b> Modelling/assumptions re future service demand prove to be incorrect and therefore requirement for facilities is incorrect.	Robust activity modelling of future demand and bed requirements. Clearly articulated assumptions. Process established to refine assumptions as information becomes available. Focused review of high risk areas e.g. birth rate.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

<b>Workforce Sustainability</b> Ability to sustain workforce within specialist services.	Workforce planning.
<b>DCN Project</b> Potential impact on RHSC specialist services of failure to co-locate with DCN.	
<b>eHealth Strategy</b> Inadequate IT & telecoms strategy in terms of network capacity leading to inefficient service delivery.	Early involvement of eHealth team in planning processes. RHSC specific clinician led informatics group.
<b>Consultant Work Plans</b> Review of Consultant work plans will not fully address delivering new models of care.	Single system Lothian solution. Regional working. Robust management of job planning process.
<b>Culture</b> Retention of children's hospital staff profile 'v' integration with wider hospital community	Effective management before and during the transition period into new environment.
<b>External Advisers</b> Risk of delays, creation of conflicting views through employment of large number of external advisers & involvement of large number of stakeholders.	Regular management review. Project management.
<b>Financial Affordability</b> Project does not meet affordability test e.g. due to increased capital charges.	Regular management review. Project management.

**NHS LOTHIAN  
REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN  
EDINBURGH  
APPENDICES**



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## SECTION 15: PREFERRED OPTION

### 15.1 Capital Planning Assumptions

#### 1. Building Assumptions

Subject to design and site constraints, the hospital will be on 3 floors: Principal clinical adjacencies proposed following the redesign are:

- a) **Ground Floor:** Front door: A&E/Acute Paediatrics Admissions and Assessment area (PAA)/ Medical Day Case /Outpatients /Therapy suite / Radiology / Pharmacy
- b) **First Floor:** Theatre suite/Surgical Day Case Unit/Critical Care.
- c) **Second Floor:** In-patient facilities:  
Surgical/medical/neuroscience/adolescents/cancer unit
- d) **CAMHS Young Peoples Unit and Forteviot day unit** - It is proposed that these will be reprovided on the RHSC site. The YPU requires an external, secure recreation area with the majority of accommodation on the ground floor
- e) **A sustainable development** will be delivered, making best use of cost effective and efficient energy sources, minimised waste during construction and operation but reflecting the requirements of the clinical environment of an advanced teaching hospital. The opportunity exists for the reprovicion to adapt operational processes to meet the sustainable strategy.
- f) **The design approach** will be to reflect age appropriate care, clinical requirements and a supportive environment for patients, parents, visitors and staff. Key benefits of good design include:
  - i) Use of light;
  - ii) Views out-with and within to offer interest and diversion;
  - iii) Accessibility in to and from the hospital for all, including access to recreation and “green space”; shopping facilities and other support services in addition clinical requirements;
  - iv) Safety and security for all users of the building and its environment; and
  - v) The hospital in context of the locality and a developing community in the wider Little France area.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

All infection control policies and procedures will be taken account of when designing facilities and agreeing adjacencies.

- 2) The **Outpatient services** will be provided from one department divided into several suites of rooms. There are 23 rooms on Sciennes site at present. The working assumption for future build is 27 generic rooms, supported by a number of specialist rooms.
- 3) The **Medical Day Case** facility will be adjacent to this area.
- 4) **Inpatient Facilities**
  - a) At least 50% of the patient beds will be in single rooms with en-suite facilities and most will have a 'bed' for a parent to stay with the patient. The other patient beds will be in 4-bedded bays, with a few in 2-bedded bays.
  - b) The Medical, Neuroscience, Surgical and Adolescent areas will be adjacent so that there can be maximum flexibility of use of clinical areas, to minimise 'Boarding' of patients, and protect the individual speciality groupings.
  - c) There will be satellite therapy facilities close to or within the inpatient facilities, to support delivery of timeous and effective therapy services to inpatients.
  - d) There will be an area between the Medical Inpatient facility and the Neuroscience facility where patients having video-telemetry and sleep studies will be admitted. This area will be adjacent to the Neurophysiology department.
  - e) Patients who require long term complex health care (e.g. 24/7 ventilation or total parenteral nutrition) and who are clinically stable but not yet able to go home (with an agreed healthcare package) will be cared for in an area immediately adjacent to the Medical Inpatient facility, which is less clinical and more similar to a home environment, but with the required technical / clinical support and infrastructure.
- 5) **Theatre Facilities**
  - a) The theatre suite will be one integral clinical area including CEPOD and the Day Case Unit (DCU), which will enable the facility to work as effectively as possible.
  - b) There should be a single reception /admissions area, where all surgical patients (inpatients and day cases) will be admitted on the day of surgery.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Some Day Case patients (e.g. patients admitted for endoscopy procedures under anaesthetic), will require pre-operative preparation, and will require privacy and easy access to toilet facilities.

- c) A number of trolleys will be required in this area, for patients who have had sedation or pre-medication.
- d) 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 happens at present.
- e) There will be a post op day case facility with beds for the immediate post op period, and a discharge lounge appropriate for all ages of patients who have made initial recovery and awaiting discharge.

**6) Critical Care**

- a) This will be a complete facility, including PICU, Medical HDU and Surgical HDU, (which will incorporate a Burns Facility) and a Surgical Neonatal Unit.
- b) The Burns facility will include a large dressings facility, including waiting area, and with a large bath specifically for the use of burns patients having dressing changes. There will be access to cubicles within surgical HDU, immediately adjacent to PICU, which are of sufficient size to manage to patients with significant thermal injury.

**7) Clinical support**

**a) Radiology:**

- i) All children's radiology services will be provided in the footprint of the new C&YP's Hospital.
- ii) It is assumed that IT / tele-link / PACS will be in place and will support moving images & information and not the patient unless there is a clinical need.

**b) Labs:**

- i) Laboratory services will be provided from the RIE site, supported by a robust reliable pneumatic tube system between the buildings.
- ii) Near patient testing facilities will be provided in PICU (biochemistry / haematology) and possibly A&E (bacteriology).

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**c) Pharmacy:**

- i) The pharmacy store, procurement, in-patient dispensing, distribution, pre-packing and medicines information services will be provided from the main pharmacy facility in the RIE.
- ii) Dispensary services to the PAA, Outpatients and Day Case patients will be provided from a dispensary in the RHSC.
- iii) An option appraisal exercise requires to be undertaken to confirm the final configuration of the Aseptic Facility.

8) **Staff rest rooms** will not be provided at clinical level, except where staff require to change out of uniform to exit their facilities – e.g. theatres and Critical Care. Coffee rooms will be provided with an enhanced central dining room and associated facilities provided for the whole Little France hospital campus.

9) **Office Accommodation**

Will be calculated based on the following policy:

- a) Single person offices will be provided for staff with an operational management responsibility.
- b) Shared Office Space. Office accommodation for all other staff will be in shared spaces. There will be interview rooms available for counselling / confidential meetings/ communication.

This allocation has been developed based on HBN guidance and policies developed in a number of recent NHS developments.

- c) Staff will be expected to hot desk if their role is not full time administrative. In general hot desking will be applied on the basis that workspace provision will be based on 60% of the staffing in each department/team. However for specialities where the amount of desk time is significantly different from 60% a speciality specific percentage will be agreed and applied.
- 10) Medical equipment will be stored in the **equipment library** and not in ward areas except in the highly technical areas e.g. theatres, critical care and A&E.
- 11) There will be a **school** in the hospital that will provide appropriate facilities for ongoing schoolwork for patients, and where possible this will be linked electronically to their own school.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- 12) It is assumed that there will be a hydrotherapy pool on site at Little France for use by all the appropriate clinical services on site. This plan is being progressed by NHSL therapies and the Facilities Directorate. It is therefore not planned to provide a hydrotherapy pool in RHSC.
- 13) **Patient/Parent hotel**
- a) Parental and family accommodation will be provided at ward level as well as in specific 'hotel' facilities within the hospital site.
  - b) There will be a 40 'family' room Parent/Patient hotel on site, e.g. room suitable for 4 people. This facility will include a self-cook kitchen, and laundry facilities. Other family support facilities may be located within this facility e.g. Drop in Centre, SNIP, Bereavement & Family Support etc.
  - c) A recent survey showed an average of 71 parents staying at the Sciennes site per night with a range of 45-81.
- 14) **Spiritual Care**
- a) There will be a small Sanctuary provided in the RHSC for parents, patients and staff. Larger events will be held in the Sanctuary in the RIE.
  - b) It is planned to provide a temperature controlled room close to PICU and theatres, and central within the hospital, where bereaved parents and families may visit their child for up to a few days after death, as the mortuary and pathology services will be provided in the RIE.
- 15) **Site Constraints and Location**
- a) In order to achieve clinical linkages and service adjacencies the potential positioning of the new hospital requires a physical link to the RIE at some point. Where practical this will be directly with the hospital street or a reconfigured layout readily accessing the hospital street. Major reconfiguration of the existing RIE layout of clinical services is considered not to be practical or cost effective.
  - b) The footprint and massing of the hospital will be constrained by existing buildings, services and infrastructure. These include:
    - i) 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.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- ii) Utilities – the priority will be to utilise the capacity and accessibility of the existing power plant and servicing. Existing routes for drainage, water, gas, electricity and communications should be maintained, or diverted with no capacity downtime.
  - iii) Niddrie Burn and other watercourses – a key constraint to the south and east of the site, together with realignment plans by CEC to the east.
  - iv) Site Conditions – data from the RIE development and site investigations on the adjoining land is available, suggesting restrictions in some areas.
  - v) Car Parking – the maintenance during construction and in operation of sufficient car parking will require taking cognisance of the neighbouring developments and planning restrictions. Fully accessible and, where appropriate, managed car parking for the RHSC 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.
  - vi) Height – the current development plans include a development height restriction of three floors, based on sight lines from Old Dalkeith Road and maintaining the uninterrupted ridges of Craigmillar Castle and Edmonston. Any variation will require clear benefits in design.
  - vii) Emergency Helicopter Landing Pad – building and associated restrictions will require to be maintained.
- 16)** *It is proposed that there will be direct links between RHSC and the reprovided **Dept of Clinical Neurosciences**, particularly at Radiology and the Theatre Suite. However at present that has not reached this stage, and the RHSC will not include this – however, as plans are developed, this will be further considered – for example, the work completed to date by Pharmacy has taken account of the additional activity that would require to be managed by that service in future.*

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

**SECTION 15: PREFERRED OPTION**

**15.2 SCIM Forms OB1 to OB4**

**OUTLINE BUSINESS CASE FOR PREFERRED OPTION: COST FORM OB1**

<p>Information withheld in concurrence with          Scottish Procurement Directorate Freedom of          Information guidance (Dec 2004) - Page 11</p>			

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**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**PROGRAMME: COST FORM OB1 (CONT.)**

STAGE	DATE ENTERED IN FULL BUSINESS CASE:

Authorised by: ..... Project Director

**Notes:**



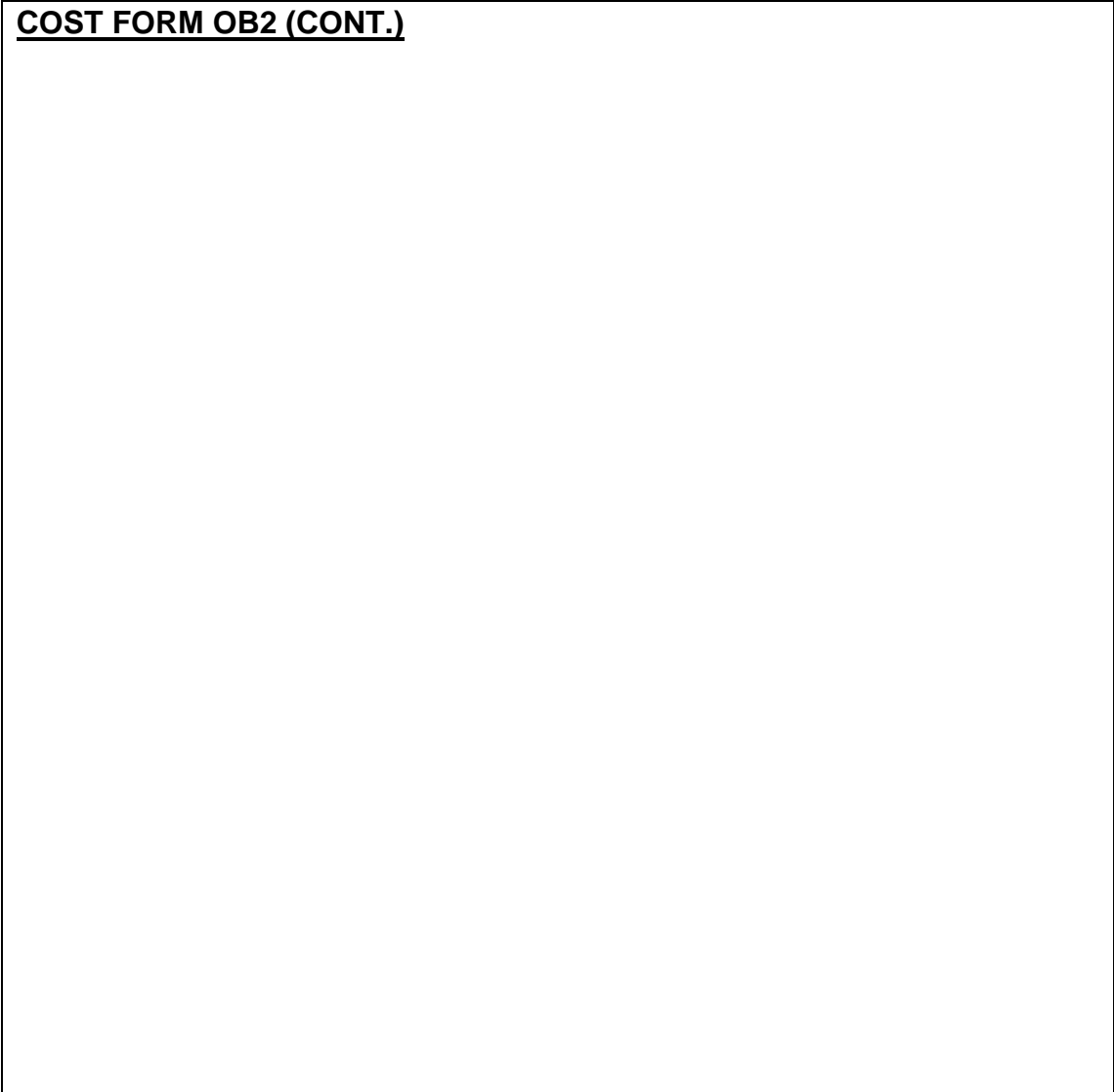
**NHS Lothian  
 REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN  
 EDINBURGH  
 APPENDICES**

**OUTLINE BUSINESS CASE FOR PREFERRED OPTION: COST FORM OB2**

Functional Content Equipment	Functional Units/ Space Requirement (1)	N/A/C/ (2)	DCG Schedule Date.....	Cost

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**COST FORM OB2 (CONT.)**



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**OUTLINE BUSINESS CASE FOR PREFERRED OPTION: COST FORM OB3**

CAPITAL COSTS: ON-COSTS

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**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

This form completed by:

**OUTLINE BUSINESS CASE FOR PREFERRED OPTION: COST FORM OB4**

CAPITAL COSTS: FEES AND NON-WORKS COSTS

		Percentage of Works Cost

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Notes:

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 15: PREFERRED OPTION**

**15.3: Discounted Cash Flow for Public Procurement Route**

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**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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**NHS Lothian  
 REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN  
 EDINBURGH  
 APPENDICES**

Year		Total Unitary Charge including Indexation

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## **SECTION 15: PREFERRED OPTION**

### **15.4 Facilities Overview**

The Facilities Directorate has responsibility for delivering a wide range of non-clinical support services namely:

- Estates
- Capital Planning & Premises Development
- Catering
- Domestic services
- Telecommunications
- Transport
- Porter services
- Security
- Waste Management Services

#### ***Estates***

The core function of the Estates Services are to provide clients, staff and visitors with a safe and comfortable environment that is fit for the intended purpose at all times within the parameters of the building design. Ensuring compliance with statutory requirements in relation to safe working practices and the operation of plant and equipment is critical. Maintaining records of all aforementioned activities as per good industry practice and related Health Technical Memoranda is also a key role.

The service is to be accredited to ISO9002, meeting necessary quality assurance requirements. The Estates team would be available 24/7 (365 days) and supplemented by term and specialist contractors as required.

A proactive asset management regime will be in operation consisting of a comprehensive pre-planned maintenance programme, reinforced by a reactive maintenance where breakdown of service occurs. Typical service provision covers the following individual services:

- Piped medical gases
- Heating and hot water services
- Ventilation and air conditioning
- Refrigeration plant
- Power and lighting (inc generation)
- Lifts
- Plumber services
- Security systems
- Fire detection systems
- Building fabric

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- Grounds and gardens
- Pneumatic tube systems
- R.O. water supplies
- Minor works; refurbishment issues
- Portable appliances

This list is indicative and should not be taken as absolute.

***Logistics Services***

Logistics is comprised of Portering, Security, Transport, Telecommunications, Waste Management and Car Parking and the rationale behind grouping these functions together is that they are in some shape or form concerned with the movement of products, visitors or patients within, through and out from the healthcare environment.

Logistics assists with the linking together of both clinical and non-clinical services to provide the visitor or patient with a seamless healthcare experience. The following functions are some of those carried out within the Logistics service disciplines:

- Patient movement internal and external
- Medical records movement within and between sites
- Patient meal delivery
- Waste removal, recycling and disposal
- Car park management
- Provision of security guard services
- Mail uplift and delivery
- Telephone services for both desktop and mobile phones including fault reporting and response
- Specimen uplift and delivery
- Linen distribution
- Physical relocation of department equipment
- Staff transport facilities

In addition technical advice is available on specialist areas such as Transport, Waste, Security and Telecommunications ensuring that NHS Lothian employs best practice and exceeds all relevant legislation in the provision of these services.

***Catering Services***

The Catering Services aims to deliver high quality catering for patients, staff and visitors which comprehensively and consistently meets the required national and local agreed nutritional standards. In addition where service opportunities permit the catering service will promote healthy choices to complement a healthy lifestyle. The service delivered to patients, staff and visitors will encompass recommendations from the Scottish Government,

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

underpinned by Quality Improvement Scotland Clinical Standards for Food, Fluid and Nutritional Care in Hospitals and will be delivered by professional staff committed to enhancing both the patient experience and further developing their own personal skills.

The following is a brief outline of areas which are encompassed within our service delivery:

- Nutritional care for patients
- Health & Safety
- Hazard Analysis Critical Control Point
- ISO 9001:2000
- Monitoring and review of service provision
- Waste management
- Financial control
- Best Value / Practice
- Procurement
- Sustainability
- Fair Trade
- Risk assessment
- Partnership consultation
- Cultural, faith and lifestyle requirements

The catering service will provide site specific production methods and service delivery will take into consideration the layout and fitness for purpose of the site, and where appropriate, working in partnership with Consort Healthcare and their suppliers at the existing Royal Infirmary of Edinburgh at Little France when appropriate.

The service aims to promote innovation to develop business opportunities in service provision and staff development and where appropriate offer professional advice site specific or NHS Lothian wide.

***Domestic & Linen Services***

Domestic Services will provide a clean, safe environment for patients, visitors and staff, complying with the recommended frequency of cleaning and the quality standards set by the National Cleaning Specification

Routine self-monitoring by the Department's Supervisors and Manager using the National Monitoring Tool will ensure the ongoing assessment of the cleaning outcomes and compliance with the National Cleaning Specification. Regular Peer Reviews, to validate the self-monitoring results, will be undertaken by the hospital's Infection Control Nurse and a Domestic Manager from another location; periodically these reviews will include a member of the public.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Access for cleaning will be agreed with the service users to ensure minimum disruption in the day-to-day activity of the hospital. The service will be consistent, timely, flexible and provided 24/7.

Laundry Services will provide staff and patients with a supply of linen and uniforms sufficient to meet the service needs and ensure continuity of service at all times.

The items supplied will meet the necessary specification and be laundered in accordance with recognised standards and all items supplied will be fit for purpose. The laundry, based at St Johns Hospital, is accredited to ISO 9002 and meets all the quality assurance standards.

The Domestic and Laundry staff will receive training appropriate to their requirements and will conduct themselves in a professional, courteous and confidential manner at all times.

Domestic & Linen Services provision includes:

- Cleaning of all rooms, unless specified otherwise, to the frequency recommended by the National Cleaning Specification and the local Cleaning Matrix
- Supply of soap, hand towels, toilet rolls and household waste bags.
- Changing and laundering of bed screens
- Window cleaning.
- Feminine Hygiene Service
- Terminal clean of isolation rooms
- Supply and laundering of pool bed linen and towels.
- Processing of soiled and infected linen
- Delivery and storage of clean linen.
- Uniform issue and laundry service.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 15: PREFERRED OPTION**

**15.5: Rapid Impact Assessment Summary Report**

**1. Date of RIA: 10<sup>th</sup> March 2008 & 5<sup>th</sup> April 2008**

**2. Who was present at the RIA?**

Please note that the Rapid Impact Assessment took place in 2 stages; firstly with key stakeholders and secondly with a group of young people from the Young People's Advisory Board.

***Stage 1 – 10<sup>th</sup> March 2008***

Name	Job Title	Telephone	Email
Rose Byrne	RHSC Reprovision Project Manager		Rose.byrne@luht.scot.nhs.uk
Paula Johnston	Partnership Representative		paula.johnston@lpct.scot.nhs.uk
Isabel McCallum	RHSC Reprovision Project Director		Isabel.McCallum@luht.scot.nhs.uk
Michele McCoy	Specialist in Public Health		Michele.mccoy@lhb.scot.nhs.uk
Neil McLennan	Capital Project Manager		Neil.McLennan@luht.scot.nhs.uk c/o
Thea McMillan	Family Council Representative		Denise.Claxton@luht.scot.nhs.uk
James Robinson	Equality and Inclusion Facilitator		James.Robinson@luht.scot.nhs.uk
John Thomas	Project Manager		John.Thomas@lhb.scot.nhs.uk
Carrie Upton	Hospital Chaplain		Carrie.Upton@luht.scot.nhs.uk

***Stage 2 – 5<sup>th</sup> April 2008***

Name	Job Title	Telephone	Email
Corrine MacRaidl	Current Service User, RHSC		
Tom McKeever	Previous Service User, RHSC		
Helen Taylor	Manager, Drop-In Centre		
Heather Turnbull	Young People's Health Advisory Group		Contact via Helen Taylor: Helen.Taylor@luht.scot.nhs.uk
Leyla Usmani	Edinburgh Youth Health Group		
Winnie Wenn	Edinburgh Youth Health Group		
Colin Young	Young People's Information and Advocacy Worker, SNIP		

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

### 3. Populations groups considered

- minority ethnic people (incl. gypsy/travellers, refugees & asylum seekers)
- women, men and transgender people
- people in religious/faith groups
- disabled people
- older people, children and young people
- lesbian, gay and bisexual people
- people of low income
- people with mental health problems
- homeless people
- people involved in criminal justice system
- staff
- carers

All populations considered. Although a children's hospital the impact will be on the wider population. The reprovion also involves a change in the childhood hospital population to include those over 13 years of age and those with mental health problems.

### 4. What positive impacts were identified and which groups will they affect?

All groups will benefit from the new facilities in terms of access, quality of services and environment. The following range of positive impacts were identified:

- Improved access to schooling while in hospital
- Improved communication between hospitalised child and their school
- Hospital in home will improve parental skills and transition to homecare for children with complex needs
- New build will offer opportunity to expand and more strongly embed Health Promoting Hospital philosophy
- The new facility will offer work opportunities to local population
- Public transport links will improve access to the hospital
- Catering option appraisal will give opportunity to improve nutrition for patients, families visitors and staff
- New building will be fully DDA compliant
- Integrated family support services
- Integration into the site will reduce stigma for children with mental health problems and will offer the opportunities to meet other people of similar age and reduce isolation
- Children with eating disorders will benefit from collocation with medical paediatrics
- Purpose built adolescent facilities will help meet the hitherto unmet needs of this group
- New building will help reduce staff stress and improve relationships between staff groups

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

- Location near to University will improve staff CPD and research and development
- Working conditions will be improved
- “Green build” will contribute to wider environmental improvement
- Control of infection will be improved
- Development of parkland adjacent to Little France site will contribute to leisure opportunities for all.
- Improved cycle access and cycle routes will reduce car use

**5. What negative impacts were identified and which groups will they affect?**

- Concerns over bed availability and size of clinical facilities
- Concerns over security through shared site with adult services
- Concerns of road safety due to location of internal site roadways
- Longer distance and time to travel for some users and staff
- Increased staff stress during transition
- “Bereavement” phenomenon associated with close of old hospital and move to new site
- Loss of business for those traders adjacent to Sciennes site
- Added stress on staff due to change in hospital child population. Anticipated issues include dealing with general adolescent issues, dealing with increased size of risk taking behaviour patient population
- Loss of access to the space surrounding the current hospital
- Increased risk taking population being served
- Increased population of substance users being served

**6. Additional Information and Evidence Required**

There will be ongoing information and evidence gathering as the development is at a relatively early stage. This includes the outcome of the work of the National Steering Group for Specialist Services in Scotland (draft report out for consultation until end of May 2008)

**7. What communications needs were identified? How will they be addressed?**

Need to keep general population informed of changes and developments. Need to keep staff, patients and carers updated on changes and developments.

Communication solutions already in place including:

- Children, Young People & Family Advisory Board
- Young People’s Advisory Group
- Regular Staff Update Sessions
- Newsletter
- Website
- Local Press

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**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**8. Recommendations**

Results of the impact assessment will be incorporated into next stage of planning and development process. This stage includes initiating the design of the hospital which will afford the opportunity to address many of the areas identified.

**9. As a result of the RIA what actions have been, or will be, undertaken and by when? Please complete:**

Specific actions (as a result of the RIA)	Who will take them forward (name and contact details)	Deadline for progressing	Review date
Findings are being incorporated into next stage of planning and development process	Rose Byrne	June 2008	October 2008

**10. Has a full EQIA process been recommended? If not, why not?**

Not at this stage as planning and development is subject to Scottish Government Capital Investment Group approval of Outline Business Case. Full EQIA may be necessary at next stage of planning and development.



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

## **SECTION 17: PUBLIC INVOLVEMENT AND CONSULTATION**

### **17.1 Methods of Consultation & Identified Stakeholders**

#### ***Methods of Consultation***

There are a number of different ways of consulting and engaging with children, young people and their families and it is recognised that various methods will be required to facilitate accessing the views of children and young people. These include:

- Use of the internet;
- Use of art (particularly relevant for younger children);
- Ward visits, to gain feedback from families on general issues, undertaken by the Family Council;
- Questionnaires/Surveys;
- Stakeholder Events (with voluntary groups and parent groups);
- Attendance at Events to provide information;
- Attending Local Groups e.g. Youth Groups;
- Focus Groups; and
- Newsletters.

#### ***Identified Stakeholders***

Identifying key stakeholders forms an important element of any project:

- Patients and their families who use the current services. The RHSC Family Council play a crucial role in this aspect
- Key voluntary organisations and community groups have been contacted to ask how they would like to be involved; this includes groups from those people deemed harder to reach.
- Local Authority partners to enable the targeting of youth groups and build on already established networks
- Community Health Partnerships. It is proposed that both Public Health Practitioners and NHS Lothian's Patient Involvement Workers will play a key role in assisting with engagement and involvement.
- SEAT Children's Planning Group are fully aware of the project and are committed to ensuring that they work with the reprovision project to ensure that the views of children, young people and their families from the SEAT region are taken into account. Work is ongoing in relation to how the existing PFPI forums within each of the SEAT Health Boards will take forward involvement and engagement with key stakeholders within their areas. The project will utilise the 'Framework for Informing, Engaging and

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Consulting with Patients and the Public in Regional Planning', which was approved by the SEAT Regional Planning Group in July 2007.

The Children, Young People and Family Advisory Board have formed three sub-groups to support this process. These groups are:

- Young Peoples Group – this group has regional representation.
- School Aged Children – this group is focusing on primary schools initially, building on the existing work by our partners, the Sick Kids Friends Foundation (SKFF), currently within primary schools and nurseries.
- Children with complex needs – this group is focusing on the best ways to engage and consult with children with complex healthcare needs and learning disabilities and their families. Much of this work will be done through specific voluntary sector groups e.g. 'Contact a Family' and Special Needs Information Point (SNIP), who have the expertise in this area.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 17: PUBLIC INVOLVEMENT AND CONSULTATION**

**17.2 Record of Involvement**

Purpose	Type of Involvement	With Whom	By Whom	Date	Feedback		Comments
					How	To Whom	
Planning meeting to explore how best to take forward Involvement, Engagement & Consultation	Meeting with staff, internal and external stakeholders to plan how to take forward agenda	invited group of staff and interested stakeholders	Rose Byrne,	19th May 2006	Note of meeting circulated	All participants and others	
To illicit views of children, young people & their families on what is important in a new hospital	Consultation process for NHSL Children & Young Peoples Health Strategy. Included: group of young people helping redraft the document so that everyone could understand it, public meetings, meetings in schools and youth groups, wide circulation of the draft document	Children, Young People and their families	Led by John Thomas but involved Jackie Sansbury, Isabel McCallum, Rose Byrne and others	June - Sept 2006	Write up outputs circulated widely and available on NHSL website	All participants and others	The draft strategy had a specific section on the new hospital - information collected from this will inform the ongoing work of the project
To inform key stakeholders of the strategic drivers that inform the need to relocate the hospital	Invited stakeholders meeting as part of the consultation on the NHSL C&YP Health Strategy	Invited stakeholders	Led by John Thomas but involved Jackie Sansbury, Isabel McCallum, John Orr, Dave Simpson and others	24th Aug 2006	Newsletter	Public, SMT	
To inform public and other interested organisations of the Reprovision	First Reprovision Newsletter produced	Public, Organisations	Isabel McCallum, Rose Byrne, Stephen Fraser	Nov-06	Contact details for members of the Project Team and Group Chairs included in newsletter	Feedback will be provided in future newsletters	Newsletters to be produced quarterly
To consider how will involve parents of children with complex healthcare needs	Meeting with Ann Wilson, Contact a Family	Ann Wilson, Contact a Family	Janice MacKenzie, Rose Byrne	Dec-06			

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
**APPENDICES**

To inform supporters of the Sick Kids about the Revisions	Article in SKFF Newsletter. Newsletter circulated to 16,000 people	Supporters of SKFF	Janice MacKenzie, Rose Byrne	Dec-06			Article in Newsletter, will have regular articles in newsletter
To ensure the Family Council are fully engaged in the Revisions	Attended Family Council meeting to discuss their involvement	Family Council members	Rose Byrne, Isabel McCallum	Jan-07	F.C developed set of governing principles	Governing Principles sent to each of the sub groups for PG2 - Clinical Redesign	Members of the Family Council attend PG 2 Steering Group meeting
To ensure letter of invitation to Young People's event was appropriate	Asked young people who are users of the service to help develop the invitation letter	Young People (patients)	Play Services Co-ordinator	Feb-07	Letter agreed with young people involved		
To illicit views of young people who use the service in relation to how they want to be consulted and involved	Focus Group	Young People	Members of PG5	12th March 2007	Outputs from event written up and validated by participants	All participants. PG 5 members	Feedback used to assist in development of posters and questionnaires
To illicit views of parents of young people who use the service in relation to how they want to be consulted and involved	Focus Group	Parents of Young People	Members of PG5	12th March 2007	Outputs from event written up and validated by participants	All participants. PG 5 members	Feedback used to assist in development of posters and questionnaires
To explore how West Lothian Youth Workers network could support the involvement and engagement agenda	Meeting	Youth Network members	Rose Byrne, Ishbel Proctor, Wendy Milne	14th March 2007	Verbal feedback at PG5 meeting	PG 5 members	Subgroup established to plan an information raising/ consultation event - provisional date 13th June. Decision taken to reschedule until later in the year

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
**APPENDICES**

To inform supporters of the Sick Kids about the Revisions	2nd article in SKFF newsletter, informing about PG 5 and also posing key questions	Supporters of SKFF	Janice MacKenzie, Rose Byrne	Mar-07	Ask readers to email/telephone comments	Feedback to be given in next article	
To explore how City of Edinburgh Children & Families services support the involvement and engagement agenda	Meeting with Lynne Portious from Children & Families services	Lynne Portious	Rose Byrne	5th April	E-mail to Janice Mackenzie re future meeting and via PG5 meeting	Janice MacKenzie & PG5 members	Lynne agreed to meet with her team to consider the best way to support the agenda and then meet with Janice MacKenzie to agree plan
To inform and consult with families and general public attending the SKFF Foundation Street Fair	Poster Displays/Newsletter/Briefing Sheet. Wishing Well and 'roving reporters' using questionnaire	Families and general public	Janice MacKenzie, Rose Byrne, Isabel McCallum, Nick Hunt, Thea McMillan	19th May 2007	Reports written with an analysis of the information from the questionnaire and wishing well 'wishes'	PG 5 members. Re provision Team. Findings will also be used in poster displays throughout the hospital and in future newsletters	
To engage with NES Young People's Advisory Group and to gain their continuing support and assistance with the project	Tour of the Hospital. Initial workshop to explore what they felt were the guiding principles for the planning of the hospital from a young person's perspective	Young People	Janice MacKenzie, Rose Byrne, Isabel McCallum	27th May 2007	Report from workshop. Guiding principles to be developed	Re provision Team and Project Groups	Ongoing commitment from the YPAG to support the project

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

To elicit the views of patients and their families about their hospital experiences and what they would like to see in the hospital	Play Specialists using form with three key questions	Patients and families	Ishbel Proctor	Apr - Jun 07	90 forms completed. Report written of current feedback to date and will be updated as more forms received	PG 5 members. Reprovision Team. Findings will also be used in poster displays throughout the hospital and in future newsletters	Consider further refining this approach with different questions at different stages of the project
To inform key voluntary agencies of the Reprovision and find out if/how they wish to be involved	Letter to key organisations	Voluntary Agencies	Janice MacKenzie, Isabel McCallum	Jun-07	Responses received from some organisations who wish to be involved		To follow up with organisations who have responded and also send out reminder to those who have not
To seek support of the Local Authorities Education Depts to engage with schools	Letters to Directors of Educations in 4 Local Authorities	Education Depts	Janice MacKenzie, Isabel McCallum	Jun-07	Letters received from 4 Local Authorities confirming support		Schools sub group to take forward involvement with schools
To elicit the views of families of children with complex needs (Contact a Family Core Group reviewed and amended original questionnaire)	Questionnaire to 140 families	Contact a family	Janice MacKenzie Thea McMillan	Jun-Jul 07	48 questionnaires returned which are being analysed. Letter written to Contact a Family	Reprovision Team. Contact a Family.	Questionnaire was adapted following feedback from Contact a Family Core Parent Group and then distributed to their wider parent membership
To elicit views of children attending a number of primary schools (sent to 39 schools)	Questionnaire	Primary Schools	Maureen Harrison Carolyn Thornton	Jun-07	5 schools replied. Finding analysed. Reprovision Team & PG 5	Reprovision Team & PG 5. Letter to participating schools	Schools sub group to take forward involvement with schools

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

To elicit views of children using the Hospital and Outreach Teaching Service	Questionnaire/Interview	School aged children (harder to reach)	Ann Burnett	Jun- Jul 07	74 questionnaires completed and report produced	Reprovision Team & PG 5. Letter to participating schools	To have ongoing involvement
To elicit views of children & young people who are looked after and accommodated	Questionnaire/Interview	School aged children (harder to reach)	Carol Watson	Jun- Jul 07	12 questionnaires completed and report produced	Reprovision Team & PG 5. Email to Carol Watson	To have ongoing involvement. Consider attendance at proposed Health Fair in Feb 2008
To raise awareness and illicit views of women form ethnic groups	Attendance at Melange Event. Poster Display. Questionnaires	Women (ethnic groups)	Reprovision Team. PG5. Family Council	21st July 07	19 questionnaires completed. Report produced	Reprovision Team & PG 5	Considering attendance at Mela on 1st & 2nd Sept
To raise awareness of the project and seek views	Poster Display (Main Entrance & Drop In Centre). Questionnaires to those attending the hospital/Drop In Centre	Parents, visitors, children & young people	Drop In Centre Staff. Nursing staff. Volunteers, Play Specialists.	23 - 30th July 07	Analysis undertaken and report produced	Reprovision Team & PG 5	
To progress the formation of a Young Person's Group	Meeting 2 members of the NES Young People's Advisory Group	2 members of the NES Young People's Advisory Group	Janice MacKenzie, Rose Byrne	2nd Aug 07			3 members of the YPAG have agreed to be involved in the development of this group. PG 5 Young People's Sub group will work with them to develop a specific Young Person's Group

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

To inform supporters of the Sick Kids about the Revisions	3rd article in SKFF newsletter, informing about PG 5 and also posing key questions	Supporters of SKFF	Janice MacKenzie, Isabel McCallum	Aug-07	Article providing feedback on key issues from consultation work		
To raise awareness of the project and seek views	Attendance at Mela Event on 1st & 2nd Sept. Poster Display & Questionnaires	Public (focus on ethnic groups)	Reprovision Team & PG 5	1 - 2 Sept 07	Analysis undertaken and report produced	Reprovision Team & PG 5	Good event to attend, consider attendance at next year's event with our own tent (not shared)
Raise awareness of project and thank schools who contributed to completion of questionnaires	Article in SKFF Schools Newsletter	School Aged Children & Teachers	Janice MacKenzie	Aug-07	Article in Newsletter	All schools involved with SKFF in Lothian	Article gives opportunity for schools to inform us if they would like to be involved with the project
To elicit view of members of SNIP	Questionnaire	Parents, visitors, patient members of SNIP	SNIP	Jul - Aug	35 questionnaires completed and report produced.	Reprovision Team. Letter of thanks to SNIP	
Raise awareness of project	Poster Presentation	Children, Young People and their families at the Family Council Logo Prize giving	Family Council & PG5	3rd Sept	Poster displays gave feedback on background to project and key themes from consultation to date	Parents and children attending prize giving	Children also had opportunity to draw pictures of what they thought new hospital should look like
Establishment of Young person's Group	Establishment of Group. Recruitment Event held for young people who are patients	Young people	Helen Taylor leading work	Ongoing from Oct 2007			



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
**APPENDICES**

Attendance at NES PFPI Event for Young People	Poster Presentation Comments Box	Young People	Janice MacKenzie, Rose Byrne, Helen Taylor & 2 Young People	27th Oct	Poster displays gave feedback on background to project and key themes from consultation to date	To those attending the event, young people and healthcare professionals	Comments will be collated
To explore with Lighthouse Trust how they could work with the project in engaging users	Meeting	Janice MacKenzie, Thea McMillan, Rose Byrne and Ann Cunningham (Lighthouse)		7th Nov	Proposal to be developed	? Presentation to Reprovision Project Board	
Attendance at SKFF Christmas Fair	Poster Presentation Graffiti Board	General Public and users	Janice MacKenzie, Rose Byrne, Angela Young	10th Nov	Poster displays gave feedback on background to project and key themes from consultation to date. People had opportunity to give comments	PG 5, ReprovisionTeam	
Attendance at Common Purpose You Turn Project	Presentation & Group Work (to create an ideal adolescent unit in new hospital)	Secondary school pupils (33) S2	Janice MacKenzie, Rose Byrne, Laura Jones	22nd Nov		PG 5, Core Project Team	Participants were asked to design the ideal adolescent facility. Lots of good work undertaken - posters/drawings etc

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
**APPENDICES**

Attendance at Event for West Lothian school aged children	Group Work	80 pupils	Rose Byrne, Helen Taylor, Ishbel Proctor	26th Nov			
Establishment of Young People's Group to ensure views of Young People are taken account of	Formation of Group	Young people (patients) and non-patients	Helen Taylor & Rose Byrne	Nov 07 & ongoing	Regular meetings		Two meetings have been held in Nov & Jan
Engage with key voluntary agencies	Stakeholder Event. Presentation given to background and feedback received from consultations	Key Voluntary Agencies (19 agencies invited, 13 attended)	Janice Mackenzie, Sarah Sinclair & Rose Byrne	18th Jan 08	Presentations circulated. Notes from workshop sent to participants	All participants	Event planned for 18th Jan 2008
Inform about formation of Young People's Group	Article in the ICIC Update Newsletter	NHS Staff in Lothian & general public	Rose Byrne	Jan-08	Information about the Young People's Group		
Inform about formation of Young People's Group	Article prepared for next addition of NHS Connections	NHS Staff in Lothian & general public	Helen Taylor	Mar-08			
Inform about formation of Young People's Group & Update on overall project	Article prepared for next addition of SKFF Newsletter	Supporters of SKFF	Rose Byrne	Mar/Apr 08	Contact details for further information given		
To seek the views of bereaved families as to the facilities required in the new hospital	Article in the CHAS Newsletter and also information sent to a number of organisations	Bereaved families and agencies that support them	Carrie Upton & Anne Wilson	Feb-08			

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

## **SECTION 18: PROJECT MANAGEMENT & TIMETABLE**

### **18.1 Communication Strategy**

The Reprovision Project for the Royal Hospital for Sick Children Edinburgh has been established to construct a new children's hospital for Lothian, with the expected opening date of the new facility set for 2012.

This communication plan describes how NHS Lothian will take forward the work required to set out our intended services, gain approval for our vision and deliver a new hospital.

This plan focuses on the overall **purpose** of the exercise, **key messages** we want to deliver, **main stakeholders** we want to target, the **resources** available to us and **suggested approaches** to engage stakeholder audiences.

#### **PURPOSE**

The overall purpose of the communications plan is to:

- engage, inform, listen and respond to issues raised by key stakeholders;
- set out a framework for the management of issues that arise during the process leading to the opening of the new hospital to patients;
- ensure meaningful communications with identified stakeholders ensuring awareness of the Reprovision Project, its work and its remit;
- highlight the issues in determining the future services to be delivered at the new hospital;
- give stakeholders the opportunity to share their views and debate these issues; and
- assist in influencing opinion leading to the successful construction of the hospital.

#### **THE KEY MESSAGES**

The creation of a major piece of clinical infrastructure has many definable phases, which can be set against an anticipated timescale. While there will be generic key messages, other messages will also be appropriate depending on the phase of this six year project.

The underpinning messages cover the following main areas:

- We have an opportunity to provide truly 21<sup>st</sup> century care for children and young people.
- The Little France site meets the national clinical recommendations on co-location with adult and maternity services.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
 APPENDICES

- Patients will benefit from having access to clinicians who work in adult, maternity or neonatal specialities or who work in both adults and children's services and this will aid in transition between these services. Patients will benefit from swifter diagnoses, as tests will be processed more quickly in the single service laboratory facilities at Little France. Patients will benefit from swifter provision of sterile items such as theatre trays, again processed in the single service facilities at Little France.
- Services for children should be provided, where appropriate, in community facilities, closer to where they live, rather than in an acute hospital setting.
- Lothian and eastern Scotland needs to have a world-class children's hospital, and that means being able to offer a wide range of national and regional services, supported by a paediatric intensive care unit.

### **MAIN STAKEHOLDERS**

Our publics in this process include: the general public, other NHS boards, the Scottish Executive, MSPs, MPs and councillors, voluntary organisations and the Sick Kids Friends Foundation.

### **PROCESS**

The engagement process has already started with coverage of a range of issues in **local and national press outlets**, followed by the **formal consultation process** on our Draft Strategy for Healthcare for Children and Young People. We are placing consultation with children and parents at the heart of our Reprovision project by forming a **Child and Family Advisory Board**, co-chaired by a parent member of the Family Council. This is one of five sub-groups in the planning process.

The process will include direct **face-to-face communications** with key stakeholder groups such as MSP/ MP/ councillors and Scottish Executive ministers.

For internal communications, an **interactive intranet website** has been established. This is supplemented by the planned inclusion of updates in the **Lothian Report**, our monthly newsletter for all staff in NHS Lothian, articles in **Connections**, NHS Lothian's **bimonthly staff newspaper**, and **quarterly all staff open briefings**. Staff in neighbouring health boards can access the interactive intranet website.

For external communications, **sub-groups** will be meeting partner organisations, including voluntary organisations, as appropriate during their work. A **quarterly newsletter** with updates on project milestones will be prepared and released to partner organisations. This will be placed on **NHS Lothian's public website**.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 18: PROJECT MANAGEMENT & TIMETABLE**

**18.2 SEAT Involvement**

The following provides an overview of the involvement of SEAT partners in the planning process for the Reprovision of the new C&YP's hospital:

Meeting/event	Attendees	Role / objective
<b><i>RHSC Reprovision</i></b>		
Project Board Meetings held quarterly	Representative from each SEAT Board Chair of the SEAT C&YP Planning group	Escalation and dissemination of information. Debate and discussion on key areas relating to the project
Clinical Redesign workshops	Representation invited from all SEAT Boards and C&YP Planning Group and PFPI reps from each Board	4 workshops held in total: 26&27 <sup>th</sup> Oct 2006 – 'Launch' of redesign process. Objective to review current and future pathways of care in across SEAT 8 <sup>th</sup> Dec 2006 – follow-up/feedback from the first meeting 26 <sup>th</sup> Jan 2007 – feedback on progress on redesign 5 <sup>th</sup> Oct 2007 – Joint meeting with SEAT C&YP Planning group. Focus on provision of sustainable services in each Board in SEAT
Meetings between NHSL, SEAT & Partner Boards	<u>NHSL:</u> RHSC Reprovision Project Director RHSC Clinical Director NHSL Director of Strategic Planning <u>SEAT:</u> Regional Planner <u>Partner Boards:</u> Finance, Planning, Managerial & Clinical Representatives	Meeting were held with each SEAT Board to explore how their services will be provided in the future and what needs to be in place to ensure sustainability. Each Board completed a template providing detail of plans for individual specialities to inform this process.

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

<b>SEAT</b>		
C&YP Planning Group Meet monthly	Project Director Clinical Director for RHSC	Escalation and dissemination of information Reprovision project a regular agenda item - provide up dates, reports and presentations on the project as appropriate
SEAT Directors of Planning Group	Project Sponsor/NHSL Director of Strategic Planning	Escalation and dissemination of information Reprovision project a regular agenda item - provide up dates, reports and presentations on the project as appropriate
SEAT Directors of Finance	NHSL Director of Finance	Escalation and dissemination of information Reprovision project a regular agenda item - provide up dates, reports and presentations on the project as appropriate
North & East Operational Planning Group 'one off' meeting	NHSL Reprovision Project Manager, Capital Finance representative & Director of SEAT (MD) met this group	This meeting resulted in agreement to access patient identifiable data from each partner Board as part of developing baseline data to support the clinical redesign process
Extra-ordinary meeting of Directors of Finance and Planning	Project Sponsor/NHSL Director of Strategic Planning & NHSL Director of Finance	Held on 28 <sup>th</sup> April 2008 to share and validate financial assumptions for the project

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

**SECTION 18: PROJECT MANAGEMENT & TIMETABLE**

**18.3 Capital Cost Detail**



Information withheld in concurrence with  
Scottish Procurement Directorate Freedom of  
Information guidance (Dec 2004) - Page 11

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES



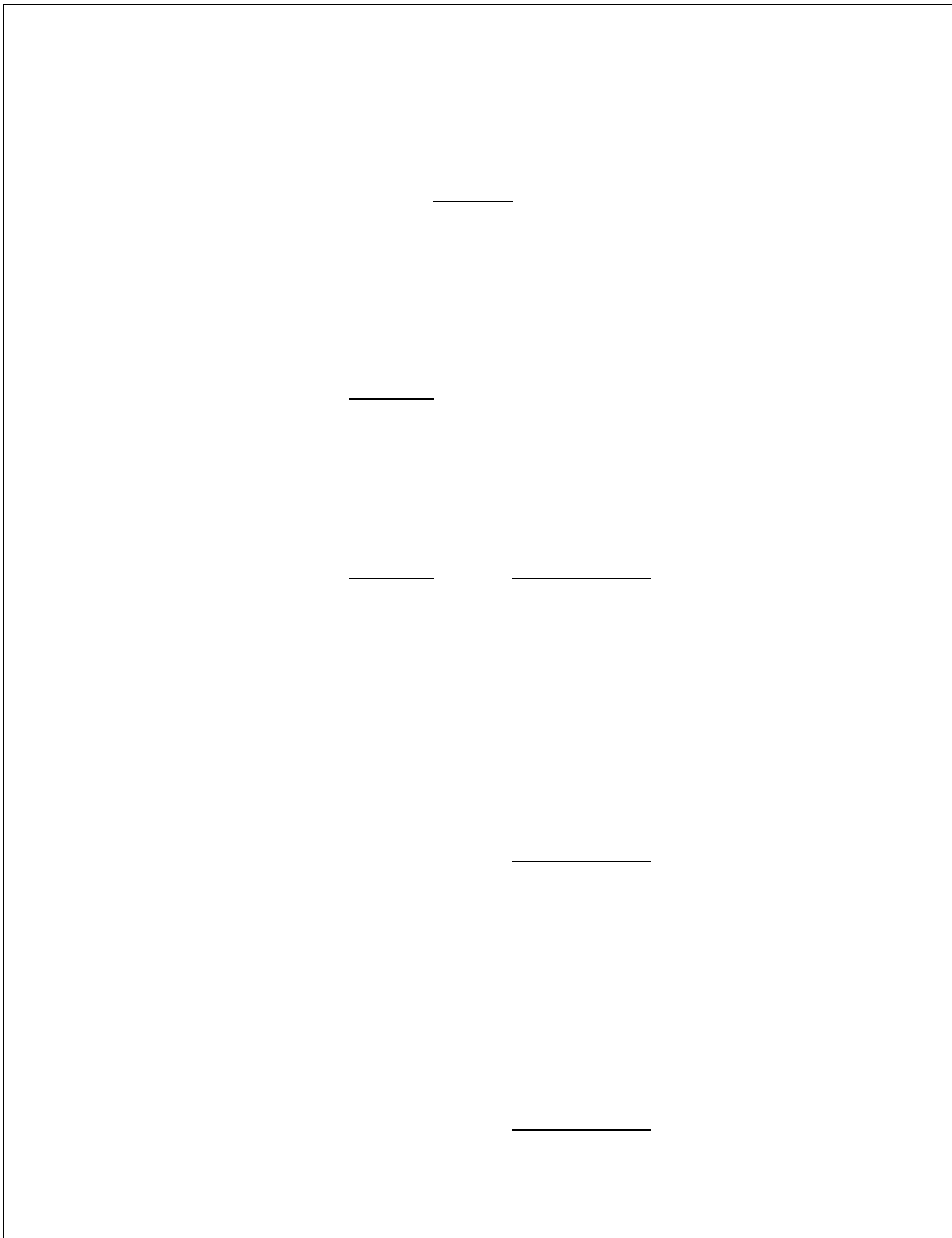

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**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

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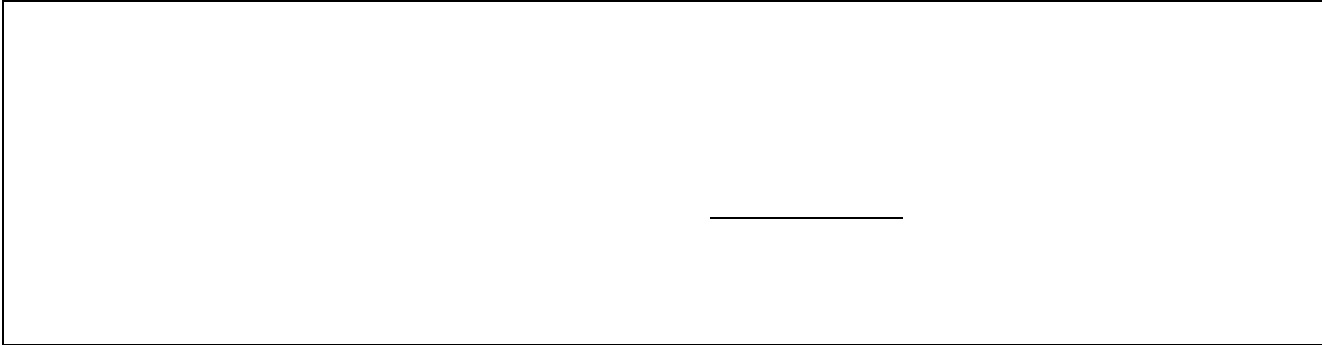
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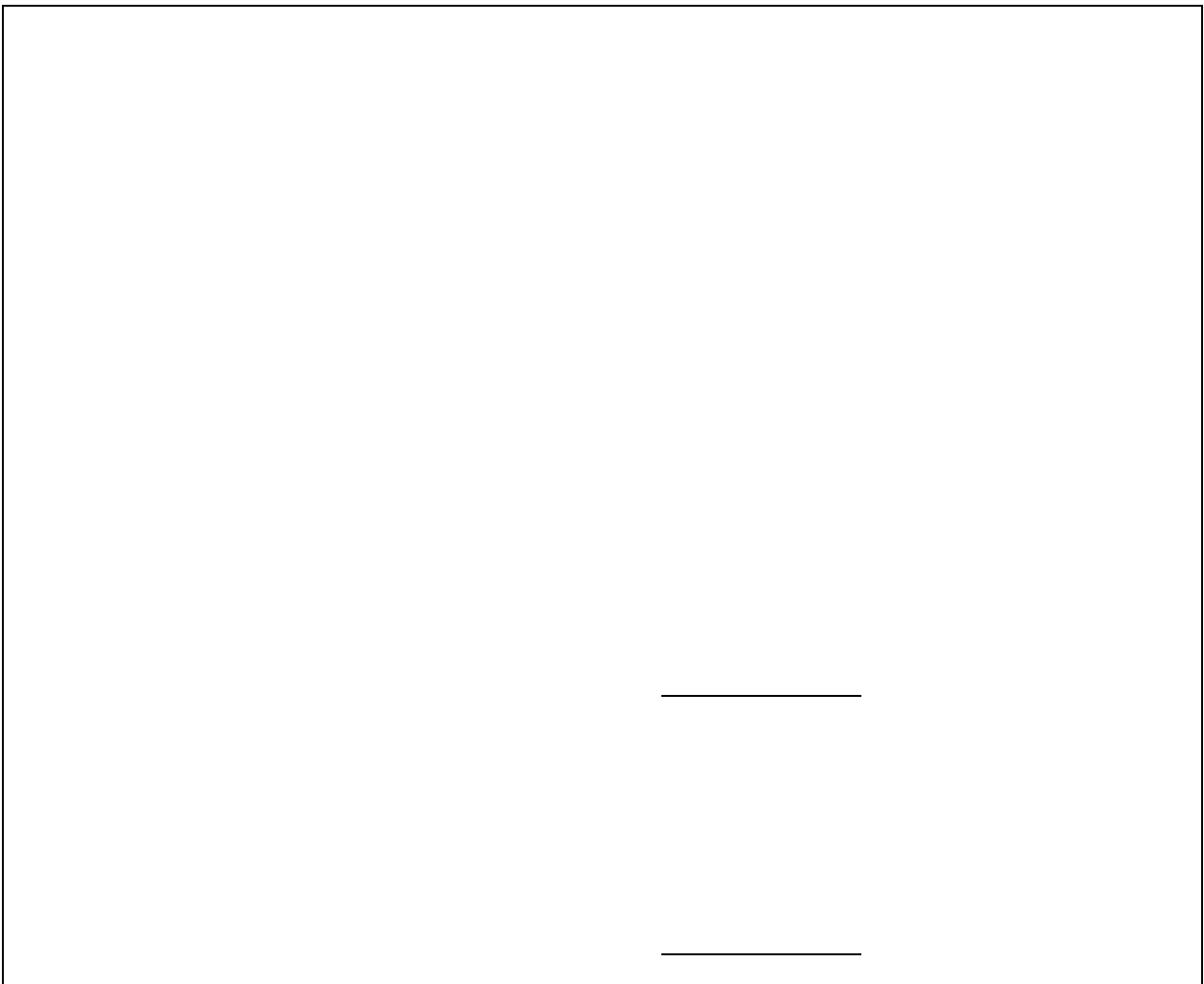
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**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES



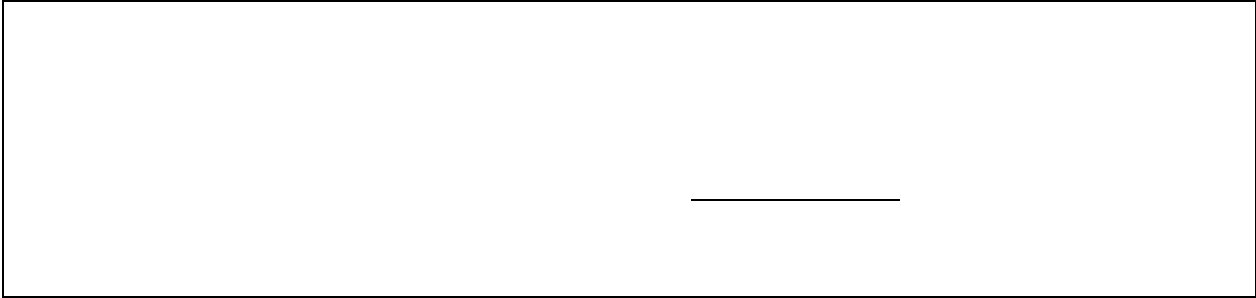
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**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES



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**EDINBURGH**  
APPENDICES



**NHS Lothian**  
**Reprovision of Royal Hospital for Sick Children**  
**Edinburgh**  
Appendices



**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

# NHS Lothian Reprovision of Royal Hospital for Sick Children Edinburgh Appendices

## SECTION 18: PROJECT MANAGEMENT & TIMETABLE

### 18.4 Ward Exemplar Drawing



**Typical InPatient Area**

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RHSC OBC Appendices – Public Version

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**EDINBURGH**  
APPENDICES



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**EDINBURGH**  
APPENDICES

## SECTION 18: PROJECT MANAGEMENT & TIMETABLE

### 18.5 Project Team Profile

#### **Jackie Sansbury**

Director of Strategic Planning and Modernisation

Project Sponsor for RHSC Project, with overall lead executive role.

Executive Director of NHS Lothian Board, has lead role for Strategic service Planning and Modernisation across £1billion budget NHS Board.

Member of National Planning Directors Group and wide participation in reviews of services at national level.

#### **Isabel J McCallum** BSc. RSCN RGN RM

Director, Reprovision of RHSC and DCN

Project / Clinical Director for RHSC Reprovision. Significant clinical and managerial (executive) nursing experience, previously being Director of Nursing for Edinburgh Sick Children's Trust (3 years), and then Lothian University Hospitals Trust (6 years).

Responsible for directing the project management of RHSC and DCN reprovision projects, and leading the clinical redesign of children's services, ensuring that the plans for future facilities for RHSC support the proposed models of care and have involved and engaged key stakeholders in the process.

#### **Rose Byrne** RGN, ONC, BSc, CertMgmt

Project Manager for Reprovision of the RHSC

Responsible for operationally managing the project, including managing the project team, preparing all statutory documents (e.g. IA, OBC & FBC) and monitoring progress against the project plan. Ensures the outputs of various work streams are connected and that interlinks and interdependencies are acted on.

Experienced clinical and general manager in NHS. Led the commissioning, move and decommissioning of the first and last (and largest) bed holding services to the new Royal Infirmary at Little France.

#### **Iain F Graham** MSc MRICS MBIFM

Head of Capital Planning and Premises Development, NHS Lothian

Leading the Capital Planning strategic input for the RHSC project, focusing on the procurement and masterplanning aspects of developing at Little France.

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APPENDICES

Experienced Chartered Surveyor, joined NHS Lothian in January 2007, with projects and operational experience from working in private practice consultancy, for a major UK developer and Edinburgh City Council.

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**Neil McLennan**

Senior Capital Projects Manager

Leading the Project Team in drawing up design brief; in procurement of consultants and contractors; and leading the development of and deliver commissioning strategy for systems.

Seven years experience as a Capital Projects Manager on a number of NHS building projects including the construction of a new A&E Department and Breast Centre at Raigmore Hospital. Prior to this, seven years experience as a Business Manager in the NHS.

---

**Ron Finlay** ARB ARIAS AfH RIBA

Architect, NHS Lothian

RHSC Reprovision, utilising the schedules of accommodation, developing exemplar layouts to inform feasibility and brief for the built project.

Thirty years experience in design and project management, inclusive of twenty years specifically related to healthcare planning and design, both in the private and public sector. Building types include Teaching Hospitals, District General Hospitals, Community Hospitals and Health Centres.

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**Kenneth Ngai** Bacc ACCA

Strategic Finance Manager, NHS Lothian

Finance lead for Royal Hospital for Sick Children project from Outline Business Case stage through to project completion.

Joined NHS Lothian in May 2006 and is part of NHS Lothian's Strategic Financial Management Team that supports the medium and long-term financial direction, control and viability of NHS Lothian.

Has financial experience, which span across the public and private sector. Experience includes financial modelling developed from working with professional advisors through dealing with commercial and not-for profit projects/businesses and reviewing business cases in central government.

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**Willie Kirk**

Strategic Planning Accountant

**NHS Lothian**  
**REPROVISION OF ROYAL HOSPITAL FOR SICK CHILDREN**  
**EDINBURGH**  
APPENDICES

Supporting the finance input for the RHSC project. Focusing primarily on support services and workforce planning elements of the reprovision.

Providing support to Strategic Finance Manager with all other financial aspects of the project. Joined NHS Lothian as a Management Accountant in April 2006 before moving to the Strategic Finance team in October 2007. Previous experience in public sector finance and the financial services industry.

---

**Libby Tait**

Head of Modernisation

Strategic Planning lead for service and Infrastructure Modernisation.

Has oversight of strategic fit and governance process for major capital projects within Directorate, linking to SGHD over this and other projects.

Extensive experience as Project Director in development of major capital programmes and projects within NHS.

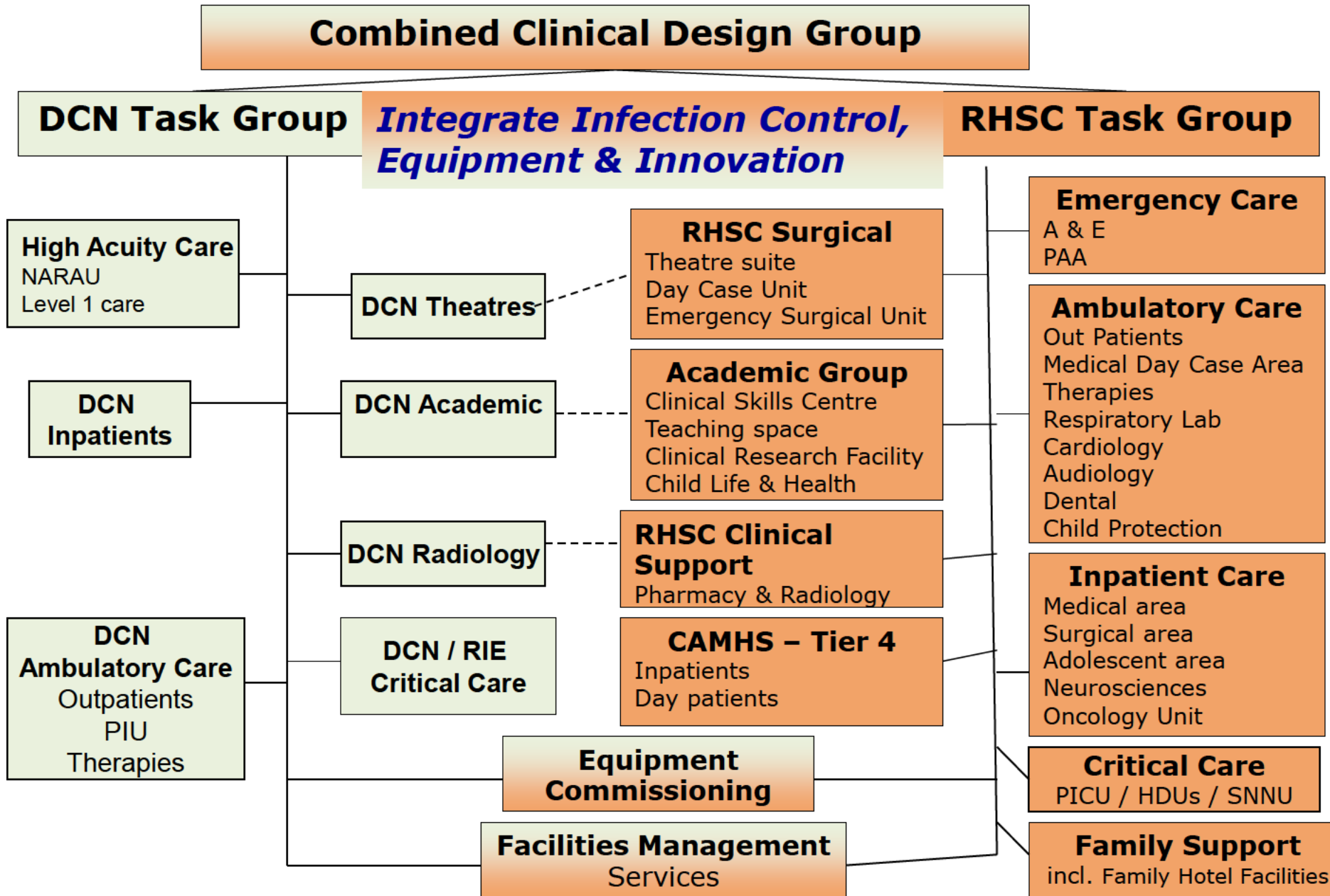
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**Angela Young**

RHSC Reprovision Project Support Officer

Responsible for providing administrative and project support to the immediate Project Team. Has a key role as the first point of contact for internal and external stakeholders. Experienced in supporting NHS projects.

# Task Teams – Clinical Design Team Structure



## **RHSC REPROVISION PROJECT – PROJECT OVERVIEW at 9<sup>th</sup> October**

### **Who's Who**

Project Sponsor	Jackie Sansbury
Project Director	Brian Currie
Clinical Director	Isabel McCallum
Service Project Manager	Rose Byrne
Capital Project Manager	Neil McLennan
Senior Nurse	Rowena Conrad
Project Support	Zuzana Stofankova & Louise Cavana

### **Key Dates**

- September 2005 - NHS Lothian approved development of the business case for reprovision of RHSC (project mandate).
- May 2006 - Initial Agreement approved by Scottish Executive Capital Investment Group.
- July 2008 – Outline Business Case (OBC) approved by Scottish Government Capital Investment Group.

### **OBC approved on the basis of:**

- The provision of a new Children and Young Peoples Hospital in Edinburgh providing local services for Lothian, regional services for the South East of Scotland (SEAT) and national services for a number of specialities.
- The provision of all services currently provided in the RHSC site will be reprovided as well as Child and Adolescent Mental Health Services (CAMHS) currently provided at the Royal Edinburgh Hospital.
- The new hospital will be on Little France site, joined at some point to the RIE.
- A total of 171 beds (reduced from 175 in OBC due to reduction from 16 to 12 beds in CAMHS).
- A capital cost of £148m.
- Capital funding includes Scottish Government Health Department contribution of £48m and fund raising by the Sick Kids Friends Foundation of £15m

### **Procurement Route/project structure**

The procurement route for the project is Framework Scotland.

Principal Supply Chain Partner (PSCP) BAM is now in place with the supply chain as follows:

#### Supply Chain

- Architect - Nightingale Associate
- Health Care Planners - Tribal Consulting
- Mechanical & Electrical – Hulley & Kirkwood
- Structural Engineer – ARUP
- Cost Manager – Doig & Smith

The following Professional Services Contract Consultants are also now in place to support the NHS team:

- Project Manager – Davis Langdon
- Cost Advisor – Thomson Gray
- Supervisor – Mott MacDonald
- Construction (Design & Management) Co-ordinator – Turner & Townsend

The project structure for Phase 3 of the project is now agreed and task groups are in the process of being established or migrated from the previous structure. Copy of Project structure attached.

#### **Time table**

The Full Business Case will be submitted to the Scottish Government Health Department in July 2010. RHSC & DCN Services are due to commence at Little France in spring 2013.

NHS Lothian has approved commencing the design of a joint build of RHSC + DCN in advance of the approval of the clinical neurosciences OBC. This is the preferred option for both projects and will mitigate against delays later in completion of the project.

#### **Accommodation schedules and footprint**

The Tribal team have undertaken a review of the accommodations schedules as proposed in the OBC and have identified a number of challenging areas. They have produced a report identifying the specific areas and highlighting potential opportunities for area reduction for review. This review is now underway towards identifying what actions are required.

#### **Full Business Case Development**

The Business Case Task Group is developing the plan and timetable for the production of the Full Business Case.

#### **Stakeholders**

The nature of this project means that there is a significant number of stakeholders involved. This is addressed in a number of ways, including:

- Maintaining the current project board as a stakeholders group in the revised structure. This group includes representation from each regional board, clinical management team, acute division, university, Scottish Ambulance Service, primary care, families, charities, education and the Glasgow repositioning project.
- Establishing the Patient Focus, Public Involvement Task Group for the next stage of the project. This group will migrate from the current Children, Young People and Families Advisory Board which had a remit to ensure effective user involvement in the project. The membership, role and remit of the group is being reviewed to ensure it supports the next stage of the project

- Continuing to work with the Young Peoples Advisory Board which was established early in the project. This is a group of young people aged between 12 and 20 years who are either current or past users of the service or who have an interest in health related issues. They are currently exploring how to expand their role and establish a Children and Young Peoples Panel to support the next stage of the project. They are also considering how to expand the age range to include younger children.
- The Communications Task Group will also support this process, building on the communications strategy developed in the initial stages of the project.

Rose Byrne/Sorrel Cosens  
October 2009

[REDACTED]

Davis Langdon  
[REDACTED]

Date 19 November 2009  
Your Ref  
Our Ref JKS/lc

Enquiries to Jackie Sansbury  
Extension [REDACTED]  
Direct Line [REDACTED]  
Direct Fax  
Email Jackie.sansbury [REDACTED]

FAO Ken Fraser - Partner

**Re: RHSC + DCN Reprovision Project – Shadow Stand Alone RHSC Solution**

Dear Sirs

We confirm our verbal instruction to continue with the design works for the above projects as follows:

1. BAM and their supply chain will continue to develop the design solution for the combined Royal Hospital for Sick Children and the Department of Clinical Neurosciences all in accordance with BAM Master Delivery Programme HSC0296/6/1B dated 21<sup>st</sup> August 2009.
2. BAM and their supply chain will develop a shadow stand alone Royal Hospital for Sick Children solution located on Car Park B. This design solution must leave sufficient space to provide a separate stand alone Department of Clinical Neurosciences at a later date.

Yours faithfully

**JACKIE SANBURY**  
**Director of Strategic Planning and Modernisation**

Cc: Brian Currie                      NHS Lothian  
      Mr S Gray                         Thomson Gray  
      Mr I Graham                     NHS Lothian



## LOTHIAN NHS BOARD

Minutes of the Meeting of Lothian NHS Board held at 10.05am on Wednesday, 26 November 2008 in the Carrington Suite, Scottish Health Service Centre, Crewe Road, Edinburgh.

**Present:** Dr C J Winstanley (Chair); Mr R Y Anderson; Professor J J Barbour; Mr D Belfall; Mr A Boyter; Mr R Burley; Mrs T Douglas; Mr E Egan (Vice-Chair); Mrs S Goldsmith; Ms L Jamie; Mr J T McCaffery; Dr A K McCallum; Dr I McKay; Mrs P Murray; Professor M Prowse (From 1.10pm); Mr S G Renwick; Mrs J K Sansbury; Dr C P Swainson; Dr A Tierney; Professor H Tierney-Moore and Cllr I Whyte (From Noon).

**In Attendance:** Dr A Bream (Shadowing Dr McCallum); Professor M Dennis (For Item 84); Ms P Eccles (Shadowing the Vice-Chair); Mr P Gabbitas; Ms L MacDonald (Shadowing Professor Tierney-Moore); Ms J A Stirton and Mr D Weir.

Apologies for absence were received from Councillor J Aitchison, Cllr J Cochrane, Councillor P Edie; Councillor R Knox, Professor Sir John Savill, Dr A Tierney and Mr G Walker.

### Declaration of Financial and Non-Financial Interest

The Chair reminded members that they should declare any financial and non-financial interests they had in the items of business for consideration, identifying the relevant agenda item and the nature of their interest. There were no declarations of interest.

#### 72. Minutes of the Meeting of Lothian NHS Board held on 24 September 2008

72.1 The Minutes of the Lothian NHS Board held on 24 September 2008 were approved as a correct record.

#### 73. Minutes of the Special Meeting of Lothian NHS Board held on 27 October 2008

73.1 The Minutes of the Special meeting of Lothian NHS Board held on 27 October 2008 were approved as a correct record.

#### 74. Matters Arising

74.1 NHS Lothian Annual Review Letter – the Chair referred Board members to the very positive follow-up letter received from the Cabinet Secretary following NHS Lothian's annual review meeting held on 8 September 2008. He noted

there were very few areas where the Scottish Government had requested to be kept updated and plans were in place to ensure this occurred.

- 74.1.1 The Chief Executive advised the Board had previously discussed the outcome of the annual review. He commented it had been useful to see the following comment in the annual review letter from the Cabinet Secretary “I welcomed the opportunity to make clear my continuing commitment to St John’s as one of the Board’s three vital acute hospitals, and I will look to the Board to work with partners to continue to develop an exciting and vibrant vision for St John’s going forward.”
- 74.2 Site Development Plans – Mr McCaffery advised both he and Mrs Goldsmith would be meeting with Consort later in the week. The purpose of the meeting was to take forward issues around Clinical Neurosciences, the Royal Hospital for Sick Children, the Royal Edinburgh Hospital and car parking. Discussions were also planned with SEEL (Scottish Enterprise Edinburgh and Lothian) about purchasing additional land at Little France in order to ensure future developments had the necessary expansion room, bearing in mind the Board’s responsibility as custodian of services for future generations..
- 74.2.1 Mr McCaffery reported transport linkages were also important and his colleagues were looking to progress Tramline 3 discussions with the City of Edinburgh Council.
- 74.2.2 Mr McCaffery advised he would be setting up a meeting with the City of Edinburgh Council Planning Directorate to discuss planning issues in respect of the Western General Hospital and Little France sites. Invitations were about to issue to obtain expressions of initial interest in respect of the building and designing of the Royal Victoria Hospital.
- 74.2.3 Mr McCaffery reported work on site constraints continued and options for rationalising the estate were being considered. He described a number of further options, all of which would be influenced by discussions regarding the tramline options for Edinburgh.
- 74.2.4 Mr Burley commented the update paper covered infrastructure, clinical adjacencies and transport. He felt as investments were made, a key objective should be to improve the health and well-being of the community served as stated by the Chief Executive of the NHS in Scotland. He commented this facet did not appear to feature significantly in the master planning process and he hoped it would feature more prominently in the final plan.
- 74.2.5 Mr McCaffery advised he and Mr Burley had met following the initial presentation and had discussed a significant number of green issues contained within the masterplan, which was based on a hospital village concept. He stressed the materials used in the design of the building would be chosen carefully and the historical aspects of some of the buildings would be maintained. Mr McCaffery commented the facilities provided would need to be fit for purpose, environmentally sound and demonstrate value for money.

- 87.8 The Board noted the position in respect of processes in place to achieve waiting time targets.

## **88. Tackling Delayed Discharge**

- 88.1 Mrs Sansbury advised November figures had now been received which showed a delayed discharge position of 97 which represented an improvement in all geographical areas over the previous month's position. She advised the East Lothian position in particular had improved following joint work between the CHP and East Lothian Council. The Joint Improvement Team had produced an action plan for improvements and this was being implemented. The Minister for Public Health and the Leader of East Lothian Council had met to discuss the delayed discharge position. Mrs Sansbury commented steps were in place to encourage other Boards to repatriate their own patients. A fuller report would be submitted to the December Finance and Performance Review Committee meeting.
- 88.2 Mr Gabbitas commented within the City of Edinburgh Council, the delayed discharge position had been stable for the previous 6 months with the exception of a blip in May with there having been minimal bounce back following the year-end. He reported that the position within Edinburgh was almost on target.
- 88.3 The Board noted the steps being taken to manage the delayed discharge position.

Mr Gabbitas left the meeting.

## **89. Healthcare Associated Infection**

- 89.1 Dr McCallum advised she was keen to re-assure Board members of Lothian's position following the BBC television programme on the Vale of Leven incident. In respect of maintenance, processes were in place to ensure ways of minimising HAI were built into new builds and refurbishments including smaller projects. Dr McCallum addressed the various points raised in the television programme as follows:-
- Cleaning – Dr McCallum advised that investment in cleaning in Lothian had increased not decreased. Detailed performance reports were received and issues resolved between herself and Mr McCaffery. NHS Lothian adhered to the national cleaning standards with a performance rating of 94.5% which reflected green traffic light indicator performance. Dr McCallum commented performance would be maintained through the continued use of the peer review model.
  - Bed Spacing – Dr McCallum confirmed NHS Lothian complied with national standards and she and her team had physically measured

spacings between beds. Again, all new build facilities took account of bed spacing requirements.

- Training – Dr McCallum advised all affected staff receiving training which was updated on an 18-month basis and included eHealth components. Mandatory training was in place for new starts through the induction process.
- Cleanliness Champions – Dr McCallum reported there was at least one cleanliness champion in each ward and champions were being introduced into the community.
- Laundry – Dr McCallum commented that a clear laundry policy was in place. Step-by-step training had been provided to areas and wards where problems had been identified. The clostridium difficile leaflet was being updated.

89.2 Dr McCallum referred to the circulated paper and made Board members aware of the recent announcement from the Scottish Government regarding NHS Boards being subject to random inspections, the detail of which was still to be announced.

89.3 Dr McCallum advised staphylococcus aureus bacteraemia rates were falling with 31 episodes having been reported in October 2008 compared to 33 in September 2008. The largest area of episodes being reported was in accident and emergency and assessment units. Dr McCallum commented that newly identified cases of clostridium difficile for the last 3 months had been 91 in August; 61 in September and 61 in October.

89.4 Dr McCallum commented mandatory surgical site surveillance continued and this allowed issues to be quickly addressed. Work was ongoing with the GP Sub-Committee.

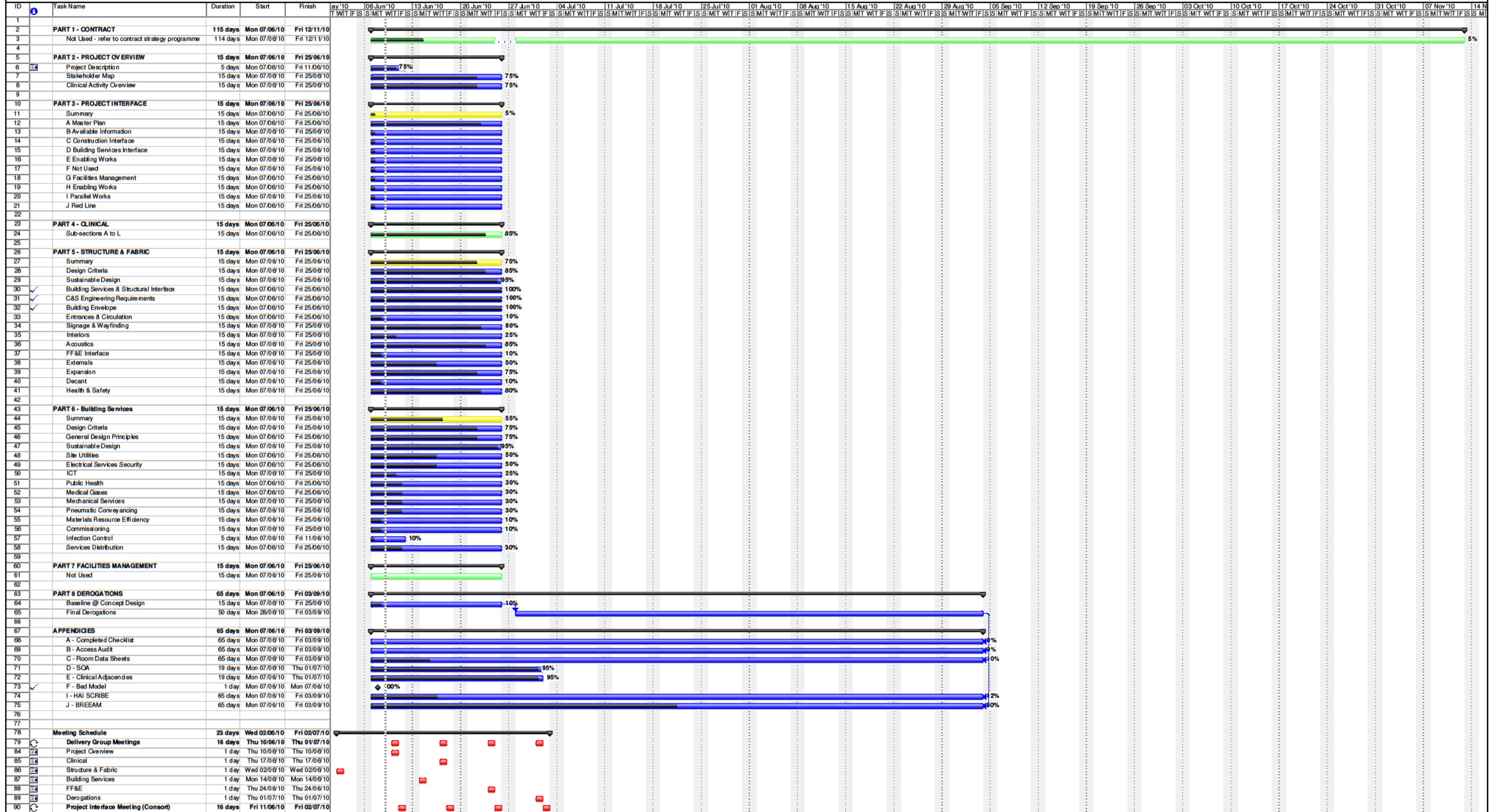
89.5 Mr Renwick commented it would be useful for Non-Executive Board members to receive a short bullet point synopsis on the back of the Board brief on this important subject. Ms Stirton advised the Board member fact sheet was being updated for December and would take account of Mr Renwick's request.

89.6 Professor Prowse commented she felt re-assured with the exercise to measure the space between beds, although from her experience the issues was often more about the adjacency of curtains and chairs as well as infusion pumps which were all possible routes of transmission. She questioned what assurances could be given in respect of standards being maintained both in people and equipment terms. Dr McCallum advised continued hand hygiene compliance would assist and further work would be introduced targeted at relatives and patients. In addition, the new chlorine-based cleaning liquid would have a positive impact. Dr McCallum advised charge nurses and cleanliness champions were becoming stricter about the number of visitors per bed head, as well as enforcing the rule about visitors not sitting on beds.

- 89.7 Mrs Douglas commented that at a recent visit to the Royal Victoria Hospital, discussions had suggested not everyone wanted single room accommodation as required by the Scottish Government. The Chair advised he recalled the discussion and a major issue had been about supervision levels.
- 89.8 Mrs Sansbury commented that a lot of work had been done by the Scottish Government looking at the benefits of single room accommodation with work having been commissioned within specialties to gauge the therapeutic benefits. She reminded the Board that national guidance had now been issued and would need to be complied with, albeit exceptions could be made if a strong enough case could be presented. Representations had been made in respect of the Royal Hospital for Sick Children. The challenge for the Royal Victoria Hospital team would be to manage work space and architectural design as well as using technology links like fall monitors to ensure the single room model worked effectively. Mrs Sansbury advised that evidence suggested most people preferred single rooms.
- 89.9 The Vice-Chair questioned who would be undertaking the random inspections announced by the Scottish Government. Professor Tierney-Moore advised the new inspectorate would be created within Quality Improvement Scotland (QIS) and consideration was currently being given to how this would be established. She stressed to the Board that NHS Lothian undertook its own ward visits and audit programme. Professor Tierney-Moore felt the inspection regime would help to restore public confidence.
- 89.10 The Vice-Chair advised he was increasingly concerned about the continued receipt of inappropriate materials to the Livingston Laundry and if the position did not improve, he would be seeking further action. He was also concerned that there had been a reported lack of hand towels at the Royal Infirmary of Edinburgh because the private contractor had allegedly reduced the number they procured.
- 89.11 Mr McCaffery advised HAI was taken very seriously and was a standing item on the Health & Safety Committee and Senior Management Team agendas. He would be meeting with the contractor the following day and would raise the issue of hand towels at that meeting. Mr McCaffery would also address the issues raised by the Vice-Chair about the Laundry and commented that significant improvements had been made although a zero tolerance approach should be adopted. Professor Tierney-Moore advised she would also pick up issues around the Laundry with Chief Nurses and monitor the areas causing concern as the issue could be resolved by stopping bad practice at ward level.
- 89.12 The Board agreed the recommendations contained within the circulated paper.

## **90. Improving Care, Investing in Change (ICIC)**

RHSC - BRIEFING PROGRESS  
&  
PROGRAMME STRATEGY  
DRAFT



## MASTER COPY

## RHSC Clinical Design Task Group

**Purpose**

To progress design of the new hospital which will deliver the accommodation required to support the delivery of the agreed redesigned clinical service, and the facilities required by patients and their families and staff.

**Membership of Overall Task Group (Deputies in red)**

Name	Representing
Paul Leonard	Emergency Care
Paul Eunson	Neuroscience / medical clinical lead
Steve Cunningham / Tom Marshall	Medical Paediatrics
Fraser Munro	Surgical Paediatrics
Dorothy Hanley / Peter Campbell	Nursing
Madeleine Mitchell	Outpatients
Julie Freeman	Critical Care
Eddie Doyle	Theatres / Surgical Care
Elaine Dhouieb	Therapies
Mike Conroy	Radiology
Neil Richardson	Pharmacy
Gwyneth Bruce	CAMHS
Jurgen Schwarze / David Wilson	Academic Group
Anna Stamp / Louis Golightly	Edinburgh University
Thea McMillan	Family / public representative
	Young People rep - to be delivered out with this group
Maureen Harrison	Family Support
Jean Harper	Infection Control
Dougie Coull	Equipment Commissioning
Sheena Watchman	Health Records
Paula Johnston / Scott Justice	Staff Partnership representation
Bryan Smith	GE Healthcare representative
Nick Durham	Nightingales (Architect)
Jason Speck	Tribal (Healthcare planners)
Dave Simpson	Co-lead for Redesign
Neil McLennan	Capital Planning
Isabel McCallum	Project Redesign Lead
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**Dates of Meetings**


Every Second Thursday - afternoon



ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF – BUILDING FABRIC

		
<h2>The Royal Hospital for Sick Children Reprovision Project</h2>		
<p><u>Technical Briefing Requirements – Draft</u> (Part 5 Structure and Building Fabric and Part 6 Mechanical &amp; Electrical Requirements Building Services) NHS Lothian Works Information</p>	<p>Doc Ref: Doc No: Revision: Date:</p>	<p>Technical Brief -[Insert doc. number] D:Template 4 March 30/06/2010</p>
<p>Author: Mott MacDonald</p>		

		
<h2>The Royal Hospital for Sick Children Reprovision Project</h2>		
<p><u>Briefing Requirements – Draft</u> (Part 5 Building Fabric and Part 6 Building Services) NHS Lothian Works Information</p>	<p>Doc Ref: Doc No: Revision: Date:</p>	<p>Technical Brief [Insert doc. Number] ED 18/10/30/06/2010</p>
<p>Author: Mott MacDonald</p>		

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Revision	Date	Originator	Checker	Approver	Description
A	1 March 2010	R. Park	A. Scott/ K Burnett/ S Simpson	A. Scott	Version 0
B	19 March 2010	R. Park	D. Stillie	A. <del>scott</del> Scott	Version 1. Alterations following initial client review meeting on Part 5
C	31 May 2010	D Stillie	R Park	A Scott	Version 2 – Agreed BAM comments and NHSL (F Halcrow/G Curley) comments added
<u>D</u>	<u>30 June 2010</u>	<u>D Stillie</u>	<u>R Park</u>	<u>A Scott</u>	<u>Version 3 – Agreed BAM/NHSL comments 14/06/10 &amp; general text edit - NHSL comments and information to 30/06/10</u>
<u>E</u>	<u>18 October 2010</u>	<u>D Stillie</u>	<u>A Duncan</u>	<u>A Scott</u>	<u>Version 4 – Agreed BAM/NHSL comments 5/10/10 general text changes and NHSL information to 15/10/10</u>

2 30 June 2010

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF – BUILDING FABRIC**

<b>PART 5.</b>	<b>STRUCTURE AND BUILDING FABRIC REQUIREMENTS</b>	<b>33</b>
5.1	Objectives & Scope	33
5.2	Project Wide Requirements	33
5.3	Spaces, Character & Innovation	34
5.3.1	Space Standards	34
5.3.2	Floor Layouts	34
5.3.3	Ward Configuration	34
5.3.4	Excellence for Patients	35
5.3.5	Healthcare Excellence	35
5.3.6	Architectural Vision	35
5.3.7	Stimulating Design	35
5.3.8	Design Innovation	35
5.3.9	Recognisable Quality	36
5.3.10	Design Concept	36
5.3.11	Scale & Proportion	36
5.3.12	Composition	36
5.3.13	Aesthetics	36
5.3.14	Colour & Texture	37
5.3.15	Quality Environment	37
5.3.16	Light & Colour	37
5.3.17	Views	37
5.3.18	Internal Wayfinding	37
5.3.19	Internal Spaces	38
5.4	General Design & Construction Requirements	39
5.4.1	Design Criteria	39
5.4.2	NHS Design Standards	39
5.4.3	Statutory Regulations and Non-NHS Requirements	48
5.4.4	Deroqation Schedule	50
5.4.5	Life Expectancy	50

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.4.6 Surveys / Site Investigations ..... 51

5.4.7 Ligature Resistant..... 51

5.4.8 Anti Vandal..... 51

5.4.9 Hierarchy of Standards..... 51

5.4.10 Infection Prevention & Control..... 52

5.4.11 Equipment Requirements..... 52

5.4.12 Room Data Sheets ..... 53

5.4.13 Standardisation & Prefabrication..... 53

5.4.14 Materials ..... 54

5.5 Construction Phase Requirements..... 56

5.5.1 General..... 56

5.5.2 Workmanship, Construction Accuracy & Tolerances..... 56

5.5.3 Control of Noise & Dust..... 57

5.5.4 Continuity of Existing Services..... 57

5.6 Sustainability ..... 57

5.6.1 BREEAM ..... 59

5.6.2 Controlled Samples ..... 59

5.7 Health & Safety..... 61

5.7.1 Designer Duties ..... 61

5.8 Building Manual ..... 63

5.8.1 Purpose ..... 63

5.8.2 Structure of the Building Manual ..... 63

5.8.3 Content of the Building Manual Part 1: General..... 63

5.8.4 Content of the Building Manual Part 2: Building Fabric..... 64

5.8.5 Content of the Building Manual Part 3: Building Services... 65

5.8.6 Content of the Building Manual Part 4: The Health and Safety File 67

5.8.7 Presentation of the Building Manual..... 67

5.8.8 Health & Safety Reference Documentation ..... 68

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

	<b>S</b>	<b>71</b>
<b>5.9</b>	<b>Services and Structural Interface</b>	<b>73</b>
	5.9.1 Building Services	73
	5.9.2 Structural	75
<b>5.10</b>	<b>Civil and Structural Requirements</b>	<b>76</b>
	5.10.1 General Requirements	76
	5.10.2 Ground Remediation	78
	5.10.3 Drainage	79
	5.10.4 Surface Water Drainage	79
	5.10.5 Foul Water Drainage	81
	5.10.6 External Civil Engineering Works	82
	5.10.7 Ground Conditions	82
	5.10.8 Loadings & Structural Flexibility	83
	5.10.9 Sub-structure	85
	5.10.10 Structure	85
	5.10.11 Floors	85
	5.10.12 Fire & Corrosion Protection	86
	5.10.13 Durability & Maintainability	86
	5.10.14 Movement Joints	87
<b>5.11</b>	<b>Building Envelope Performance Criteria</b>	<b>87</b>
	5.11.1 General	88
	5.11.2 Walls	88
	5.11.3 Roof	88
	5.11.4 Windows	89
	5.11.5 External Doors	90
<b>5.12</b>	<b>Entrances and Circulation</b>	<b>91</b>
	5.12.1 Main Entrance, Reception and Arrival	91
	5.12.2 Service and Other Entrances	91
	5.12.3 Corridors	91

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.12.4	Stairways	91
5.12.5	Ramps	92
5.12.6	Lifts	92
5.12.7	Fire Evacuation	92
5.12.8	Protection	93
5.12.9	Security	94
5.12.10	Access	94
5.13	Signage & Wayfinding	95
5.13.1	External	95
5.13.2	Internal	96
5.13.3	Art Concept	96
5.14	Finishes	98
5.14.1	Walls	99
5.14.2	Floors	99
5.14.3	Ceilings	100
5.14.4	Doors	100
5.15	Acoustics	102
5.16	Furniture Fittings & Equipment (FF+E) Interface	103
5.16.1	ADB Room Data Sheets & 1:50 Layouts	103
5.16.2	Furniture, Fittings & Equipment (FF&E) Groupings	103
5.16.3	Sanitary Accommodation	104
5.17	Externals	105
5.17.1	General	105
5.17.2	Hard Landscaping	106
5.17.3	Soft landscaping	108
5.17.4	Interface with Highways	110
5.17.5	Parking and Drop off	111
5.17.6	External furniture	114
5.17.7	Boundary conditions	114

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.17.8	Expansion.....	116
5.17.9	Decant.....	118
<b>PART 6.</b>	<b>MECHANICAL &amp; ELECTRICAL REQUIREMENTS .....</b>	<b>120</b>
6.1	Design Criteria.....	120
6.2	Design Reference Documents .....	120
6.3	Performance Standards.....	123
6.4	Energy Efficiency.....	125
6.5	Sustainable Design.....	127
6.6	Site Utilities .....	137
6.7	Electrical Services .....	139
6.7.1	Main & Sub-Main Distribution.....	139
6.7.2	Standby Generation.....	139
6.7.3	Uninterruptible Power Supplies.....	140
6.7.4	Electrical Small Power.....	141
6.7.5	Lighting.....	141
6.7.6	Interior Lighting.....	142
6.7.7	Exterior Lighting.....	144
6.7.8	Lighting Control & Wiring.....	146
6.7.9	Emergency Lighting.....	147
6.7.10	Standby Lighting.....	147
6.7.11	Lifts.....	148
6.7.12	Induction Loop.....	148
6.7.13	Public Address System .....	150
6.7.14	TV & Radio Facilities .....	150
6.7.15	Lightning Protection & Earthing.....	150
6.8	Security Installation .....	152
6.8.1	General.....	152
6.8.2	Panic Alarm System.....	152
6.8.3	Nurse Call Systems.....	153

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.8.4 Alarms & Intruder Detection System ..... 154

6.8.5 Security Access Control ..... 154

6.8.6 External CCTV ..... 155

6.8.7 Internal CCTV ..... 155

6.8.8 Clinical Equipment Alarms ..... 156

6.8.9 Patient Tagging System ..... 156

6.8.10 Car Park Barriers ..... 156

IT Structured Cabling ..... 157

6.9 ..... 157

6.9.1 Telephony Requirements ..... 159

6.9.2 Smart Metering ..... 171

6.10 Public Health Services Design ..... 172

6.10.1 Drainage ..... 173

6.10.2 Dual Towns Water Connection to the Site ..... 174

6.10.3 Site Mains Water, Fire Water, Quality & Distribution ..... 174

6.10.4 Domestic Water Services ..... 174

6.10.5 Hot Water Supply ..... 176

6.10.6 Special Water Services ..... 177

6.10.7 Sterilisation/Decontamination ..... 177

6.11 Medical Gases ..... 178

6.11.1 Medical & Dental Vacuum ..... 179

6.11.2 Anaesthetic Gas Scavenging System ..... 179

6.11.3 Mechanical Services ..... 180

6.11.4 Building Management Systems & Controls ..... 180

6.11.5 Mechanical Ventilation & Air Conditioning ..... 190

6.11.6 Fume Cupboard & Micro-biological Safety Cabinets ..... 192

6.11.7 High Specification Air Conditioning Systems ..... 192

6.11.8 Ventilation of Isolation Rooms ..... 192

6.11.9 Boilerplant / Heat Source ..... 193

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.11.10 Heating System .....	193
6.12 Fire Detection & Suppression Systems .....	195
6.13 Pneumatic Conveyancing .....	197
6.14 Materials Resource Efficiency .....	210
6.15 Commissioning .....	211
6.15.1 Commissioning & Testing .....	211
6.16 Infection Control .....	211
Services .....	212
6.17 Distribution .....	213
6.17.1 Engineering Flexibility & Zoning .....	213
6.17.2 Services Capacity Reserve .....	213
6.17.3 Service Routes .....	213
<b>PART 5: STRUCTURE AND BUILDING FABRIC REQUIREMENTS .....</b>	<b>3</b>
5.1 Objectives & Scope .....	3
5.2 Project Wide Requirements .....	3
5.3 Spaces, Character & Innovation .....	3
5.3.1 Space Standards .....	3
5.3.2 Floor Layouts .....	3
5.3.3 Ward Configuration .....	3
5.3.4 Excellence for Patients .....	3
5.3.5 Healthcare Excellence .....	3
5.3.6 Architectural Vision .....	3
5.3.7 Stimulating Design .....	3
5.3.8 Design Innovation .....	3
5.3.9 Recognisable Quality .....	3
5.3.10 Design Concept .....	3
5.3.11 Scale & Proportion .....	3
5.3.12 Composition .....	3
5.3.13 Aesthetics .....	3

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.3.14 Colour & Texture ..... 3

5.3.15 Quality Environment ..... 3

5.3.16 Light & Colour ..... 3

5.3.17 Views ..... 3

5.3.18 Internal Wayfinding ..... 3

5.3.19 Internal Spaces ..... 3

5.4 General Design & Construction Requirements ..... 3

5.4.1 Design Criteria ..... 3

5.4.2 NHS Design Standards ..... 3

5.4.3 Statutory Regulations and Non NHS Requirements ..... 3

5.4.4 Derogation Schedule ..... 3

5.4.5 Life Expectancy ..... 3

5.4.6 Surveys / Site Investigations ..... 3

5.4.7 Ligature Resistant ..... 3

5.4.8 Anti Vandal ..... 3

5.4.9 Hierarchy of Standards ..... 3

5.4.10 Infection Prevention & Control ..... 3

5.4.11 Equipment Requirements ..... 3

5.4.12 Room Data Sheets ..... 3

5.4.13 Standardisation & Prefabrication ..... 3

5.4.14 Materials ..... 3

5.5 Construction Phase Requirements ..... 3

5.5.1 General ..... 3

5.5.2 Workmanship, Construction Accuracy & Tolerances ..... 3

5.5.3 Control of Noise & Dust ..... 3

5.5.4 Continuity of Existing Services ..... 3

5.6 Sustainability ..... 3

5.6.1 BREEAM ..... 3

5.6.2 Controlled Samples ..... 3

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.7 Health & Safety ..... 3

    5.7.1 Designer Duties ..... 3

5.8 Building Manual ..... 3

    5.8.1 Purpose ..... 3

    5.8.2 Structure of the Building Manual ..... 3

    5.8.3 Content of the Building Manual Part 1: General ..... 3

    5.8.4 Content of the Building Manual Part 2: Building Fabric ..... 3

    5.8.5 Content of the Building Manual Part 3: Building Services ..... 3

    5.8.6 Content of the Building Manual Part 4: The Health and Safety File ..... 3

    5.8.7 Presentation of the Building Manual ..... 3

    5.8.8 Health & Safety Reference Documentation ..... 3

5.9 Services and Structural Interface ..... 3

    5.9.1 Building Services ..... 3

    5.9.2 Structural ..... 3

5.10 Civil and Structural Requirements ..... 3

    5.10.1 General Requirements ..... 3

    5.10.2 Ground Remediation ..... 3

    5.10.3 Drainage ..... 3

    5.10.4 Surface Water Drainage ..... 3

    5.10.5 Foul Water Drainage ..... 3

    5.10.6 External Civil Engineering Works ..... 3

    5.10.7 Ground Conditions ..... 3

    5.10.8 Loadings & Structural Flexibility ..... 3

    5.10.9 Sub structure ..... 3

    5.10.10 Structure ..... 3

    5.10.11 Floors ..... 3

    5.10.12 Fire & Corrosion Protection ..... 3

    5.10.13 Durability & Maintainability ..... 3

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5-10-14 Movement Joints ..... 3

5.11 Building Envelope Performance Criteria ..... 3

5.11.1 General ..... 3

5.11.2 Walls ..... 3

5.11.3 Roof ..... 3

5.11.4 Windows ..... 3

5.11.5 External Doors ..... 3

5.12 Entrances and Circulation ..... 3

5.12.1 Main Entrance, Reception and Arrival ..... 3

5.12.2 Service and Other Entrances ..... 3

5.12.3 Corridors ..... 3

5.12.4 Stairways ..... 3

5.12.5 Ramps ..... 3

5.12.6 Lifts ..... 3

5.12.7 Fire Evacuation ..... 3

5.12.8 Protection ..... 3

5.12.9 Security ..... 3

5.12.10 Access ..... 3

5.13 Signage & Wayfinding ..... 3

5.13.1 External ..... 3

5.13.2 Internal ..... 3

5.13.3 Art Concept ..... 3

5.14 Finishes ..... 3

5.14.1 Walls ..... 3

5.14.2 Floors ..... 3

5.14.3 Ceilings ..... 3

5.14.4 Doors ..... 3

5.15 Acoustics ..... 3

5.16 Furniture Fittings & Equipment (FF+E) Interface ..... 3

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.16.1—ADB Room Data Sheets & 1:50 Layouts ..... 3

5.16.2—Furniture, Fittings & Equipment (FF&E) Groupings ..... 3

5.16.3—Sanitary Accommodation ..... 3

5.17—Externals ..... 3

5.17.1—General ..... 3

5.17.2—Hard Landscaping ..... 3

5.17.3—Soft landscaping ..... 3

5.17.4—Interface with Highways ..... 3

5.17.5—Parking and Drop off ..... 3

5.17.6—External furniture ..... 3

5.17.7—Boundary conditions ..... 3

5.17.8—Expansion ..... 3

5.17.9—Decant ..... 3

**PART 6: MECHANICAL & ELECTRICAL REQUIREMENTS ..... 3**

6.1—Design Criteria ..... 3

6.2—Design Reference Documents ..... 3

6.3—Performance Standards ..... 3

6.4—Energy Efficiency ..... 3

6.5—Sustainable Design ..... 3

6.6—Site Utilities ..... 3

6.7—Electrical Services ..... 3

6.7.1—Main & Sub Main Distribution ..... 3

6.7.2—Standby Generation ..... 3

6.7.3—Uninterruptible Power Supplies ..... 3

6.7.4—Electrical Small Power ..... 3

6.7.5—Lighting ..... 3

6.7.6—Interior Lighting ..... 3

6.7.7—Exterior Lighting ..... 3

6.7.8—Lighting Control & Wiring ..... 3

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.7.9	Emergency Lighting	3
6.7.10	Standby Lighting	3
6.7.11	Lifts	3
6.7.12	Induction Loop	3
6.7.13	Public Address System	3
6.7.14	TV & Radio Facilities	3
6.7.15	Lightning Protection & Earthing	3
6.8	Security Installation	3
6.8.1	General	3
6.8.2	Panic Alarm System	3
6.8.3	Nurse Call Systems	3
6.8.4	Alarms & Intruder Detection System	3
6.8.5	Security Access Control	3
6.8.6	External CCTV	3
6.8.7	Internal CCTV	3
6.8.8	Clinical Equipment Alarms	3
6.8.9	Patient Tagging System	3
6.8.10	Car Park Barriers	3
6.9	IT Structured Cabling	2
6.9.1	Telephony Requirements	2
6.9.2	Smart Metering	2
6.10	Public Health Services Design	3
6.10.1	Drainage	3
6.10.2	Dual Towns Water Connection to the Site	3
6.10.3	Site Mains Water, Fire Water, Quality & Distribution	3
6.10.4	Domestic Water Services	2
6.10.5	Hot Water Supply	2
6.10.6	Special Water Services	2
6.10.7	Sterilisation/Decontamination	2

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

<b>6.11</b>	<b>Medical Gases</b>	<b>3</b>
6.11.1	Medical & Dental Vacuum	3
6.11.2	Anaesthetic Gas Scavenging System	3
6.11.3	Mechanical Services	3
6.11.4	Building Management Systems & Controls	3
6.11.5	Mechanical Ventilation & Air Conditioning	3
6.11.6	Fume Cupboard & Micro biological Safety Cabinets	3
6.11.7	High Specification Air Conditioning Systems	3
6.11.8	Ventilation of Isolation Rooms	3
6.11.9	Boilerplant / Heat Source	3
6.11.10	Heating System	3
<b>6.12</b>	<b>Fire Detection &amp; Suppression Systems</b>	<b>3</b>
<b>6.13</b>	<b>Pneumatic Conveyancing</b>	<b>3</b>
<b>6.14</b>	<b>Materials Resource Efficiency</b>	<b>3</b>
<b>6.15</b>	<b>Commissioning</b>	<b>3</b>
6.15.1	Commissioning & Testing	3
<b>6.16</b>	<b>Infection Control</b>	<b>3</b>
<b>6.17</b>	<b>Services Distribution</b>	<b>3</b>
6.17.1	Engineering Flexibility & Zoning	3
6.17.2	Services Capacity Reserve	3
6.17.3	Service Routes	3
5.1.1	1	
5.1.1	1	
<b>PART 5</b>	<b>STRUCTURE AND BUILDING FABRIC REQUIREMENTS</b>	<b>10</b>
<b>5.1</b>	<b>Objectives &amp; Scope</b>	<b>10</b>
<b>5.2</b>	<b>Project Wide Requirements</b>	<b>10</b>
<b>5.3</b>	<b>Spaces, Character &amp; Innovation</b>	<b>11</b>
5.3.1	Space Standards	11
5.3.2	Floor Layouts	11

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.3.3	Ward Configuration	11
5.3.4	Excellence for Patients	12
5.3.5	Healthcare Excellence	12
5.3.6	Architectural Vision	12
5.3.7	Stimulating Design	12
5.3.8	Design Innovation	12
5.3.9	Recognisable Quality	13
5.3.10	Design Concept	13
5.3.11	Scale & Proportion	13
5.3.12	Composition	13
5.3.13	Aesthetics	13
5.3.14	Colour & Texture	14
5.3.15	Quality Environment	14
5.3.16	Light & Colour	14
5.3.17	Views	14
5.3.18	Internal Wayfinding	14
5.3.19	Internal Spaces	15
5.4	General Design & Construction Requirements	15
5.4.1	Design Criteria	15
5.4.2	NHS Design Standards	15
5.4.3	Statutory Regulations and Non NHS Requirements	22
5.4.4	Derogation Schedule	23
5.4.5	Life Expectancy	24
5.4.6	Surveys / Site Investigations	24
5.4.7	Ligature Resistant	24
5.4.8	Anti Vandal	25
5.4.9	Hierarchy of Standards	25
5.4.10	Infection Prevention & Control	25
5.4.11	Equipment Requirements	26

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**ROYAL HOSPITAL FOR SICK CHILDREN****PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.4.12	Room Data Sheets	27
5.4.13	Standardisation & Prefabrication	27
5.4.14	Materials	27
5.5	Construction Phase Requirements	30
5.5.1	General	30
5.5.2	Workmanship, Construction Accuracy & Tolerances	30
5.5.3	Control of Noise & Dust	31
5.5.4	Continuity of Existing Services	31
5.6	Sustainability	31
5.6.1	BREEAM	32
5.7	Health & Safety	35
5.7.1	Designer Duties	35
5.8	Building Manual	37
5.8.1	Purpose	37
5.8.2	Structure of the Building Manual	37
5.8.3	Content of the Building Manual Part 1: General	37
5.8.4	Content of the Building Manual Part 2: Building Fabric	39
5.8.5	Content of the Building Manual Part 3: Building Services	39
5.8.6	Content of the Building Manual Part 4: The Health and Safety File	40
5.8.7	Presentation of the Building Manual	41
5.8.8	Health & Safety Reference Documentation	41
5.9	Objectives & Scope	44
5.10	Design Criteria	45
5.10.1	Design Standards	45
5.10.2	Statutory Regulations	54
5.10.3	Derogation Schedule	52
5.10.4	Life Expectancy	52
5.10.5	Surveys / Site Investigations	53

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.10.6	Ligature Resistance	53
5.10.7	Anti Vandal	53
5.10.8	Controlled Samples	53
5.11	Sustainability	55
5.11.1	BREEAM	56
5.12	Services and Structural Interface	57
5.12.1	Building Services	57
5.12.2	Structural	57
5.13	Civil and Structural Requirements	58
5.13.1	General Requirements	58
5.13.2	Ground Remediation	60
5.13.3	Drainage	60
5.13.4	External Civil Engineering Works	62
5.13.5	Ground Conditions	63
5.13.6	Loadings & Structural Flexibility	63
5.13.7	Sub structure	65
5.13.8	Structure	65
5.13.9	Floors	65
5.13.10	Fire & Corrosion Protection	66
5.13.11	Durability & Maintainability	66
5.13.12	Movement Joints	66
5.14	Building Envelop Performance Criteria	67
5.14.1	General	67
5.14.2	Walls	67
5.14.3	Roof	67
5.14.4	Windows	67
5.14.5	External Doors	68
5.15	Entrances and Circulation	69
5.15.1	Main Entrance, Reception and Arrival	69

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.15.2	Service and Other Entrances	69
5.15.3	Corridors	69
5.15.4	Stairways	69
5.15.5	Ramps	70
5.15.6	Lifts	70
5.15.7	Fire Evacuation	70
5.15.8	Protection	71
5.15.9	Security	71
5.15.10	Access	72
5.16	Signage & Wayfinding	72
5.16.1	External	72
5.16.2	Internal	73
5.16.3	Art Concept	73
5.17	Finishes	74
5.17.1	Walls	75
5.17.2	Floors	75
5.17.3	Ceilings	75
5.17.4	Doors	76
5.18	Acoustics	77
5.19	Furniture Fittings & Equipment (FF+E) Interface	79
5.19.1	ADB Room Data Sheets & 1:50 Layouts	79
5.19.2	Furniture, Fittings & Equipment (FF&E) Groupings	79
5.19.3	Sanitary Accommodation	79
5.20	Externals	79
5.20.1	General	79
5.20.2	Hard Landscaping	80
5.20.3	Soft landscaping	82
5.20.4	Interface with Highways	82
5.20.5	Parking and Drop off	84

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**ROYAL HOSPITAL FOR SICK CHILDREN****PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.20.6	External furniture	87
5.20.7	Boundary conditions	87
5.20.8	Expansion	88
5.20.9	Decant	89

**PART 6: MECHANICAL & ELECTRICAL REQUIREMENTS**

6.1	Design Criteria	90
6.2	Design Reference Documents	90
6.3	Performance Standards	92
6.4	Energy Efficiency	94
6.5	Sustainable Design	95
6.6	Site Utilities	96
6.7	Electrical Services	98
6.7.1	Main & Sub Main Distribution	98
6.7.2	Standby Generation	98
6.7.3	Uninterruptible Power Supplies	99
6.7.4	Electrical Small Power	99
6.7.5	Lighting	99
6.7.6	Interior Lighting	100
6.7.7	Exterior Lighting	104
6.7.8	Lighting Control & Wiring	102
6.7.9	Emergency Lighting	102
6.7.10	Standby Lighting	103
6.7.11	Lifts	103
6.7.12	Induction Loop	104
6.7.13	Public Address System	104
6.7.14	TV & Radio Facilities	104
6.7.15	Lightning Protection & Earthing	106
6.8	Security Installation	106
6.8.1	General	106

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.9.2	Panic Alarm System	106
6.9.3	Nurse Call Systems	106
6.9.4	Alarms & Intruder Detection System	107
6.9.5	Security Access Control	107
6.9.6	External CCTV	107
6.9.7	Internal CCTV	108
6.9.8	Clinical Equipment Alarms	108
6.9.9	Patient Tagging System	108
6.9.10	Car Park Barriers	108
6.9	IT Structured Cabling	109
6.9.1	Project Description	109
6.9.2	ICT Requirements Definition	110
6.9.3	Departments and Other Hospital Functions (HF1 and HF2)	110
6.10	Public Health Services Design	118
6.10.1	Drainage	118
6.10.2	Dual Towns Water Connection to the Site	119
6.10.3	Site Mains Water, Fire Water, Quality & Distribution	119
6.10.4	Domestic Water Services	119
6.10.5	Hot Water Supply	120
6.10.6	Special Water Services	121
6.10.7	Sterilisation/Decontamination	121
6.11	Medical Gases	122
6.11.1	Medical & Dental Vacuum	122
6.11.2	Anaesthetic Gas Scavenging System	123
6.11.3	Mechanical Services	124
6.11.4	Building Management Systems & Controls	124
6.11.5	Mechanical Ventilation & Air Conditioning	128
6.11.6	Fume Cupboard & Micro biological Safety Cabinets	129

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.11.7	High Specification Air Conditioning Systems	129
6.11.8	Ventilation of Isolation Rooms	129
6.11.9	Boilerplant / Heat Source	129
6.11.10	Heating System	129
6.12	Fire Detection & Suppression Systems	134
6.13	Pneumatic Conveyancing	133
6.14	Health & Safety Manuals	137
6.14.1	Designer Duties	137
6.14.2	Design Output	137
6.15	Building Manual	139
6.15.1	Purpose	139
6.15.2	Structure of the Building Manual	139
6.15.3	Content of the Building Manual Part 1: General	139
6.15.4	Content of the Building Manual Part 2: Building Fabric	140
6.15.5	Content of the Building Manual Part 3: Building Services	141
6.15.6	Content of the Building Manual Part 4: The Health and Safety File	142
6.15.7	Presentation of the Building Manual	143
6.16	Materials Resource Efficiency	145
6.17	Commissioning	145
6.17.1	Commissioning & Testing	145
6.18	Infection Control	146
6.19	Services Distribution	147
6.19.1	Engineering Flexibility & Zoning	147
6.19.2	Services Capacity Reserve	147
6.19.3	Service Routes	147
<b>PART 5</b>	<b>STRUCTURE AND BUILDING FABRIC REQUIREMENTS</b>	<b>38</b>
5.1	Objectives & Scope	38
5.2	Design Criteria	39

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

5.2.1 Design Standards ..... 39

5.2.2 Statutory Regulations ..... 316

5.2.3 Derogation Schedule ..... 316

5.2.4 Life Expectancy ..... 317

5.2.5 Surveys / Site Investigations ..... 317

5.2.6 Ligature Resistance ..... 317

5.2.7 Anti-Vandal ..... 318

5.2.8 Controlled Samples ..... 318

5.3 Sustainability ..... 320

5.3.1 BREEAM ..... 324

5.4 Services and Structural Interface ..... 322

5.4.1 Building Services ..... 322

5.4.2 Structural ..... 323

5.5 Civil and Structural Requirements ..... 324

5.5.1 General Requirements ..... 324

5.5.2 Ground Remediation ..... 326

5.5.3 Drainage ..... 326

5.5.5 External Civil Engineering Works ..... 329

5.5.6 Ground Conditions ..... 329

5.5.7 Loadings & Structural Flexibility ..... 329

5.5.8 Sub-structure ..... 331

5.5.9 Structure ..... 331

5.5.10 Floors ..... 332

5.5.11 Fire & Corrosion Protection ..... 332

5.5.12 Durability & Maintainability ..... 332

5.5.13 Movement Joints ..... 333

5.6 Building Envelop Performance Criteria ..... 334

5.6.1 General ..... 334

5.6.2 Walls ..... 334

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

5.6.3	Roof	334
5.6.4	Windows	335
5.6.5	External Doors	336
5.7	Entrances and Circulation	336
5.7.1	Main Entrance, Reception and Arrival	336
5.7.2	Service and Other Entrances	336
5.7.3	Corridors	337
5.7.4	Stairways	337
5.7.5	Ramps	337
5.7.6	Lifts	337
5.7.7	Fire Evacuation	338
5.7.8	Protection	339
5.7.9	Security	339
5.7.10	Access	339
5.8	Signage & Wayfinding	340
5.8.1	External	340
5.8.2	Internal	341
5.8.3	Art Concept	341
5.9	Finishes	342
5.9.1	Walls	343
5.9.2	Floors	343
5.9.3	Ceilings	343
5.9.4	Doors	344
5.10	Acoustics	346
5.11	Furniture Fittings & Equipment (FF+E) Interface	347
5.11.1	ADB Room Data Sheets & 1:50 Layouts	347
5.11.2	Furniture, Fittings & Equipment (FF&E) Groupings	347
5.11.3	Sanitary Accommodation	348
5.12	Externals	349

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

5.12.1	General	349
5.12.2	Hard Landscaping	350
5.12.3	Soft landscaping	352
5.12.4	Interface with Highways	354
5.12.5	Parking and Drop off	354
5.12.6	External furniture	357
5.12.7	Boundary conditions	358
5.13	Expansion	359
5.14	Decant	360
<b>PART 6</b>	<b>MECHANICAL &amp; ELECTRICAL REQUIREMENTS</b>	<b>364</b>
6.1	Design Criteria	364
6.1.1	Design Standards	364
6.1.2	Performance Standards	363
6.2	Energy Efficiency	365
6.3	Sustainable Design	367
6.4	Site Utilities	368
6.5	Electrical Services	370
6.5.1	Main & Sub Main Distribution	370
6.5.2	Standby Generation	370
6.5.3	Uninterruptible Power Supplies	374
6.5.4	Electrical Small Power	374
6.5.5	Lighting	372
6.5.6	Interior Lighting	372
6.5.7	Exterior Lighting	374
6.5.8	Lighting Control & Wiring	375
6.5.9	Emergency Lighting	376
6.5.10	Standby Lighting	376
6.5.11	Lifts	376
6.5.12	Induction Loop	377

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

6.5.14 Public Address System ..... 378

6.5.15 TV & Radio Facilities ..... 378

6.5.16 Lightning Protection & Earthing ..... 378

6.6 Security Installation ..... 380

6.6.1 General ..... 380

6.6.2 Panic Alarm System ..... 380

6.6.3 Nurse Call Systems ..... 381

6.6.4 Alarms & Intruder Detection System ..... 381

6.6.5 Security Access Control ..... 382

6.6.6 External CCTV ..... 382

6.6.7 Internal CCTV ..... 382

6.6.8 Clinical Equipment Alarms ..... 382

6.6.9 Patient Tagging System ..... 382

6.6.10 Car Park Barriers ..... 382

6.7 IT Structured Cabling ..... 384

6.7.2 ICT Requirements Definition ..... 384

6.8 Public Health Services Design ..... 393

6.8.1 Drainage ..... 393

6.8.2 Dual Towns Water Connection to the Site ..... 393

6.8.3 Site Mains Water, Fire Water, Quality & Distribution ..... 394

6.8.4 Domestic Water Services ..... 394

6.8.5 Hot Water Supply ..... 395

6.8.6 Special Water Services ..... 396

6.8.7 Sterilisation/Decontamination ..... 396

6.9 Medical Gases ..... 397

6.9.1 Medical & Dental Vacuum ..... 399

6.9.2 Anaesthetic Gas Scavenging System ..... 399

6.10 Mechanical Services ..... 399

6.10.1 Building Management Systems & Controls ..... 399

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.10.2	Mechanical Ventilation & Air Conditioning	3103
6.10.3	Fume Cupboard & Micro biological Safety Cabinets	3104
6.10.4	High Specification Air Conditioning Systems	3105
6.10.5	Ventilation of Isolation Rooms	3105
6.10.6	Boilerplant / Heat Source	3105
6.10.7	Heating System	3105
6.11	Fire Detection & Suppression Systems	3107
6.13	Pneumatic Conveyancing	3109
6.14	Health & Safety Manuals	3110
6.15	Materials Resource Efficiency	3117
6.16	Commissioning	3118
6.17	Infection Control	3119
6.18	Services Distribution	3120
6.18.1	Engineering Flexibility & Zoning	3120
6.18.2	Services Capacity Reserve	3120
6.18.3	Service Routes	3120
<b>PART 5</b>	<b>STRUCTURE AND BUILDING FABRIC REQUIREMENTS</b>	<b>88</b>
5.1	Objectives & Scope	88
5.2	Design Criteria	99
5.2.1	Design Standards	99
5.2.2	Statutory Regulations	1616
5.2.3	Derogation Schedule	1716
5.2.4	Life Expectancy	1716
5.2.5	Surveys / Site Investigations	1717
5.2.6	Anti Ligature	1817
5.2.7	Anti Vandal	1817
5.2.8	Controlled Samples	1818
5.3	Sustainability	2019
5.3.1	BREEAM	2120

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**ROYAL HOSPITAL FOR SICK CHILDREN****PART 5: DESIGN BRIEF - BUILDING FABRIC**

<b>5.4</b>	<b>Services and Structural Interface</b>	<b>2224</b>
5.4.1	Building Services	2224
5.4.2	Structural	2222
<b>5.5</b>	<b>Civil and Structural Requirements</b>	<b>2423</b>
5.5.1	General Requirements	2423
5.5.2	Ground Remediation	2625
5.5.3	Drainage	2625
5.5.4	Water Supply (excluded from original list)	2928
5.5.5	External Civil Engineering Works	3028
5.5.6	Ground Conditions	3020
5.5.7	Loadings & Structural Flexibility	3020
5.5.8	Sub structure	3234
5.5.9	Structure	3234
5.5.10	Floors	3234
5.5.11	Fire & Corrosion Protection	3332
5.5.12	Durability & Maintainability	3332
5.5.13	Movement Joints	3432
<b>5.6</b>	<b>Building Envelop Performance Criteria</b>	<b>3534</b>
5.6.1	General	3534
5.6.2	Walls	3534
5.6.3	Roof	3534
5.6.4	Windows	3635
5.6.5	External Doors	3735
<b>5.7</b>	<b>Entrances and Circulation</b>	<b>3736</b>
5.7.1	Main Entrance, Reception and Arrival	3736
5.7.2	Service and Other Entrances	3736
5.7.3	Corridors	3836
5.7.4	Stairways	3837
5.7.5	Ramps	3837

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

5.7.6	Lifts	3837
5.7.7	Fire Evacuation	3937
5.7.8	Protection	4038
5.7.9	Security	4039
5.7.10	Access	4039
5.8	Signage & Wayfinding	4139
5.8.1	External	4140
5.8.2	Internal	4240
5.8.3	Art Concept	4241
5.9	Finishes	4342
5.9.1	Walls	4443
5.9.2	Floors	4443
5.9.3	Ceilings	4443
5.9.4	Doors	4544
5.10	Acoustics	4745
5.11	Furniture, Fittings & Equipment (FF+E) Interface	4846
5.11.1	ADB Room Data Sheets & 1:50 Layouts	4846
5.11.2	Furniture, Fittings & Equipment (FF+E) Groupings	4846
5.11.3	Sanitary Accommodation	4947
5.12	Externals	5048
5.12.1	General	5048
5.12.2	Hard Landscaping	5149
5.12.3	Soft landscaping	5351
5.12.4	Interface with Highways	5553
5.12.5	Parking and Drop off	5553
5.12.6	External furniture	5856
5.12.7	Boundary conditions	5957
5.13	Expansion	6058
5.14	Decant	6159

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

<b>PART 6</b>	<b>MECHANICAL &amp; ELECTRICAL REQUIREMENTS</b>	<b>6260</b>
6.1	Design Criteria	6260
6.1.1	Design Standards	6260
6.1.2	Performance Standards	6462
6.2	Energy Efficiency	6664
6.3	Sustainable Design	6866
6.4	Site Utilities	6967
6.5	Electrical Services	7169
6.5.1	Main & Sub Main Distribution	7169
6.5.2	Standby Generation TO BE CONFIRMED WITH THE BOARD/NHS Lothian	7169
6.5.3	Uninterruptible Power Supplies	7270
6.5.4	Electrical Small Power	7270
6.5.5	Lighting	7370
6.5.6	Interior Lighting	7374
6.5.7	Exterior Lighting	7573
6.5.8	Lighting Control & Wiring	7674
6.5.9	Emergency Lighting	7775
6.5.10	Standby Lighting	7775
6.5.11	Lifts	7775
6.5.13	Induction Loop	7876
6.5.14	Public Address System	7977
6.5.15	TV & Radio Facilities	7977
6.5.16	Lightning Protection & Earthing	7977
6.6	Security Installation	9179
6.6.1	General	9179
6.6.2	Panic Alarm Systems	9179
6.6.3	Nurse Call Systems	9179
6.6.4	Alarms & Intruder Detection System	9279

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.6.5	Security Access Control	9279	Formatted: Font: (Default) Arial, 10 pt, Bold
6.6.6	External CCTV	9280	Formatted: Not Highlight
6.6.7	Internal CCTV	9280	Formatted: Not Highlight
6.6.8	Clinical Equipment Alarms	9480	Formatted: Not Highlight
6.6.9	Baby Tagging System	9484	Formatted: Not Highlight
6.6.10	Car Park Barriers	9484	Formatted: Not Highlight
6.7	IT Structured Cabling	9582	Formatted: Not Highlight
6.7.2	JCT Requirements Definition	9582	Formatted: Not Highlight
6.8	Public Health Services Design	9494	Formatted: Not Highlight
6.8.1	Drainage	9494	
6.8.2	Dual Towns Water Connection to the Site	9494	
6.8.3	Site Mains Water, Fire Water, Quality & Distribution	9592	
6.8.4	Domestic Water Services	9592	
6.8.5	Hot Water Supply	9693	
6.8.6	Special Water Services	9693	
6.8.7	Sterilisation	9794	
6.9	Medical Gases	9895	
6.9.1	Medical & Dental Vacuum	9996	
6.9.2	Anaesthetic Gas Scavenging System	9996	
6.10	Mechanical Services	10007	
6.10.1	Building Management Systems & Controls	10007	
6.10.2	Mechanical Ventilation & Air Conditioning	104104	
6.10.3	Fume Cupboard & Micro biological Safety Cabinets	105102	
6.10.4	High Specification Air Conditioning Systems	106103	Formatted: Not Highlight
6.10.5	Ventilation of Isolation Rooms	106103	Formatted: Not Highlight
6.10.6	Boilerplant / Heat Source	106103	
6.10.7	Heating System	107103	Formatted: Not Highlight
6.11	Fire Detection & Suppression Systems	108106	Formatted: Not Highlight
6.13	Pneumatic Conveyancing	110107	Formatted: Font: (Default) Arial, 10 pt
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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

6.14 Health & Safety Manuals ..... 111108

6.15 Materials Resource Efficiency ..... 118115

6.16 Commissioning ..... 110116

6.17 Infection Control ..... 120117

6.18 Services Distribution ..... 121118

    6.18.1 Engineering Flexibility & Zoning ..... 121118

    6.18.2 Services Capacity Reserve ..... 121118

    6.18.3 Service Routes ..... 121118



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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

PART 5. PART 5 STRUCTURE AND BUILDING FABRIC REQUIREMENTS

5.1 Objectives & Scope

This document should be read in conjunction with, but not limited to, the following documents:

- Those NHS documents listed in Section 5.4.2 of this Briefing Document ~~Guidance and reference documents to be included~~
- A Policy on Design Quality for NHS Scotland – 2010 Revision
- All other parts of the Briefing Document

The Works shall be designed in accordance with the documents listed above and shall accommodate the clinical, non-clinical and other functions as set out in ~~the all other documents listed above~~ sections of the brief

5.2 Project Wide Requirements

NHS Lothian places the highest importance on the approach to the design of the Facilities consistent with their vision to provide a wide range of patient-focused acute services in line with their healthcare strategy operating from a single-site children's hospital in Edinburgh.

NHS Lothian will be seeking innovative design proposals from the PSCP for the Works to facilitate the planned integration of services, which complements and adds value to NHS Lothian's overall clinical modernisation agenda. The PSCP shall ensure that the design of the Works draws upon and endeavours to further develop, improve and exceed current best practice and standards achieved in other similar hospitals and especially children hospitals, and meets the requirements of the prospective patient groups, staff and public. This philosophy of design shall be extended across all parts of the Works including landscaped and external areas as well as the essential patient areas.

The PSCP shall ensure the design complies with the general ethos detailed here, whilst also addressing the detailed requirements listed in the following document. It should be noted that the requirements detailed are not exhaustive, and it is recognised that specific clinical needs will determine the nature and design of the Works in some areas. NHS Lothian is keen to actively participate in the design process. To facilitate this, the PSCP shall engage NHS Lothian in all aspects of the design.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

**5.3 Spaces, Character & Innovation**

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**5.3.1 Space Standards**

The PSCP shall provide designs which are efficient, economical and flexible for immediate and future use, and which can be managed efficiently to cope with seasonal and strategic variations in activity.

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Appropriate space provision shall be given to circulation, waiting and sub-waiting space for the movement of patients, staff, visitors and pedestrians and the storage and transportation of goods.

Space shall be considered to allow informal discussion, therapy and interaction within open and reception areas in the clinical environment, such as areas of rehabilitation, consultation and main waiting / reception areas. Consideration shall also be given to making use of open space areas within clinical areas and main circulation routes for 'break-away' space such as corridor recesses and courtyards.

The PSCP shall recognise that patients and staffs' perception of the spaces created may assist with their feeling of belonging and of not being intimidated, and may help with their orientation, mobility, confidence, privacy and their ability to socialise.

**5.3.2 Floor Layouts**

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The design of departmental and unit layouts shall reflect the demand for space defined by occupancy and usage as described in NHS Lothian's Operational Policy Documents. Where areas and shape of rooms results in undesirable spaces, the PSCP should discuss with NHS Lothian alternative solutions, which may or may not result in shared space providing a more appropriate environment as well as optimising the available use of space. These may include locker rooms, sitting areas, seminar rooms etc.

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**5.3.3 Ward Configuration**

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The PSCP shall meet or exceed the standards of space and environmental quality contained in NHS Estates Guidance.

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The layout of the wards shall facilitate the separation and zoning of patients into clinical groups to respond to seasonal variations in activity, case mix, and practice and to deal with infectious conditions.

Space around beds shall comply with HBN 04 providing adequate space for healthcare professionals and staff, teaching requirements, visitors and multi-pieces of equipment to be located near to the patient within the bed area. Additional space shall be allowed for engineering and building services zones. The PSCP shall position the staff base in a convenient location on the ward to allow nursing staff to observe patients without obstruction of view.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

**5.3.4 Excellence for Patients**

The design of buildings, external and internal appearance as well as the design of the external works, and landscape can have a positive or a negative effect upon patient care, staff experience at the work place and the way NHS healthcare buildings are perceived. The PSCP shall develop design solutions which by the use of materials, lighting, shape, scale, mass and form of the building elements make a positive contribution to engendering well-being of patients and staff.

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**5.3.5 Healthcare Excellence**

Healthcare buildings should fit within their community and be compatible in design and the use of materials with their neighbourhood and have a strong NHS identity. The PSCP shall develop building design solutions that:

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- Reinforce the dependability and reassurance that the NHS means to the local community;
- Respect their local environment but at the same time make a positive contribution to the urban context that they are in;
- That clearly expresses their function in external and internal appearance;
- Allows patient diagnostic and treatment areas that can be differentiated in design concept and detail from inpatient areas; and
- Reflect that design considerations such as the distribution, size and proportion of windows and the use of materials can reflect the clinical function.

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These elements shall be expressed in the scale and mass of the building, as well as the disposition of functions.

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**5.3.6 Architectural Vision**

The PSCP shall develop building design solutions, which create an ordered composition of building elements in a stimulating form that successfully combines good standards of space, height, form, scale and use of materials and colours / images with associated functional requirements and its surroundings.

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**5.3.7 Stimulating Design**

The PSCP shall develop building design solutions which create a high quality, good working environment, both externally and internally, which shall provide a reassuring, enjoyable, convenient and safe hospital for all patients, their families, visitors and staff. This objective shall not be in conflict with the desire to produce a stimulating design.

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**5.3.8 Design Innovation**

Innovation in design can range from whole concepts of hospital planning, distribution of functions etc to detail design of components, materials, spaces, use of technology etc. The

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

PSCP shall develop designs at the concept level which shall translate the NHS modernisation agenda, and new forms of service delivery into new and innovative building solutions.

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**5.3.9 Recognisable Quality**

NHS Lothian expects high quality design to match the best national standards of healthcare provision it intends to implement.

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Materials shall be substantial and of high quality. They shall be carefully detailed and constructed such that the quality is appreciated throughout the life of the Works. They shall retain their appearance within a compatible maintenance regime. The life cycle plan and design detailing shall allow for replacement of elements in a way that does not impair design quality or service provision.

**5.3.10 Design Concept**

The visual forms shall enhance the sense of place. They shall make best advantage of the environmental qualities of the Works and the wider site.

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The design concept shall be clear, and compromised as little as possible by the subsequent detailed design development. The design concept shall be complete and well balanced, with all parts relating to the whole.

**5.3.11 Scale & Proportion**

Appropriate scale and proportions shall reflect the human scale, adjoining urban surroundings and the existing buildings / structures on the Site. Plant rooms, lift and stair towers shall express form and function, but they shall not be perceived as dominating and oppressive.

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**5.3.12 Composition**

The composition of the building shall be complete, cohesive and well balanced in massing.

The visual form shall enhance the Site and sense of place. This can be done in a number of ways including by linkages to surroundings in plan form, expressions in the design of local character and including natural features of the Site in the composition.

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The overall form of the building shall be designed to demonstrate the special needs and function of each ward. The design shall clearly express in the form of the building the individuality and special nature of parts of the Works.

**5.3.13 Aesthetics**

The overall visual form of the building shall combine good standards of space, height, form and scale. The form of the building shall appeal to the aesthetic senses of patients, visitors and staff as follows:

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(a) The lines of the design shall clearly define forms and surfaces of the building:

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

(b) The skyline shall reflect the mass of the building but not be out of scale and dominating;

(c) The sky line shall not be monotonous.

(d) The solid forms shall be in scale and have harmonious shapes; and

(e) The interplay of light and shade shall add to the definition of the building form and the balance between solid and glazed elements should be carefully considered.

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**5.3.14 Colour & Texture**

Colour decoration and motifs shall be used to facilitate identity of the Works; and its designated areas / zones and in addition improve wayfinding. It can also be used to create an immediate and distinct 'image' of the Works to visitors, which is interesting and stimulating. The use of colour shall be co-ordinated and adapted with the lighting to the activities of each area, toned down in certain areas e.g. recovery, rehabilitation and quiet areas; but bright and stimulating in others, such as waiting and corridor areas.

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**5.3.15 Quality Environment**

The design of the Works shall create a high quality, good working environment, both externally and internally which will provide a reassuring, enjoyable, convenient and safe hospital for all patients, their families, visitors, staff, delivery personnel and NHS sub-contractors.

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**5.3.16 Light & Colour**

The design shall provide quiet, comfortable areas with pleasing outlook easily accessible from clinical areas where patients and their families / visitors can "escape" from the clinical environment. Such areas may facilitate informal discussions with health professionals in the future, and be equipped for play / recreation.

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**5.3.17 Views**

The Works shall provide quiet, comfortable areas with pleasing outlooks.

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**5.3.18 Internal Wayfinding**

Design solutions shall incorporate an integrated, comprehensive wayfinding strategy that enables patients, visitors and staff to self-navigate with ease and lack of stress throughout the building.

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The wayfinding strategy shall be designed to meet the needs of patients and visitors but routes shall be clearly defined to ensure that parts of the building that are restricted to staff are not used as short cuts by patients and visitors. The use of enclosed internal courtyards as an integral part of a route shall be considered.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

Internal signage shall be easily understood and consistent throughout the journey from the entrance to the department reception and on to rooms. It shall not create a clutter and the use of pictograms and graphic art should be considered.

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The design should be developed which acknowledge the multi-sensory process used in wayfinding and which address the need of people with impairment in touch, smell, sight or sound.

The wayfinding strategy shall embrace the Identikit toolkit identity guidelines published by NHS Scotland.

**5.3.19 Internal Spaces**

All internal spaces shall be well planned and appropriate. Spaces shall be designed to encourage social interaction for patients, visitors and staff.

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Public spaces shall be used to integrate the various parts of the building, and shall be designed to avoid being a space joined by long, narrow corridors.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.4 General Design & Construction Requirements

5.4.1 Design Criteria

This document sets out the key design criteria that NHS Lothian has defined for the new Royal Hospital for Sick Children. It reflects the core requirement of creating a modern, landmark hospital which will be an asset to the future service provision. The design should be efficient and take account of the history, culture and physical requirements of an internationally renowned Children's Healthcare centre of excellence.

5.4.2 NHS Design Standards

The Scottish Government Health Department (SGHD) believes that improving the quality of our caring environments is crucial to delivering the confident, compassionate Scotland that is aspired to.

The new Royal Hospital for Sick Children will follow the design aspirations and guidance laid out in "the A Policy on Design Quality for NHS Scotland", (2010 revision 06) to which NHS Lothian subscribes and implements through its Design Champions. It will also aspire to deliver the quality objectives laid down by the Family Council and other stakeholders in the project ie Staff, Patients, Charities, Family Council and Public.

'The new hospital will be a beautiful place with Children and Young People at the centre of a nurturing, engaged and safe community.

'It will provide systems and spaces that recognise the healing capacity of sustaining everyday lives and provide parallel pathways of care for patients, carers and families.'

RHSC Family Council

The design will be evaluated using the NHS Scotland Achieving Excellence Design Evaluation Toolkit (AEDET). The NHS Lothian Re-provision Project Team will use AEDET as a structure to monitor agreed standards through all stages from design to completed construction.

This document follows the AEDET framework in terms of content and approach. Specific requirements for additional documentation to support the response to their Design Briefing Requirements are included in the Appendices.

The Design Champion for the project is NHS Lothian's RHSC Project Director of Planning and the design process is managed by the Re-provision NHS Lothian Project Team comprising representatives from NHS Lothian NHS Lothian and Acute Services Division, Children's Service clinical and management teams, Young People's Group, Family Council.

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

Partnership representatives, and other significant user and patient involvement groups. The new hospital will be managed within the Lothian University Hospital's Acute Services Division (LUHD).

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The PSCP shall also ensure that the Works comply with NHS Requirements, but not limited to, the following (including all amendments):

- NHS Scotland and NHS policies;
- NHS Lothian Approved Codes of Practice;
- NHS Lothian Procedure and Policy documents;
- NHS Model Engineering Specifications;
- The Patient's Charter,
- Department of Health publication "Better by Design";
- Specific healthcare design guidance codes:
- Department of Health Letters published by SGHD (HDL)
- Scottish Health Guidance Notes (SHGN)
- Health Guidance Notes (HGN)
- Scottish Health Planning Notes (SHPN)
- Scottish Hospital Planning Notes (SHPN)
- Scottish Hospital Technical Notes (SHTN)
- Fire Practice Notes (included but not limited to those listed in Building Better Healthcare Vol.3);
- Firecode
- Safety Action Notices published by HFS;
- Hazard Notices; published by HFS;
- HSC 1999/123;
- NHS QIS (Quality Improvement Scotland) advice, guidance and standards;
- Department of Health publication "Better by Design";
- NHS Lothian's Fire Officer's requirements and Fire safety requirements, including, but not limited to NHS Lothian's Fire Strategy;
- Health Building Notes (HBN)
- Scottish Health Technical Memoranda (SHTM)
- Health Technical Memoranda (HTM)
- Scottish Health Facilities Notes (SHFN)
- Health Facilities Notes (HFN)
- Scottish Fire Practice Notes (SFPN)

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

Where applicable and in specific patient areas, the PSCP shall as a minimum achieve the standards detailed in The Patients' Rights Bill Charter. This shall include the provision of adequate WCs and washing facilities in relation to each bed area, such that the wards can be allocated for single sex usage (either sex).

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The PSCP shall provide to NHS Lothian, at the Completion Date, a certificate confirming that the Works comply with the requirements of NHS Scotland the Firecode or that the facilities comply with the fire strategy agreed with NHS Lothian's Fire Officer and other relevant statutory bodies. For the avoidance of doubt, the PSCP shall provide the Works complete with all fixed and portable fire fighting equipment to comply with statutory requirements and the requirements and recommendations of NHS Scotland the Firecode.

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Where there is any conflict between 2 or more documents, the higher standard shall be adopted, unless specifically agreed otherwise by NHS Lothian, taking due account of all third party representations.

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

The PSCP shall comply with the requirements in relation to each of the following:

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#### Health Building Notes (HBN)

The PSCP shall take fully into account the guidance and advice included within HBNs. The PSCP shall ensure the Facilities are designed, taking account of the guidance within the agreed list of HBNs and shall record in a schedule of derogations where the design deviates significantly from the guidance.

~~The PSCP shall: take fully into account the guidance and advice included within HBNs; ensure that the Works comply with the requirements of HBNs; and adopt as mandatory any recommendations and preferred solutions contained in HBNs.~~

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#### Scottish Health Technical Memoranda & Health Technical Memoranda (SHTM & HTM)

The PSCP shall, in relation to all SHTMs and all HTMs (except HTMs where an SHTM exists with the same number and covering the same subject matter): take fully into account the guidance and advice included within such SHTMs and HTMs; ensure that the Facilities are designed, taking account of the guidance within the agreed list of such SHTMs and HTMs; and record in a schedule of derogations where the design deviates significantly from the guidance.

~~The PSCP shall, in relation to all SHTMs and all HTMs (except HTMs where an SHTM exists with the same number and covering the same subject matter): take fully into account the guidance and advice included within such SHTMs and HTMs; ensure that the Works comply with the requirements of such SHTMs and HTMs; and adopt as mandatory all recommendations and preferred solutions contained in such SHTMs and HTMs.~~

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#### Scottish Health Facilities Notes & Health Facilities Notes (SHFN & HFN)

The PSCP shall, in relation to all SHFNs and all HFNs (except HFNs where an SHFN exists with the same number and covering the same subject matter): take fully into account the guidance and advice included within such SHFNs and HFNs; ensure that the Facilities are designed, taking account of the guidance within the agreed list of such SHFNs and HFNs; and record in a schedule of derogations where the design deviates significantly from the guidance.

~~The PSCP shall, in relation to all SHFNs and all HFNs (except HFNs where an SHFN exists with the same number and covering the same subject matter): take fully into account the guidance and advice included within such SHFNs and HFNs; ensure that the Works comply~~

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

~~with the requirements of such SHFNs and HFNs; and adopt as mandatory all recommendations and preferred solutions contained in such SHFNs and HFNs~~

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This shall include but is not limited to the following documents, which are based upon developed versions of superseded HFNs:

- (a) Design against crime: a strategic approach to hospital planning (HFN 05);
- (b) Design for patient-focused care (HFN 01);
- (c) Infection control in the built environment: design and planning (HFN 30);
- (d) Refurbishment for natural ventilation (HFN 26);
- (e) Car Parking (HFN 21);
- (f) Disability Access (HFN 14);
- (g) Minimal Access Therapy (HFN 08);
- (h) Operational Commissioning Strategy (HFN 06);
- (i) Effective heat and power strategies for healthcare premises (HFN 03);
- (j) Reducing energy consumption in oversized plant (HFN 27);
- (k) Environmental Management in Healthcare (HFN 11); and
- (l) Materials management (supply, storage and distribution) in healthcare Facilities. (HFN 29).
- (m) Security Management in Healthcare Facilities

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Scottish Health Guidance Notes & Health Guidance Notes (SHGN & HGN)

The PSCP shall, in relation to all SHGNs and all HGNs (except HGNs where an SHGN exists with the same number and covering the same subject matter): take fully into account the guidance and advice included within SHGNs and HGNs. The PSCP shall ensure the Facilities are designed, taking account of the guidance within the agreed list of SHGNs and HGNs and and record in a schedule of derogations where the design deviates significantly from the guidance

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~~The PSCP shall, in relation to all SHGNs and all HGNs (except HGNs where an SHGN exists with the same number and covering the same subject matter): take fully into account the guidance and advice included within such SHGNs and HGNs; ensure that the Works comply with the requirements of such SHGNs and HGNs; and adopt as mandatory all recommendations and preferred solutions contained in such SHGNs and HGNs.~~

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Scottish Health Planning Notes (SHPN)

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

The PSCP shall take fully into account the guidance and advice included within SHPNs. The PSCP shall ensure the Facilities are designed, taking account of the guidance within the agreed list of SHPNs and record in a schedule of derogations where the design deviates significantly from the guidance.

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~~The PSCP shall take fully into account the guidance and advice included within Scottish Health Planning Notes; ensure that the Works comply with the requirements of Scottish Health Planning Notes; and adopt as mandatory all recommendations and preferred solutions contained in Scottish Health Planning Notes.~~

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Scottish Hospital Planning Notes (SHPN)

~~The PSCP shall take fully into account the guidance and advice included within Scottish Hospital Planning Notes. The PSCP shall ensure the Works comply with the requirements of Scottish Hospital Planning Notes and shall adopt as mandatory any recommendations and preferred solutions contained in Scottish Hospital Planning Notes.~~

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~~Scottish Hospital Technical Notes (SHTN)~~Scottish Hospital Planning Notes (SHPN)

The PSCP shall take fully into account the guidance and advice included within SHPNs. The PSCP shall ensure the Facilities are designed, taking account of the guidance within the agreed list of SHPNs and and record in a schedule of derogations where the design deviates significantly from the guidance.

Scottish Hospital Technical Notes (SHTN)

The PSCP shall take fully into account the guidance and advice included within SHTNs. The PSCP shall ensure the Facilities are designed, taking account of the guidance within the agreed list of SHTNs and record in a schedule of derogations where the design deviates significantly from the guidance.

Fire Practice Notes

The PSCP shall take fully into account the guidance and advice included within FPNs. The PSCP shall ensure the Facilities are designed, taking account of the guidance within the agreed list of FPNs and record in a schedule of derogations where the design deviates significantly from the guidance.

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

~~The PSCP shall take fully into account the guidance and advice included within SHTNs. The PSCP shall ensure the Works comply with the requirements of SHTNs and shall adopt as mandatory any recommendations and preferred solutions contained in such SHTNs.~~

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~~Scottish Fire Practice Notes (SFPN) & Fire Practice Notes (FPN)~~

~~The PSCP shall, in relation to all FPNs and all SFPNS (except FPNs where an SFPN exists with the same number and covering the same subject matter), take fully into account the guidance and advice included within such SFPNs and FPNs; ensure that the Works comply with the requirements of such SFPNs; and adopt as mandatory all recommendations and preferred solutions contained in SFPNs.~~

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~~Firecode~~

~~The PSCP shall ensure the Works comply with the NHS Scotland Fire Safety Management - A suite of documents which explains the policy and technical guidance in fire precautions in hospitals and other healthcare premises, comprising the Scottish Executive Health Department Fire Safety Policy, the Scottish Health Technical Memorandum (SHTMs) and Scottish Fire Practice Notes (SFPNs) which comprise NHS Scotland Firecode, the Fire Safety Documentation Reference Guide and A Model Management Structure for Fire Safety.~~

~~In the event of a conflict between the requirements of the local Building Control officers and NHS Scotland the Firecode the more onerous requirements shall take precedence. The PSCP shall notify NHS Lothian as soon as such conflict is known or suspected and shall further advise NHS Lothian of the PSCP's proposed relevant design solution as early as possible before formal submission for review by NHS Lothian.~~

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~~The PSCP shall take fully into account the guidance and advice included all other NHS published documents. The PSCP shall ensure the Works comply with the requirements of all other NHS published documents and shall adopt as mandatory any recommendations and preferred solutions contained in all other NHS published documents.~~

The PSCP shall also take fully into account the guidance and advice included within the following publications:

- (a) Enhancing privacy and dignity-achieving single sex accommodation;
- (b) The design of hospital main entrances;
- (c) Housekeeping - a first guide to modern and dependable ward housekeeping;
- (d) National standards of cleanliness for the NHS Scotland;
- (e) Quality Guidelines: Access for People with Disabilities (April 2000);

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

(f) Healthcare Associated Infection System for Controlling Risk In the Built Environment SHFN 30;

(g) National Standards of cleanliness for the NHS Implementation Guidance Too kit; and

(h) Standards for Environmental Cleanliness in Hospitals.

The PSCP shall ensure the design of the Works incorporates the following requirements:

(a) Minimisation of the need for staff to be with patients in secluded or isolated parts of the building;

(b) The layout of the inpatient units shall discourage patients from leaving the units except when authorised to do so. The PSCP shall give due consideration to channelled exit routes that require the negotiation of staffed areas; and

(c) Ease of patient observation by staff.

(d) Designed to offer a quality and functional building focused on offering the most up-to-date model incorporating the latest and best technology to support leading children's care

In certain instances, NHS publications include a number of options or alternative solutions. Where NHS Lothian has defined their preference specifically, the PSCP shall adopt these NHS Lothian's preferences as a mandatory requirement. Where no NHS Lothian preference is stated, the PSCP shall engage NHS Lothian in the design development process to seek and incorporate NHS Lothian's preference within the Works.

While NHS Lothian has placed a clear obligation on the PSCP in relation to NHS publications, it also wishes to acknowledge that in certain cases the subject matter, guidance and advice included therein has been further developed and improved since the date of publication. NHS Lothian does not wish to limit the use of current best practice or innovation in relation to the adoption of design standards. Consequently, NHS Lothian therefore wishes the PSCP to actively engage NHS Lothian in an on-going dialogue during the design process in order for NHS Lothian to review and agree to any proposed alternatives. For the avoidance of doubt, NHS Lothian considers NHS publications reflect minimum standards and any alternatives proposed by the PSCP shall provide a similar or enhanced level of service and quality.

National policies on the provision of paediatric specialist services provide a framework for redesigning services, developing new models of care and in turn, identifying the facilities required to support the provision of high quality care to Children and Young People in fit-for-purpose accommodation. These are reflected in the redesigned models of care and the plans for the new hospital.

The hospital will be a sustainable development, making best use of cost effective and efficient energy sources, waste will be minimised during construction and operation while meeting the challenging requirements of the clinical environment of an advanced teaching hospital. HFS

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

Sustainable Design Strategy (November 2009) NHS Lothian Sustainable Development Strategy (August 2006) provides the framework for this project. The Design must demonstrate full cognisance has been taken of the following statement from the SGHD:

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Good design is not merely a question of visual style or personal perception but arises from the careful synthesis of many interrelated factors including architectural vision, functionality and efficiency, structural integrity and build quality, accessibility, security, sustainability, lifetime costing, flexibility in use and a sense of space in the community.

The design approach will be to reflect age appropriate care, clinical requirements and a safe, caring and healing environment for patients, parents, staff and visitors. Key benefits of good design include:

- Views out-with and within to offer interest and diversion
- Safe and controlled access bility into and from the hospital for all, including access to recreation and "green space" and other support services in addition to clinical requirements.
- Safety and security for all users of the building and its environment.
- Combination of Single Rooms and Bed Bays within the inpatient areas to support privacy, dignity and control of infection as well as the essential social and developmental elements of paediatric care:
- High quality overnight accommodation for parents (both by child's bed and in separate facility):
- Age appropriate Facilities, including a dedicated adolescent unit:
- Unscheduled, emergency care patient pathway that is efficient and effective:

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The complexities of this project given the clinical priorities, the existing PFI contract at Little France between NHS Lothian and Consort, site constraints and project management issues (i.e. the difficulties of imposing a new type contract into an existing PFI contract) require to be fully comprehended and overcome at every stage. The hospital will have a physical link to the Royal Infirmary of Edinburgh (RIE) in order to achieve the required clinical linkages and adjacencies.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

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**5.4.3 Statutory Regulations and Non-NHS Requirements**

The PSCP shall also ensure that the Works comply with relevant statutory requirements (including highways) and required consents and all non-NHS requirements including, Good Industry Practice but not limited to, the following:

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- Acts and Duty of Care – e.g. Environmental Protection Act 1990
- BS8300:2009 Code of Practice for the design of buildings and their approaches to meet the needs of disabled people. Note: where BS8300 is more onerous than the Technical Standards, BS8300 shall apply.
- BS8301: Code of Practice for Building Drainage
- BSI Standards and Codes of Practice
- Building Research Establishment Digest Recommendations;
- Chartered Institute of Building Services Engineers (CIBSE) publications and Institute of Electrical Engineers (IEE) publications;
- Construction (Design and Management Regulations) 2007
- Construction (Health Safety and Welfare Regulations) 1996
- Control of Asbestos at Work Regulations 2006
- Control of Substances Hazardous to Health (COSHH) Regulations;
- CORGI ACS Accreditation;
- Disabled Discrimination Act 2005 (DDA)
- Environmental Protection Act 1990
- Fire (Scotland) Act 2005 as Amended
- Fire (Scotland) Regulations 2009

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

- Fire Precautions Act 1971
- Fire Precautions (Workplace) Regulations 1997
- Health and Safety at Work Act 1974
- Health and Safety Executive Guidance, Approved Codes of Practice
- Health and Safety legislation, including all UK and Scottish Statutory Instruments;
- Health and Safety (Display Screen Equipment) Regulations 1992;
- Local Authority / highways / statutory services adoptable standards;
- Local Bye-Laws and Regulations;
- Lothian and Borders Fire Brigade, City of Edinburgh Council's Fire Officer
- Manual of Contract Documents for Highways Works Volumes 1-6
- Management of Health and Safety at Work Regulations 1999;
- Manual Handling Operations Regulations 1992, as amended in 2002;
- Offices, Shops and Railway Premises Act 1963;
- Radioactive Substances Act 1993;
- Radiological Protection Act 1991;
- Recommendations of the Health and Safety at Work Executive;
- Relevant British Standards, Codes of Practice, or equivalent European industry recognised standards;
- Requirements of the Building Control Officer, Fire Officer and Environmental Health Officer;
- Requirements of the City of Edinburgh Council's Building Control Officer, Fire Officer and Environmental Health Officer;
- Requirements of the local Water Supply and Sewerage Company, Electricity Supply Company, Telecommunications Supply Company, Gas Supply Company, any other utilities company and NHS Lothian;
- Scottish Centre for Infection and Environmental Health guidance / recommendations;
- Scottish Government Technical Standards – Building Standards (Scotland) (current at the time of Building Warrant application)
- The Building (Scotland) Act 2003
- The Building (Scotland) Amendment Regulations 2009;
- The Building (Scotland) Regulations 2004;
- The Health and Safety (Miscellaneous Amendments) Regulations 2002;
- The Ionising Radiation (Medical Exposure) Regulations 2000;
- The Ionising Radiation Regulations 1999;

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

The Requirements of the National Radiological Protection Board Water Research Centre Codes:

- Town and Country Planning Act 1990:
- Workplace (Health, Safety and Welfare) Regulations 1992
- All other bodies and authorities having jurisdiction.

The list above should not be considered exhaustive. It is the responsibility of the PSCP to ensure that the design and construction complies fully with relevant Legislation, Applicable Standards, Guidance and Good Industry Practice.

**5.4.4 Derogation Schedule**

Where compliance with guidance is not achieved, the PSCP will prepare and submit to NHS Lothian a schedule of derogations from ~~comply with~~

All relevant national clinical standards and guidelines including SHTM's, HBN's, HTM's and SHPN's.

**5.4.5 Life Expectancy**

**NHS Lothian is currently reviewing these requirements as intimated at the meeting of 5<sup>th</sup> October 2010.**

The building materials including building services components, shall be designed with materials, components and techniques that are readily available, reliable, sustainable and easily maintainable in use. NHS Lothian supports buildings constructed of proven technology components, with high life expectancy, leading to minimum cost in use.

Life expectancy at the Completion Date shall be in accordance with ISO 15686 – Buildings and Constructed Assets – Service Life Planning and for the elements listed below shall as a minimum be:

Structure, including substructure	70 years
Floor Structure	970 years
Roof Structure	970 years
Drainage and below ground civil engineering infrastructure	970 years
External Walls	970 years
External Openings, windows and door	25 years
Roof Finishes	25 years
External finishes	25 years*
External Hard Surfaces	20 years

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

Internal partitions including openings	25 years
Internal Doors	25 years
Internal finishes	15 years*
Internal fixtures and fittings	15 years
Floor Finishes	15 years
Engineering plant	CIBSE Guide Volume M
Engineering services distribution systems	CIBSE Guide Volume M

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\*excluding painted finishes

**5.4.6 Surveys / Site Investigations**

The PSCP shall be responsible for all ~~geographical~~ topographical, hydrological, geotechnical and environmental surveys and/or investigations.

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**5.4.7 Anti-Ligature Resistant**

The PSCP shall recognise the importance of ~~anti~~ ligature resistant and self harm considerations in the design of any aspect of the Works. To reflect this, the PSCP shall fully consider and limit ligature and self harm risks in the design of the Works. The PSCP shall comply with the specific Clinical Requirements and specific Non-Clinical Requirements.

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**5.4.8 Anti Vandal**

The PSCP shall recognise the importance of anti vandalism considerations in the design of any aspect of the Works. To reflect this, the PSCP shall fully consider and limit vandalism risks as far as reasonably practicable. The PSCP shall note that sources of vandalism to be addressed may arise from both external sources and patients. Where immediate prevention cannot be readily achieved, the PSCP shall ensure that the design of the Works allows for sufficient robustness and resistance to potential mistreatment of the Works, and for remediation of them with minimal cost and disturbance to the operation of the Facilities and its users.

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**5.4.9 Hierarchy of Standards**

Where there is any conflict between two or more documents, the more onerous and / or the most up-to-date standard shall be adopted. NHS Scotland standards shall take precedence over equivalent NHS England & Wales's standards.

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In certain instances, NHS publications include a number of options or alternative solutions. Where NHS Lothian has defined their preference specifically, the PSCP shall adopt these preferences as a mandatory requirement. Where no NHS Lothian preference is stated, the

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

PSCP shall engage NHS Lothian in the design development process to seek and incorporate NHS Lothian's preference within the Works.

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**5.4.10 Infection Prevention & Control**

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Prevention and control of infection shall remain a primary consideration of the PSCP in the design of the Works. The whole hospital planning shall place a high priority on infection prevention and control in relation to the movement of goods and in particular the segregation as far as is reasonably practical of clean linen, food trolleys and the removal of waste, soiled linen and empty food trolleys.

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The PSCP shall ensure all aspects of the Works allow the control and management of an outbreak and spread of infectious diseases in accordance with the following:

- (a) Infection Control in the Built Environment: Design and Planning (SHFN 30);
- (b) Scottish Infection Manual – "Managing the Risk of HAI in NHS Scotland";
- (c) Guidance provided by Clinical Standards NHS Lothian NHS QIS;
- (d) Textiles and Furniture (SHTM 87); and
- (e) Ventilation in Healthcare Premises (SHTM 2025).

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**5.4.11 Equipment Requirements**

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The PSCP shall identify and provide all necessary connections and infrastructure (including supply, extraction and removal of waste) for all items of equipment identified in ~~XXX~~ the ADB sheets and as subsequently amended during the 1:50 design development.

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The PSCP shall provide a suitable environment for each item of equipment; this shall take into account temperature and ventilation requirements. For the avoidance of doubt, this obligation specifically includes specialist service requirements, including for example 3-phase electrical supply, surge protection, special water supply requirements and separation of contaminated waste.

For reasons relating to standardisation, compatibility, staff familiarity and product quality NHS Lothian expects to be fully involved in the choice of certain items of equipment. All equipment and associated systems to be installed and commissioned in accordance with:

- (a) Good Industry Practice;
- (b) Manufacturer's instructions;
- (c) NHS Lothian's specific supplementary requirements;
- (d) NHS Lothian's, and statutory health and safety requirements;
- (e) All equipment and associated systems to operate efficiently, effectively and in accordance with its intended function for the whole of its design life;

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

(f) Take due account of the impact on the environmental conditions within the Works. For the avoidance of doubt, this obligation includes (but is not limited to) impact of heat gain and loss, and ventilation; and

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(g) Take due account of the potential impact of future equipment changes through either refresh or replacement. In particular, allowance for equipment of different sizes, weights, service requirements or environmental impacts.

The PSCP shall allow NHS Lothian to provide their- Clinical and Non-Clinical services with a minimum of disruption during installation, commissioning, operation, maintenance and replacement.

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A number of specialist engineering systems will be required within the Works and each shall be fully integrated within the design proposals. Specialist systems shall be incorporated where appropriate to enhance the operation of the equipment and the Works

The construction, structure, plant and services shall be designed to meet the Board's Equipment Specification and the specific requirements for special equipment and associated services. The design of the Works shall meet these requirements with regards to wall and floor loads, structural movement and deflections, the need for special floors, wall supports, ceiling grids and other such measures to allow for the installation of special equipment and associated services.

**5.4.12 Room Data Sheets**

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The PSCP shall provide Works that, as a minimum, meet all the requirements specified in the signed-off Room Data Sheets and 1:50 Room Layouts included in XXX

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**5.4.13 Standardisation & Prefabrication**

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In order to take advantage of the repetitive nature of construction, maximise productivity and efficiency and minimise construction periods and waste, consideration shall be given to off-site prefabrication. It shall specifically be applied to repetitive elements e.g., sanitary assemblies, bathrooms or complex equipment such as plant assemblies.

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The PSCP shall adopt standardised and / or pre-fabricated components and elements of construction which improve product quality, guarantee consistency of performance, enhance efficiency of maintenance, and provide flexibility for future changes, ease of replacement and value for money.

The use of standardised / prefabricated elements and building components to achieve good quality control, ease and speed of installation and flexibility for future use are welcomed. Their use shall not constrict NHS Lothian achieving clinical functionality and offer value for money.

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

#### 5.4.14 Materials

The PSCP shall ensure that all materials incorporated into the Works shall comply with the requirements of the Construction Products Regulations 1991, and all other parts of the Works Information.

The PSCP shall ensure that all products and materials to be incorporated into the Works shall be new unless otherwise agreed by NHS Lothian.

The PSCP shall ensure that the whole quantity of each product and material required to complete the Works is of a consistent type, size, quality and overall appearance and is fit for its intended purpose. The PSCP shall ensure all products and materials are handled, stored, prepared and used or fixed strictly in accordance with the manufacturers' written instructions or recommendations and not be damaged when incorporated into the Works.

The PSCP shall not construct the Works utilising substances which are hazardous to health, including but not limited to substances referred to as being hazardous to health and safety in "The Control of Substances Hazardous to Health Regulations 2002".

The PSCP shall not specify or include products or materials that do not comply with relevant British or European Standards, Codes of Practice or which are generally known within the European Union at the time of specification to be deleterious to health and safety or to the durability of buildings and/or other structures and / or finishes and / or plant and machinery in the particular circumstances in which they are used. Such materials include but are not limited to:

- High alumina cement in structural elements;
- Marine aggregates or their derivatives where the chloride iron content by mass of cement exceeds the requirements of Table 4 of BS 5328: Part 1;
- Aggregates where the drying shrinkage characteristics, when tested in accordance with BS 812: Part 120, exceed a value of 0.05%;
- Aggregates for use in reinforced concrete which do not comply with BS 882 or with the provisions of BS 8110;
- Water used in construction or manufacture which is not clean, fresh or free from chemical or organic impurities or does not otherwise comply with BS 3148;
- Concrete where the total mass of the reactive alkali in the concrete mix exceeds the recommendations set out in the Concrete Society Technical Report No 30;
- Woodwool slabs in permanent formwork to concrete or in structural elements;
- Calcium chloride in admixtures for use in reinforced concrete or reinforced masonry construction;

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ROYAL HOSPITAL FOR SICK CHILDRENPART 5: DESIGN BRIEF - BUILDING FABRIC

- Calcium silicate bricks incorporated within any load bearing part of the structures, or other areas of the construction which are deemed to be load-bearing in any way;
- Asbestos or asbestos-containing products;
- Lead, or any material containing lead, which may be ingested, inhaled or absorbed, except where copper alloy fittings containing lead are specifically required in drinking water pipework by any statutory requirement or in architectural design features (e.g. weather flashings);
- Urea formaldehyde foam, or materials which may release formaldehyde in quantities which may be hazardous with reference to the limits set from time to time by the HSE, at the time of incorporation in to the Works comprising the project;
- Softwood used externally, except for non structural landscaping or in areas agreed with NHS Lothian (e.g. pressure treated pine decking);
- Slipbricks;
- Polyisocyanurate foam;
- Polyurethane foam;
- Extruded polystyrene other than low ozone depletion materials;
- Other substances, which at the time of their incorporation into the project, have been designated by the Building Research Establishment and published in their Digest, as deleterious to health and safety or deleterious to the building fabric, including both substructure and superstructure, in the particular circumstances in which these substances are used;
- Products associated with the destruction or depletion of tropical rain forest or threatened animal species;
- Products or manufacturing processes which cause the emission of pollutants, harmful radiation or ozone depleting chemicals, as identified in the Montreal Protocol;
- Use of noxious substances including DoE "Red List" and EC "List 1" substances;
- Materials which are generally composed of mineral fibres, either man-made or naturally occurring, which have a diameter of 3 microns or less and a length of 200 microns or less, or which contain any fibres not sealed or otherwise stabilised to ensure that fibre migration is prevented;
- Lightweight or air-entrained concrete bricks;
- Iberian roof slates; and
- Fibrous boards, including MDF board, in any external construction work.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.5 Construction Phase Requirements

5.5.1 General

The proposed construction Site boundary is as shown on the Site Plans contained in Part 3 of the Briefing Document.~~XXX~~

The PSCP shall be responsible for identifying and implementing all necessary working practices to satisfy statutory requirements in relation to their construction activities and must liaise with NHS Lothian to ensure that specific site wide rules are complied with -

In addition to their statutory obligations, the PSCP shall at all times respect the requirements and reasonable wishes and safety of the immediate neighbours to the Site. In order to facilitate compliance with this obligation, the PSCP shall establish a site liaison group on which all interested parties are invited to be represented, including NHS Lothian, which shall meet at regular intervals in the immediate run up to, and during, all site-works.

The PSCP shall undertake all Principal Contractor duties applicable under the Construction - (Design & Management) Regulations 2007 and appropriate amendments for the duration of the Works.

The PSCP shall also comply with the obligations of the "Contractor" as laid down in NHS Lothian's Policy and Safety Rules. NHS Lothian recognises that their safety guidance was written primarily with work on live hospital Sites in mind, and as such accepts a degree of interpretation is required in order to ensure relevance for this Project.

The PSCP shall at all time work within the hours permitted by City of Edinburgh Council in granting planning permission for the development.

The PSCP shall ensure all surplus excavated material and all building spoil and rubbish is disposed of to a recognised tip, licensed by City of Edinburgh Council, be transported by an approved waste transportation company, and shall fully comply with all current legislation governing the controlled disposal of waste material. No materials shall be disposed of off-Site by any other means.

The PSCP shall provide, for the duration of the construction phase, personal protective equipment for visiting NHS Lothian staff (and other approved visitors), and use of the PSCP facilities for meetings etc.

5.5.2 Workmanship, Construction Accuracy & Tolerances

The PSCP shall ensure that general workmanship conforms to current revisions of BS 8000 - "Workmanship on Building Sites", which covers typical building construction activities. Where specialist design proposals require construction activities outside the scope of this document, the PSCP shall propose specific quality procedures relating to these activities based on Good Industry Practice current at the time, as a minimum.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

The PSCP shall ensure that workmanship for all construction and component assemblies is to the highest standards in every respect. Work is to be true to detail with sharp profiles, straight and free from defects, marks, waves or flaws of any nature impairing strength, performance or appearance.

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The building and the external works shall be designed and set out by the PSCP in accordance with BS 5606:1990 "Guide to Accuracy in Building"...

**5.5.3 Control of Noise & Dust**

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The attention of the PSCP is drawn to the provisions of Section 60 of the Control of Pollution Act 1974, with reference to the control of noise in relation to any demolition or construction works. Where such works are adjacent to occupied property, the PSCP shall ascertain from the Site neighbours what requirements or restrictions, if any, shall apply, particularly in relation to Aspergillus. The restrictions may relate to the type of plant to be used, siting of plant, methods of working to be adopted, the hours of work permissible and may, in addition, impose a maximum noise level that must not be exceeded.

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The PSCP shall fit all compressors, percussion tools and vehicles with effective silencers of a type recommended by the manufactures of the compressors, tools or vehicles but in any event to the requirements of BS 5228: Part 1: 1997.

Any equipment of a semi-permanent nature used by the PSCP, which produces noise on a regular basis, shall be positioned to cause the minimum disturbance to adjacent areas. The PSCP shall ensure absolute care is taken at all times throughout the course of the Works to prevent the egress of water, dust, debris or any microbiological contamination out of the Site and into adjacent buildings. In particular, the PSCP shall establish any specific requirements for the control of dust identified.

**5.5.4 Continuity of Existing Services**

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The PSCP shall plan and execute the Works to ensure that the operational continuity of the immediate neighbours to the Site, and their activities are maintained at all times.

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The PSCP shall ensure that all reasonable safeguards are incorporated to ensure continuity of utility supplies to the adjacent users of the Site in-so-far as they may be affected by the Works. For the avoidance of doubt, utility supplies include, but are not limited to, gas, electricity, water, sewerage and communications services.

**5.6 Sustainability**

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The PSCP shall promote sustainable development by demonstrating an integrated approach to the social, environmental and economic well-being of the area served, now and for future generations. The PSCP shall ensure that the design and completed Works complies with the

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

recommendations of Local Agenda 21, including reflecting the objectives of any Local Agenda 21 strategy supported by City of Edinburgh Council.

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The Works shall, as far as reasonably possible, deliver benefits to the environment. The PSCP shall:

Implement a strategy to meet the BREEAM aspirations of NHS Lothian refer to section 4.5.6 for further information.

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- (a)
- (b) Minimise waste during construction and operation;
- (c) Using Greencode, implement an Environmental Management System (EMS) for accreditation with ISO 14001;
- (d) HTM 07-07 Sustainable Health and Social Care Buildings: Planning, design, construction and refurbishment
- (e) Reduce the use of fuels which contribute to ozone depletion, global warming, air and water pollution and non-renewable resource depletion;
- (f) Respect the local landscape and protect natural habitat and species and comply with the UK Biodiversity Action Plan;
- (g) Avoid sources of ionising and electromagnetic radiation to the extent determined by the relevant HTM;
- (h) Avoid any design features associated with sick building syndrome;
- (i) Maximise the opportunity for waste minimisation and re-cycling;
- (j) Maximise efficient and effective removal and transport of waste;
- (k) Adopt maintenance regimes which maintain optimum performance;
- (l) Where possible avoid the use of harmful building products and processes; and
- (m) Explore the use of prefabricated elements to achieve good quality control, ease and speed of installation and flexibility for future use.
- (n) The PSCP shall comply with the relevant NHS Requirements, including, but not limited to:

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1. The development of a Local Environmental Strategy in line with sustainable development in NHS;
2. New environmental strategy for the National Health Service;
3. Greencode;
4. Carbon/ energy management in healthcare; and
5. Consultation with SHINE: Alliance for sustainable buildings.
6. When delivered the building will achieve the energy usage rating for a building of this type and will not exceed 50Gj/100m<sup>3</sup>

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

7. NHS Lothian's target of utilising some 20% of renewable energy sources will be met by the PSCP by the use of Low or Zero Carbon Technology through the provision of a 1 megawatt CHP sited at the upgraded Energy Centre. This work will be instructed by NHS Lothian as part of the Enabling Works.

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The PSCP shall design the Works to support the environmental services and to conserve and utilise energy. The design of the environmental control system shall be co-ordinated and integrated with the design of the structure and the occupied areas in order to maximise the control and flex bility of the installations.

Commented [mod5]: HK – Note PSCP approach will not employ any "renewables". A CHP engine is a key part of the strategy which is considered a LZCT ( Low and Zero Carbon Technology ) but this is not a "renewable " technology.

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5.6.1 BREEAM

The PSCP should be shall work towards achieving a BREEAM Excellent rating, as targeted by is policy within NHS Lothian. A specific version of BREEAM has been developed by the BRE in 2008 for healthcare buildings "BREEAM for Health", which will be adopted for this project. All references to BREEAM shall mean "BREEAM for Health". Achieving an Excellent rating is in line with the aspirations requirements of Health Facilities Scotland for all new build healthcare projects.

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"A Policy on Design Quality for NHS Scotland – 2010 Revision" makes it a requirement that all new healthcare buildings achieve a BREEAM Excellent rating.

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Under the new BREEAM healthcare there are now mandatory requirements specifically under energy, water and ecology. In addition, BREEAM embraces energy efficiency and passive design strategies for ventilation and thermal control to enhance internal comfort. The inclusion of renewables Low or Zero Carbon Technology -is now a necessary component in achieving mandatory to achieve an 'Excellent' rating.

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A "predictive" or initial assessment is required to establish routes for achieving the 'Excellent' rating. These routes should be practical and affordable.

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BREEAM requires a design stage assessment, carried out and completed before construction starts on site, by the PSCP. In addition a post construction review is required at completion carried out by the PSCP. The post construction review assesses "as built" specifications and actual construction practice on site and should maintain the 'Excellent' rating.

5.6.2 Controlled Samples

Samples of various finishes and equipment shall will be presented by the PSCP for acceptance and sign-off by NHS Lothian, during Stage 3 and during the course of the construction works. The undemoted lists represent the minimum requirements of NHS Lothian.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

- (a) All Floor Finishes
- (b) All Wall Finishes
- (c) All Ceiling Finishes
- (d) Wall / Corner Protection
- (e) Balustrades
- (f) Stair nosing's
- (g) Sanitary ware
- (h) Doors / Ironmongery
- (i) Windows / Ironmongery
- (j) Furniture Fittings & Equipment (FF&E)
- (k) Way finding signage
- (l) Facilities Management / NHS Estates required signage
- (m) Kitchen cabinetry and worktops
- (n) Entrance Area & Cafe

Samples:-

- Patient Bedroom Wardrobe
- (a) Patient Bedroom Shelf Unit Reception Desk
- (b) Nurse Base Desk

Finishes / Sample NHS Lothian to be provide for:-

- Reception Desk
- Nurse Base Desks

Mock Ups:-

- Nurse Station
- Office Accommodation
- (a) Typical Single Bed Ward & Ensuite Ward Layouts

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

**5.7 Health & Safety**

**5.7.1 Designer Duties**

**5.7.1.1 Scope**

The PSCP's designers shall identify how the requirements of Regulation 11 of the Construction (Design and Management) Regulations 2007 (CDM Regs) are complied with regarding the use of the structure as a workplace (with reference to The Workplace (Health, Safety and Welfare) Regulations 1992.)

Specifically they shall identify the process for demonstrating that the principles of prevention that are identified within Appendix A have been applied for the following items.

- (a) The building fabric and any item attached to it or incorporated within it which requires access shall be accessible in a manner that addresses the hierarchy of control measures (with particular reference to The Work at Height Regulations 2005 Regulation 6.)
- (b) The plant, services and equipment that is located within or on the building structure shall be accessible in a manner that addresses the hierarchy of control measures (with particular reference to The Work at Height Regulations 2005 Regulation 6.)
- (c) The requirement to include confined spaces within the structure (with particular reference to The Confined Spaces Regulations 1997 Regulation 4.)
- (d) The inclusion within the structure of substances that are classified as hazardous to health address the hierarchy of control measures (with particular reference to The Control of Substances Hazardous to Health Regulations 2002 Regulation 7(7).

**5.7.1.2 Design Output**

The output from the design process shall identify:

- Details of areas where access may be required. These include but are not limited to:
  - Roof slabs.
  - Suspended slabs.
  - Walls.
  - Ceilings / soffits.
  - Raised floor systems / floor finishes.
  - Stairs and stairwells.
  - External works (e.g. decking).
  - Confined spaces (and why they cannot be designed out)
  - Plant & equipment.
  - The loading criteria for all structural elements where access may be undertaken.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

The position of all items which will require access e.g. by identification on a drawing or within a schedule.

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The activities that require to be undertaken, together with details of any items which require to be removed / replaced, including details of any particular issue e.g. working space for undertaking the activity, size of item(s), weight of item(s), the route through the building that any item will require to take.

This includes details of the activity classification e.g.:

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- Operation.
- Routine inspection.
- Planned preventative maintenance.
- Routine maintenance repairs.
- Statutory inspection.
- Statutory test.
- Insurance inspection.
- Warranty condition.
- Replacement.
- Cleaning.
- Others (specify).

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The frequency of the activity e.g.:

- Daily.
- Weekly.
- Monthly.
- Bi-annually.
- Annually.
- As specified by manufacturer / supplier.
- Other (specify).

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The location of the supporting information e.g.:

- Drawing(s).
- Health & Safety File.
- O & M information.
- Schedules of loading information.
- The activities that require to be undertaken, together with details of any items which require to be removed / replaced, including details of any particular issue e.g. working

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

space for undertaking the activity, size of item(s), weight of item(s), the route through the building that any item will require to take.

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The drawings shall demonstrate the access strategy both vertically and horizontally, identifying how access is achieved. This shall include identifying the practicalities of the access strategy with regard to constraints e.g.:

- Internal door widths
- Position of furniture, fittings, equipment and features.
- Access over around other elements of the building fabric
- Turning circles and swept path.
- The position and rating of all items provided to facilitate access through the building e.g. lifting beams, lifting frames, lifting points.

**5.8 Building Manual**

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**5.8.1 Purpose**

The Building Manual is to be a comprehensive information source and guide for owners and users of the completed Works. It should provide an overview of the main design principles and describe key components and systems to enable proper understanding, efficient and safe operation and maintenance.

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**5.8.2 Structure of the Building Manual**

Part 1: General

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Part 2: Fabric

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Part 3: Services

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Part 4: The Health and Safety File.

**5.8.3 Content of the Building Manual Part 1: General**

Content: Obtain and provide the following, including all relevant details not included in other parts of the manual.

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Index: list the constituent parts of the manual, together with their location in the document.

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The Works:

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- Description of the building and facilities.
- Ownership and tenancy, where relevant.
- Health and Safety information – other than that specifically required by the Construction (Design and Management) Regulations.

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The Contract:

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

- Names and addresses and contact details of all significant consultants, contractors, subcontractors, suppliers and manufacturers.
- Overall design criteria.
- Environmental performance requirements.
- Relevant authorities, consents and approvals.
- Third party certification, such as those made by "competent" persons in accordance with the Building Regulations.

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Operational requirements and constraints of a general nature:

- Maintenance contracts and contractors.
- Fire safety strategy for the building and the site. Include drawings showing emergency escape and fire appliance routes, fire resisting doors, location of emergency alarm and fire fighting systems, services, shut off valves switches, etc.
- Emergency procedures and contact details in case of emergency.
- Other specific requirements:

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Description and location of other key documents.

**5.8.4 Content of the Building Manual Part 2: Building Fabric**

Content: Obtain and provide the following, including all relevant details not included in other parts of the manual.

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Detailed design criteria, including:

- Floor and roof loadings.
- Durability of individual components and elements.
- Loading restrictions.
- Insulation values.
- Fire ratings.
- Other relevant performance requirements.
- Construction of the building:

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A detailed description of methods and materials used.

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As-built drawings recording the construction, together with an index.

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Information and guidance concerning repair, renovation or demolition/ deconstruction

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Periodic building maintenance guide chart.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

Inspection reports.

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Manufacturers' instructions index, including relevant COSHH data sheets and recommendations for cleaning, repair and maintenance of components.

Fixtures, fittings and components schedules and index.

Guarantees, warranties and maintenance agreements – obtain from manufacturers, suppliers and subcontractors.

- Test certificates and reports required in the specification or in accordance with legislation, including:

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Air permeability.

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Resistance to passage of sound.

Continuity of insulation.

Electricity and Gas safety.

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Other specific requirements:

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- Ground investigation reports
- Flood risk assessment

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—Drainage impact assessment

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**5.8.5 Content of the Building Manual Part 3: Building Services**

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Content: Obtain and provide the following, including all relevant details not included in other parts of the manual.

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Detailed design criteria and description of the systems, including:

- Services capacity, loadings and restrictions.
- Services instructions.
- Services log sheets.
- Manufacturers' instruction manuals and leaflets index.
- Fixtures, fittings and component schedule index.
- Detailed description of methods and materials used.

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As-built drawings for each system recording the construction, together with an index, including:

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- Diagrammatic drawings indicating principal items of plant, equipment and fittings.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

- Record drawings showing overall installation.
- Schedules of plant, equipment, valves, etc. describing location, design performance and unique identification cross referenced to the record drawings.
- Identification of services – a legend for colour coded services.

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Product details, including for each item of plant and equipment:

- Name, address and contact details of the manufacturer.
- Catalogue number or reference.
- Manufacturer's technical literature, including detailed operating and maintenance instructions.
- Information and guidance concerning dismantling, repair, renovation or decommissioning.

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Operation: A description of the operation of each system, including:

- Starting up, operation and shutting down.
- Control sequences.
- Procedures for seasonal changeover.
- Procedures for diagnostics, troubleshooting and faultfinding.

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Guarantees, warranties and maintenance agreements – obtain from manufacturers, suppliers and subcontractors.

Commissioning records and test certificates list for each item of plant, equipment, valves, etc. used in the installations – including:

- Electrical circuit tests.
- Corrosion tests.
- Type tests.
- Work tests.
- Start and commissioning tests.

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Equipment settings: Schedules of fixed and variable equipment settings established during commissioning.

Preventative maintenance: Recommendations for frequency and procedures to be adopted to ensure efficient operation of the systems.

Lubrication: Schedules of all lubricated items.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

Consumables: A list of all consumable items and their source.

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Spares: A list of recommended spares to be kept in stock, being those items subject to wear and tear or deterioration and which may involve an extended delivery time when replacements are required.

Emergency procedures for all systems, significant items of plant and equipment

Annual maintenance summary chart

Other specific requirements:

**5.8.6 Content of the Building Manual Part 4: The Health and Safety File**

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Content: obtain and provide the following, including all relevant details to the CDM co-ordinator:

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- Residual hazards and how they have been dealt with.
- Hazardous materials used.
- Information regarding the removal or dismantling of installed plant and equipment.
- Health and safety information about equipment provided for cleaning or maintaining the structure.
- The nature, location and markings of significant services.

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Key information and as-built drawings of the structure, its plant and equipment

- 

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**5.8.7 Presentation of the Building Manual**

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Hard copy format: A4 size, plastics covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover titled.

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Selected drawings needed to illustrate or locate items mentioned in the Manual: Where larger than A4, to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings.

As-built drawings: The main sets may form annexes to the Manual.

Electronic copy format: electronic read only (e.g. pdf) + electronic read / write (e.g. AutoCAD for as built drawings, Word for project specific text.)

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Refer to the Contract for details of the number of copies required and the timescales for submission.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

Submit to:

**5.8.8 Health & Safety Reference Documentation**

**5.8.8.1 General**

[Health & Safety at Work etc Act 1974.](#)

**5.8.8.2 Safe ways of working**

[Management of Health and Safety at Work Regulations 1999 \(S.I. 1999/3242\)](#)

[Management of Health and Safety at Work \(Amendment\) Regulations 2006 \(S.I. 2006/438\)](#)

[The Confined Spaces Regulations 1997 \(S.I. 1997/1713\)](#)

[Dangerous Substances \(Notification and Marking of Sites\) Regulations 1990 \(S.I. 1990/304\)](#)

[Health and Safety \(Safety Signs and Signals\) Regulations 1996 \(S.I. 1996/341\)](#)

**5.8.8.3 Construction**

[Construction \(Design and Management\) Regulations 2007 \(S.I. 2007/320\)](#)

[Notification of Conventional Tower Cranes Regulations 2010 \(S.I. 2010/333\)](#)

**5.8.8.4 Work at height**

[Work at Height Regulations 2005 \(S.I. 2005/735\)](#)

[Work at Height \(Amendment\) Regulations 2007 \(S.I. 2007/114\)](#)

**5.8.8.5 Workplace**

[Workplace \(Health, Safety and Welfare\) Regulations 1992 \(S.I. 1992/3004\)](#)

**5.8.8.6 Fire safety**

[Fire \(Scotland\) Act 2005.](#)

[Fire \(Scotland\) Act 2006.](#)

[The Fire Safety \(Scotland\) Regulations 2006 Scottish SI 2006/456.](#)

**5.8.8.7 Work equipment / machinery**

[Lifting Operations and Lifting Equipment Regulations 1998 \(S.I. 1998/2307\)](#)

[Provision and Use of Work Equipment Regulations 1998 \(S.I. 1998/2306\)](#)

**5.8.8.8 Gas equipment**

[Gas Safety \(Installation and Use\) Regulations 1998 \(S.I. 1998/2451\)](#)

[Gas Safety \(Management\) Regulations 1996 \(S.I. 1996/551\)](#)

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

**5.8.8.9 Pressurised plant and equipment**

[Pressure Systems Safety Regulations 2000 \(S.I. 2000/128\)](#)

**5.8.8.10 Electricity**

[Electricity at Work Regulations 1989 \(S.I. 1989/635\)](#)

**5.8.8.11 Radiations**

[Ionising Radiations Regulations 1999 \(S.I. 1999/3232\)](#)

**5.8.8.12 Harmful substances**

[Control of Substances Hazardous to Health Regulations 2002 \(S.I. 2002/2677\)](#)

[Control of Substances Hazardous to Health \(Amendment\) Regulations 2003 \(S.I. 2003/978\)](#)

[Control of Substances Hazardous to Health \(Amendment\) Regulations 2004 \(S.I. 2004/3386\)](#)

[Chemicals \(Hazard Information and Packaging for Supply\) Regulations 2002 \(S.I. 2002/1689\)](#)

[Chemicals \(Hazard Information and Packaging for Supply\) Regulations 2009 \(S.I. 2009/716\)](#)

[Control of Asbestos Regulations \(S.I. 2006/2739\)](#)

[Control of Lead at Work Regulations 2002 \(S.I. 2002/2676\)](#)

**5.8.8.13 Flammable and explosive substances**

[Dangerous Substances and Explosive Atmospheres Regulations 2002 \(S.I. 2002/2776\)](#)

**5.8.8.14 Noise**

[Control of Noise at Work Regulations 2005 \(S.I. 2005/1643\)](#)

**5.8.8.15 Vibration**

[Control of Vibration at Work Regulations 2005 \(S.I. 2005/1093\)](#)

**5.8.8.16 Manual lifting and handling**

[Manual Handling Operations Regulations 1992 \(S.I. 1992/2793\)](#)

**5.8.8.17 Managing health**

[Health and Safety \(Display Screen Equipment\) Regulations 1992 \(S.I. 1992/2792\)](#)

**5.8.8.18 Personal protective equipment**

[Personal Protective Equipment Regulations 1992 \(S.I. 1992/2966\)](#)

[Construction \(Head Protection\) Regulations 1989 \(S.I. 1989/2209\)](#)

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

**5.8.8.19 Accidents and emergencies**

[Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 \(S.I. 1995/3163\)](#)

[Health and Safety \(First-Aid\) Regulations 1981 \(S.I. 1981/917\)](#)

**5.8.8.20 Consultation with employees**

[Safety Representatives and Safety Committees Regulations 1977 \(S.I. 1977/500\)](#)

[Health and Safety \(Consultation with Employees\) Regulations 1996 \(S.I. 1996/1513\)](#)

[Health and Safety Information for Employees Regulations 1989 \(S.I. 1989/682\)](#)

[Health and Safety Information for Employees \(Modifications and Repeals\) Regulations 1995 \(S.I. 1995/2923\)](#)

[Health and Safety Information for Employees \(Amendment\) Regulations 2009 \(S.I. 2009/606\)](#)

**5.8.8.21 Other Documentation**

[Health and Safety in Construction HSG150 \(Second edition\)](#)

[Health and safety in roof work HSG33 \(Second edition\)](#)

[Health and safety in excavations HSG185](#)

[The safe use of vehicles on construction sites HSG144](#)

[Avoiding danger from underground services HSG47 \(Second addition\)](#)

[Protecting the public your next move HSG151](#)

[Avoidance of danger from overhead electric powerlines GS6](#)

[Fire safety in construction work HSG168](#)

[Fire Prevention on Construction Sites. The Joint Code of Practice on the Protection from Fire on Construction Sites and Buildings Undergoing Renovation \(Fire Protection Association\)](#)

[LPS 1207: Fire Requirements for the LPCB Approval and Listing of Protective Covering Materials \(BRE certification\)](#)

[LPS 1215 Requirements for LPCB Approval and Listing of Scaffold Cladding Materials \(BRE certification\)](#)

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

S5.1 Objectives & Scope

~~This document should be read in conjunction with, but not limited to, the following documents:~~

~~Guidance and reference documents to be included~~

~~The facility shall be designed to accommodate the clinical, non-clinical and other functions as set out in the documents listed above.~~

~~The Facility is the new hospital.~~

~~The Facilities are the full range of healthcare services provided by NHS Lothian in the fitted out building.~~

~~Or~~

~~The Facilities are the new Royal Hospital for Sick Children provided by the PSCP with all of the Group 3 and 4 Equipment installed.~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

~~the scheme works complies with the recommendations of Local Agenda 21, including reflecting the objectives of any Local Agenda 21 strategy supported by The City of Edinburgh Council.~~

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The Facilities shall, as far as reasonably possible, deliver benefits to the environment. ~~The PSCP shall:~~

- ~~□ BREEAM refer to Section 5.4.1 for further information.~~
- ~~□ Minimise waste during construction and operation;~~
- ~~□ Using Greencode, implement an Environmental Management System (EMS) for accreditation with ISO 14001;~~
- ~~□ HTM 07-07 Sustainable Health and Social Care Buildings: Planning, design, construction and refurbishment~~
- ~~□ Reduce the use of fuels which contribute to ozone depletion, global warming, air and water pollution and non-renewable resource depletion;~~
- ~~□ Respect the local landscape and protect natural habitat and species and comply with the UK Biodiversity Action Plan;~~
- ~~□ Avoid sources of ionising and electromagnetic radiation to the extent determined by the relevant HTM;~~
- ~~□ Avoid any design features associated with sick building syndrome;~~
- ~~□ Maximise the opportunity for waste minimisation and re-cycling;~~
- ~~□ Maximise efficient and effective removal and transport of waste;~~
- ~~□ Adopt maintenance regimes which maintain optimum performance;~~
- ~~□ Where possible avoid the use of harmful building products and processes; and~~
- ~~□ Explore the use of prefabricated elements to achieve good quality control, ease and speed of installation and flexibility for future use.~~
- ~~□ The PSCP shall comply with the relevant NHS Requirements, including, but not limited to:~~
  - ~~□ The development of a Local Environmental Strategy in line with sustainable development in NHS;~~
  - ~~□ New environmental strategy for the National Health Service;~~
  - ~~□ Greencode; and~~
  - ~~□ Carbon/ energy management in healthcare.~~
  - ~~□ Consultation with SHINE: Alliance for sustainable buildings~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

~~The PSCP shall design the Facilities to support the environmental services and to conserve and utilise energy. The design of the environmental control system shall be co-ordinated and integrated with the design of the structure and the occupied areas in order to maximise the control and flexibility of the installations.~~

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#### ~~5.3.1 BREEAM~~

~~The PSCP should be working towards achieving a BREEAM Excellent rating, as targeted by NHS Lothian. A specific version of BREEAM has been developed by the BRE in 2008 for healthcare buildings "BREEAM for Health", which will be adopted for this project. Achieving an Excellent rating is in line with the Health Facilities Scotland for new build healthcare projects.~~

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~~Under the new BREEAM healthcare there are now mandatory requirements specifically under energy, water and ecology. In addition, BREEAM should embrace energy efficiency and passive design strategies for ventilation and thermal control to enhance internal comfort. The inclusion of renewables is now mandatory to achieve an 'Excellent' rating.~~

~~For Outline Business Case, a "predictive" or initial assessment is required to establish routes for achieving the 'Excellent' rating. "Scottish Government Health Directorates support the general thrust of the other UK health departments that from August 2008 all Board should seek to attain the BREEAM Healthcare excellent rating for new buildings and very good rating for refurbishment of existing properties. SGHD is currently integrating such a requirement into its procurement policy and guidance for building projects of £2m or more."~~

~~The new BREEAM version requires a design stage assessment, carried out and completed before construction starts on site, in addition to a post construction review required at completion. The post construction review assesses "as built" specifications and actual construction practice on site and should maintain the 'Excellent' rating.~~

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#### ~~5.9~~ ~~5.4~~ ~~Services and Structural Interface~~

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#### ~~5.9.1~~ ~~5.4.1~~ ~~Building Services~~

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Appropriate integration of the building services must be addressed within the design. Services engineers shall integrate their design layouts showing all plant requirements in order to identify any short fall in area. The architect will adjust the footprints accordingly. Any such changes will be assessed by ~~the~~ NHS Lothian to ensure areas required for the medical profession, patients and other associated spaces are not compromised.

~~Exposed services must be avoided where practicable. Exposed high level Services will not be acceptable. Where new services are required to be accessible they shall be contained in proprietary trunking and architectural ducting to marry with the localised building fabric and~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

~~colour scheme constructed in compliance with HAI SCRIBE. There will be no exposed services in entrance areas, toilets and shower rooms.~~

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Exposed services must be avoided in all occupied areas. Exposed high level services will not be acceptable except in isolated areas with the specific prior agreement of NHS Lothian. Where new services are required to be accessible they shall be contained in proprietary trunking and architectural ducting to marry with the localised building fabric, be colour coordinated with the finished scheme of decoration and constructed in compliance with HAI-SCRIBE. There will be no exposed services in entrance areas, toilets and shower rooms.

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Services must be designed to facilitate access for inspection, maintenance and upgrading without disruption to building finishes. Where access is required above, demountable water resistant and washable ceilings will be used for access. Services must also be routed in circulation areas and in dedicated service risers and cupboards. Small plant, such as electrical distribution cabinets will only be permissible in dedicated plant space or duct risers. Building Services Plant shall not compromise any Clinical or Facilities Management spaces (e.g. stores).

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All items of plant to be sited externally must be easily accessible, covered and be located in non-sensitive areas of the Grounds / Roof and must be suitably screened where necessary to avoid noise pollution to external areas of RHSC and adjacent properties. It is accepted that chillers will be sited externally and will not be covered. Plant and equipment should be selected to minimise noise breakout. All new building services should be specified to meet the acoustic criteria detailed within the Room Data Sheets to ensure compliance with acceptable indoor ambient level noise criteria.

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~~They must also be routed in circulation areas and afforded dedicated service risers and cupboards. Small plant, such as electrical distribution cabinets will only be permissible in dedicated plant space or duct risers. Building Services Plant shall not compromise any Healthcare or Facilities management Spaces (e.g. stores).~~

~~All items of plant to be sited externally must be located in non sensitive areas of the Grounds / Roof and must be screened where necessary to avoid noise pollution to adjacent properties. Aesthetic screening will be required also. Plant and equipment should be selected to minimise noise breakout. All new building services should be specified to meet acoustic criteria as detailed within the Room Data Sheets to ensure compliance with acceptable indoor ambient level noise criteria.~~

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Access to plant, including water storage tanks, must be safe and convenient for inspection, maintenance and replacement in accordance with the health and Safety Legislation and Construction Design and Management Regulations (2007).

All services must comply with all relevant nNecessary Consents, Applicable Standards and Guidance.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

**5.9.2 5.4.2 Structural**

Structural floors shall be designed to have penetrable zones co-ordinated with the modular framework for partitions and services.

Columns shall be located in so far as is reasonably practical to coincide with corridor walls in order to minimise intrusion into rooms or corridors. The relationship of columns, ducts and walls shall permit clear internal room surfaces and not obstruct equipment or fittings. Where practicable downstand beam construction shall be avoided in favour of flat soffit construction to facilitate services access.

As far as practical, the walls to vertical service shafts shall be non-load bearing to allow for future service installations, alterations and maintenance and they must not have high or low level horizontal ledges.

The elevation design shall facilitate distribution of services at the building perimeter. The substructure and foundation design shall facilitate services access to the building perimeter.

Where building structure, in particular columns, and beam locations appear to encroach on a plan arrangement and in particular interfere with the typical ADB 1:50 layouts for a particular room type, the PSCP will review the position with NHS Lothian. Any encroachment as such will not prevent the inclusion of the specified equipment requirement and shall not affect the operational function of the room. The use of horizontal ledges and the like must be avoided.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

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5.10 5.5 **Civil and Structural Requirements**

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5.10.1 5.5.4 **General Requirements**

The PSCP shall ensure that the design and construction of the civil and structural engineering elements of the buildings and external works meets the following criteria:

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- (a) Be designed and constructed with due skill and care in fitting with the intended building function and use;
- (b) Be selected as robust and appropriate for use ;
- (c) Civil and structural engineering proposals within the PSCP's Design support the architectural concept for ~~the~~ NHS Lothian.
- (d) Civil and structural elements must be fully integrated with the architectural and landscape design.
- (e) Be fully co-ordinated with the design of the building fabric, finishes, services, facades, internal walls, medical equipment and existing site features, including buildings;
- (f) Include the design and construction of any secondary framing necessary for the support of plant, services, ceiling mounted tracking hoist systems, other lifting equipment or medical equipment. The location of all such supports etc will be developed by the PSCP in discussion with NHS Lothian through the 1:50 design development stage ;
- (g) Provide adequate space for the distribution of services, while maintaining the required finished floor levels and the floor to ceiling heights called for in the ~~{~~Room Data Sheets}; and elsewhere in ~~the this specification~~ Briefing Requirements; Those areas where the

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

required floor to ceiling heights cannot be achieved shall be agreed on an individual basis and will be the subject of a derogation.

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(h) Maximise the clear zone above the ceilings for services to the degree consistent with overall economy for NHS Lothian;

(i) Provide fire resistance required by the appropriate SHTM and HTM, and the requirements of the Building Regulations;

(j) Be economically adaptable to meet changing clinical needs;

(k) Require minimum maintenance and be designed to accommodate maintenance requirements for services, equipment and building fabric; and

(l) Provide adequate structural tying to prevent disproportionate collapse.

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~~Provide adequate structural tying to resist disproportionate collapse mechanisms occurring.~~

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**Performance Standards**

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All structural elements are designed in accordance with the following standards mentioned below:

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(a) Eurocode 0 – BS EN 1990:2002 – Basis of structural design (+A1:2005);

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(b) Eurocode 1 Series – ~~EC1~~BS EN 1991 Actions on structures;

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(c) Eurocode 2 Series – ~~EC2~~BS EN 1992 Design of concrete structures;

(d) Eurocode 3 Series – ~~EC3~~BS EN 1993 Design of steel structures;

(e) Eurocode 4 Series – ~~EC4~~BS EN 1994 Design of composite steel and concrete structures;

(f) Eurocode 5 Series – ~~EC5~~BS EN 1995 Design of timber structures;

(g) Eurocode 6 Series – ~~EC6~~BS EN 1996 Design of masonry structures;

(h) Eurocode 7 Series – ~~EC7~~BS EN 1997 Geotechnical ~~d~~Design;

(i) Eurocode 8 Series – ~~EC8~~BS EN 1998 Design of structures for earthquake resistance;

(j) Eurocode 9 Series – ~~EC9~~BS EN 1999 Design of aluminium ~~alloy~~ structures;

(k) BS 8500-1:2006 - Concrete: Complementary British Standard to BS EN 206-1. Method of specifying and guidance for the specifier;

(l) BS 8500-2:2006 – Concrete: Complementary British Standard to BS EN 206-1. Specification for constituent materials and concrete;

(m) BS 8102:2009 – Code of practice for protection of below ground structures against water from the ground;

(n) BS 8204 – Screeds, bases and in-situ floorings;

(o) BS 5606:1990 – Guide to accuracy in building; and

(p) BS 8000 – Workmanship on building sites;

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

**Note:** Eurocodes 0 to 9 – Corresponding **National Annexes** should be used where applicable for Nationally Determined Parameters (NDP).

The PSCP shall ensure that building structures are designed to resist imposed, roof and wind loads not less than those required by Eurocode 1 Series – Actions on sStructures. The PSCP shall ensure that building structures are designed to carry the loads of heavy plant or medical equipment in their permanent positions and any loads that will be imposed upon the structures during the installation, removal or replacement of such heavy items. This requirement may involve the design of 'strong routes' through the building and/or specially strengthened areas of the roof onto which heavy items can be lifted. These areas and routes shall be identified on the scheme and working drawings. These areas and routes shall be identified by the PSCP, in the design, construction and as-built drawings. NHS Lothian will advise the specific locations of any such heavy items of medical equipment. Consideration by the PSCP shall also be given to selection of floor screeds which shall have adequate strength and resilience to resist abrasion and indentation from the use of medical equipment.

The PSCP shall ensure that any measures considered necessary shall be taken to protect the building from ingress of naturally occurring ground gases.

#### 5.10.2 5.5.2 Ground Remediation

Existing contamination shall be remediated to the satisfaction of ~~the~~ The City of Edinburgh Council and NHS Lothian and in accordance with the Environmental Protection Act 1990 Part IIA in order that the area is suitable for the intended use and not defined as contaminated land under the Environmental Protection Act 1990.

The PSCP shall agree a method statement for remediation with ~~the~~ NHS Lothian. Remediation Works shall be carried out in accordance with the agreed method statement. The PSCP will provide test results of all remediation work in accordance with the agreed method statement. Sampling and reporting must be carried out by an approved AGS (Association of Geotechnical and Geoenvironmental Specialist) registered company, with testing done by a NAMAS (National Accreditation of Measurement and Sampling) registered laboratory. The company shall warrant the test results to ~~the~~ NHS Lothian. The PSCP shall ensure that all necessary precautions are taken to prevent harm to building occupants and building elements from the effects of any remaining contaminants or gases.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.10.3 ~~5.5.3~~ **Drainage**

Foul and surface water drainage shall be designed on separate systems, in accordance with the requirements of Civil Engineering Specification for the Water Industry 6<sup>th</sup> Edition, Sewers for Adoption 6<sup>th</sup> Edition, BS EN 752 and Scottish Water standards. The PSCP shall ensure that all drainage discharges from the Site shall be to the existing systems and are strictly in accordance with the limits set by the Scottish Environment Protection Agency, ~~Edinburgh Council~~The City of Edinburgh Council and Scottish Water.

Prior written approval shall be obtained from Scottish Water, to discharge foul sewage or surface water to the public sewerage systems. Such approval shall include confirmation that the existing systems have adequate capacity to accept the increased foul and surface water discharges from the new Facility. It is confirmed that Scottish Water will carry out work downstream of the site to improve the current downstream storage constraints

Prior written approval of the proposed surface water scheme shall be obtained from the Local Planning Authority, the Scottish Environment Protection Agency (SEPA) and Scottish Water.

The PSCP-NHS Lothian shall be responsible for negotiation any wayleaves required for the installation of the new foul and surface water drainage system.

Provision shall be made by NHSL for the diversion of any existing buried drainage, access chambers or other components, which may be necessary to enable construction of the new facility.

The PSCP shall provide, where necessary within the on-site drainage network any isolaters, retention traps, interceptor tanks and other such devices necessary to prevent the discharge of any potentially dangerous or otherwise contaminative materials to the public sewers. A risk-managed system including facilities to contain and collect accidental spillages or discharges shall be provided. The installation and operation of the system shall meet the appropriate requirements of Scottish Water, ~~Edinburgh Council~~The City of Edinburgh Council and the Scottish Environment Protection Agency.

The foul and surface water drainage systems shall include all necessary access chambers, rodding facilities etc necessary for inspection and maintenance of the systems, Rodding eyes shall be positioned externally.

As a security precaution, the PSCP shall ensure that all manhole covers in internal courtyards are lockable.

5.10.4 **Surface Water Drainage**

Surface Water Drainage ~~and are kept locked at all times when not being accessed.~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

#### i) Surface Water Drainage

The PSCP shall design and construct a surface water drainage system to serve the Facilities, incorporating as necessary, balancing, storage, semi-permeable surfacing for car park areas and other means in order to reduce peak flows and improve the quality of surface water discharge.

Flat roofed areas wherever possible shall be drained to eaves gutters. Where such roof is enclosed, without eaves, it shall be drained by a minimum of two grated roof outlets and rainwater pipes, which shall be designed to pass the design rate of run-off assuming one outlet or 33 per cent of the outlets are out of use, whichever is the greater number. For the avoidance of doubt, the design of the roof structure shall be capable of supporting the weight of the retained water if outlets are blocked and runoff shall not enter the building.

Surface water discharge shall be designed in accordance with the following order of preference / hierarchy:

- —A Sustainable Urban Drainage System designed and constructed in accordance with the Regulations and the guidance contained in the CIRIA publication Sustainable Urban Drainage Systems: Design Manual for Scotland and Northern Ireland
- —An outfall to a watercourse that complies with any notice and / or consent by SEPA;
- —A public sewer provided under the Sewers for Adoption 6th Edition.

—SUDS features shall be designed as an integral part of the landscaping.

The PSCP shall design the surface water drainage system to avoid the risk of local flooding and flooding of the system into which it discharges. Flooding of electrical equipment areas and areas where stray current leakage may occur in the presence of water shall be prevented. The design of the system shall ensure that no areas of standing water occur and sufficient capacity is provided to accept, as a minimum, the design peak flows from the Facilities for the storm event specified by the relevant authority and shall be considered an integral part of the public sewerage system.

The PSCP shall check for flooding during high return period design storms and provide the necessary overland flow routes to safely route the surplus surface water runoff away from vulnerable areas to meet the requirements of ~~the~~ SEPA and to the satisfaction of ~~the~~ NHS Lothian. NHS Lothian ~~have~~s a requirement that there shall be no water run-off from or through the ~~site~~Site to adjoining properties in all but exceptionally adverse weather conditions. Exceptionally adverse weather is taken to mean a one in thirty year storm resulting in surface water logging and a one in two hundred year storm resulting in flooding to adjacent properties.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

The surface water drainage system shall be designed to require no regular maintenance other than the cleaning of gully traps, petrol interceptors etc, and shall be capable of taking such detritus as may normally arise during the operation of the system. Access for maintenance shall be provided to all drainage runs. The design of the system shall be such as to create the minimum disruption in the event of blockages.

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The PSCP shall design the drainage system in such a way as to minimise the requirement for internal manholes.

5.10.5 Foul Water Drainage

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Foul Water Drainage

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ii) Foul Water Drainage

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The PSCP shall design and construct a separate below ground foul water drainage system which, as a minimum, shall provide sufficient capacity to accept flows based on estimated dry weather flows and peak flows for the Facilities by reference to methods set out in the relevant parts of BS EN 752, and discussions with Scottish Water and ~~Edinburgh Council~~The City of Edinburgh Council. The design of the system shall be such as to create the minimum disruption in the event of blockages.

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A free passage of air shall be maintained through the foul drainage system.

The PSCP shall design the drainage system in such a way as to minimise the requirement for internal manholes.

As far as reasonably practicable, the use of internal fall pipes shall be minimised. Where internal fall pipes are used, the PSCP shall ensure that there is good accessibility for maintenance and any potential disruption to hospital services ~~are~~is minimised. Where external fall pipes are utilised, the PSCP shall ensure that anti-climb measures are incorporated into their design.

5.5.4 Water Supply (excluded from original list)

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~~The PSCP shall be responsible for liaising with Scottish Water and shall arrange for and install a suitably sized and located mains water supply into the Facilities.~~

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~~A separate fire mains distribution system shall be provided to serve the Facilities. Fire hydrants shall be located in strategic places agreed with the local Fire officer (in consultation with the NHS Lothian's Fire Officer).~~

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~~The water supply system for the Facilities shall include a new supply and also incorporate a water storage capacity to ensure that a minimum of 12 hours~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

demand can be met, as per NHS guidance, whilst fully addressing legionella requirements. Cold water storage will be based on HTM 2027 Specialist Hospital 531 litres/bed/day. A minimum of two tanks for each water service will be provided to allow maintenance to be carried out without interruption of supply.

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Suitably sized and secure connections for temporary incoming water supplies shall be provided at strategic locations either into individual the buildings, or into the general distribution infrastructure. The PSCP shall consult with the NHS Lothian in relation to the number and location of temporary connections.

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The design of the cold water pipe work distribution system shall be such that there are no excessive dead ends. Extended pipe work runs that serve infrequently used appliances and equipment shall be avoided. Where unavoidable, the pipe work run shall be extended to serve an appliance or range of appliances that will be used on a regular basis.

Local water supply isolation shall be provided at all sanitary appliances and final connections to fixed equipment.

External isolation of water supply shall be provided to each building.

#### 5.10.6 5.5.5 External Civil Engineering Works

All access roads, car parking, sub grade/surface drainage, hard standings and all forms of highways requiring construction consent, must be designed and constructed to the requirements of the manual of Contract Documents for Highways works Volumes 1-6 published by HMSO.

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#### 5.10.7 5.5.6 Ground Conditions

It will be the PSCP's responsibility to obtain any further, more specific information necessary on the Site for the detailed design and construction of the NHS Lothian facility. It is the responsibility of the PSCP to arrange any further investigations, sampling and testing deemed necessary on the Site for design development and successful construction of the NHS Lothian facility.

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Earthworks shall be carried out in accordance with all the relevant British Standards and Codes of Practice and earthmoving operations shall ensure the stability of the site Site. Where possible the use of earth retaining structures shall be kept to a minimum with the emphasis on finished contoured ground profiles suitably landscaped.

Where possible, Excavated soils shall be retained on Site for appropriate re-use in order to minimise importing and exporting of soil.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.10.8 5.5.7 Loadings & Structural Flexibility

Structures shall be designed to cater for the dead loads associated with the chosen materials for the structure, finishes, partitions and cladding and for the imposed loads of all FF&E to the RHSC facility.

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~~Structures shall be designed to cater for the dead loadings associated with the chosen materials for the structure, finishes, partitions and cladding to the NHS Lothian.~~

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All dead loads, imposed loads, wind loads and snow loads should be in accordance with Eurocode Series 1 Actions on ~~S~~structures and their corresponding National Annexes mentioned in section 5.5.1 under performance standards. Structural deflections shall be restricted to limits or lesser value as necessary for the proper installation and functioning of special mobile, rail-mounted, or fixed equipment. The PSCP must ensure that the constituent structural materials and method used in the construction of the Works shall comply with all relevant Applicable standards.

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NHS Lothian / Scottish Healthcare Supplies to establish if there are any anticipated items of heavy equipment and equipment requiring service recesses e.g. mobile x-ray units which require special consideration. NHS Lothian/SHS to advise loadings for all such equipment.

~~NHS Lothian / Scottish Healthcare Supplies to establish if there are any anticipated items of heavy equipment e.g., mobile x ray units any specific piece of equipment should be referred to along with their load.~~

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The Facilities' structural flexibility shall reflect the overall Adaptability Strategy designed by the PSCP.

The PSCP shall account for (but not be limited to) the following loading schedule:

- 
- ☐ General floor loadings;
- ☐ Point loads for clinical equipment and Services;
- ☐ Impact loads;
- ☐ Notional loads;
- ☐ Vibration loads;
- ☐ Special plant foundation loads; and

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

Service loads.

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The PSCP shall take account of concentrated point loads and impact load from mobile and stationary plant and equipment. The structure shall incorporate reasonable measures to accommodate updated versions of such machinery without major disruption. In addition, the PSCP shall ensure that floors and supporting structures have the capacity for retro fitting lifting devices for all fixed items of plant and equipment weighing 35kg or more.

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The PSCP shall take account of the need for special screeds, raised floors, ceiling grid support grids and other such measures to allow for the installation of special equipment and associated services.

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~~The PSCP shall ensure that specific areas of the Facilities satisfy particular requirements of NHS Lothian operations or equipment in those areas.~~ The PSCP shall ensure that the Facilities satisfy the particular requirements of NHS Lothian's operations or equipment in all areas. Relevant constraints may include but are not limited to maximum allowable structural deflections, horizontal movement, differential settlement, vibration and the meeting of any specific tolerances. The PSCP shall be responsible for liaising with the NHS Lothian to establish and agree constraints.

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The PSCP shall take account of dynamic loads from general movement of people through to activities such as aerobics, dance or other rhythmic activities that can give rise to harmonic effects in poor design. The natural frequency of all structural floors shall be such that structural dynamic response shall be restricted to allowable limits in accordance with current standards. The vibration response of the ~~buildings~~ building shall comply with the requirements of HTM 2045 and be compatible with the requirements of the equipment to be installed.

Lateral stability bracing systems shall not obstruct or hinder clinical or non-clinical operations and shall not obscure the windows or doors.

With respect to new Facilities ~~and where advised by NHS Lothian,~~ the PSCP shall:

- ~~(a)~~ Take due account of future flexibility of the Facilities (in terms of future change of use and / or relocation of equipment);
- ~~(b)~~ Specifically make allowance for future flexibility of ceiling mounted tracking hoist equipment within the bedrooms / assisted en-suite bathrooms, ~~within each Older Persons unit.~~ This includes the requirement for re-configuration, extension and / or retro-fitting of lifting equipment i.e. the whole of these specified areas shall be structurally capable of accommodating hoist equipment;
- ~~Take due account of future flexibility of the Facilities (in terms of future change of use and/or relocation of equipment);~~

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

- (c) ~~Where advised by NHS Lothian, Make~~ specific allowance for items of particularly heavy equipment and/or other onerous loading conditions; and
- (d) ~~Where advised by NHS Lothian, Make~~ specific allowance for installation, transfer and/or removal routes for heavy equipment throughout the Facilities.

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**5.10.9 5.5.8 Sub-structure**

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The substructure for the new facilities shall have a minimum life of 790 years. Foundations are to be constructed on appropriate bearing strata. The PSCP must take steps to mitigate noise during substructure works. All foundations are to be designed in accordance with current Applicable Standards, Guidance and Good Industry Practice taking into account the vertical, horizontal and vibration loadings to be sustained, prevailing ground conditions and the effects of any settlement on new superstructure and on links to adjacent buildings. The Works must not undermine or impose excessive additional load on adjacent foundations or structures. Basements and floors below ground level must be adequately waterproofed.

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**5.10.10 5.5.9 Structure**

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All new-build structural members and frames must be constructed in appropriate materials. Structural grids, floor to floor height and headroom requirements are to be appropriate for the intended usage. Any concealed structural steelwork is to be provided with a suitable protective coating to give a period to first maintenance of 790 years. Fire protection is to be provided to meet the requirements of the Fire Officer and comply fully with fire and health and safety Legislation. The exact type of construction is at the discretion of the PSCP, but the natural frequency must be such that vibrations will be minimal and not detrimental to occupants or the operation of the building and equipment. Floor slabs must be concrete. The design of the structure of the NHS Lothian RHSC must be capable of holding the loading of equipment as set out in the Room Data Sheets. Where any part of the structure is exposed internally (e.g. exposed steel beams), it must be accessible for cleaning. The design of the structure of the NHS Lothian must allow integration of building services installations and facilitate maintenance and replacement of such.

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**5.10.11 5.5.10 Floors**

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

Floors for new construction must be designed to accommodate the intended function and loading and in accordance with Eurocode 1 Series - Actions on sStructures. The design must take account of concentrated loads. Plant room floors must be designed for a minimum of 7.5KN/m<sup>2</sup> uniformly distributed to allow for flexibility of future Plant.

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Vibrations from equipment must be minimal and not detrimental to occupants or the operation of the building and equipment. Adequate joints must be provided at appropriate locations for movement induced by shrinkage, temperature or other causes. Floors shall be designed to reduce noise transmission to comply with the requirements of the Room Data Sheets.

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Concrete floors shall provide a smooth level surface to receive coverings and be in accordance with BS 8204. The design of floors must allow integration of building services installations and facilitate maintenance and replacement of such.

**5.10.12 5.5.14 Fire & Corrosion Protection**

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The PSCP shall provide fire protection to all elements of structure and ensure fire ratings are in compliance with space use and the higher of the standards specified in the "Design Criteria" given in Sections 5.4.1 & 5.4.2 Section 5.2 (such as the Building Regulations and Firecode), in addition to the satisfaction of the relevant Fire Authority / Officer.

~~In determining fire protection measures, PSCP shall take due consideration of the potentially increased fire risk in accordance with the use and patient type associated with the Facility.~~

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**5.10.13 5.5.12 Durability & Maintainability**

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All elements of the structure shall provide a reasonable level of resistance against potential deterioration due to weather, ground conditions, wear and tear, and accidental damage relevant to their location and environment and shall have a design life no less than that stated in Paragraph 5.4.5 Life Expectancy

Where there is a requirement for maintenance during the required life span of the element(s) practical and realistic arrangements shall be designed into the construction of the Facilities to allow for any necessary repairs, replacements, and painting etc. to be carried out safely without compromising the operational activities within and around the Facilities.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.10.14 5.5.13 Movement Joints

Where deemed necessary by the PSCP structural movement joints shall not be located through:

- a) Kitchens and food preparation areas;
- b) Any room with (now or in the future) ceiling mounted tracking hoists or other similar lifting equipment;
- c) Seclusion suites; and
- d) Any other room requiring a sterile environment.

Lateral stability bracing systems shall not obstruct or hinder clinical or non-clinical operations and shall not obscure the windows or doors.

5.11 Building Envelope Performance Criteria

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.6 Building Envelop Performance Criteria

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5.11.1 5.6.1 General

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The building fabric shall be designed into minimise heat loss and air leakage and shall be completely water tight, in accordance with all relevant technical criteria as referred to within this the Briefing documentation Requirements. U values calculations will be carried out to the satisfaction of Building Control and BREEAM Assessor. The building will meet the relevant air tightness criteria. The constructed building will be subject to an air tightness test at a time deemed appropriate by the PSCP but after the external fabric is complete. This will assist in proving the efficiency of the design. The constructed building will be subject to an air tightness test at a time deemed appropriate by the PSCP. This will assist in proving the efficiency of the design. The test will take place soon after the external fabric is complete and well in advance of the occupation date. The Supervisor shall witness and confirm that the specified performance has been achieved

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5.11.2 5.6.2 Walls

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External walling shall be of good quality construction designed to give maximum be durable durability with due consideration for long term maintenance, to prevent ingress of water and minimise air leakage other than designed venting and good weathering characteristics. Movement joints shall be incorporated in accordance with manufacturer's recommendations and the relevant British Standards. Careful detailing must be employed to prevent staining, excessive weathering and discolouration from efflorescence. The internal face of external walls must be robust and suitable for a Specialist healthcare facility.

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5.11.3 5.6.3 Roof

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Roofs must be designed to suit the location of the building. Flat roofs must have adequate drainage falls to comply with the Scottish Executive Technical Standards Scottish Government Building Standards and have adequate overflow warnings linked to the building management systems. Roof coverings must be easy to maintain; the use of coverings which require maintenance by specialist subcontractor must be avoided without prior approval from the employer NHS Lothian. Safe access for roof maintenance must be provided to comply with health and safety Legislation and relevant Guidance.

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Penetrations to roof coverings must be kept to a minimum. Designs must discourage birds, nesting on roofs and other roofing elements.

Rainwater goods must be robust, non-climbable and vandal resistant. Gutters must be capable of sustaining loadings from maintenance operations.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

~~The design shall consider Proprietary means to control solar gain and glare must be provided. The roof construction and covering must be designed in accordance with SHTM 2045 to minimise the effect of rain noise.~~ The roof construction must provide good resistance to impact noise of heavy rain and must not generate rain/hail noise within the Facility in excess of the acoustic requirements detailed ~~in SHTM 2045~~ in HTM 08-01

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**5.11.4 5.6.4 Windows**

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Windows shall comply with all relevant standards and in particular the requirements of SHTM 55 and relevant statutory requirements paying particular attention to their performance when opening and NHS Lothian will seek test certificates stating that they conform with the 100mm max requirement. ~~The PSCP will ensure a safe method of window cleaning is incorporated in the design. The PSCP will demonstrate how cleaning shall be addressed.~~ Windows must also comply with the requirements for ventilation set out in Room Data Sheets. Window design must be suitable for the particular location and exposure. Materials must be of a high quality and resistant to vandalism. Windows with opening lights whose lower edge is less than 1500mm above finished floor level must incorporate restrictors to prevent the passage of a 100mm sphere through the bottom horizontal edge of the window. The PSCP must demonstrate that any restricted opening can achieve the required natural ventilation rates contained in CIBSE Guides. The restrictors must be resistant to accidental loading and accidental release. All windows must be un-openable from the outside when closed. Window ironmongery shall be easily operated and functionally compliant. Where opening lights are positioned above fixed perimeter benching and/or equipment, window operation must be by use of automatic opening methods. The design of openings shall maximise natural ventilation and provide ventilation at low and high level, while avoiding draughts at desk level. Windows must be capable of being cleaned safely. Windows must comply with EU Directive 89/654/EEL on glazing and with Workplace Regulations 1992 Regulation No.14. Glare must be controlled by the use of sunshadinges or blinds to reduce glare on computer screens, permit the use of overhead projectors and allow legibility of writing on whiteboards from all parts of the room. Where provided, blinds must not interfere with the opening and closing of opening lights. To minimise the effects of heat gain and glare a combination of supporting control measurements must be utilised. These may include but not be restricted to:

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- Externally mounted brise-soleil.
- Effective design of eaves and roof overhang details.
- Solar shading through the use of colonnades.
- ⊕ Sunshades and blinds.
- Anti-sun glazing.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

Glazing must comply with BS 6262, and where required within the Room Data Sheets thermal performance low-emissivity glazing must be used.

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Obscure or Opaque glass must be provided to WC's, changing rooms, shower areas and those other areas specified on the Room Data Sheets where they are located on an external wall.

~~performance low-emissivity glazing must be used.~~

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~~Obscure or Opaque glass must be provided to WC's, changing rooms, shower areas and medical room windows where located on an external wall.~~

5.11.5 ~~5.6.5~~ External Doors

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Doors shall comply with all relevant standards and be ~~of solid core construction~~, suitable for their location and purpose. All doors must meet the requirement of anticipated movements within the ~~NHS Lothian RHSC~~ and comply with BS 8300 and SHTM's 58, 59.

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The location of fire exit doors in the ~~NHS Lothian Works~~ must be agreed with the Fire Authority and the Building Control Officer.

Main entrance doors for patients, staff and visitors must be glazed and the doors of automatic opening type, meeting all industry standards and also best practice for such premises where children are likely to be regular visitors. A draught lobby must be provided at the Main ~~Entrance~~ and the ~~Medical Day Hospital~~. The garden/courtyard access is also required to have automatic opening. ~~All facilities and delivery strategy will be in accordance with the operational policy. All doors must incorporate an appropriate level of security aligning with the recommendations of secured by design and the agreed lock suiting strategy.~~ ~~othian.~~

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The facilities management and deliveries strategies will be in accordance with the NHS Lothian operational policies. All doors must incorporate an appropriate level of security aligning with the recommendations of Secured by Design and the agreed lock suiting strategy defined by NHS Lothian.

Door locks must be suited to facilitate access to all parts of the RHSC from the master suite and control and secure sub-divisions of areas of the RHSC which will be used at different times. Suiting will be to the satisfaction of NHS Lothian. Locking arrangements must be compatible with Fire Authority Requirements and the agreed lock suiting strategy.

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Ironmongery shall be suitably robust and compliant with SHTM 56, ~~for an NHS Lothian environment~~. External doors must be draught stripped and weather sealed.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.12.5.7 Entrances and Circulation

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5.12.1.5.7.1 Main Entrance, Reception and Arrival

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Proposed main entrance, reception and arrival aspirations to be agreed with NHS Lothian and updated in conjunction with design solution.

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5.12.2.5.7.2 Service and Other Entrances

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Reference should also be made to the Operational Policies for the new RHSC and existing RIE Buildings. This shall include but will not be limited to the following aspects:-

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(i) Laundry

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(ii) Delivery of hot and cold beverages

(iii) Meal delivery

(iv) Supplies

(v) Disposal of Waste

(vi) Estates Maintenance

5.12.3.5.7.3 Corridors

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Corridors should be of suitable width to accommodate the manoeuvrability of beds and other equipment within. Corridors should have rounded handrails for ambulant patients. Corridors shall comply with the HBN 00-04. It is of paramount importance that beds can successfully negotiate corridors and other circulation space without the risk of damage to the building fabric. Where corridors are narrower in width than the standard requirement, it is essential that beds can be manoeuvred successfully into and out of the bedrooms. Local corridor widening will be acceptable.

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5.12.4.5.7.4 Stairways

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Stairs shall be designed to comply with Part 4.3 of the Technical Handbook (Scotland), with regards to maximum rise and minimum going dimensions.

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Generally stairs shall be of pre-cast concrete or metal construction with handrails, balustrades and heavy duty non-slip vinyl finish with contrasting nosings.

Balustrades and handrails in feature areas shall be designed and specified to an appropriate standard consistent with the area they are intended to serve. Standards of finish shall be greater for feature areas than for escape stairs.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

**5.12.5 5.7.5 Ramps**

Ramps shall be designed to comply with Part 4.3 of the Technical Handbook (Scotland).

**5.12.6 5.7.6 Lifts**

All lifts should be designed to comply with SHTM 2024 and BS 8300:2001 with regards to size, controls and signals.

Lift cars shall be of suitable sizes to allow for manoeuvrability of beds and provide for those escorting a patient with any equipment relevant to that patients needs. Lifts in staff only areas should accommodate wheelchair bound persons.

All internal features of the lift car should be of a construction suitable for this specialised facility, easily maintained, durable etc.

It is the duty of the PSCP to fully understand NHS Lothian's Operational Policy Documents and ensure that all lifts cater for all manoeuvres. Lifts should have ~~rounded~~ handrails for ambulant patients. The lift should have control panels on the sides. ~~The buttons should be horizontally positioned at a height of 800mm and DDA compliant.~~ A mirror should be placed opposite the doorway so that wheelchair users can see the door is open if the lift prohibits a 360 degree turn. Over and above visual aid for operation, audible announcement will be required for floor level indication and door operating warning. An audible alarm and communication unit will also be required for use by persons trapped within.

**5.12.7 5.7.7 Fire Evacuation**

Fire Evacuation shall be in accordance with the local NHS Lothian policy and with the guidance set out within:-

- NHS Scotland Firecode
- Fire Precautions in New Hospitals - HTM 81
- The Scottish Building Standards Technical Handbook 2009 – section 2

The PSCP will conclude the fire strategy in consultation with NHS Lothian, their fire consultant, Lothian & Borders Fire & Rescue Service and The City of Edinburgh Council Building Standards Department.

The principles governing the means of escape will be that of 'progressive horizontal evacuation'. Escape routes shall be designed to facilitate mattress evacuation.

All compartmentation shall be designed in compliance with the relevant codes and standards.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

Assembly point locations must be properly considered. The route to the assembly point must be facilitated with a hard surface, illuminated and sign directed. Evacuees must be safe whilst en-route and at the fire assembly point.

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~~The PSCP will employ a fire engineering expert to determine where a~~Active fire protection systems such as detection warning systems and fire suppression systems may be incorporated into the building so that the time available for escape is maximised. The feature may be most beneficial for the occupants of adjacent space immediately affected by the fire'.

Fire fighting equipment shall be located in accordance with the relevant standards and codes. Where there is a requirement for portable fire fighting equipment to be located within the building, it shall be appropriately placed, in recesses to avoid obstruction to public thoroughfares and escape widths. The PSCP shall conclude the design on this basis in order that the following equipment can be readily accommodated.

A minimum of 1 No. Fire Point shall be made available within each sub-zone.

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Each fire point shall consist of the following;

- 1 No. 6 litre AFFF Extinguisher, (S/P) and
- 1 No. 2kg CO2 Extinguisher.

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Recesses for fire extinguishers are not required within the following rooms;

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- Plant Rooms
- Server Rooms
- Lift Motor Rooms

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Plant, Server and Lift Motor Rooms each require 1 No. 2kg or 5 kg CO<sub>2</sub> Extinguisher. ~~The PSCP will provide these.~~ Portable extinguishers shall comply with BS EN 3 and BS 7863 and will be supplied to the PSCP for fitting in the works.

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~~The PSCP will also make provision for~~ 1 No 4x1.2mx1.2m fire blanket will be supplied to PSCP for fitting within each kitchen or pantry. ~~Both the blanket and space for it shall be provided within the design.~~

5.12.8 ~~5.7.8~~ Protection

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This building is open to the public and there are a number of factors to be considered when selecting materials for all horizontal and vertical circulation routes. Materials should in general be suitable robust. In addition corner and wall protection is essential to combat the inevitable impact of beds, trolley and wheel chairs. Whilst operationally essential within a hospital environment it is important that the selection of said protection is also an integral

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

consideration of the interior design strategy. This ethos should be consistent throughout the facility and to include lifts, public toilets and the like.

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5.12.9 5.7.9 Security

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This section should be read in conjunctions with the requirements of the Mechanical and Electrical and Operational Sections of ~~this the Briefing documentation~~ Requirements and Appendix 6A. There requires to be synergy with the new systems currently at the Western General Hospital (WGH) and St John's Hospital at Howden (St John's). It is likely that there will be one control room looking in at CCTV and access control breaches within the WGH control room.

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All areas within the facility should be easily observable, with a limitation on blind spots as far as is reasonably practicable. Interior design should allow good sight lines and avoid isolated spaces.

5.12.10 5.7.10 Access

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The entrances and exits to the Facilities shall be clearly defined and signed; their design should enhance ease of movement from and to the public roads. The road system shall be designed to facilitate safe, convenient routes separating transportation groups as far as practical. Attention is to be given to provide clear and well defined routes for emergency vehicles, fire, police, ambulance and daily site service vehicles to the Facilities. The requirements of the Firecode in relation to 'Site Access' shall be considered. The PSCP shall utilise the NHS document 'Wayfinding' which supersedes HTM 65 'Signs' as their model for signposting of the ~~site Site~~ and ~~facilities the building~~ for staff, visitors and patients.

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~~All of the access requirements shall satisfy the requirements of The City of Edinburgh Council.~~

All of the site wide access requirements shall satisfy the requirements of The City of Edinburgh Council and shall be agreed with NHS Lothian and Service Co..

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The PSCP shall define and seek agreement with The City of Edinburgh Council for the creation of additional pedestrian and / or emergency road access points to suit the specific requirements of the final design.

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The PSCP shall also provide suitably robust signage for easy site navigation during construction and operational phases.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.13 5.8 **SSignage & Wayfinding**

The detailed wayfinding strategy shall be evolved and agreed atwith the detail of the design stage but the following key features will be considered:

Wayfinding shall be designed to meet the needs of all groups of people accessing the Site, such as children, young people, the elderly and the physically or visually impaired as well as for service delivery purposes and for contractors.

Where possible, use of colour, texture and landscape should be designed so that traditional directional signage is not required around the siteSite, or can be kept to a minimum.

Generally, all public information signage to be to HTM 65, and should have colorimetric and photometric properties to BS 5378-2, ensuring colour definition required by the Disabilities Discrimination Act.

Health and Safety signs and all Fire signage to BS 5499, and HTM 65.

All general signage to be in strict accordance with NHS Scotland signage guidelines.

Samples of all signage should be submitted for testing and approval by the BoardNHS Lothian.

5.13.1 5.8.4 **External**

The signage for the building must form an integral part of the design and support a wayfinding strategy. Signs must be appropriately designed, adequately located and be readily understood.

The External signage will; comprise:-

- ☐ Building Name
- ☐ Way finding directional signage from the car park to the new building
- ☐ Way finding directional signage within the new building from Reception~~on~~, including links to the adjacent RIE Building
- ☐ Fire Muster Points
- ☐ External signage shall be well lit.

To encourage patients and visitors to have freedom of movement about the unit, wayfinding signage will be clear and will conform to the NHS Scotland signage guidelines. The form of sign posting used and the method of displaying notice's should not detract from the desired environment but should be sufficiently explicit to be understood by patients who may be either confused or are from a different culture.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

It will also be in the style and template provided by NHS Scotland.

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5.13.2 5.8.2 Internal

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The signage for the building must form an integral part of the design and support a wayfinding strategy. Signs must be appropriately designed, adequately located and be readily understood. Directional signage shall assist way finding from all main points of entry. ~~Directional signage shall also be appropriately placed to assist patients to find day rooms when leaving their bedrooms.~~

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The signage will be integral to the interior design proposals assisting in the navigation of patients, staff and visitors. The incorporation of art, its use for way finding and the enhancement of the overall therapeutic environment shall be an essential component of the building design. The PSCP should consider the use of the four senses of sight, hearing, touch and smell in their design.

All rooms must be clearly signed / labelled to show their purpose in accordance with NHS Scotland signage guidelines. Specific rooms may require additional signage eg engaged signs which will be agreed during the development of the 1:50 Room Layouts.

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~~All rooms must be clearly signed / labelled to show their purpose in accordance with NHS Scotland signage guidelines. Bedrooms shall in addition have a sliding type engaged sign to discourage entry when a patient is undergoing examination or tests.~~

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Alternative materials as well as the use of light and colour must be considered to aid Orientation within and around the Facilities.

It will also be in the style and template provided by NHS Scotland.

5.13.3 5.8.3 Art Concept

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NHS Lothian and the PSCP are currently investigating how best to deliver artist involvement with the assistance of Grit & Pearl.

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The incorporation of art, its use for way finding and the enhancement of the overall therapeutic environment shall be an essential component of the building design. The development of innovative way-finding and orientations mechanisms should be undertaken in consultation with artists.

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The PSCP should consider the use of the four senses of sight, hearing, touch and smell in their design. ~~All areas within the facility should be easily observable, with a limitation on blind spots as far as is reasonably practicable. Interior design should allow good sight lines and avoid isolated spaces.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.14 ~~5.9~~ **Finishes**

Generally, the PSCP shall select finishes on the basis of the following:

- ~~(ee)~~ Accessibility considerations;
- ~~(ff)~~ Appropriateness;
- ~~(gg)~~ Durability;
- ~~(hh)~~ Robustness;
- ~~(ii)~~ Compatibility;
- ~~(jj)~~ Maintainability;
- ~~(kk)~~ Suitability for life-cycle replacement;
- ~~(ll)~~ Co-ordination with other finishes;
- ~~(mm)~~ Suitability for infection control; and
- ~~(nn)~~ Slip resistance.

All wall finishes and backgrounds shall be selected and installed in accordance with SHTM's and appropriate British and European Harmonised Standard specifications and codes of practice.

Parts of the Facilities that are subject to potential damage from trolleys, beds or other similar traffic shall have adequate protection to comply with the principles set out in ~~of~~ HTM 69.

Corners on main circulation routes shall be rounded or angled.

The PSCP shall ensure that all floor, wall and ceiling finishes include adequate provision for movement joints, in accordance with current recommendations, to cater for any movements of the structure and/or the background material of the finish. The PSCP shall ensure that the location and detail of the joints shall be fully co-ordinated with the overall interior/exterior design.

Finishes generally shall be selected as robust and appropriate for use in each area, which can be interpreted as meaning:

- ~~(oo)~~ Ability to withstand the rigorous and demanding patient environment, this having been proven prior to installation;
- ~~(pp)~~ Enhance the internal environment for users, staff and visitors; and
- ~~(qq)~~ Enhance the aesthetic quality and functionality throughout the life of the Facilities.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

For the avoidance of doubt, the PSCP shall also be required to address these criteria in the selection of light fittings, controls, sockets and faceplates as appropriate to their location within the Facilities. ~~The PSCP shall agree with~~ NHS Lothian shall advise the PSCP of those specific areas which require a higher level of robustness e.g. metal clad fittings or similar.

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5.14.1 ~~5.9.1~~ **Walls**

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Generally wipe-able ~~paint~~ finishes to walls. Ant bacterial paint shall be applied in the following areas:

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Critical Care Suite (PICU/HDU/Surgical Neonates/ Haematology/ All Isolation Rooms

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~~–~~No paper coverings. Walls in wet areas e.g. to bathrooms and en-suites, regeneration and main ~~site~~-kitchen, to have impervious wall finishes.

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Walls must be constructed in materials which permit wall-mounting of fittings such as pinboards shelving and specific NHS Lothian equipment by means of either solid core construction or ample pattressing within.

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Where internal walls are glazed, they shall incorporate appropriate manifestation and safety glazing as required by the ~~Scottish Executive Technical Standards~~Scottish Government Building Standards.

Wall finishes must be smooth, durable and easily cleaned. Wall finishes to circulation areas shall be suitable for those areas and be capable of easy repair. All wall finishes, shall provide a uniform appearance, free from cracks, stains or mechanical damage. An impervious splash-back of appropriate size shall be provided to all wall abutments to sinks, wash hand basins and vanity units. The splash-back must extend to the underside of any mirrors fitted and the junction must be properly sealed.

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5.14.2 ~~5.9.2~~ **Floors**

Floor finishes being in accordance with HTM 61, ~~HAI Scribe~~HAI-SCRIBE and in accordance with NHS Lothian Slips and Trips policy. The coverings should be selected to allow equipment to be pushed without excessive force. Barrier matting must be provided at all entrances and be of sufficient size to remove water and dirt from incoming footwear, wheelchairs or trolleys. Raised thresholds will not be permissible within the building although at external door thresholds should be designed to meet both the requirements of weather proofing and those of BS 8300.

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'Wet' areas, including changing rooms, showers, toilets, cleaner's cupboards, kitchens, treatment rooms, must be provided with suitable slip resistant floor finishes. Within these areas, the floor finish must incorporate integrated continuous skirting's with supported wall/floor junctions. Floor finishes must be continuous under sanitary fittings not contained

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

within a concealed plumbing system, reference and final selection to be in accordance with NHS Lothian Slips and Trips policy.

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Floor finish requirements will be developed in parallel with the 1:50 design through workshops with NHS Lothian stakeholders.

**5.14.3 5.9.3 Ceilings**

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Ceilings are to be in accordance with SHTM 60. Ceiling finishes must be light in tone. Ceiling finishes in treatment areas and kitchens must be capable of being easily cleaned. Means of access for maintenance to concealed Services must be provided. All ceilings generally shall be level (however this shall not preclude the use of ceilings which are inclined or faceted to follow roof planes) and provide a uniform appearance, free from cracks, stains, sagging or mechanical damage. All ceiling tiles must be fire retardant. Where architectural feature ceilings are required as part of the interior design proposals Where the development of the detailed designs of each Project Facility incorporate feature ceilings, the Board NHS Lothian must be made aware of these proposals through drawings (aesthetic) and data (acoustic performance).

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~~Where architectural feature ceilings are required as part of the interior design proposals. Feature lighting will be considered in the context of bulkheads, art works and other particular features such as the reception desk.~~

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**5.14.4 5.9.4 Doors**

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Doors shall comply with all relevant standards and in particular the requirements of SHTM 58. ~~Doors shall comply with all relevant standards and in particular the requirements of HTM 58, HTM 81 and the relevant sections of HBN 40.-~~ Where clinical needs allow, ~~D~~doors must comply with the requirements of SHTM ~~08-012045~~ in respect to acoustic performance.

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Video door entry systems and electronic door locks shall be provided to control access via the main door to each ward area. Control stations for each system shall be located in each Nurse station. Doors shall be open during the day and monitored by a video entry system. ~~Electronic door locks shall be activated between 22:00 and 07:00 hours. These door entry systems will be compatible with a single ID card solution currently being progressed for NHS Lothian.~~

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The secondary access to the wards will be used for fire escape only. This will assist with the controlled management of the ward.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

~~Bedroom doors shall be leaf and a half with the larger leaf capable of being held open on an electro-magnetic device. The smaller leaf will be double. All doors shall fail safe in the event of a fire, with the exception of the smaller leaf which will be subject to operational policy.~~

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Doors must not open outward ~~such that they restrict~~ corridors or other circulation routes unless agreed with ~~the~~ NHS Lothian. However, ~~the~~ NHS Lothian accepts that doors to cleaner's cupboards, service voids and small plant space may be exceptions. The doors must be considered with the overall interior design concept of ~~the NHS Lothian~~ RHSC, be self finished and robust. Vision panels to room doors must be provided where indicated on Room Data Sheets and in accordance with BS8300. Vision panels must be provided on circulation route doors. The size and location of all vision panels must comply with BS 8300. ~~The locations of interstitial blinds in vision panel will be agreed with NHS Lothian during the design development stage.~~ Ironmongery to be in accordance with SHTM 59. Kick plates shall be provided to protect the base of doors to a minimum height of 300mm above finished floor level on both sides.

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All locks should be operational from out with the room only with an unlock function in the event of someone locking the door from the outside.

Internal doors within circulation zones and/or corridors may incorporate "hold open devices" (linked to the fire alarm system) in accordance with the agreed access & circulation requirements. Infection Control to be consulted regarding this requirement as the design develops.

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~~Internal doors within circulation zones and/or corridors must incorporate "hold open devices" (linked to the fire alarm system) in accordance with Access & Circulation.~~

The specification of ~~All~~ new doors shall take account of the guidance contained in ~~must~~ comply with SHTM 08-012045.

Ironmongery shall be ~~suitably~~ robust and suitable for the intended environment. All hinges shall be fitted with tamperproof finger guards, screwed into place; not glued.

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Notwithstanding the above, the PSCP shall be responsible for establishing through detailed consultation with NHS Lothian additional specific requirements for doors in areas where NHS Lothian's operations rely on the use of larger items of equipment such as waste containers and regeneration trolleys.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.15 ~~5.10~~ **Acoustics**

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SHTM ~~08-012046~~ "Acoustics" in conjunction with SHTM 56 "Partitions" document follow a code of practice which recognises the special acoustic requirements in the design of new hospital premises and shall allow the current statutory regulations to be applied sensibly within a framework of understanding.

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The HTM's outline the requirements for speech privacy between rooms of similar or contrasting uses. Within ~~this~~the specification Briefing Requirements the requirements of sound reduction (Rw) as detailed in SHTM ~~08-012046~~ are required.

The following rooms have particular acoustic requirements where the guidance contained in SHTM ~~204508-01~~ and 56 should be complied with.

- ~~(ff)~~• bedrooms
- ~~(ss)~~• \_\_\_\_\_ treatment rooms
- ~~(tt)~~• examination rooms
- ~~(uu)~~• \_\_\_\_\_ therapy rooms
- ~~(vv)~~• \_\_\_\_\_ offices
- ~~(ww)~~• \_\_\_\_\_ seminar/meeting rooms
- ~~(xx)~~• \_\_\_\_\_ consulting rooms
- ~~(yy)~~• \_\_\_\_\_ plant rooms
- ~~(zz)~~• \_\_\_\_\_ seclusion rooms
- ~~(aaa)~~• \_\_\_\_\_ contemplation/meditation room
- ~~(bbb)~~• \_\_\_\_\_ Audiology Departments

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- Orthotics Workroom
- Audiology Sound Proof Zones
- Theatre Suite

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.16 5.41 Furniture Fittings & Equipment (FF+E) Interface

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5.16.1 5.41.4 ADB Room Data Sheets & 1:50 Layouts

The PSCP will present to NHS Lothian 1:50 Layouts for review, comment and sign off. The Layouts will include all loose furniture and equipment as well as all building services information relevant to that room and shall directly correlate to the ADB Room Data Sheet Information. This shall be include but not be limited to position of light fittings, electrical sockets, lighting and specialist equipment.

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Fixed Furniture and Equipment must comply with the British and European Standards

A structural overview will be undertaken of any piece of equipment which is reliant on the building fabric for its stability. The PSCP will be responsible for the design and detailing of any particular restraints or supports required for Group 1 and 2 equipment.

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5.16.2 5.41.2 Furniture, Fittings & Equipment (FF&E) Groupings

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FF&E shall be identified under the appropriate groupings and shall be accommodated by the PSCP in accordance with SHPN 03. For the avoidance of doubt FF&E shall be grouped as follows:-

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- Group 1 – Supplied and Fitted by the PSCP
- Group 2 – NHS Lothian Supply / PSCP Fit
- Group 3 – NHS Lothian Supply & Fit including loose furniture
- Group 4 – NHS Lothian Supply & Fit Loose Fit Equipment

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The PSCP will agree a Fit out Plan with NHS Lothian in order to allow the placement and/or installation of all FF&E either by themselves or by the PSCP giving time for testing and commissioning in advance of the operational phase.

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The PSCP shall procure and install, Furniture and Equipment detailed in the Room Data Sheets in the locations identified on the 1:50 Layouts. Appropriate spaces shall be left for the accommodation of furniture and equipment to be supplied and or fitted by others.

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~~Display boards must be incorporated into integrated display areas, entrance halls and other strategic locations. The use of flame spread materials must be restricted in all areas and especially in escape routes. Pin boarding must be appropriately located so as not to impinge upon reach.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

The quantities of items of all furniture and equipment as indicated on the Room Data Sheets must be accommodated within the relevant constructed room. Where the quantity of items, listed within the Room Data Sheets, cannot, be accommodated, within a room, for any reason, (due, for example, by encroachment of the designed building structure), then the PSCP ~~and must notify~~ NHS Lothian ~~will~~ agree a solution. The outcome will be concluded under the Compensation Events procedures.

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Where any existing White Goods and/or Miscellaneous Electrical Equipment are to be transferred. ~~The~~ NHS Lothian must undertake PAT tests on all such equipment.

5.16.3 5.44.3 SS Sanitary Accommodation

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All Sanitary Accommodation shall be designed in accordance with HBN 00-02 and shall comply with BS 8300. Where there is a discrepancy between these guidance references NHS Lothian input shall be sought by the PSCP.

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~~En suite and bathroom areas are to have a domestic appearance as far as is possible, designed to prevent attempted ligature. Seclusion en-suites and the PICU Unit require more specialised robust fittings, and will incorporate electronic timed taps/water outlets.~~

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~~The final choice of components will require close consideration and liaison between the PSCP's designers and NHS Lothian user/clinical team, and will be agreed in writing between the parties.~~

En-suite and bathroom areas are to have a domestic appearance as far as is possible, designed to prevent attempted ligature. Seclusion en-suites and the PIC Unit require more specialised robust fittings, and will incorporate automatic electronic timed taps/water outlets

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The final choice of components will require close consideration and liaison between the PSCP's designers and NHS Lothian user/clinical team, and will be agreed in writing between the parties.

Design/component choice and solutions will ultimately be subjected to clinical and product testing through the provision of samples and mock-ups by the PSCP.

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~~Design/component choice and solutions will ultimately be subjected to clinical and product testing.~~

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The following descriptions are provided as a guide to designers and are not intended to be conclusive of ~~the Board~~ NHS Lothian's requirements.

- Ceiling mounted or wall fixed anti ligature shower head fitting. No shower curtain.
- Dished floor type shower i.e. whole en-suite area to be pocketed during slab casting and falls manipulated to suit. Top access, security fixed gully.
- Flex ble wall mounted towel holder.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

- Traditional porcelain WC pan and plastic toilet seat with button flush recessed into wall. Cistern to be slim-line space saver type concealed in duct behind.
- No exposed pipework in the en-suite area. Pipework for the shower in ceiling void. All services to be isolated from duct area.
- Set-in wash hand basins (WHB) in vanity unit construction worktop. With traditional hand operated taps on timer i.e. limited flow time. With captive swivel bevel edged plug.

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5.17 5.42 Externals

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5.17.1 5.42.1 General

The building must have an external appearance of quality which must be achieved through the design of the Building, surrounding hard standing, grounds, perimeter fencing, entrances and gateways. ~~The PSCP shall design and construct an external works environment for the Facilities that fully integrate with the buildings on the Site.~~

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The PSCP shall design and construct an external works environment for the Facilities that fully integrate with the buildings on the wider RIE site.

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The PSCP ~~must~~ should use colour and differing materials or form to highlight elevations or individual aspects of Building. The entrances must be obvious and the landscaping arrangement will contribute to making this so.

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The PSCP shall provide a secure ~~garden~~ /courtyard for use by patients and visitors.

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The PSCP must demonstrate that the design of the external areas shall take account of the character of the area, topography of the Site, views from the Site, links to the building and the Site's exposure to wind and sun. The design must mitigate the effects of adverse environmental conditions such as traffic noise, unattractive views, or neighbours in close proximity.

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The PSCP shall design the external works for ease of navigation around the ~~site~~ Site by staff, patients, emergency services, hospital services, deliveries and visitors, however privacy of those rooms directly adjacent to walkways and open spaces should be maintained.

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Temporary external works such as any temporary car parking provision and the PSCP's compound shall be removed and the land shall be remediated to a standard suitable for the proposed hard or soft landscaping.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 5: DESIGN BRIEF - BUILDING FABRIC**

In preparing the hard and soft landscaping scheme for the external works, the PSCP shall ensure that ~~the~~ NHS Lothian's requirements with respect to the integration of artwork are met.

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Hard surface materials must be varied and to standards relevant to the proposed use. Creative planting, varied in form and colour, must provide hardy, year round interest.

The PSCP shall provide any planting and topography so as not to present opportunities for the concealment of patients from staff observation.

The PSCP shall seek advice from Lothian and Borders Police Authority's (or successor body) crime prevention representative, Special Branch for special matters and ~~the~~ NHS Lothian on the proposals for external works to seek to minimise the risk of crime and vandalism on the Site and the Facilities. This advice shall be pro-actively sought by the PSCP as part of the design process. The PSCP shall obtain "Secured by Design" certification for the Facilities

Where possible, the PSCP shall ensure that external surfaces allow easy cleaning of vandalised elements, with the minimum of effort and disturbance to staff, patients and visitors.

The PSCP shall ensure any service ~~element~~ inspection cover etc within a patient amenity area shall be securable and tamperproof. Any hard landscape surface / material shall not be readily lifted, thrown or ingested by patients. External furniture shall be securely fixed and sufficiently robust to avoid damage or movement.

The PSCP shall provide external door thresholds which are flush.

Where required, the PSCP shall provide perimeter fencing to the Site boundary of non-industrial appearance which prevents easy access to the ~~site~~Site. The design of any such fencing will be submitted to NHS Lothian for acceptance.

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**5.17.2 ~~5.42.2~~ Hard Landscaping**

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The PSCP shall incorporate into the Facilities all associated hard landscaping for the Site, including but not limited to the following;

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- (a) ~~(a)~~ Access and hardstanding for emergency and delivery vehicles;
- (b) ~~(b)~~ Access for building maintenance and window cleaning;
- (c) ~~(c)~~ Access and circulation for, visitors and patients both on foot, bicycles, in cars or on public transport;
- (d) ~~(d)~~ Parking for vehicles and bicycles including disabled facilities;
- (e) ~~(e)~~ Drop-off facilities including lay-bys and bus/transport stops;
- (f) ~~(f)~~ Service areas, as appropriate;

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

~~(g)~~ ~~(g)~~ Accommodation for building services plant, waste and materials management, as appropriate;

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~~(h)~~ ~~(h)~~ Amenity areas for staff, patients and visitors (including, but not limited to, seating);

~~(i)~~ ~~(i)~~ Suitable pathways and paving;

~~(j)~~ ~~(j)~~ Protection against noise and environmental pollution;

~~(k)~~ ~~(k)~~ Security provisions, as appropriate;

~~(l)~~ ~~(l)~~ Appropriate Site boundary treatment;

~~(m)~~ ~~(m)~~ Walls, fencing, gates / barriers and hedgerows as appropriate along the Site boundary and at particular locations inside the Site;

~~(n)~~ ~~(n)~~ CCTV surveillance to all car parks, pedestrian routes, therapy gardens and other specified external areas (that may be identified during the development of the design);

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~~(n)~~ ~~(n)~~ CCTV surveillance to all car parks, pedestrian routes, therapy gardens and other specified external areas (that may be identified following the submission of the design);

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~~(o)~~ ~~(o)~~ External lighting, including to all car parks;

~~(p)~~ ~~(p)~~ Suitable means of shelter against adverse weather conditions at entrances, bus / transport waiting, and drop off locations and covered links provided, as appropriate;

~~(q)~~ ~~(q)~~ Automatic vehicle access / egress barriers, as appropriate;

~~(r)~~ ~~(r)~~ Raised planting beds;

~~(s)~~ ~~(s)~~ Fire hydrants; and

~~(t)~~ ~~(t)~~ Waste receptacles

All hardstanding, Site roads, paths, car parks, cycleways, and footpaths etc shall be designed and constructed so as to be free from standing water unless, in areas of porous paving, it is a requirement of the SUDS during a 'designed-for' state. With the exception of areas designated for SUDS all hardstanding area shall include positive drainage systems in the form of gullies, channels or drainage kerbs. The system shall require minimum maintenance. Petrol and oil interceptors are to be provided as in accordance with the requirements of Statutory Authorities.

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The PSCP shall select hard landscape finishes in order to provide an appropriate, clean and serviceable finish.

The PSCP shall provide measures to protect pathways and grassed areas from unauthorised parking.

Consideration shall be given to how illegal and inappropriate parking can be controlled using, but not limited to, landscaping and architectural ironmongery.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

Pedestrian walkways shall be located to allow for ease of movement and readily allow pedestrians to access the main entrance(s). Pedestrian walkways should also be clearly defined and segregated from vehicle routes and consideration should be given to these being covered, relative to walking distances. Consideration should also be given to the safety of staff, patients and visitors. The PSCP shall ensure that walkways are adequately lit. See also [the M&E Specification Briefing Requirements Part 6](#) for external lighting and CCTV.

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Service yards and turning circles to be provided as required.

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Separate dedicated areas for deliveries/uplifts shall be provided.

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Access for emergency vehicles to be included particularly with reference to Blue Light access and Fire Fighting to the building.

Pedestrian routes between the principle building entrances and transport pick-up/drop-off locations ~~must provide suitable shelter from the elements and~~ must be sized to accommodate multiple wheelchair users arriving or departing simultaneously.

~~Secure bin storage provision is required for dirty linen, clinical waste and waste.~~

~~Secure external storage provision is required for medical gases.~~

All external areas shall be serviced by adequate lighting, with barriers and hand rails appropriate to their use. Roads and associated lighting to be to adopt ~~table 4~~ standards.

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5.17.3 ~~5.42.3~~ ~~SS~~ soft landscaping

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The PSCP shall design, as an integral part of the Facilities, a soft landscaping scheme that will enhance the environment of the Facilities. Areas of soft landscaping should complement both building and hard landscaped areas of the Site

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All soft landscaping is to be ~~constructed provided~~ in accordance with ~~the~~ requirements of ~~The City of Edinburgh Council Planning requirements Department and as detailed on the Planning Approval drawings.~~ ~~Imaginative soft landscaping proposals for entrances and secure landscaping proposals for entrances and secure gardens, beyond the minimum requirements of the local planning authority are welcomed.~~

The soft landscaping shall be easy to maintain, and plants and shrubs shall reach a state of maturity within three years of the Completion Date. Specified plants and materials shall be non poisonous and non-injurious (e.g. berries, sp kes and the like).

The design of landscaping and selection of shrubs shall aid the reduction in risk of crime.

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

The PSCP shall involve ~~the~~ NHS Lothian in the decision making process for all proposed planting for the Facilities. To comply with Building Regulations, CEC requirements and the ~~ERIE~~ site wide strategy

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The PSCP shall carry out accurate site surveys prior to design of soft landscape to determine ~~s~~Site levels and identify on survey drawings all existing features including any~~the~~ existing mature trees.

The PSCP shall by reference to the ground investigation data; confirm the need for imported subsoil and topsoil or whether amelioration of existing soil is sufficient to support their soft landscaping proposals. The PSCP shall then provide new or utilise existing soils, as appropriate.

The PSCP shall carry out any necessary remedial measures to suit planted areas and hard landscaped areas.

Soil preparation shall be carried out by the PSCP in accordance with BS 4428:1989, Code of Practice for General Landscape Operations (excluding hard surfaces). The PSCP shall ensure care is taken with the use of weed-killers, pesticides and the like. The PSCP shall ensure that all topsoil complies with BS 3882:1984, Specification for Topsoil.

The PSCP shall ensure that any work to existing trees, whether or not covered by Tree Preservation Orders (TPO), shall only be undertaken with the appropriate licence as stipulated by the TPO or with the approval of the relevant Local Authority.

The PSCP shall ensure that tree protection complies with BS 5837:1991, Guide for Trees in Relation to Construction.

The PSCP shall ensure that all shrubs shall comply with BS 3936 Part 1:1992, and shall be planted to BS 4043: 1989.

The PSCP shall ensure that planting and watering is carried out while soil and weather conditions are suitable for relevant operations.

The PSCP shall ensure that turf is in accordance with BS 3969:1998, Recommendations for Turf for General Purposes and free from undesirable grasses and weeds.

The PSCP shall ensure that all works and materials comply with the provisions and recommendations of HBN 45.

~~The PSCP shall ensure that all weed killer / pesticides and herbicides and any other chemicals used in association with the landscape works preparation shall be non-toxic to humans birds and animals under normal use comply with Environment Agency (EA) regulations, the COSHH Regulations, the "Control of Pesticides Regulations 1986", any relevant Code of Practice issued by MAFF Department for Environment, Food and Rural~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

~~Affairs (DEFRA) and be on the current list of approved products and any other relevant regulations applying to hospital sites.~~

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~~The PSCP shall ensure that all weed-killer / pesticides and herbicides and any other chemicals used in association with the landscape works preparation shall be non-toxic and comply with the Scottish Environmental Protection Agency (SEPA) regulations, the COSHH Regulations, the "Control of Pesticides Regulations 1986", any relevant Code of Practice issued by Department for Environment, Food and Rural Affairs (DEFRA) and be on the current list of approved products and any other relevant regulations applying to hospital sites.~~

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The construction, materials and plant selections must be environmentally appropriate.

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Drainage of hard and soft landscaped areas is to be designed to allow safe use of all grounds at all times.

The PSCP shall appoint an appropriately qualified professional and prepare a comprehensive hard and soft landscaping scheme.

**5.17.4 5.12.4 Interface with Highways**

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The entrances and exits to the Facilities shall be clearly defined and signed; their design should enhance ease of movement from and to the public roads. The road system shall be designed to facilitate safe, convenient routes separating transportation groups as far as practical. Attention is to be given to provide clear and well defined routes for emergency vehicles, fire, police, ambulance and daily ~~site~~ service vehicles to the Facilities. The requirements of the Firecode in relation to 'Site Access' shall be considered. The PSCP shall utilise the NHS good practice guidance contained within 'Wayfinding' (as included in Building Better Healthcare (Volume 3) as their model for signposting of the Site and Facilities for staff, visitors and patients.

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All of the access requirements shall satisfy the requirements of ~~Edinburgh Council~~The City of Edinburgh Council.

~~In order to accommodate buses and large vehicles the access roads and car parking areas shall be constructed to adopt~~ableed standards in accordance with ~~Edinburgh Council~~The City of Edinburgh Council guidelines. Due recognition should be made of road network geometry especially in respect of bus movements and turning areas as well as ensuring safe pedestrian routes.

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The PSCP shall define and seek agreement with ~~Edinburgh Council~~The City of Edinburgh Council for the creation of additional pedestrian and / or emergency road access points to suit the specific requirements of the final design.

~~The PSCP shall also provide suitably robust signage for easy Site navigation during the construction phase. Traffic signage and NHS Lothian' corporate signage to be provided.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

~~The PSCP shall also provide suitably robust signage for easy site navigation during construction and operational phases. Traffic signage, white lining of surfaces and the Board NHS Lothian corporate signage to be provided.~~

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5.17.5 5.42.5 **Parking and Drop off**

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BAM TO PROVIDE NUMBERS OF CAR PARKING AND CYCLE SPACES SET OUT IN THE DEVELOPED DESIGN FOR INCLUSION IN THE FOLLOWING PARAGRAPH.

*The PSCP shall provide a total of \*\* car parking spaces, of which \* are dedicated disabled parking bays, \*\* are dedicated to baby and toddler parking bays and \* are dedicated visitor parking bays. The PSCP shall also provide facilities for the secure, covered storage for \* bicycles, in addition to designated localised locking points for bicycles in the proximity of main entrances.*

The PSCP shall ensure the following:

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(a) ~~(a)~~ Parking for vehicles is as close as possible to Facilities served and the diminishing of the visual impact of parking by appropriate planting shall not impinge on individual parking places;

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Commented [s45]: HTM 00-07 Resilience Planning

(b) ~~(b)~~ Suitable barrier control in relation to egress from the Site, with associated CCTV and two way intercom system allowing monitoring and remote operation at the Hospital main reception. ~~This is to be developed in conjunction with the PSCP. This is will be developed by NHS Lothian in conjunction with the PSCP.~~ The prime purpose of the system is to prevent unauthorised use of the ~~site~~Site, but not to hinder the flow of traffic, particularly at peak times;

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(c) ~~(c)~~ Direct routes from parking areas to the building entrances are provided;

(d) ~~(d)~~ Appropriate and secure cycle storage to comply with any planning regulations; and

(e) ~~(e)~~ Disabled parking spaces shall be within 40m of building entrance(s) (subject to final design by the PSCP).

NHSL & the PSCP shall provide a network of internal roadways providing access to;

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(a) ~~(a)~~ Car parking;

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(b) ~~(b)~~ The delivery entrance(s) to the Facilities, waste compounds and service infrastructure;

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(c) ~~(c)~~ Bus stop(s); and

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(d) ~~(d)~~ Taxi / car / ambulance drop off and layover bay(s).

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

(e) Cycle Parking

The PSCP shall ensure that all roads, delivery and refuse collection areas have sufficient headroom above them to allow for the passage of appropriate delivery and refuse collection vehicles and are designed to provide sufficient space to allow efficient manoeuvring of such vehicles without undue difficulty, risk of impact or adverse effect of exhaust fumes on occupants of the buildings. The PSCP shall ensure that all roads, car parks and other areas that may be used by fire appliances shall have sufficient headroom for such vehicles and are designed to allow their efficient manoeuvring. The PSCP shall agree with ~~the~~ NHS Lothian the types of delivery vehicles which require to be considered in the design.

New car parks within the Site shall be designed by the PSCP to comply with applicable HTM, HBN 45, HFN 20, HFN 21 and any requirements of the relevant Local Authority.

~~Where areas of car parks are required to be traversed by vehicles heavier than 2500kg for maintenance or access purposes, the sub-base, base and surfacing of these areas shall be specifically designed by the PSCP for these heavier loads.~~

Where areas of parking or hardstanding are required to be traversed by vehicles heavier than 2500kg for maintenance or access purposes, the sub-base, base and surfacing of these areas shall be specifically designed by the PSCP for these heavier loads.

Roads, delivery and refuse collection areas, and car parks, together with their supporting groundworks and structures, shall be designed by the PSCP to provide full and sufficient access for inspection, maintenance and repair of roads, car parks, delivery and refuse collection areas, structures, underground and underground drainage, including existing drainage items such as manhole covers and drains. Where access for maintenance, repair or replacement of underground services is required under the terms of an easement, the design of all elements affecting the exercise of such an easement shall also be in accordance with the requirements of the company that has the right to exercise the easement.

The PSCP shall also comply with the following criteria:

~~(a)~~ (a) — Finish: to be macadam, hot rolled asphalt or, if agreed with ~~the~~ NHS Lothian, block paving or other self-draining products as per the SUDS design;

~~(b)~~ (b) — Kerbs: to comply as a minimum standard with BS 7263, Part 1: Pre-Cast Concrete channels and edgings. Dropped, flush, kerbs and tactile paving shall be provided at all pedestrian crossing locations;

~~(c)~~ (c) — Pedestrian crossings: types, locations, lighting and controls shall be agreed with ~~the~~ NHS Lothian;

~~(d)~~ (d) — Markings: to The Traffic Signs Regulations & General Directions 2002 and The Traffic Signs Manual (part of the Design Manual for Roads & Bridges), and for ~~the~~ NHS Lothian's approval;

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 5: DESIGN BRIEF - BUILDING FABRIC

~~(e)~~ ~~(e)~~ Gradients: All gradients shall comply with the provisions of HBN 45 and the Building Regulations 2004 as applicable. No gradient in excess of 1:20 shall be allowed in parking areas (other than access roadways), and 1:15 on pedestrian staff, patient and visitor access paths from parking areas to the building entrances;

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~~(a)~~ ~~(f)~~ Parking bays: comply with the reference documents, HBN 45, HFN 20, HFN 21 and the item on gradients above. Variation from the standard (to make optimum use of the space for example) may be desirable and allowed subject to agreement with ~~the~~ NHS Lothian; and

~~(b)~~ ~~(g)~~ Traffic and parking management: to be agreed with ~~the~~ NHS Lothian.

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Designs shall cater for the access and parking needs of pedestrians and the physically disadvantaged. This shall involve catering for visitors and staff using different modes of transport in adapted vehicles and with multiple aids / equipment without reversing ~~manoeuvres~~ manoeuvres.

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The PSCP shall give consideration to the inclusion of raised crossings where appropriate on roads / routes to ease pedestrian movement on the Site.

Blue badge bays shall be 3.6m x 6m overall, with hatching as outlined in Part M of the Building Regulations

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Parking for the transport requirements of deliveries and waste disposal, ambulances, fire appliances and other specialist and emergency vehicles shall be segregated from public and staff parking.

~~Car~~ Parking ~~and pickup/drop off~~ provision shall take into account the following requirements:

~~1. Dedicated Ambulance pick up/ drop off points at main entrance;~~

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~~2. Dedicated taxi and bus pick up/drop off facility close to the main entrance;~~

~~3. Dedicated disabled parking for those with disabilities located close the clinical areas, especially for those with limited mobility in close proximity to building entrances;~~

~~4. Dedicated baby and toddler parking located close the clinical areas:~~

~~5. Non-staff parking shall be located as near to the building entrances as possible, with priority to given to dedicated disabled and baby and toddler parking;~~

~~6. Space for larger vehicles, which may be fitted with wheelchair ramp or carrying specialist mobile equipment from / to the Facilities (such spaces will be larger than the normal car parking space); and~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

~~7.9~~ Automated controlled entry / egress barrier arms (or equivalent) to the appropriate elements of car parking area shall be installed by the PSCP. Care shall be taken that the location and design of the control mechanism has sufficient capacity to cope with peak flows and that there should be clearly defined instructions.

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The PSCP shall design and provide appropriate signage external to the Facilities to ensure ease of navigation around the Site.

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Risk assessments shall be undertaken by designers, particularly to assess crossing points and mixed traffic areas. These shall form part of the design sign-off requirements.



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~~5.17.6~~ ~~5.12.6~~ **External furniture**

Garden designs shall allow for the re-location of refurbished benches from the existing RHSC supplied by NHS Lothian. Each shall be given a hard standing to which it can be secured. Additional benches and other seating arrangements may be required and will be provided by the PSCP based on the developed design.

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The PSCP should not create areas which persons can gather unobserved by staff.

Planters may be incorporated and shall require drainage and irrigation provisions.

Grit and salt stations/bins to be robust and secured to the ground and located outwith patient areas.

Litter bins require to be robust and secured to the ground, with cigarette extinguishing feature all public/staff entrances.

~~Permanent fencing may be incorporated to assist the security of the Site and the secure garden areas. Fences should be secure and robust in construction and of pleasing design. Permanent fencing where required to assist with the security of the Site and the secure garden areas should be robust in construction and of pleasing design and shall take account of the guidance in Secured by Design.~~ Height will vary according to functional requirement

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~~5.17.7~~ ~~5.12.7~~ **Boundary conditions**

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No work shall commence on Site until the details of the proposed boundary treatment have been submitted to and approved by the relevant Local Authority and ~~the~~ NHS Lothian.

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The PSCP shall provide boundaries to the Facilities, which provide security, appropriate visual screening and essential maintenance access. [The PSCP shall engage NHS Lothian in the design process for all boundaries including those with the adjacent RIE:]

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~~The PSCP shall provide boundaries to the Facilities, which provide security, appropriate visual screening and essential maintenance access. [The PSCP shall engage the NHS~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

~~Lothian in the design process for all boundaries. The following security requirements associated with the boundary between the Site and the adjacent RIE:~~

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Commented [s49]: NHSL to advise as to need for boundary fencing

Where appropriate, proposals for the Site boundary treatment shall comply with the relevant parts of BS1722: Fencing.

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5.17.8

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.13 Expansion

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~~PSCP shall design the Facilities to incorporate a minimum potential future expansion of zero% of NHS Lothian's, has advised that the design should not incorporate any scope to increase the clinical overall accommodation on the Site.~~

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Commented [h50]: This supersedes previous advice and will need to be assessed by BAM

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~~The PSCP shall provide all the necessary building services infrastructure to permit the level of expansion set out in Section 6 Paras 6.1 and 6.6.1 Services Distribution. suit the eventual completion of this expansion i.e. all main drainage and buried services to be sized to cope with the expanded Facilities.~~

In this respect, however, the capacity of central plant shall be considered carefully by the PSCP. The PSCP may provide plant of the capacity to suit the expansion, or consider how the expanded capacity could be provided in future e.g. spare space in plant rooms for additional plant, or replacement of that plant with enhanced capacity equipment.

The PSCP shall ensure that the physical arrangement of the buildings building allows for future growth and change of clinical services in the future, as far as is practical and without adversely affecting the initial design of the Facilities. ~~The architectural and engineering flexibility shall be developed by the PSCP. For example, The PSCP shall consider flex bility issues such as ease of change, and quality of finishes following changes (e.g. neat faceplates / panels etc) associated with adding and removing equipment / services at a future date, such as how wash hand basins may be removed from a clinical room if the use is changed to a clerical purpose.~~

The PSCP shall ensure that the design of the internal enclosing walls, screens and ceilings, and their relationship to the servicing strategy, present a co-ordinated and consistent approach throughout, capable of accepting change at a later date with a minimum of disruption to the building structure and main mechanical and electrical plant installations and associated services.

Structural floors shall have penetrable zones co-ordinated on a modular basis with partitions and services. Services should be organised in a clearly zoned spatial hierarchy.

~~PSCP shall maximise the opportunity for flex ble adaptation and extension.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 5: DESIGN BRIEF - BUILDING FABRIC

5.17.9 ~~5.14~~ **Decant**

NHS Lothian will advise the PSCP of details of such equipment and/or other material which it intends to transfer to the new facility.

**<Decant strategy wording to be developed by NHSL>**

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF – BUILDING SERVICES

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

~~PART 6.~~ PART 6 MECHANICAL & ELECTRICAL REQUIREMENTS

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~~4-6.1~~ Design Criteria

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The PSCP shall in carrying out the Works comply with the following ~~outline~~~~non-exhaustive list~~ of mechanical & electrical requirements.

~~Through innovative design.~~ The PSCP shall provide mechanical, ~~and~~ electrical ~~and communication~~ systems that help create a "state-of-the-art" building with innovative design. ~~The PSCP shall provide an engineering system that utilises~~ the latest technology to create a high quality working environment that will provide a reassuring, enjoyable and convenient hospital for all patients, their families, visitors and staff. The PSCP shall ensure the services network is efficient, effective, flexible and unobtrusive to the clinical functions. The PSCP shall ensure that the system is easy to maintain and shall maximise the opportunities for flexible adaptation and extension of the Facilities.

Electrical, mechanical and communication services shall be designed to be an integral and co-ordinated part of the design. Services shall be clearly identified at regular intervals and at all locations where maintenance access is required.

The location of engineering and utility services shall be co-ordinated with the structure and not constrain or conflict with clinical functionality. Access to all services shall facilitate ease of maintenance which should be safe and able to be effectively undertaken. ~~Whilst there is built in resilience of 25% within the electrical distribution system.~~ ~~There is no~~ shall be provision of ~~dedicated for~~ space to give flexibility for future re-planning and / or re-modelling of the ~~mechanical services installation services.~~

Commented [mod51]: HK Plant & riser & ceiling voids design currently accommodates only the known briefing with no specific extra over allowances made. SoA and affordability issues apply.

~~The Board~~ NHS Lothian requires the ~~buildings~~ building to be designed to achieve an optimum level of energy and utility utilisation.

~~6.1.1~~ Design Standards

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6.2 Design Reference Documents

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In addition to the publications Minimum Design and Construction Standards, the PSCP shall ensure that the design, construction and selection of components for the mechanical and electrical works comply with the following:

- Building Better Healthcare Volume 3;
- NHS Scotland Firecode;

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

- All current relevant legislation and Codes of Practice by CIBSE;
- All current relevant legislation by HVAC;
- All current relevant British Standards;
- European Harmonised Standard Specifications and Codes of Practice;
- ACS Accreditation (formerly CORGI Regulations);
- Gas Safety Regulations;
- EC Biological Agents Directive 1995;
- Water Research Centre Codes;
- The Water Supply (Water Quality) (Scotland) Regulations 2001;
- Electricity at Work Regulations;
- BS 7671 (IEE Wiring Regulations);
- The control of legionella bacteria in water systems approved Code of Practice L8;
- NHS Scotland guidance notes and recommendations;
- Low Voltage Directive (CE mark);
- EMC Directive;
- ISO/IEC 11801:1999 Generic Cabling for Customer Premises;
- EN50173: 1999 Performance requirements of generic cabling systems;
- PrEN50174 Information Technology – Planning and Installation of cabling systems;
- ANSI / TIA / EIA 568-B Commercial Building Telecommunications Wiring Standard;
- ANSI / TIA / EIA TSB67 Transmission Performance Specifications for Field Testing Unshielded Twisted-Pair Cabling Systems;
- BS7718 Codes of practice for the Installation of fibre optic cabling; and
- BS6701 Codes for practice for the Installation of apparatus intended for connection to certain telecommunications systems.

The design of the environmental control system shall be co-ordinated and integrated with the design of the structure and the occupied areas as to maximise the control and flexibility of the Facilities.

The following is a non exhaustive list of SHTM's applicable to the scheme project:

- SHTM 64 Building components Sanitary Assemblies:

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- SHTM 68 Building Components Duct and Panel Assemblies;
- SHTM 2005 Building Management Systems;
- SHTM 2007 Electrical services supply and distribution;
- SHTM 2010 Sterilisation;
- SHTM 2011 Emergency electrical services;
- SHTM 2014 Abatement of electrical services;
- SHTM 2015 Bedhead Services;
- SHTM 2020 Electrical Safety code for low voltage systems;
- SHTM 2021 Electrical Safety code for high voltage systems;
- SHTM 2022 Medical Gas pipeline systems;
- SHTM 2023 Access and accommodation for engineering services;
- SHTM 2024 Lifts;
- ~~SHTM 03-01-2025~~ Ventilation in healthcare buildings;
- SHTM 2027 Hot and Cold water supply and storage mains;
- SHTM 2035 Mains signalling;
- SHTM 2040 The control of legionellae in healthcare premises;
- ~~SHTM 08-01 2045~~ Acoustics;
- SHTM 2070 Estates emergency and contingency planning;
- MEIGaN;
- All applicable SHTN's, SFPN's, SHFN's, SHPN's and Infection Control Documentation.

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Where there is any conflict between 2 or more documents, the higher standard shall be adopted, unless specifically agreed otherwise by the NHS Lothian, taking due account of all third party representations.

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The PSCP shall consider the requirement for anti-ligature resistant fittings and fixings within the building services provision in appropriate areas (identified or otherwise in the Specific Clinical and Non-Clinical Requirements), and generally in keeping with Good Industry Practice.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.4.26.3 Performance Standards

**Energy Targets**

~~The Board~~ NHS Lothian is committed to the incorporation of sound practical environmental solutions to the design and operation of its Facilities. In recognition of this, the PSCP shall ensure that the Facilities shall operate to achieve a target energy consumption of no more than 5350 GJ/100m3 (heated volume). (This is the lower figure in the range desc rbed within Carbon / Energy Management in Healthcare.)

**Thermal Comfort**

Where maximum internal summer time temperature calculations indicate that the internal temperature will exceed those limits set out in the RDS, the PSCP shall provide means of reducing the temperature rise in each department area.

**Air Quality - Internal**

Air quality in all areas shall take account of occupancy levels, internal pollutants, heat gains, external pollutants and atmospheric conditions and shall be controlled to provide adequate comfort and fresh air levels appropriate to the functions of each department area.

Particular attention should be given to the risk of cross infection within the hospital / healthcare environment and shall be such as to minimise the spread of infection. The PSCP. The PSCP will demonstrate how their design proposals with the requirements of SHTM 03-012025 (Ventilation in Healthcare Premises) and HIA SCRIBE. In order to reduce cross-contamination, the design of the Facilities shall incorporate 100% fresh air supply systems only.

The PSCP shall provide natural ventilation wherever possible, except where:

- The level of outside noise is unacceptable;
- Safety or security features must be provided;
- Unpleasant smells are generated either inside or outside the building;
- Where inflows of air are undesirable;
- Clinical requirements do not allow, in areas such as isolation rooms, where positive or negative pressure are required; and
- Areas which are air-conditioned.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- Key data server areas.

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**Air Quality - External**

The PSCP shall comply with the requirements of ~~Edinburgh Council~~The City of Edinburgh Council and other statutory bodies regarding airborne emissions from the Site and shall undertake all studies necessary to prove that emissions and their dispersal will not have any adverse impact on the local community or staff, patients and visitors to the Site.

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**Vibration**

The PSCP shall ensure that building services plant and equipment are suitably isolated from the building structure in order to prevent the transmission of vibration. The PSCP shall comply with the guidance on the satisfactory magnitude of building vibration with respect to human response given in BS 6472. The PSCP shall comply with the following vibration limits detailed below:

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- Plant rooms on occupied floors 0.015 m/s<sup>2</sup>;
- Plant rooms above and below occupied floor levels 0.050 m/s<sup>2</sup>; and
- Remote plant rooms 0.100 m/s<sup>2</sup>.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.4 ~~6.2~~ **Energy Efficiency**

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~~The Board NHS Lothian is committed to the incorporation of sound practical environmental solutions to the design and operation of its Facilities. In recognition of this, the PSCP shall ensure that the Facilities shall operate to achieve a target energy consumption of no more than 35GJ/100m<sup>3</sup> (heated volume). (This is the lower figure in the range described within Carbon / Energy Management in Healthcare.)~~

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~~The Board NHS Lothian~~ believes that whilst 50GJ/100m<sup>3</sup> ~~this~~ is a demanding target, it is a realistic one and one that can be met through a high quality building design and the early application of a cohesive energy strategy, which seeks to join together equipment suppliers and controls specialists. The PSCP shall provide a breakdown of how this target energy consumption shall be achieved. In particular, the PSCP shall provide details of the anticipated electrical and gas consumption of the proposed Facilities.

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In order to assist in meeting this target, the PSCP in consultation with NHSL shall incorporate a high level of innovative building automation and equipment monitoring. The PSCP shall ensure that a central Building Management System (BMS) for the Facilities is in place; providing linked control and monitoring of the estate functions the PSCP shall also adhere to the requirements of Building Management Systems and Controls.

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The PSCP shall note that the Building Volume used in the calculation of Energy Consumption Performance Indicators shall be the "Heated Volume" as defined in Encode. The PSCP shall also include services within the calculation for determining the energy consumption.

At design stage, the PSCP shall calculate the energy consumption for the new buildings/building using weather data from CIBSE Guides, and degree-day data (to 18.5 °C base for hospitals). The Energy Model calculation shall be submitted with the 1:200 Stage Scheme Design Report.

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In order to assist in achieving the water consumption target the PSCP shall consider the use of low flush toilets and insert spray caps where appropriate to taps to ensure the conservation of the water supply. The PSCP shall install systems into the urinal facilities to reduce the flush requirements.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

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**Carbon Dioxide (CO<sub>2</sub>) Emission Targets:**

~~To demonstrate compliance with SHTM07-02 EnCO2de, page 112 Table A6, the facility design shall be such that the actual building CO<sub>2</sub> emission rate does not exceed 1175kg CO<sub>2</sub>/m<sup>2</sup> when based on natural gas as being the primary fuel. The PSCP must also satisfy the target energy consumption requirement whilst achieving (or improving on) the stated emission rate.~~

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The above CO<sub>2</sub> emission rate value does not relieve the PSCP in their obligations to ensure that the building is designed to comply with Section 6 of the Scottish Building (Standards) Regulations, and the City of Edinburgh's Planning Document – "The Edinburgh Standards for Sustainable Buildings". ~~Following the adoption of the Edinburgh City Local Plan on 28 January 2010 amendments have been made to "The Edinburgh Standards for Sustainable Buildings" that shall be complied with.~~

~~A derogation in terms of To demonstrate compliance with the City of Edinburgh's Planning Document – "The Edinburgh Standards for Sustainable Buildings" and amendments, Priority Standard 2, has been agreed with City of Edinburgh Council in recognition of the fact that the primary heat source is from the RIE Energy Centre. the facility shall be designed such that the onsite renewable energy generation technologies are provided to achieve a 20% reduction in the development's CO<sub>2</sub> emissions.~~

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~~For the avoidance of doubt, the PSCP shall be required to design the facility to ensure compliance with Section 6, then, the design shall be enhanced to achieve the 20% further reduction in CO<sub>2</sub> emissions.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.5 ~~6.3~~ **Sustainable Design**

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~~Whilst NHSL recognises that the primary heat source is from the RIE Energy Centre, the design team~~ PSCP shall where possible incorporate the City of Edinburgh's Planning Document – "The Edinburgh Standard for Sustainable Buildings" and the principles of SHTM0702 EnCO2de, Chapter 3 "Procurement of buildings, equipment and services" and Chapter 4 "Energy Considerations" during the design process and complete the Project Design Checklist.

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• The following systems should be given consideration in the design:

Commented [mod52]: HK – We have added the checklist to the back of the HK Scheme Design Report. Note that NHSL have to input into the checklist also.

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~~(eee)~~• Solutions producing electricity (Photovoltaic Array, Wind turbine),

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~~(ddd)~~• Solutions producing heating (Ground and Air source Heat Pump, Biomass Boilers)

~~(eee)~~• Solution producing Hot water for domestic consumption (Solar Water).

~~(fff)~~• Combined solution (Combined Heating, Cooling and Power machines, Tri-generation)

Consideration should also be given to Passive and Energy Efficient Designs, ~~as well as rainwater harvesting.~~

The above systems should take into consideration the following:-

==

~~(ggg)~~• Visual Impact

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~~(hhh)~~• Production of Heating/Cooling

~~(iii)~~• Reduction/Increase of CO2 emissions

~~(jjj)~~• Energy efficiency

~~(kkk)~~• Payback period

~~(lll)~~• Maintenance/Running Costs

~~(mmm)~~• Grant Availability

~~(nnn)~~• Capital Investment

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- (ooo) Impact on current systems
- (ppp) Lifespan
- (qqq) Impact on company reputation
- (rrr) Monitoring
- (sss) Planning Implications
- (ttt) Carbon Tax
- (uuu) Feed in Tariffs

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The following clauses are taken from the NHS Lothian Report "A Strategy for Sustainable Development" - the PSCP shall take cognisance of the contents of this strategy document in the design

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Energy Efficiency:

The design should be energy efficient that incorporates, as far as possible, items from the following list.

1. Primary heat generation for the provision of heating, hot water and ventilation systems - these systems will be designed to maximise conservation efficiency of the primary supply fuel. Boilers will operate at low return temperatures to enable optimum "condensing" of flue gases. Low temperature hot water systems will have minimum distribution length with maximum economic thickness of insulation. Comment - Primary heat source from RIE Energy Centre

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Commented [mod53]: HK - Note heat source for RHSC is from existing RIE energy centre.

Commented [mod54]: HK - Note DHW generation is via low storage high performance maximiser type units within 3 no heat stations. This is not "point of use".

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2. It should be possible for users, where appropriate, to control the natural ventilation to their own areas wherever possible. However, in mechanically cooled areas the windows that are capable of being opened (by the user) should, wherever possible, be interlocked to inhibit the cooling devices for the respective areas. Comment - Interlocking windows not provided.

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Commented [mod55]: HK Note interlocked windows is not affordable for RHSC.

3. Wherever there is a clinical or functional requirement mechanical ventilation will require to be installed. Where mechanical ventilation is installed this should

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

incorporate as much energy recovery as possible from the extracted air. How this would be achieved would depend upon the quality of air extracted from the area served. It would be expected that recovery would be by blended recovered air (with selectable minimum air percentage) or by a heat recovery unit incorporating electronic positioned by-pass dampers.

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Commented [mod56]: HK Note – note SHTM/HTM's require full fresh air with no mixing/blending.

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4. Duct sizes and routes of mechanically supplied air should present the least resistive path wherever possible.

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5. Electronic controlled shading of windows should be considered to assist in maintaining a comfortable environment without recourse to mechanical cooling.

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Comment - Shading provided by solar control glazing

Commented [mod57]: HK – Note the proposed solution includes solar control glass only where necessary, but not electric driven shading.

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Heat reflective glazing options should be incorporated to reduce heat losses from aspects of the building that may suffer from this condition. Comment - Shading provided by solar control glazing

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Commented [mod58]: HK – note solar control glass where exposed to direct sun path and where considered necessary will be employed as part of the approach.

6.

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The installation of Inverter drives to AHU motors and duct pressure sensors controlled from the BMS (Building Management System) will allow for the speed of the fan motors to be ramped down whenever situations allow. This will also allow soft-start to reduce the initial "current draw" of the motors.

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8. The installation of Inverter drives to all Pump motors will allow for the speed of the pump to be reduced, by the BMS, whenever possible. This will also allow soft-start to reduce the initial "current draw" of the motors. Dual pump heads with own control system should be avoided as remote BMS speed control may not be possible.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

9. Dirty extract fans for toilets, showers etc should be individually controlled by the BMS to the dictates of a room occupancy sensor located within the respective room. On detection of occupancy, within a room, the BMS will be signalled and will bring the required fan into operation. The fan will continue to run while the room is occupied and will continue to run for a period of time after the room has been vacated. The run on time for the fan will be adjustable (set by the BMS) and will allow the fan to be disabled by the BMS if required. Comment - Bedroom en-suites, dirty utility rooms etc shall be served by departmental general extract to optimise heat recovery of extract air

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Commented [mod59]: HK – Note HTM 03-01 does not require duty/standby dirty extract systems in healthcare facilities. The approach is to use such systems only for consolidated toilet cores. Bedroom en-suites, dirty utility rooms etc shall be served by departmental general extract to optimise heat recovery of extract air.

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10. All heating pipes, cooling pipes, supply air transfer ducts, extract air transfer ducts, hand valves, control valves and pipe flanges should be insulated with enhanced thermal insulation.

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11. It should be possible to monitor the energy that individual departments have used. This is achievable by the provision of sub metering on electrical supplies, energy metering on heating supplies, energy metering on cooling supplies and water usage. It is expected that these meters should not be a pulse-output type (prone to problems) but should be of a type capable of remote reading of true values. All of the meters would be linked by their own MODBUS data network and interfaced into the BMS via one interface unit. The data could then be analysed and perhaps automatic control applied if limits, of usage, have been exceeded.

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12. If applicable, the provision of occupancy sensors could be used not only to illuminate an area but also to bring the environmental temperatures from a set-back value to the required comfort value. A delay would be incorporated, on the temperature control, to inhibit the heating in the event of short occupancy (some one collecting item from room etc).

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13. The lighting levels in rooms and corridors would take account of the natural light available from external sources and would adjust automatically the level of

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

lighting supplied. Lighting level set points would be available for different times of day (different uses) with a gradual transition between set points to avoid "startled rabbit" situations.

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14. At the hand-over of the building thermal images should be taken and recorded of all aspects of the building. These images will be retained and compared to future thermal images to ensure the energy conservation, of the building, has not been compromised.

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15. Wind harvesting equipment could be incorporated to provide "free" cooling to the building during warmer weather when it would otherwise be necessary to operate chilling equipment. This could be incorporated into the BMS to allow for free cooling of the fabric of the building over night.

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16. The provision of high tech light wells could supply natural daylight to areas in the centre of the building that would otherwise require artificial lighting.

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17. Individual rooms should have their own temperature control loop comprising a room temperature sensor, control valve and temperature controller. The sensor should have a digital display indicating the current room temperature with a facility for the occupier to make adjustments to the current set value. Comment – Not proposed

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Commented [h60]: BAM – Individual rooms are controlled by local TRVs (where radiators / radiant panels are fitted) of adjustable sensors (where CHW cassettes or duct mounted re-heats) – Refer to H&K Scheme Design Approach

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES



Example of room temperature sensor complete with digital display, local adjustment facility and an indication of operational mode.

The individual temperature controllers will be connected by a network to interface units that are then connected into the BMS. This will allow the facility for the BMS to monitor the current parameters within the controller such as current room temperature, occupier's adjustment to the set point, position of heating valve, etc. The BMS will also be able to set the desired temperature set point (at various times of day), override the heating on/off and to set the upper and lower limits that the user can adjust the set point by.

The BMS should be programmed to allow individual rooms to be adjusted remotely. Common areas, such as corridors, nurse's stations could also utilise the same type of control loop. The room controllers should be grouped into sixes and contained within steel enclosures located within risers. Each controller should have its own MCB so that replacement of a controller will not effect the operation of other controllers within the same enclosure. A maximum of three enclosures (18 controllers) should be networked into each interface unit for connection into the BMS. The BMS will monitor the demand from all of the heating valves and will enable the heating source if any controller has a demand for heat.

Cassette units (wall or ceiling mounted) used for air conditioning should be connected via interface units into the respective BMS. This will allow the monitoring of cassette unit's set values, temperatures, operational mode, fault/run conditions etc. Each cassette unit's main set point value will be set remotely by the BMS as will the enabling/disabling of the unit. Whenever a cassette unit for an area is in a cooling mode any heating for the same area will be disabled by the BMS. Cassette units should only be brought into operation when the room temperature exceeds a maximum value and should not be utilised for day to day comfort control.

18. It will be a requirement that on completion of the commissioning a hand-over period will take place. The hand over period should only commence once all the

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Commented [h61]: BAM – This will only be possible in the areas where CHW cassettes . re-heat batteries are installed for area / individual rooms

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

building trades (including painters, carpet fitters, furniture movers etc) have completed and left site. During the hand over period all systems (including BMS, Heating, Ventilation and lighting) should be fully operational and will be controlling to the required set points. During this time the systems will be monitored by the BMS to ensure that stable control is achievable without any under heating, over heating or hunting being noticeable. The BMS should be utilised to carry out data logging of all the temperature sensors and final control elements (heating valves, cassette units, etc) during this time and should be set to record their values at intervals no greater than every five minutes. If external conditions exist that would prevent the proving of the heating control loops the heating set points, for the respective areas, should be temporarily raised to ensure that the system can perform its duty correctly and efficiently. The contract should allow for demonstrations of the systems to be carried out to the Systems Controls Officer (or his agent) where access to the aforementioned logged data will be required.

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19. On completion of the building the design team will have prepared an Energy Performance Certificate compliant with the requirements of the Energy Performance Directive 2002/91/EU.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

3. Sustainable Design and Renewable Energy

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Currently there are several methods of sustainable design that can be utilised individually or for greater effect in conjunction.

The following options are outlined:

- Passive design. This is achievable with the new building as it embraces the design and materials used in the construction to ensure that the heat losses from the building are kept as low as possible. The warming effect of the sun providing (free) illumination during the summer will be balanced with the requirements of preventing the building from overheating.

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- Energy Efficiency.

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1. Careful consideration should be given during the design phases that a high thermal inertia structure should be created. This will allow application of air conditioning to be minimised by using the latent cooling in the building structure to minimise the controlled area temperature. Conversely during heating requirements the thermal inertia (by creating a heat store) will assist in maintaining a background heat during periods of non-occupancy.

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2. The building should be zoned into as many zones as possible (each occupied room) with room temperature sensors fitted in each zone. The set points for the rooms should be remotely settable by the BMS to allow automatic reduction or over-ride facilities.

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3. If operationally possible utilise windows that the occupiers can open to allow natural ventilation – however the windows could be interlocked to the BMS room temperature set points to prevent un-necessary heating (or cooling) being supplied to the room. Consideration should be given to the supply of

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

window blinds to reflect the heating effect of the sun during summer conditions.

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4. The system should be easy to understand and operate and allow for easy access for maintenance works.

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5. The system should be easily adaptable to allow for any future energy savings techniques to be applied.

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The undemoted options have been considered but for various reasons have been rejected in this case. The PSCP,s Energy Option Appraisal Report refers.

• Biomass. This option could be explored but does depend on planning requirements within Edinburgh. Expert advice should be sought.

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• Wind Energy Generation. This option could be explored. However, further professional investigation will be required to identify the suitability of wind energy generation for this site. Noise will be a consideration that will need to be taken into account.

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• Ground Source Heat Pump. There is a possibility of utilising low grade heat at this site. Bore holes would require to be drilled or trenches dug for the heat collection pipes. Expert advice and feasibility studies would need to be carried out.

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• Air Source Heat Pump. There is a possibility of utilising low grade solar heat at this site. It is likely that collectors may be mounted at roof level or on vertical south facing surfaces. Expert advice and feasibility studies would need to be carried out.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

• Solar Water Heating. The new building would have a sizable roof area that may be incorporated to allow the installation of the collector panels for the Solar Water Heating. Expert advice should be sought with regards integrating this heating system into the main heating system for the building.

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• Photovoltaic Energy Generation. The new building would have a sizable roof area that may be incorporated to allow the installation of the collector panels for the Photovoltaic Energy Generation. Presently grants are available from the Low Carbon Buildings Programme (LCBP) phase 2 where up to 50% of the installation cost is possible. Although this programme ends in May 2009 it should be pursued for further extension or new phase.

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• Combined Heat and Power. The provision of a CHP unit would provide for some of the heating and power requirements for the building. The problem would be is what to do with the excess heat during the warmer weather when there is little demand for heat to the building. Therefore the provision of CHP should be considered from the outset of the design and enable close matching between the CHP outputs and the buildings HVAC system requirements. In other words CHP should not be considered in isolation as a "bolt on" to pre-designed systems.

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• Grey Water Harvesting. Providing the roof area is suitable consideration should be given to the collection of rain water for utilisation within the building.

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Commented [h62]: BAM – The Energy Option Appraisal Report produced by H&K reviewed the case for the various renewable energy options. CHP being provided in Existing Energy centre by Consort.

• Vegetative Green Roof. Providing Grey Water Harvesting is not carried out consideration should be given to the incorporation of a vegetative green roof. This will reduce the quantity of rain water that requires to be disposed of via the waste system.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.6 Site Utilities

THE INTERFACE BETWEEN SERVICE CO AND THE PSCP IS DETAILED IN PART 3 OF THE BRIEFING DOCUMENT. The undemoted is for information only and reference should be made to the developed Part 3 for the detailed position.

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~~SECTION TO BE AGREED WITH THE BOARD NHS Lothian FOR THE SOURCE OF UTILITIES~~

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General:

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The PSCP NHS Lothian will be responsible for the provision of all utilities and the energy supply infrastructure to and from the site of the Facilities, including:

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~~(vvv)~~ Confirmation of the capacity of the proposed system;

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~~(www)~~ Liaison with potential suppliers;

~~(xxx)~~ Off-site system development and planning;

~~(yyy)~~ Any supplies modifications to the periphery of the ~~site~~Site;

~~(zzz)~~ Any supplies modifications within the ~~site~~Site;

~~(aaa)~~ Metering and sub-metering of supplies;

~~(bbb)~~ Strategic planning;

~~(ccc)~~ Emergency systems; and

~~(ddd)~~ Power factor correction.

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Security of Incoming Supplies:

The PSCP NHS Lothian shall provide back up to respond to the failure of the incoming supply of electricity, gas and water supplies to the development.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

In particular, NHS Lothian~~the PSCP shall provide-arrange for~~ 100% standby capacity for electrical services in accordance with the requirements and recommendations of HTM 2011. For the avoidance of doubt, the PSCP shall also ensure that the Facilities are provided such that all ~~The Board~~NHS Lothian management responsibilities detailed in HTM 2011 are satisfied.

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NHS Lothian~~The PSCP~~ shall ensure that energy, water, power supplies, medical gases and communication supplies to and within the facilities are maintained by agreement ~~with~~with Service Co, the utility suppliers, the hospital estates department, and where necessary by providing standby sources of supply (e.g. Dual fuel boilers, Diesel generation etc).

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The PSCP shall develop a strategy to ensure the security of the supplies. The PSCP shall be required to demonstrate the feasibility of the strategy to the satisfaction of ~~The Board~~NHS Lothian.

The PSCP shall investigate adequacy, and provide ~~The Board~~NHS Lothian a report on location and number of ~~connections of local town's water supply~~ connections around and to the siteSite. The PSCP shall ensure the ~~air town's~~ water connection to the siteSite maintains an adequate and robust service and shall submit full connection details with their proposals.

Provision for Isolation:

The PSCP shall ensure that sections of the supply mains, whether supplying electricity, gas or fluids, can be taken out of service for maintenance without interrupting the supply to the Facilities.

The PSCP shall provide external isolation of water supplies to the new Facilities. Local isolation of the water supply to all sanitary appliances, and at the final equipment connection points, shall also be provided.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.7 ~~6.5~~ **Electrical Services**

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6.7.1 ~~6.5.1~~ **Main & Sub-Main Distribution**

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The PSCP shall provide a main and sub-main distribution system for the new Facilities incorporating all connections from the utility provided HV supply, LV main switchgear, sub-main cabling and distribution boards as required, to provide ~~separate essential and non-essential~~ supplies to power and lighting throughout the Facilities

Commented [DS65]: HK The complete building has generator back-up so there will not be separate essential and non-essential supplies.

The design shall demonstrate resilience by providing dual feeds to switchboards, section boards, local distribution boards etc. The PSCP shall provide for agreement with NHSL, a list of the areas where dual supplies are to be provide.

The PSCP shall incorporate no less than 25% spare capacity (for the Facilities as designed) to the main distribution switchgear, standby generator etc within the Facilities and size the installations (all distribution panels, containment, risers etc.) to accommodate additional future spare requirements.

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The PSCP shall provide automatic power factor correction equipment in accordance with SHTM 2007 and shall provide harmonic filtering where required.

6.7.2 ~~6.5.2~~ **Standby Generation TO BE CONFIRMED WITH THE BOARD NHS LOTHIAN:**

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NHS Lothian The PSCP shall provide a standby mains failure generator for the Facilities to provide 100% power in the event of loss of the mains supply and comply with requirements set out in section 0.

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in accordance with NHSL's preferred solution set out in the Electrical Services Infrastructure Option Appraisal Document prepared by the PSCP.

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Commented [h66]: BAM – Standby generation not by PSCP

The system shall include for controls to operate and maintain the generator/s inclusive of facilities to automatically synchronise with the switchboard.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The provision of services to modern healthcare facilities is critical to ~~their~~ continuous operation and designs should include adequate resilience and support systems in all areas of the design.

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~~The PSCP shall agree all critical services with NHS Lothian and shall ensure in the design that these~~ critical services shall be maintained in the event of:

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~~The PSCP shall ensure all critical services shall be maintained in the event of:~~

~~—~~

- ~~(a)~~ A primary supply failure;
- ~~(a)~~ A main distribution failure; and
- ~~(b)~~ A local distribution or equipment failure.

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Loss of any critical service shall not disrupt the operation of the Facilities and sufficient back-up systems shall be included to assure continuity of services.

In sizing the generators the PSCP shall include the 25% spare electrical capacity identified for the general power distribution systems.

~~NHS Lothian~~The PSCP shall ensure the quality of generated supply is ~~to be~~ compatible with the requirements of ~~the~~ specialist clinical equipment.

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~~6.7.3~~ ~~6.5.3~~ **Uninterruptible Power Supplies**

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~~The PSCP shall provide Uninterruptible Power Supplies (UPS) to serve life support equipment within Intensive Care Units, Intensive Treatment Units, High Dependency Units, Coronary Care Units, Resuscitation areas and operating theatres in order to provide a no-break supply during loss of normal mains power supply and subsequent emergency generator power supply. the undernoted areas~~

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Commented [DS67]: HK We were previously advised that all UPS for IT equipment will be provided by NHSL. Please clarify requirements for server room. Is it necessary for the ventilation system to be provided with UPS back-up?

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- Critical Care
- Theatres/recovery
- A&E

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- Transitional Care
- Radiology - Interventional Radiology Rooms, MRI Scan & CT Scan
- Radio Lollipop

The PSCP will issue the equipment list to NHS Lothian for confirmation of any further critical requirements for UPS.

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These units shall provide one hour standby duration in accordance with relevant SHTM documents.

6.7.4 ~~6.5.4~~ **Electrical Small Power**

The PSCP shall provide socket outlets throughout the Facilities to provide for general facilities, cleaner's requirements and for connection of particular items and portable equipment as required throughout the Facilities. The PSCP shall provide power supplies suitable for personal domestic appliances (e.g. hairdryer) in changing rooms. Segregation shall be provided between "clean" and "dirty" power supplies.

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The PSCP shall provide all necessary single and three phase power supplies for external plant and equipment.

Twin & Earth cable will not be permitted for any wiring installation.

6.7.5 ~~6.5.5~~ **Lighting**

The lighting installation shall be designed by the PSCP to comply with the latest versions of the following publications:

- CIBSE LG2 Guidance;
- IES Technical Reports on the Daytime Lighting of Buildings
- Designing for the Disabled.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The PSCP shall provide the lighting levels and uniformity of light suitable for the task to be carried out and in accordance with the appropriate guidelines. ~~The Board~~NHS Lothian requires a lighting design / installation which provides good uniformity over the task area i.e. ≥ 80%.

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The PSCP shall ensure that luminaires are complete with an appropriate high efficiency diffuser / controller and be suitable for the application for which they are proposed.

The PSCP shall incorporate the use of daylight into the lighting design. The PSCP shall design and orientate the building such that the daylight can be used to best effect, supplemented by the artificial lighting system to provide the appropriate levels of illumination.

6.7.6 ~~6.5.6~~ Interior Lighting

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All access routes to plant areas shall be lit to provide safe access for maintenance.

Hazardous areas shall be provided with the appropriate classified luminaires.

All light switches for public areas shall be provided such that they cannot be operated by unauthorised persons.

Whilst the lighting design must be functional for clinical use, the PSCP shall ensure that the overall lighting concept will produce an aesthetically pleasing environment. All lighting equipment shall be co-ordinated with the building structure. The PSCP shall aim to use a mixture of fittings and retail lighting techniques to create a welcoming atmosphere and balanced visual environment.

The PSCP shall provide and install high efficiency luminaires, utilising high frequency electronic control gear to provide occupiers with improved visual comfort while reducing noise levels and running costs.

Where VDU's are being used, the PSCP shall ensure that the lighting scheme complies with "CIBSE Lighting Guide LG3, Areas for Visual Display Terminals".

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

The PSCP shall ensure that corridor lighting is multi circuited to facilitate use of 100% or 50% of the luminaires. Where the corridor is over 15 metres in length, consideration should be given by the PSCP to zoned lighting.

Night lighting shall be provided within all corridors either by individual fittings or by selective switching of the general corridor wall/ceiling luminaires. Corridors forming part of the Patient Pathway shall have night lighting suitable for an incident situation. NHS Lothian has advised that the lux levels required is 150 lux. ~~The PSCP shall ensure night lighting in corridors shall not spill into patient bedrooms, or other bedded areas.~~

Night lighting shall be provided at nurse stations, patient bed areas and locations where call systems are installed. The PSCP shall ensure night lighting in corridors shall not spill into patient bedrooms, or other bedded areas.

Luminaires shall be located to provide ready access for lamp changing and maintenance, whilst still providing the recommended level and quality of illumination to the area.

Artificial illumination shall be provided to Treatment (activity / consulting) Rooms, etc by fully recessed, hermetically sealed modular light fittings, switched at the room door positions. Treatment Room luminaires which provide the general lighting shall be controlled by at least two circuits depending on the arrangement of fluorescent tubes in each fitting. The design of these luminaires by the PSCP must provide ease of access for lamp changing.

Luminaires, their colour and material finish shall be selected to co-ordinated with the architectural intent throughout the circulation areas. Luminaires to be used in particular rooms shall be selected on their ability to create a calm and "homely" atmosphere. Tungsten lamps or low wattage (10 watts or less), 2700K compact fluorescent lamps shall be the PSCP's first choice. The PSCP shall consider the inclusion of wall mounted luminaires and /or uplighters.

All fluorescent lamps used in clinical areas shall have as a minimum a colour rendering capability of  $\geq 85$  CRI. For practical reasons consideration should be given by the PSCP to

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Commented [s69]: Agreed patient areas and patient pathways only. Lighting levels in incident situation to be confirmed by NHSL

Commented [s70]: Agreed patient areas and patient pathways only. Lighting levels in incident situation to be confirmed by NHSL

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

using the same luminaire in both Clinical and Non-Clinical spaces within the same ward. A reading light with an on/off switch shall be provided at each bedhead location. The PSCP shall provide an additional switch on the nurse call handset.

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Where luminaires of the fully recessed type (modular and / or downlighter) are installed within fire rated ceilings, they should be provided with a one hour rated fire canopy. The PSCP shall also ensure that they maintain the integrity of the ceiling and that the canopies are tested to "BS 476 Parts 20 and 23, clause 5. The PSCP shall also ensure that all canopies meet the requirements of Class O materials".

Luminaires with prismatic diffusers installed on fire escape routes shall be fitted with flame retardant diffusers to TP(a) classification, minimum Class 3 surface spread of flame.

Each high dependency and recovery bed position shall have a wall or bed-head trunking mounted, examination lamp with integral switch.

Commented [s71]: Compare ADB but will be developed during 1 50 Stage

Laser and x-ray warning lights shall be provided outside theatres, major treatment rooms and x-ray rooms and interfaced with the laser / x-ray machines.

Food factory type luminaires shall be provided in areas in which food is prepared, cooked and stored.

Ensure that in the entrance areas, functional lighting is supplemented by additional lighting to enhance the interior and create an aesthetically pleasing environment.

Plant areas, roof void areas, ducts, lift motor rooms, shafts and similar utility areas shall be additionally illuminated utilising suitably IP rated luminaires.

The PSCP to provide over-mirror lights in all male and female changing rooms.

Commented [s72]: Compare ADB but will be developed during 1 50 Stage

6.7.7 ~~6.5.7~~ Exterior Lighting

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EXTENT OF PSCP DESIGN AND CONSTRUCTION TO BE IDENTIFIED BY NHSL AND LINKED TO NHSL AND SITE WIDE SECURITY STRATEGY

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

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The perimeter, including any main entrance canopies and pedestrian walkways, to ~~all the buildings~~building shall be lit by the use of energy efficient luminaires mounted on walls, columns and/or bollards. All on-site access roads, footpaths and cycle ways shall be lit to levels compatible with the adjacent public roads. The lighting shall satisfy the requirements of BS 5489. Lighting shall be provided to all direction signs around the Site where these are not adequately illuminated by external lighting.

The external lighting will be suitable for the effective operation of the selected CCTV monitoring system and will be designed to City of Edinburgh Council adoptable standards.

All access routes to plant areas shall be lit to provide safe access for maintenance.

All wall mounted luminaires shall be fed by back entry. Cable runs on the outside of buildings shall not be permitted.

All external columns, bollards etc. shall be provided with fused cut-outs and termination facilities for cabling.

All luminaires shall be wired on multiple circuits to avoid loss of light to whole areas in the event of a mains/circuit failure.

~~PSCP shall illuminate the main entrance, the building perimeter and pedestrian walkways by use of energy efficient luminaires, wall, column and / or bollard mounted. The installation shall achieve the requirements of BS 5489, providing external lighting for safety and security purposes.~~

~~PSCP shall ensure that all access routes to plant areas are lit to provide safe access for maintenance.~~

When selecting luminaires, the PSCP shall give consideration to light pollution, vandalism, security, energy efficiency and local residents' needs.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The PSCP shall control external lighting to minimise energy consumption, by photocell or movement sensor, the lamp type selected must be sympathetic to frequency of switching dictated by the control means. The PSCP shall consider the use of solar powered lighting.

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~~PSCP shall wire luminaires on multiple circuits to avoid loss of light to whole areas in the event of a mains/circuit failure.~~

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~~6.7.8~~ ~~6.5.8~~ **Lighting Control & Wiring**

The PSCP shall provide automatic control of lighting using natural light level sensing. Control lighting for unoccupied periods by use of the BMS scheduling capability, with movement sensing override for safety. The PSCP shall provide a safe minimum light level at all times.

The PSCP shall ensure that the lighting design incorporates a flexible switching arrangement to allow for varying activities within each room and for cleaning purposes. All light switches for public areas shall be provided such that they cannot be operated by unauthorised persons.

~~Switches for public areas should be positioned by PSCP so that unauthorised persons cannot switch the lighting.~~

Lighting within all WC's, Staff WC's and changing rooms shall be controlled via passive infrared sensors/movement detectors or similar, with adjustable time control facilities.

Lighting within clinical areas shall be manually controlled.

The PSCP shall arrange the circuiting of luminaires to control groups of fittings in order to provide flexibility of switching arrangements. Such a facility is particularly important in large spaces where the level of daylight is not uniform and artificial lighting is likely to be needed for long period in areas remote from windows.

The PSCP shall provide alternative circuits together with two-way or intermediate switching at all section doors and corridor direction changes for lighting in corridors and circulation areas.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

Where multi-gang lighting control switches are required the PSCP shall provide a label fixed to the grid under the switch plate, indicating the switches are fed from different supplies.

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The PSCP shall wire lighting circuits within rooms/areas on the same phase as the general power circuits.

6.7.9 ~~6.5.9~~ **Emergency Lighting**

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The PSCP shall connect the emergency lighting to addressable self-monitoring control panels with each luminaire containing an interface unit that will be monitored and controlled by the control panel which shall report to the BMS system. The PSCP shall ensure that the emergency luminaires are automatically tested in accordance with the requirements of the British Standards.

The emergency luminaires ~~will~~ may be of either the maintained or non-maintained variety. The PSCP shall ensure that they are powered by a suitable battery supply connected by an auto-changeover switch ~~or utilise self-contained battery packs within luminaires (3-hour rated)~~. The PSCP shall ensure that the emergency luminaires will be automatically energised in the event of a failure to the local lighting circuit

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Commented [s74]: H&K to investigate central battery solution and report costs for comparison

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The PSCP shall comply with the proposed requirements of European Legislation CEN 169 WG3.

6.7.10 ~~6.5.10~~ **Standby Lighting**

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The PSCP shall provide 100% standby lighting via the generator to enable normal activities to continue during the loss of a normal mains supply.

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The PSCP shall ensure that the quality of standby lighting is equal to that of the normal lighting at the task points.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.7.11 ~~6.5.14~~ Lifts

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The PSCP shall provide bed passenger lifts (suitable for inclusion of at least one hospital bed (orthopaedic bed)), goods lifts, service lifts (dumb waiters) and general passenger lifts and evacuation lifts for emergency conditions within the buildings building in accordance with SHTM 2024 and SHTM 81. All lifts provided for the movement of patients shall be supplied from the essential services supply in accordance with SHTM 2011.

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The PSCP shall give consideration to the following in the provision of lifts:

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(e) The lifts shall be vandal / damage proof but aesthetically pleasing and appropriately sized - (min size for bed and associated equipment);

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(f) Banks of lifts shall be appropriately controlled to maximize movement;

(g) Collective controls of groups of lifts shall be used;

(h) All floors including plant levels shall be served;

(i) The PSCP's control rooms shall be easily accessible and designed to minimise the need for artificial cooling;

(j) Emergency hands free telephones in lifts shall be accessible to the blind;

(k) partially sighted, deaf and wheelchair users. Telephones shall be linked to lift car audio inductive loop;

(l) Lifts for people and goods shall be separated;

(m) Dedicated lifts are required for theatres or swipe controlled staff access override; and

(n) Disabled friendly controls, information etc (wheelchair accessible height of buttons, tactile numbers, voice messages, and visual alarm) shall be incorporated in the lift design.

6.7.12 ~~6.5.13~~ Induction Loop

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The design of the Facilities shall include a comprehensive system of induction loops with suitably located dedicated sockets and signage in

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- All OPD Reception Areas
- A & E Reception Area Seminar Rooms
- Clinical Education Suite/ Community Child Health
- Critical Care / Theatre Reception Areas
- 1 Meeting Room within Family Support

~~areas such as reception areas, bedded bays, single, treatment, consulting, counselling and interview rooms.~~

Additionally, the design shall reflect these requirements in areas such as offices where this facility may be required by individual members of staff may require this facility. NHS Lothian & the PSCP to agree the extent of this provision during the development of the 1:50 room layouts.

The PSCP shall provide induction loop or infrared systems in accordance with DDA requirements. The final provision and locations are to be agreed with ~~the Board~~ NHS Lothian, dependent upon the final design solutions. ~~The Board~~ NHS Lothian would prefer to see a building-wide system installed but experience has shown that this often raises issues of confidentiality.

The PSCP shall therefore ensure the provision of portable hand held systems for use by visitors that shall be made available at reception. The PSCP will agree the number of such units with NHS Lothian. This shall ensure that the parts of the Facilities not provided with induction loops or infrared systems are made access ble to all users.

The "ear" symbol denoting the presence of an induction loop should be prominently displayed. A sign shall explain clearly to people using hearing aids how they can benefit from the induction loop.

Alternative, proven systems that do not raise issues of patient confidentiality can be proposed by the PSCP to provide Facilities wide coverage as appropriate.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.7.13 6-5-14 Public Address System

~~The PSCP shall provide a public address system throughout the Facilities within the Ozone as detailed in Board's Construction Requirements (Specific Clinical Requirements and Specific Non-Clinical Requirements) which provides voice evacuation messages linked to the RIE includes specific additional requirements for piped music etc. in designated patient areas.~~

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Commented [DS77]: HK Is PA required throughout the facilities or in specific departments/areas? How is it intended to operate the system and what is the interface requirements with the existing R E system?

6.7.14 6-5-15 TV & Radio Facilities

NHSL TO CONFIRM HOW THESE SERVICES ARE TO BE DELIVERED

The PSCP shall provide the infrastructure for reception and distribution of television and radio for use by patients, visitors and staff. This shall include external aerials / dishes, containment and cabling / distribution to enable radio, and both satellite / terrestrial TV services to be distributed throughout the Facilities.

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Commented [s79]: NHSL to advise ref Radio Lollipop and internet access

Television and radio will primarily be required for individual rooms and spaces as set out in the Room Data Sheets.

6.7.15 6-5-16 Lightning Protection & Earthing

The PSCP shall provide a lightning protection system for the protection of the structure, the contents and occupants. The lightning protection installation shall be in accordance with the latest version of BS EN62305. The lightning protection system shall comprise of air termination network, down conductors, earth termination network and all required equipotential bonds.

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Surge Protection shall be provided for the protection of electrical equipment.

The PSCP shall provide a system of earthing that shall ensure sufficient and fast operation of protective systems in the case of earth faults.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The earthing system shall comply with the latest versions of BS7671 (IEE Wiring Regulations), BS7430 (Earthing) and with the Electricity at Work Regulations.

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The earthing system shall comprise of earth electrode system, main and supplementary earth bars, main and supplementary equipotential bonding.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.8 ~~6.6~~ **Security Installation**

The system will conform fully with the NHS Lothian Security Strategy document in Appendix 6A. However it is intended as an open protocol system and therefore it is not absolutely necessary to employ the specific manufacturers mentioned in that document.

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The chosen systems will be compatible with existing systems installed at the WGH and St John's and have capability to be viewed and operated remotely from these sites. A single card solution shall be preferred for door access systems

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Commented [DS80]: HK The NHSL security strategy document refers to specific manufacturers for the various systems. Is it necessary to use the same suppliers?

The PSCP shall obtain certification under the Secured by Design scheme.

6.8.1 ~~6.6.1~~ **General**

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The PSCP shall provide security systems specifically designed to meet the requirements of each department / unit.

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The systems shall present a secure and reassuring environment for staff, patients and visitors by providing appropriate security measures within the particular restraints imposed by clinical demand and personal freedom.

The design for all security systems shall be in line with the general principles of the approach suggested by Secured by Design and in accordance with a detailed engineering specification to be agreed with Lothian and Borders Police-

Local alarm annunciation shall be provided within wards and at the central security desk.

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6.8.2 ~~6.6.2~~ **Panic Alarm Systems**

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The PSCP shall provide a panic alarm system, which will provide ~~total~~ coverage of the undemoted areas:

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- CAMHS - In Patient Areas
- A&E, Reception Area, plus the consultation room that is identified for the use of CAMHS patients (referred to as the mental health room)
- A & E
- Child Protection Consultation Rooms (2) for the Facilities

The system shall be capable emitting both audible and visual warnings to alert staff and security to the fact that there is an attack or a situation has arisen in which patients, visitors or other staff members are in danger. Clinical requirements shall dictate where the alarm is announced but as a general guide the panic alarm shall raise an alarm locally and at the central security control room. The system shall be capable of highlighting the exact location of the staff members in distress.

The system shall be inclusive of 50 no personal staff panic alarms for all staff.

**6.8.3 6.6.3 Nurse Call Systems**

The PSCP shall provide a comprehensive nurse call system at all bed locations (and ensembles), nurse stations, toilets and showers, TV Rooms and all other areas frequented by patients (refer to RDS for details). The system must be capable of emitting both audible and visual warnings for the following situations:

- To summon a nurse (Patient to Nurse); and
- To highlight a medical emergency (Nurse to Nurse).
- To highlight a non-medical emergency (Nurse to Nurse).

The PSCP shall ensure that both visual and audible warnings are sited in positions that enable the appropriate staff to respond to the exact location of the call both efficiently and effectively. The PSCP shall ensure that the warnings, both visible and audible, should be specific to the type of emergency and must be consistent throughout all areas of the Facilities.

The PSCP shall provide systems that comply fully with the requirements of relevant (S)HTMs and (S)HBNs. In addition these systems shall interface fully with the information technology

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

system to enable adjacent monitoring of on-screen alerts as noted below at locations to be agreed with the Board NHS Lothian.

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- Acute Surgical Admissions Ward into Critical Care Ward
- Neuroscience Ward into Haematology/Oncology Ward and vice versa
- CRF into Haematology/Oncology Ward
- Paediatric Acute Receiving Ward into the A & E Department and vice versa
- Critical Care Floor – all three sub areas shall be linked to each other

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Commented [DS82]: HK Further information required on how this is to be achieved.

The PSCP shall ensure that the nurse call button / cord meet the need of the particular patient that may be required to use the Facilities. Patients may have cognitive problems or have difficulties with mobility.

6.8.4 ~~6.6.4~~ **Alarms & Intruder Detection System**

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The PSCP shall provide an ~~IDS System~~ Intruder Detection System (IDS) within the Facilities to provide out of hours security cover. This shall be provided by PIR Detectors located within the corridors, and rooms with ground floor windows internally adjacent to any roof access points. In addition the PSCP shall ensure that restricted areas have door contacts available for monitoring unauthorised entry.

The PSCP shall ensure that the proposed alarm systems for the Facilities include lifts, refrigeration equipment and other critical equipment. The PSCP shall ensure that the alarm systems can be monitored ~~on Site within the Works~~ and also remotely ~~from the Facilities outside the Works~~.

6.8.5 ~~6.6.5~~ **Security Access Control**

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The PSCP shall provide a comprehensive access control system to all external access doors and to internal doors requiring restricted access including access control doors to each ward

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

bay. Ward access control doors shall also be fitted with CCTV camera and door access system. The CCTV camera shall be suitable for viewing of visitors in wheel chairs.

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The PSCP shall ensure the system includes all necessary power supplies, card readers, actuators, egress buttons and emergency "break-glass" release units.

The system installed by the PSCP shall utilise a separate LAN cable and all necessary central controls / network cards shall be suitable for future extension.

The PSCP shall provide door entry video intercom systems to the main entrance door and the delivery entrance.

6.8.6 ~~6.6.6~~ External CCTV

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The PSCP shall provide a comprehensive colour CCTV system covering all external access points, car parking and external pedestrian circulation routes around the Site.

The design shall also take cognisance of the Board's Construction Requirements (Specific Clinical Requirements and Specific Non-Clinical Requirements).

The PSCP shall ensure that the system comprises a multi-channel digital recorder with a recording frame per second for each camera which is in accordance with a detailed engineering specification to be agreed with Lothian and Borders Police.

The digital recorder shall also control playback of images onto a CCTV monitor.

6.8.7 ~~6.6.7~~ Internal CCTV

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The PSCP shall provide a comprehensive colour CCTV system covering all corridors, reception, lift lobbies and other areas where members of the public gather or areas where access is to be restricted i.e. wards.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The design shall also take cognisance of the Board's Construction Requirements (Specific Clinical Requirements and Specific Non-Clinical Requirements).

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The PSCP shall ensure that the system comprises a multi-channel digital recorder with a recording frame per second for each camera which is in accordance with a detailed engineering specification to be agreed with Lothian and Borders Police.

The digital recorder shall also control playback of images onto a CCTV monitor.

6.8.8 Clinical Equipment Alarms

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Each clinical cupboard shall be alarmed back to local office to warn of unauthorised access.

The PSCP shall provide a system by which clinical equipment alarms can be ~~announced~~ annunciate at a designated location during working hours but out of hours alarms can be directed to a designated member of staff, off-site. The PSCP shall determine all equipment alarms of this nature.

6.8.9 Patient-Baby Tagging System

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The PSCP shall provide an ~~patient/infant~~ tagging system and controlled access to ~~the infant~~ CAMHS, the main entrances and CAMHS department entrances as departments agreed with NHSL.

6.8.10 Car Park Barriers

Commented [s84]: Control of barriers by Consort? Need for barriers in this contract to be confirmed once plaza design finalised.

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The PSCP shall provide all power and control wiring associated with vehicle access barriers and shall be compatible with card solutions in use on other NHS Lothian sites.

ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICESIT Structured Cabling6.9

The PSCP shall provide an appropriate number of hub rooms and 1 main server room to serve the new RHSC building.

Each Hub / Comms room shall be provided with the following:

- 1 No. 42 U ( 700\*1200 ) vertical lockable data cabinet, with cable management
- All required patch panels ( with cable management )
- Racks and power supplies ( PDUs metered / switched )

The Data Cabling Requirements – Backbone Cabling

All departments within the RHSC Re-Provision Project should be flood-wired with structured cabling that support Voice and Data traffic. This is to comprise copper cables to be terminated in cabling cabinets located throughout the hospital.

Type of Cabling:

Cat 5E UTP

Shielded twisted pair required if cable is run in the vicinity of High Voltage Equipment

Cabling Length:

Maximum length of 85 metres

Outlets:

All outlets to be dual RJ45, and may be used for voice and/or data. The quantity per room must be as per the ADB sheets and must be terminated in patch panels mounted within cabling cabinets.

Data Cable Installation:

Wiring of outlets from node rooms on another floor is acceptable and must be labelled accordingly.

The data cabling shall be presented on patch panels within open patch frames to form the data cabinet. The patch panels shall be separated by 1U cable tidies such that each cable tidy shall be followed by not more than 48 outlets, followed by a 1U cable tidy and so on, i.e. one cable tidy per 48 outlets plus one additional cable tidy.

Fibre Optic Cable Specification

Single Mode OS-1-9 micron

50% redundancy in fibre optic cabling required

Fibre Installation

Star wired from the RIE Comms Room (2 rooms)

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

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**External Cabling**

All works are to be carried out in accordance with the Roads and Street works Act, 1991 and the Traffic Management (chapter 8) or later. Before commencing any work, the PSCP must submit detailed plans of all intended routes

**Server Room Requirements:**

RHSC Server Room size 40 Sqm2

Un-interruptible Power Supplies (UPS) only required in the main server room and connected to the hospital emergency generator. Server room ventilation also to be connected to the UPS system.

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All other UPS and associated equipment for IT installation will be supplied, installed and commissioned by NHSL.

**Main Comms Hub**

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The location of the main communications hub shall be as agreed with NHS Lothian.

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All active parts/components/equipment required by NHS Lothian shall be located in the main Comms room and shall be supplied, installed and commissioned by NHSL.

Any potential for flood damage to the equipment should be eliminated.

**Node Rooms:**

The Node Rooms shall be located throughout the building to ensure that all data cable lengths are within the limits as set out in the structured cabling standards.

No active equipment will be located in the Node Rooms. Mechanical cooling will not be required.

**User Outlets including Wireless Equipment:**

User outlets shall be presented to suit the area being serviced and shall utilise at least, but not limited to, the following types:

- Surface user outlets;
- Ceiling user outlets;

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This will allow installation of Wireless Communication' Transmitters / Receivers

(-Amount of Access Points will depend on a wireless survey prior to the completion of the building.)

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

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6.9.1 ~~6.7.4~~ Project Description, Telephony Requirements

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~~An obligation on NHS Lothian under the contract is to identify user requirements for each of the telecommunications systems being provided and inform the PSCP of these user requirements. This will enable the PSCP to develop telecommunications system designs which meet the requirements of NHS Lothian in terms of the functionality offered.~~

~~The PSCP is responsible for the provision of all telecommunications voice, data and video services to the hospital.~~

Requirements Capture

Table 1 details the hospital functions (HF1 to HF4) RHSC Hospital functions:

Reference	Hospital Function
HF1	Departments
HF2	Other Hospital Functions
HF3	Switchboard
HF3	Major Incident Room

~~The telephony requirements guide contained within Table 2 are used to assist the identification of system requirements for the facility hospital function.~~

ICT Requirements Guide

Item	ICT Requirement
1	Required system functionality: day to day operations
2	Connectivity to external sites (Private Circuits/Direct

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 6: DESIGN BRIEF - BUILDING SERVICES**

Item	ICT Requirement
	<del>Lines/Hotlines to Emergency Services, GP surgeries, Health Centres, Other Hospitals, Local Community, etc.)</del>
3	<del>System and service resilience and availability</del>
4	<del>Internal departmental inter working requirements</del>
5	<del>Required system functionality- emergency fallback</del>
6	<del>End user devices: user profiling, class of service, telephone handset type identification/allocation</del>

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**6.7.2 ICT Requirements Definition**

~~This section defines the outline requirements for the new FVAH IP telephony system as follows:~~

~~Hospital functions HF1 to HF4~~

~~Network services~~

~~Emergency fal-back system~~

~~Integration with other systems~~

~~Migration to RHSC.~~

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**Departments and Other Hospital Functions (HF1 and HF2)**

~~Scope~~

~~IP telephony services shall be provided to the following RHSC departments and other hospital functions:~~

~~RHSC Departments~~

Reference	Department

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ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICES

Reference	Department
HF1.1	A&E
HF1.2	Pharmacy
HF1.3	Renal Unit
HF1.4	Critical Care
HF1.5	Neonatal
HF1.6	Women and Children
HF1.7	Ambulance Care
HF1.8	Acute Stroke
HF1.9	Rehabilitation
HF1.10	Learning Centre
HF1.11	Occupational Health
HF1.12	Medical Physics
HF1.13	Pathology
HF1.14	Rehabilitation Therapy
HF1.15	Integrated Mental Health
HF1.16	Generic Wards
HF1.17	Therapy
HF1.18	Oncology
HF1.19	Cardiology
HF1.20	Radiology

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RHSC Other Hospital Functions

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ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICES

Reference	Department
HF2.1	Wards
HF2.2	Theatres
HF2.3	Main Entrance
HF2.4	Outpatients
HF2.5	Retail
HF2.6	Staff Offices
HF2.7	Conference Rooms
HF2.8	Communications Room
HF2.9	Data Centres
HF2.10	Facilities Management
HF2.11	Public Areas
HF2.12	Restaurant

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**Standard Features and Functionality**

All hospital functions shall be provided with IP telephone handsets capable of supporting the standard telephony features and functionality of a modern enterprise telephony system with at least those as detailed in the Room Data Sheets.

**Architecture**

The IP telephony system shall have a modular architecture (following best practice in the NHS environment), support industry standards and minimise proprietary components. The architecture shall be flexible and scalable to support future changes and growth.

**Telephone System Availability**

The IP telephony system shall present a minimum of 99.999% availability across a calendar year (including leap years).

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

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#### **Management System**

~~The IP telephony system shall support centralised management and administration.~~

#### **Dial Plan**

~~NHS Lothian intends to utilise a five digit extension number configuration for all phones.~~

~~The IP telephony system shall support short code dialling to enable RHSC to quickly call the ambulance service, police, other hospitals and local authorities. A full list of short code dialling destinations is included in the Dial Plan (to follow). A blank dial plan has been included for your information. The requirement for national numbers will continue to exist for certain services, i.e. 2222 for crash teams and 4444 for fire. (These may need to reflect the five digit extension configuration.)~~

~~The following list details the main (not all) Health Centres, Clinics and Community Areas to be contacted immediately bypassing the main switchboard facility from all telephone handsets throughout the site.~~

~~Insert list of Departmental Requirements.~~

#### **Published Numbers**

~~All telephone extensions shall be allocated a unique DDI number. The publishing of these DDI numbers shall be the responsibility of individual Clinical Units and Departments.~~

#### **IP Handset Type and Distribution**

~~IP telephone handsets shall be deployed in accordance with the agreed Handset Distribution List. This list includes details on IP handset type and quantity by location.~~

#### **Class of Service**

~~All clinical wards and clinical departments require unlimited DDI access. However, depending on working practices within the new site, this facility may have to be extended to other departments which will remain functional out with normal 'office hours.' This may include departments such as medical physics, ICT and any other specialised department/function. Details of class of service for each extension will be captured within the Dial Plan.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

Call Recording

~~Call recording capability should be provided on the VoIP network to a limited number of users and the switchboard.~~

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Power Supply

~~The IPSCP shall provide a resilient mains power supply suitable for the telephony system to be supplied, installed and commissioned by NHS Lothian. A UPS back-up supply to enable seamless telephony in the event of a hospital power failure also will be provided by NHS Lothian.~~

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~~NHS Lothian will be responsible for the provision of payphones throughout the facilities~~

Switchboard (HF3)

Functionality

~~The IP telephony system shall support IP switchboard consoles as necessary. The console shall provide standard switchboard functionality to support central operator services at RHSC and shall be located as identified in the Handset Distribution List.~~

Operators

~~The switchboard shall be managed by XXX under strict performance criteria. It shall be XXX responsibility to ensure the switchboard is manned accordingly to meet the performance criteria set out in these construction requirements~~

Service

~~The switchboard service shall operate and manage the following services:~~

~~Handling internal, incoming and outgoing calls~~

~~The co-ordination of telephone line fault reporting~~

~~Internal pagers (including the issue of pagers and the supply of batteries)~~

~~Wide area pagers (including the issue of wide area pagers and the supply of batteries)~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

Call logging system

Private call charging systems

Moves and changes

Fault reporting procedure

#### Incoming Calls

Incoming calls to the switchboard can be classified into three broad categories listed below in descending order of priority:

Major incidents

GP/Health centre emergency referrals

All other general public, staff enquiries and day to day calls.

#### DDI Numbers

A single DDI number shall be reserved for each of the Incoming Call categories from Section 2.2.4.

Major incident reporting—This DDI shall only be published to a select group of authorities and individuals expected to call the Hospital to report a major incident

Emergency GP referrals—This DDI shall only be published to GPs/Health Centres expected to call the Hospital to enquire about an emergency referral

General enquires—The main switchboard DDI number.

These DDI numbers shall be included in the Dial Plan.

#### Call Prioritisation

The IP telephony system shall be capable of prioritising incoming calls for presentation to the switchboard by DDI and internal calls as follows:

A major incident call shall take precedence over all calls.

Cardiac Arrest

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

#### Fire

A GP emergency referral call shall take precedence over a general call to the main switchboard.

#### Visible and Audible Warning

In the event of a major incident, cardiac arrest and fire call, a visible and audible warning shall be presented by the IP telephony system to alert the switchboard staff of the incoming call.

#### Call Logging

All incoming calls, outgoing calls and paging activity via the switchboard shall be logged to enable switchboard operator performance to be measured.

#### Major Incident Rooms

The IP telephony system shall provide service to the Major Incident Room and associated Support Rooms. The Major Incident Room and Support Rooms are invoked during an emergency situation which requires the implementation of special arrangements by one or more of the Emergency Services, the NHS or a Local Authority.

#### Major Incident Extensions

Three PSTN DDI and three IP DDI extensions shall be provided in each of the Major Incident Room Support Rooms. These DDI numbers are reserved for use during an emergency incident situation. The DDI numbers shall be published by NHS Lothian to those authorities that the RHSC needs to remain in touch with during a major incident, e.g. Scottish Government and SEPA. Spare handsets (Medium Spec will be required) for each of the DDI lines will also be required. A radio point suitable for portable two-way radio will also be required.

#### Network Services

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

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#### **PSTN**

PSTN connectivity to the IP telephony system shall be required at RHSC for incoming and outgoing calls. The equivalent of 6 x ISDN30 lines shall be provided as a minimum. This is to include allowance for additional external traffic from NHS Lothian functions, e.g. Accounts, which are not migrating to RHSC. The ISDN30 services should be diversely routed ISDN30 lines from the provider.

A contiguous block of DDI numbers shall be provided with the ISDN30 lines allowing a unique DDI number to be allocated to each extension and published switchboard service.

#### **ISDN30 Channel Reservation**

Dedicated ISDN30 channels shall be reserved for major incident reporting and emergency GP referrals on the switchboard, and for the three Major Incident Management Room extensions.

#### **PSTN Availability**

All PSTN services to RHSC shall present a minimum of 99.99% availability across a calendar year (including leap years).

#### **Emergency Fallback System**

The fallback requirements consider the resilience of the IP telephony system and the availability of the network services (external connectivity).

#### **Functionality**

A secondary fallback telephony system shall be deployed in parallel with the primary IP telephony system at RHSC. The fallback system is not a standby system and shall be provisioned as an active system. It shall be possible to use this system in parallel with the primary IP telephony system and other communications services, i.e. paging system.

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

The fallback system shall be provisioned with separate handsets and provide basic call functionality as follows:

Dial-out facility

DDI availability

Call any extension on the IP or fal-back telephony system

Call forwarding

Call ring-back

Group Pickup

#### Architecture

The fal-back system shall be an independent PBX based solution or a hosted telephony solution. The selection and provision of a preferred fallback system shall be agreed with NHS Lothian.

#### Operation

The fall-back system shall operate in a manner consistent with the IP telephony system by allowing, but not limited to, the following operational capability:

Dial plan requirements (as per Section 2.1.6 of this document)

DDI number requirements (as per Section 2.1.7 of this document)

Switchboard functionality (as per Section 2.2 of this document)

Full integration with the hospital paging system

Internal calls to be made at no additional cost to RHSC.

#### Fallback Handsets and Faxes

Fallback telephones shall be strategically located throughout RHSC to provide a continuous means of voice communication in the event of failure of the IP telephony System. Fallback fax lines shall be strategically placed within RHSC to those departments and functions that have critical business continuity needs in light of failure of the centralised fax solution. Fallback

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

Telephone handsets and faxes shall be deployed in accordance with the agreed Handset Distribution List.

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#### Fallback Call Routing

The fallback system shall accept and route all incoming calls destined for the IP telephony system seamlessly and automatically in the event that the IP telephony system fails. Diversely routed ISDN30 services shall be provisioned to enable this.

#### Power Supply

The fallback system shall have a resilient mains power supply and UPS back up to enable seamless telephony in the event of a hospital power failure.

#### Integration with Other Systems

##### LAN

A suitable LAN environment, with the necessary Quality of Service and Power over Ethernet capability, shall be provided to support the IP telephony system.

IP handsets shall incorporate an integrated Ethernet switch to enable desktop PCs and handsets to share a common switch port where appropriate.

##### DECT (Roaming)

DECT (Roaming) handsets shall be deployed within certain hospital areas to allow key users the ability to remain mobile within their hospital function. DECT handsets shall be deployed in accordance with the agreed Handset Distribution List.

The following minimum functionality shall be provided:

Dial-out facility

DDI availability

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

~~Call any extension on the IP or fal-back telephony system~~

~~Call forwarding~~

~~Call ring-back~~

~~Group Pickup~~

~~The DECT system shall integrate seamlessly with the IP telephony system allowing calls to be made and received as though it were a regular handset.~~

#### ~~Paging System~~

~~A Paging System with 600 pagers (160 of which have speech capability) shall be provided to call both internal pagers and call out the emergency on-site response teams — Fire, Cardiac Arrest, and Major Incident. Both numeric and voice-activated pagers shall be supported. The Paging System shall have a 15% expansion capability.~~

~~The Paging System activation process shall be accessible from, and integrated with, the IP telephony system and fal-back system. Pagers shall be activated individually by telephone extension handsets or via a 'team' broadcast by the on-site switchboard operator.~~

#### ~~Calls to the Emergency Services~~

~~The IP telephony system and fallback system shall both support dialling to the emergency services. As a minimum both systems shall satisfy the following two emergency service requirements:~~

~~Emergency calls must be connected to the emergency service located in nearest proximity to the caller~~

~~Details of the caller's physical location shall be available and passed from the IP telephony system and the fallback system to the PSTN services provider.~~

#### ~~Payphones~~

~~Payphones providing PSTN connectivity shall be located in public areas~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

Migration to RHSC

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Business Continuity

6.9.2 Business continuity (the ability to make and receive telephone calls) shall be maintained throughout the migration period from the old to the new RHSC.  
Smart Metering

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The following document has been prepared by NHS Lothian and details the required metering strategy.

Mandatory Smart Meters

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New licence conditions for the supply of electricity and gas were introduced on April 6th 2009. These new conditions are an essential building block in the Government's carbon reduction programme for the UK. Under these changes, all Profile Class 05-08 electricity meters, and all metered gas consuming over 732,000 kWh a year, must be replaced by smart meters. The new metering standards for all Profile Class 05-08 meters will be CoP10 for whole current and CoP5 for CT meters (Current Transformer Operated Meter). Customers have until 2014 to change their meters, but any smart meter installed as from the 1st January 2009 must comply with this new metering code of practice.

Smart Meter Type

According to BERR/DECC, the new meters must 'store measured electricity consumption data for multiple time periods; and at least half hourly' and they must 'provide remote access to such data by the licensee'. BERR/DECC also state that 'timely' access to the data from the meter must be given to the customer. Government guidance is that 'timely' should be day + one.

But, just because suppliers will now have to give you access to your meter data, it doesn't mean they should let you have it for free. The Office of Government Commerce (OGC) is advising the public sector not to sign up to a supplier contract where metering is conditional on the agreement. They believe this 'limits competition and the ability to negotiate energy contracts in the future'.

Continuity of data is fundamental to achieving carbon savings. So, the best route is to go appoint an independent provider of metering and data services such as Catalyst. This will

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

allow you to change supplier without being bound by any metering and data service, and without losing any of your meter data during the supplier change over.

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The Government believes proprietary metering systems are not good for market choice. Therefore, BERR/DECC are calling for open systems, so that any data collector can collect from any metering system – just like in the half hourly market. The benefit of having open systems is that it will greatly improve consumer choice.

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Mandatory smart metering by 2014 will affect around 170,000 electricity meters and 40,000 gas meters in the UK. If this includes your organisation, then it's in your interest to switch to smart metering sooner rather than later, because the half hourly meter data you will have access to will enable you to see exactly where and when energy waste is occurring. It's only when you have this detailed information that you can start to introduce effective measures to eliminate waste and reduce carbon emissions.

#### Carbon Reduction Commitment

Currently, there are 110,000 meters in the half hourly market. The requirement for mandatory smart metering in electricity Profile Classes 5-8 and annual gas usage of 732,000 kWh or over means a tripling in the number of half hourly meters by 2014. Any organisation which has introduced half hourly metering and which uses more than 6,000 megawatt hours a year (or around £1/2m at today's prices) will now be caught in the net of the Carbon Reduction Commitment (CRC). So, if you thought your organisation was going to slip under the radar of the CRC, you may need to revisit this assumption. As a reminder, the CRC is a mandatory carbon trading scheme that will be introduced in 2010. Its aim is to cut carbon emission by 1.2 million tonnes in the UK by 2020. You can find out more on DECC's website: [www.decc.gov.uk](http://www.decc.gov.uk) The CRC will be a bonus and penalty scheme, with organisations in the top half of the 'league table' being paid a bonus. So, it's not all bad news: with your smart metering system in place, you will be able to eliminate energy waste – which puts you in a much stronger position to win regular CRC bonuses.

#### 6.96.10 Public Health Services Design

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

#### 6.10.1 ~~6.8.4~~ Drainage

The PSCP shall provide all necessary drainage to support ~~the Board's Construction Requirements NHS Lothians requirements~~ and ~~its~~their aspirations regarding reduced water consumption which shall include but not be limited to:

—

- ~~(a)~~ General foul water drainage;
- ~~(a)~~ General surface water drainage;
- ~~(b)~~ Kitchen drainage, inclusive of grease traps;
- ~~(c)~~ Laboratory drainage;
- ~~(c)~~ Pathology and mortuary drainage;
- ~~(e)~~ Drainage from areas handling radio isotopes, or other contaminants such as silver;
- ~~(f)~~ Bedpan disposal system; Macerators required in Dirty Utility Rooms and
- ~~(g)~~ Drainage from oil bund areas, inclusive of oil interceptors.

~~The PSCP shall consider the environmental benefits and economic viability of rainwater harvesting on Site and if beneficial to the project shall incorporate such a system into the building services and flood abatement philosophy for the Site. The PSCP shall describe fully its mode of operation and integration into the Site.~~

The PSCP shall ensure all drainage discharges from Site are strictly in accordance with the limits set by SEPA.

Drainage systems shall be provided which function reliably with the minimum of blockages, leaks etc. Materials and jointing systems shall be chosen with a proven track record.

The design of the system shall be such as to create the minimum disruption in the event of blockages.

They should be designed in conjunction with the current Bio-Diversity system deployed within the RIE site i.e. all surface water should be considered for harvesting and re-use or should be diverted, piped into natural water ways.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

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6.10.2 ~~6.8.2~~ **Dual Towns Water Connection to the Site**

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NHS Lothian ~~sThe PSCP~~ shall provide a dual towns water connection to the Site from the local RIE ring main which is in turn connected to the adjacent Scottish Water ring main network, ensuring a robust alternative towns water supply is available to the Site from a separate sector of the Scottish Water network.

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6.10.3 ~~6.8.3~~ **Site Mains Water, Fire Water, Quality & Distribution**

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The PSCP shall develop the Site potable and fire water networks as separate systems, each arranged in a ring with adequate valving to achieve robustness in continuity of supply.

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The PSCP shall filter the Site potable water to the criteria set out in HTN02 and commensurate with the piping material proposed.

In determining the pipework material the PSCP shall take cognisance of the latest best practice in the Scottish NHS.

6.10.4 ~~6.8.4~~ **Domestic Water Services**

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NHS Lothian shall be responsible for liaising with Consort/Scottish Water and shall arrange for and install a suitably sized and located mains water supply into the Facilities.

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A separate fire mains distribution system shall be provided to serve the Facilities. Fire hydrants shall be located in strategic places agreed with the local Fire officer (in consultation with NHS Lothian's Fire Officer).

The water supply system for the Facilities shall include a new supply and also incorporate a water storage capacity to ensure that a minimum of 24 hours demand can be met, as per NHS guidance, whilst fully addressing legionella requirements. Cold water storage will be based on HTM 2027 Specialist Hospital 400 litres/bed/day. A minimum of two tanks for each water service will be provided to allow maintenance to be carried

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out without interruption of supply.

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Suitably sized and secure connections for temporary incoming water supplies shall be provided at strategic locations either into the building, or into the general distribution

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

infrastructure. The PSCP shall consult with NHS Lothian in relation to the number and location of temporary connections.

The design of the cold-water pipe work distribution system shall be such that there are no excessive dead ends. Extended pipe work runs that serve infrequently used appliances and equipment shall be avoided. Where unavoidable, the pipe work run shall be extended to serve an appliance or range of appliances that will be used on a regular basis.

Local water supply isolation shall be provided at all sanitary appliances and final connections to fixed equipment.

External isolation of water supply shall be provided to each building.

~~The water supply system for the Facilities shall include a new supply and also incorporate on-site bulk water storage (24 hours).~~

Treatment of potable cold water supplies is considered undesirable and the provision of a wholesome supply from Scottish Water's mains with the minimum of storage and handling is the preferred approach.

The PSCP shall design and install the domestic cold and hot water supply installations to fully comply with the requirements of SHTM 2027 and SHTM 2040 "The control of legionella in healthcare premises - a code of practice" and Health Guidance Note "Safe Hot Water and Surface Temperatures." The PSCP shall include for all specialist treatment plant that may be necessary. The PSCP shall provide water sampling points as directed by ~~the Board~~ NHS Lothian with due regard for clinical requirements.

Secure local isolation shall be provided by the PSCP at all sanitary appliances, and at final connection points to equipment. The PSCP shall provide secure external isolation to the ~~buildings~~ building.

The PSCP shall provide plumbed in water dispensers at ward level in accordance with the RDS's. The installation of ice machines is prohbited.

The PSCP shall provide plumbed water to specialist services such as, but not limited to, washing machines in specialised units and dishwashers in ward areas in accordance with the Board's Construction Requirements and in particular the Room Data Sheets.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The PSCP shall provide plumbed water to all vending machines as required throughout the Facilities in accordance with the Board's Construction Requirements and in particular the Room Data Sheets.

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The PSCP's attention is drawn in particular to SHTN 02 concerning pipework materials and standards of filtration to be used in Scottish health care facilities. All hand washing facilities shall be provided with automatic taps.

~~The PSCP shall evaluate the benefits of rainwater harvesting which if adopted, the PSCP shall ensure that the rainwater from the roof of the Facilities is collected, stored and re-used for toilet flushing purposes and if appropriately separated to serve supply points for irrigation of the external areas of the proposed Facilities.~~

6.10.5 ~~6.8.5~~ **Hot Water Supply**

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Appropriate operational engineering systems for hot water and steam shall be included in the design of the Facilities.

Domestic hot water systems shall be designed to provide adequate flow to satisfy maximum demand whilst minimising stored hot water and energy consumption. The provision of some storage is desirable to minimise the impact of hot water generation on boiler power.

The control of legionella and other bacteria within the systems is critical and is ~~considered~~ mandatory.

The PSCP shall install Type 3 (in accordance with NHS Model Engineering Specification D08) thermostatic mixing valves at all HWS outlets to SHTM's and SHGN's except where 60°C water is a particular requirement.

Hot water boilers shall be provided in all staff rest rooms and kitchen areas.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.10.6 6.8.6 Special Water Services

NHS Lothian has confirmed that a supply of distilled or de-ionised water is required in both research labs in the Department of Child Life and Health. Note These Labs should be designed to Biohazard Containment Level 2 and should also be designated as Supervised areas for radioactive work.

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Commented [mod86]: HK – Note no provision has been made for Renal Water treatment/RO Water/DI Water/Bulk Fluids to date.

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The PSCP shall provide all special water services required to support the Board's Construction Requirements (Specific Clinical Requirements and Specific Non-Clinical Requirements), such as but not limited to:

—

Special supplies such as de-ionised water to laboratory equipment; and

Special supplies such as de-ionised water to equipment washers / disinfection equipment; and

Special supplies for Renal Dialysis.

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6.10.7 6.8.7 Sterilisation/Decontamination

NHS Lothian has confirmed that there is no requirement for sterilisation or decontamination within the RHSC.

Commented [h87]: We were previously advised that all Sterilisation Facilities were being provided in the RIE.

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PSCP shall provide clean steam and associated sterilisation plant and distribution systems as required to support the Board's Construction Requirements (Specific Clinical Requirements). Plant and associated systems shall be designed to SHTM 2031 and SHTM 2010. Discharges to drain are to be treated / managed in accordance with SEPA requirements.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.11 ~~6.9~~ Medical Gases

NHSL PHARMACIST TO ADVISE IF MEDICAL AIR IS TO BE SUPPLIED.

The PSCP shall provide all medical gases required to support the Board's Construction Requirements (Specific Clinical Requirements and Specific Non Clinical Requirements), such as but not limited to:

NHS Lothian shall provide all medical gases required to support the requirements of NHS Lothian, such as but not limited to:

- Oxygen VIE comprising 2 No. Sources from RIE ring main system
- Nitrogen – Locally from RHSC
- Nitrous oxide – Locally from RHSC
- 50% oxygen / 50% nitrous oxide – Equinox – Locally from RHSC

Medical gas bottles, plant areas and stores shall be accommodated within suitably designed buildings / rooms / enclosures with good access, natural ventilation and satisfactory noise emissions control.

All medical gas installations which serve clinical departments shall be connected to essential electrical supplies.

The status of the central medical gas plant shall be monitored by an alarm system with a status signal to an alarm panel located in a manned office. The panel shall also report the alarm to the BMS.

The PSCP shall install the piped medical gases in accordance with SHTM 2022 and "Model Engineering Specification C11".

The PSCP shall install outlets as defined in room data sheets.

The PSCP shall provide a medical gas distribution system sized to accommodate the demand of the Facilities at completion and handover, with the capacity to accommodate an increase in demand (flow and consumption) of no less than 25%.

The PSCP shall ensure that the provision of medical gases to the point of use is continuous. Where the PSCP are providing medical gases via cylinders they shall provide manifold systems with automatic change over from duty to standby to no less than two equal banks of cylinders.

The PSCP shall ensure that adequate points of isolation exist to all medical gas systems.

NHSL PHARMACIST TO ADVISE IF MEDICAL AIR IS TO BE SUPPLIED.

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Commented [h88]: Main Medical Gas Plant provided by NHSL / Consort to an agreed point – formerly the tunnel – with works within the RHSC only BAM's responsibility. Revised Solution to be advised.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

~~The PSCP shall provide all medical gases required to support the Board's Construction Requirements (Specific Clinical Requirements and Specific Non-Clinical Requirements), such as but not limited to:~~

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- ~~• Oxygen VIE comprising 23 No. Sources from RIE ring main system~~
- ~~• Nitrogen Locally from RHSC~~
- ~~• Nitrous oxide Locally from RHSC~~
- ~~• 50% oxygen / 50% nitrous oxide Equinox Locally from RHSC~~
  - ~~• Blended surgical air system at 7 bar, and~~
  - ~~• Blended medical air system at 4 bar.~~

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~~The Board NHS Lothian's preference for blended medical air is derived from a desire to meet latest medical air quality criteria free from unacceptable oil carry over and moisture content.~~

~~es to the point of use is continuous. Where the PSCP are providing medical gases via cylinders they shall provide manifold systems with automatic change over from duty to standby to no less than two equal banks of cylinders.~~

~~The PSCP shall ensure that adequate points of isolation exist to all medical gas systems.~~

**6.11.1 6.9.1 Medical & Dental Vacuum**

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~~The PSCP shall provide medical and dental vacuum systems as required to support NHSL's the Board's Construction Requirements.~~

Medical and dental vacuum plant areas and stores shall be accommodated within suitably designed buildings / rooms / enclosures with good access, natural ventilation and satisfactory noise emissions control.

Installations shall be connected to essential electrical supplies.

The status of the central medical and dental vacuum plant shall be monitored by an alarm system with a status signal to an alarm panel located in a manned office. The panel shall also report the alarm to the BMS.

**6.11.2 Anaesthetic Gas Scavenging System**

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~~The PSCP shall provide and active AGSS as required to support NHS Lothian's requirements the Board's Construction Requirements.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

AGSS plant areas and stores shall be accommodated within suitably designed buildings / rooms / enclosures with good access, natural ventilation and satisfactory noise emissions control.

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The installation shall be connected to essential electrical supplies.

The status of the AGSS shall be monitored by an alarm system with a status signal to an alarm panel located in a manned office. The panel shall also report the alarm to the BMS.

**6.11.3 Mechanical Services**

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The PSCP shall design, supply, install, test, commission, ~~operate and maintain~~ all mechanical building services necessary to support the clinical activities of the Facilities. The following systems are indicative of those anticipated by ~~the Board~~ NHS Lothian but are not exhaustive and sole responsibility shall be ~~the~~ PSCP's to determine all necessary systems are included.

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Commented [mod89]: HK – Note ref to operate and maintain should be deleted.

Systems shall be designed, supplied, installed, tested, commissioned by the PSCP ~~and~~ ~~Operated and maintained all in accordance with the current regulations and standards by the~~ Board NHS Lothian.

**6.11.4 ~~6.10.1~~ Building Management Systems & Controls**

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The following clauses are taken from the NHS Lothian report "A Strategy for Sustainable Development" ~~and describe the functional requirements of the BMS.~~

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**Building Management System.**

As with all new buildings a building management system (BMS) should be installed to allow easy, remote, monitoring of measured values and control set points. ~~Communication with (and between controllers) will utilise a separate BMS LAN network and therefore the data traffic between controllers and dependency on the network should be minimised. There will not be a requirement for video or sound files to be transferred, via the network, and therefore it is not envisaged that a high data bandwidth will be needed. All BMS systems have the same functionality and therefore the choice of manufacturer should be limited to existing systems that are currently on the network. To avoid yet another BMS system being introduced at NHS Lothian the following systems should be specified during the tendering process: "Sigma" from Schneider Electric or "Desiqo" from Siemens.~~

Commented [h90]: BAM – Communication between controllers will be via a separate BMS LAN network

~~The BMS will control and operate automatically the mechanical services within the building and provide the functionality as detailed below:~~

- ~~1. The control and timing of heating, cooling and ventilation plant to ensure optimum energy and environmental performance.~~
- ~~2. Optimum start of heating, cooling and ventilation plant to minimise the operational costs of achieving desired values by occupation time.~~
- ~~3. Optimum stop of heating, cooling and ventilation plant to minimise the operational costs of running plant during the required occupancy period.~~

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ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICES

4. Facility to program night set back set points for areas that require heating continuously but not consistently.
5. Protection for the mechanical plant and building fabric during external frost conditions.
6. Protection for the building fabric, from condensation, when the mechanical plant is timed off.
7. Protection for the mechanical plant and building fabric during severe external air low temperatures.
8. Provision to automatically shut off heating plant when the external air temperature has risen above a pre-determined set value. The plant will automatically restore normal operation when the external air temperature falls to below a separate pre-determined value.
9. Weather compensation of any heating circuit dependant on external air temperature. This compensated set value will be accessible for easy adjustment (if required).
10. Weather compensated heating circuits will also have room temperature influence to raise (and lower) the calculated set point with reference to a room temperature set point.
11. Where dual plant has been installed this should be able to be automatically duty cycled by the BMS on a weekly basis. Failure of the duty plant should notify the system and automatically (after a short period of time) bring on the standby plant.
12. Representative graphic slides will be required for all the controlled plant on the system. A hierarchical structure should be adopted that allows other relative slides to be directly accessed from the current slide. These slides should match the standard slides for the respective existing systems.

The graphic slides should be drawn using a white background (to minimise ink when printing). Relevant temperatures, plant running conditions, alarms, plant enables, set values and software interlocks should be available from the slide without reference to any other slide. Historical logged values, alarm histories, current trend values, set points and manual over-ride functions should be accessible from the slide. Pseudo three dimensional graphic slides are to be avoided. The same functionality can be represented, on graphic slides, by drawing in two dimensions without the additional clutter that pseudo three dimensional representations creates.

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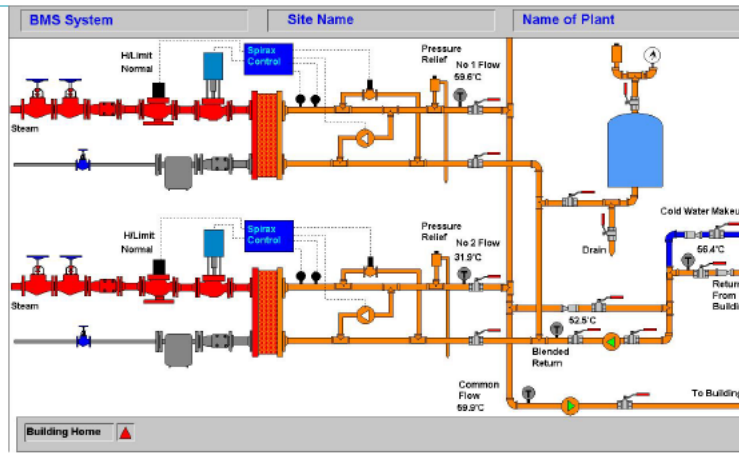
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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES



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Example of BMS slide as used at Royal Edinburgh Hospital

It should be possible to identify, from the graphic slide, the actual respective location of devices. The installed location of devices will have been identified before the slides are drawn to ensure accuracy. It is expected that the slides will incorporate all devices such as hand valves, gauges, filters etc to ensure respective representation of installed equipment within a plant room.

13. The system should automatically flag-up alarms for remote interrogation. Essential critical alarms should be also routed via SMS texts to an out-of-hours "on call" mobile phone. Great care should be given to selection of the alarms that are deemed to be essential critical alarms.
14. The current state of plant, temperatures, set-values etc should be accessible from a simple, intuitive index tree structure on the BMS "front-end" interface.
15. Application of energy metering, via the BMS, will allow energy saving schemes to be implemented if required. This will require heat meters to be installed on each heating circuit and connected into the BMS. It is not envisaged that these meters will be used for fiscal purposes but would assist in providing information as to energy use.
16. The BMS should monitor the fire alarm system. The fire alarm system should be hard-wired to the heating/ventilation plant to switch the plant off when required. The BMS input from the fire alarm system would mirror the plant of the fire alarm hard-wired connection to also switch the plant off to prevent nuisance alarms from being generated.
17. The BMS should monitor the control circuit state within each control panel and on failure of the control circuit would switch off the demands for the connected plant. This will assist in identifying the control circuit state and also in preventing the system from being swamped by nuisance alarms. Care should be taken that the control circuit failure does not give the impression that a fire alarm event has happened.
18. The automatic start-up of plant (timed on, restoration of fire alarm or control circuit) will be staged in over a period of a few minutes to prevent surges on the supply to the control panels.

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ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICES

19. The BMS will status monitor other systems such as medical gas alarm, fire alarm fault, security system fault, lift motor fault etc but will NOT be expected to carry out any function with this information. All the systems connected will have their own strategy that will not be affected by the operation of the BMS.
20. Local independent cooling systems serving IT rooms will be controlled by their own control system to the dictates of their own, independent, temperature control sensor. The BMS will have a dedicated sensor located beside the control sensor for monitoring purposes only. Information from the cooling system such as "Running" and "Failure" will be connected into the BMS.
21. Boilers and Chillers independent control systems will have electronic interfaces to connect to the respective BMS. This is envisaged to be a MODBUS connection that will allow operational data – such as temperatures, conditions, set values, run-times and alarms to be "mapped" onto the BMS as real values.
22. Fans and pumps will be inverter driven and speed set via an analogue output from the BMS. This will allow trim to be applied to reduce operational costs as and when possible. Independent pump (and fan) speed control should be avoided as remote speed control, by BMS, is unlikely to be achievable.
23. Information from inverter drives used for fans and pumps such as running state and trip state will be echoed back to the BMS via connections internal to the respective control panels. These signals will also illuminate indicators on the control panel fascia.
24. Piped across pumps and fans will be differential pressure switches that will provide indications of actual running condition of the plant. These conditions will be echoed back to the BMS via connections internal to the respective control panels. These signals will also illuminate indicators on the control panel fascia.
25. The BMS will be programmed with settable operational user levels to allow the filtering of functionality to be determined dependant on users experience and training.
26. Where local room temperature controllers are utilised they should be integrated with the BMS to allow the BMS to monitor the current characteristics of the controller. Characteristics such as current room temperature, actual room set-point, controller state, valve positions etc. It should also be possible to set values into the controllers remotely from the BMS. Examples of the set values are: Enabling the controller, main set values, lower set point limit, upper set point limit. Every room controller will be represented individually on the BMS to allow specific rooms default conditions to be set remotely. The BMS software should be written to allow for night set-back room temperature set points to be applied if required.

The BMS will include all the required control equipment (Fan / pump starters, sensors, valve actuators, pressure switches, pressure transducers, relays, power wiring, control wiring, network wiring, hand over-ride switches, panel indicator lamps, all other associated control panel items, site specific software including graphic slides) to provide a complete working system control system.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

5. Health, Safety and Maintenance issues:

Historically some plant was installed without any regards to maintenance or replacement. Frequently devices were installed above ceilings or under floors in inaccessible locations that are not really acceptable to current health and safety legislation. To assist with maintenance etc regards should be given to the following:

- It should be possible to access all heating and ventilation control equipment without recourse to step ladders, platforms etc.
- It should be possible to access all heating and ventilation control equipment without effecting access routes in corridors, wards etc
- Consideration should be given to grouping zone control equipment in clusters where maintenance, on one zone, can be carried out without disturbance to patients or other members of staff.
- Dirty extract fans should be duelled. However, it should be possible to carry out maintenance work on one fan while the other stand-by fan is operational. To prevent risk to maintenance staff hand isolation shut-off dampers should be installed either side of the fan assemblies. Care should be taken that the manufacturer's guidelines are followed when the fans are installed with regards to orientation and access requirements.
- Heating pumps should be duelled. However, it should be possible to carry out maintenance work on one pump while the other stand-by pump is operational. To prevent risk to maintenance staff hand isolation shut-off valves should be installed either side of the fan assemblies. Care should be taken that the manufacturer's guidelines are followed when the pumps are installed with regards to orientation and access requirements. Non return valves will be required to ensure flow is not short circuited back through a non operational pump during normal use.
- In consultation with the fire officers at NHS Lothian it is suggested that on a fire alarm condition all ventilation plant and gas supplied appliances are shut down. These items of equipment should have hard wired interlocks with the fire alarm system via the respective HVAC control panel. It is noted that heating pumps and zone heating systems may remain operational during a fire alarm condition. A key operated facility should be provided beside the fire alarm panel to inhibit the shutting down of the ventilation in the event of a fire alarm test. It should only be possible to remove the key in the automatic position. When the fire alarm clears the control system should automatically restart the controlled plant without recourse to manual intervention. Only hard-wired interlocks should be utilised for shutting down the plant in the event of a fire alarm condition. Provision of a fire alarm signal state into the BMS will de-activate the software to prevent nuisance alarm generation in the event of a fire alarm condition. Indication should be given on HVAC control panels that a fire alarm condition has occurred.
- Installed control valves. It is a characteristic of automatic control valves that they require maintenance of their moving parts. All control valves should be installed with regards to future maintenance issues. To allow access under no circumstances are rotary control valves to be located with their operational side facing a wall unless there is a minimum clearance distance of 500mm between the pipe and wall.

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

~~The PSCP shall ensure all plant can be operated in automatic mode (via a BMS) or manual mode should a corruption in BMS software occur. Furthermore, physical bypasses shall be provided where appropriate for maintaining service, for example at control valves.~~

~~The PSCP shall install a new digital BMS that controls all mechanical systems, lighting circuits, security, CCTV, lifts and interfaces with nurse call, staff attack, disabled alarms and fire systems. It shall assist in minimising energy consumption. The PSCP shall ensure that the Facilities have a hard wired link between the BMS and fire alarm systems to enable plant shutdown if required during fire situations. The PSCP shall ensure that the BMS is capable of producing energy consumption reports to the Board NHS Lothian's requirements.~~

~~The BMS system shall be designed, installed and commissioned in accordance with the manufacturers' instructions. The following documents shall also be taken into consideration:~~

- ~~■ Standard Specifications For BMS, AG 9/2001, BSRIA;~~
- ~~■ Library of system control strategies, AG 7/98, BSRIA;~~
- ~~■ Automatic control, CIBSE Commissioning Code C- 2001;~~
- ~~■ Specifying building management systems, TN 6/08, BSRIA; and~~
- ~~■ HTM 2006.~~

~~The Board NHS Lothian's controls philosophy is to provide a safe, healthy and comfortable environmental condition in the Facilities, whilst focusing on energy conservation measures.~~

~~The PSCP shall ensure that the controls effectively deliver the requirements of the Board NHS Lothian. The PSCP shall adopt Good Industry Practice in the application of BMS controls in order to achieve the stringent new energy target for the Facilities.~~

~~The PSCP shall ensure that an energy and life cycle cost conscious approach is adopted for all stages of the BMS. The PSCP shall ensure that this includes the initial design of a system through to final commissioning; the planned maintenance; and the servicing of the plant.~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

~~The PSCP shall ensure that the programming of the outstations shall be carried out in a consistent, structured manner. The PSCP shall ensure that strategies shall be kept as simple and as uniform as possible. The PSCP shall ensure that the BMS incorporates the following non-exhaustive list of monitoring points:~~

- ~~—~~
- ~~• Space temperature / humidity;~~
- ~~— External temperature;~~
- ~~— Weather economy setting;~~
- ~~— Free cooling cycle on ventilation plant;~~
- ~~• Frost protection;~~
- ~~• Filter status;~~
- ~~• Domestic hot water temperature monitoring;~~
- ~~• Index circuits;~~
- ~~• Cold water temperature monitoring, including stored cold water;~~
- ~~• Common fault alarms for security, fire alarms, CCTV, staff attack, disabled alarms and nurse call;~~
- ~~• Interface with lifts / escalators;~~
- ~~• UPS / emergency generators; and~~
- ~~• Remote monitoring of all critical fridges / freezers.~~

~~The PSCP shall ensure the BMS is set up in a way that enables the monitoring of points on a continuous basis by the Board NHS Lothian in order to facilitate trend analysis. The PSCP shall ensure that this includes temperature profiles, valve positions and plant operation periods. The PSCP shall ensure that it is possible to obtain historic data on specified points for a period of at least 14 days in order to facilitate fault diagnosis in the event of a problem.~~

~~The PSCP shall ensure that the monitoring of domestic hot water and cold water (including tanks) is carried out throughout the Facilities (not just at central plant) in order to comply with the Board NHS Lothian's Legionella prevention strategy.~~

~~The PSCP shall ensure that the BMS is installed to control all plant where there is an operational requirement or a life cycle cost benefit, including:~~

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 6: DESIGN BRIEF - BUILDING SERVICES**

- Boiler plant;
- Air handling plant;
- Ventilation plant;
- Cooling plant;
- Domestic hot water plant;
- Duty/Standby control; and
- Lighting interior and exterior (localised control should also be considered).

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~~The PSCP shall ensure that all major plant items shall be designed and controlled to provide "real time" status monitoring, including run, fault, and alarm reporting. The PSCP shall ensure that this includes boilers, pumps, pressurisation units, air handling plant, fans and air conditioning. The PSCP shall provide a modular boiler system for the Facilities if not fed from existing hospital installations.~~

~~The PSCP shall ensure that the requirements of the following sections are incorporated into the proposed Building Management System for the Facilities:~~

~~(i) Zone Control~~

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~~The PSCP shall ensure the Facilities are capable of individual temperature control for all patient areas; to be achieved with the use of zone controls. Areas of 24 hour operation should be independently controlled from non 24 hour areas to ensure optimum efficiency and in discreet areas consideration should be given to localised zoning depending on the orientation of the buildings/building. Proper consideration is required to the level and extent of temperature sensing and monitoring devices to provide both accurate and cost effective zonal control.~~

~~(ii) Optimisation & Compensation~~

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~~The PSCP shall ensure Good Industry Practice is adhered to regarding control regimes incorporating time, optimisation and weather compensation.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

~~(iii) Metering~~

~~The PSCP shall ensure the use of meters giving high accuracy at low flow rates and that metering points give consumption in SI units including any time bands as appropriate. The PSCP shall ensure data collection and report production is by electronic systems.~~

~~The PSCP shall allow sub metering of electricity usage for each individual department / unit as identified on the RDS.~~

~~The BMS shall be installed to automatically read and provide trend analysis to a range of energy / water meters. All meters including those of the utility supply companies and internal sub meters shall be automatically read by the BMS at pre determined intervals. The PSCP shall ensure that the BMS is capable of reading utility meters on a continuous basis in order to facilitate trend analysis. Reference should be made to the document "Metering and Energy Use in New Non Domestic Buildings - A Guide to help Designers meet Part L2 of the Building Regulations" General Information Leaflet 65 published by the Carbon Trust for guidance on metering strategies. The energy metering shall include (but not limited to):~~

~~(a) Electricity~~

- ~~(h) Main incoming HV supply;~~
- ~~(i) Main LV Switchboard;~~
- ~~(j) External lighting (separate sub meter for car park lighting);~~
- ~~(k) All distribution boards with separate meters for power and lighting;~~
- ~~(l) Departmental power and lighting;~~
- ~~(m) HVAC control panels;~~
- ~~(n) Cooling plant; and~~
- ~~(o) Tenant areas.~~

~~For the purpose of energy estimates, hours run meters shall be provided for all Air Handling Unit (AHU) fans.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

(b) Water

- ▲ Main incoming water supply; and
- ▲ Internal sub-meters.

(c) Gas

- viii) Main incoming gas supply; and
- ix) Internal sub-meters.

(d) Oil

- PART 9. Delivered to Site; and
- PART 10. Used on Site.

(e) Steam

- PART 11. Main incoming steam supply (if required)

(iv) Communication Protocol

In recognition of the advances being made in building management systems, the PSCP shall ensure that the BMS platform is compatible with the existing site BMS installation as well as a range of diversified core systems and standard protocols such as BACnet, LonTalk, Modbus, and OPC. The use of these standard communication protocols will allow for more effective integration and help prepare for future devices and technologies. It will also facilitate the use of communication between different manufacturers control equipment.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

(v) User Interface

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~~The PSCP shall ensure that once installed and commissioned the BMS user interface is sufficiently user friendly to facilitate multi user access, without the need for the users to be controls or software specialists. The PSCP shall meet the requirements of the Board NHS Lothian in so far as that, the Board NHS Lothian envisages that navigation around the BMS, via the "front end" will be by a combination of floor plans, plant & equipment graphics and drop-down menus or "software" knobs.~~

~~The PSCP shall provide the Board NHS Lothian with a system capable of remote off site access to the BMS from a number of locations, in order that it can monitor internal conditions and utility consumptions / trends.~~

(vi) System Selection

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~~The PSCP shall ensure that all materials and equipment used are standard components, regularly manufactured for this and/or other systems and not custom designed specially for this project. The PSCP shall ensure that all systems and components have been thoroughly tested and proven in actual use, for at least two years, within other NHS establishments of a similar size and complexity. All control panels should be type tested and carry the CE mark.~~

~~The BMS Contractor shall confirm that both the hardware and software will be fully supported for a minimum period of 15 years from the date of final handover. Future compatibility shall be supported for no less than 10 years. Compatibility shall be defined as the ability to upgrade existing field panels to current level of technology, and extend new field panels on a previously installed network.~~

~~othian~~

6.11.5 6.40.2 Mechanical Ventilation & Air Conditioning

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The heating, ventilation and air conditioning systems shall be logically designed to operate efficiently incorporating heat recovery and provide local control where required.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The energy and power systems shall be appropriately designed to provide fully integrated designs in terms of the incorporation of engineering services into the building fabric and external spaces.

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The need to maintain acceptable comfort conditions in all areas but particularly in clinical areas is of paramount importance and the PSCP shall develop strategies for achieving optimum comfort together with minimum energy consumption.

The PSCP shall provide natural and mechanical ventilation, comfort cooling, and air conditioning to suit the Facilities and clinical requirements. The PSCP shall provide a climate control facility in clinical and staff areas which are provided with air conditioning (if applicable).

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The PSCP shall ensure heat gain from all equipment and personnel is allowed for in sizing and selection of the systems.

The PSCP shall demonstrate how their designs facilitate the control and management of an outbreak and spread of infectious diseases in accordance with SHTM 2025 and SHFN 30.

The PSCP shall ensure that ventilation systems installed in areas classified as hazardous are designed to relevant standards.

Where grilles or diffusers are used within rooms the PSCP shall ensure they are:

- (a) Arranged to avoid draughts; and
- (b) Designed to minimise noise intrusion into the space.

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Humidification shall be provided where control of humidity is required for clinical reasons.

Local Exhaust Ventilation Systems:

The PSCP shall provide all LEV systems including but not limited to that required to support the provision of catering, workshop and maintenance facilities on Site.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.11.6 ~~6.10.3~~ Fume Cupboard & Micro-biological Safety Cabinets

Fume cupboards and Micro-biological safety cabinets are required in the Laboratories in the Department of Child Life and Health. These labs shall be designed to Biohazard Containment Level 2 and should also be designated as Supervised areas for radioactive work.

A supply of distilled or de-ionised water would be required.

NHS Lothian shall advise any further specific department/room requirements during the 1:50 design development process.

The PSCP shall provide fume cupboards and both CAT II and CAT III microbiological safety cabinet exhaust systems. Systems shall comply with NHS Specifications and Guidance documentation which shall include a matched supply system into the room(s) containing fume cupboards and micro-biological safety cabinets. Fume cupboard design and installation shall be to BS 7258. Microbiological Safety Cabinet design and installation shall be to BS 5726.

6.11.7 ~~6.10.4~~ High Specification Air Conditioning Systems

The PSCP shall provide high specification, full function and close control air conditioning systems to support the Board's Clinical Output Specification, such as but not limited to:

- ~~□~~ Aseptic rooms;
- ~~(s)~~ Laminar flow rooms and / or operating theatres;
- ~~(t)~~ Pharmacy Dispensing Area; and
- ~~□~~ Areas handling radio isotopes or other radiological contaminants.

- ~~(v)~~
- Air conditioning systems installed in the above areas shall be higher specification air conditioning systems with standby motors belted up in accordance with HTM 03-01 and SHTM 2025,

6.11.8 Ventilation of Isolation Rooms

2040 and NHS Model Engineering Specification C04

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Commented [mod91]: HK – note this information is required to verify allowances for service risers can accommodate requirements.

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Commented [mod92]: HK – note current standards HTM03-01 and SHTM 2025 guidance only shall be used for AHU system standards.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.10.5 Ventilation of Isolation Rooms

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The PSCP shall provide air conditioning systems to Isolation Rooms to support the Board's Construction Requirements and ~~HAI-SCRIBE~~~~HAI-SCRIBE~~, NHS infection control standards and maintaining strict positive / negative pressure differentials.

Ventilation and air conditioning systems for these rooms shall be designed and installed in accordance with HBN 04 Supplement 1, SHTM-2025 03-01, SHTM 202540 and NHS Model Engineering Specification C04. The PSCP shall demonstrate how their designs facilitate the control and management of an outbreak and spread of infectious diseases.

6.11.9 6.10.6 Boilerplant / Heat Source

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Fossil Fuels:

~~The PSCP shall be responsible, in conjunction with Scottish Gas Networks in determining the philosophy for the provision of fossil fuels to the Site. Options the PSCP may consider are an interruptible gas or the provision of dual fuel burners and a heating oil standby facility.~~

It is recognised that the primary heat source is MTHW from the RIE Energy Centre

6.11.10 6.10.7 Heating System

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The PSCP shall provide all heating systems required to support ~~the Board~~NHS Lothian's Clinical Requirements:

—

- ~~(a)~~ Zone and control heating circuits to provide an efficient and comfortable environment;

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- ~~(b)~~ Provide valve isolation such that isolation of circuits/sub-circuits shall have minimal disruption to the remaining departments;

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- ~~(e)~~ Provide 24 hour occupied (and unoccupied) wards and departments with a night set back facilities;

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- ~~(d)~~ Provide a temperature and ventilation night set-back facilities so that when departments are unoccupied they will have frost and anti-condensation protection; and

The PSCP shall provide good quality heat emitters to ensure satisfactory heat distribution within the area served. The PSCP shall arrange heat emitters and all heating pipework such that in all areas, the surface temperature limits as laid down in Health Guidance Note "Safe Hot Water and Surface Temperatures" are not exceeded. The PSCP shall not utilise heating pipework as a heat emitter within patient areas.

The PSCP shall pay particular attention to effective use of warm air curtains in entrance / draft lobbies.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.12 ~~6.44~~ **Fire Detection & Suppression Systems**

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The PSCP shall ensure that the fully addressable automatic fire detection system for the Facilities is fully compliant with the performance criteria laid down under SHTM 82 (including Supplement A) and BS 5839. The design of the Facilities shall be in full accordance with HTM 81, including both vertical and horizontal compartmentation and evacuation routes. All ~~circulation~~ doors in circulation areas shall be installed with integrated electro-magnetic door hold open devices with all security door locks interlocked for evacuation in a fire condition.

Commented [s93]: NHSL to advise policy and requirements under HAI\_SCR BE for automatic doors/hold open devices etc in corridors and where required for fire separation within ward areas.

The PSCP shall take into account the need to maintain security during alarm testing and the testing regime will therefore not allow doors which are normally secured to open during routine testing.

The new system will be connected back to the RIE remote signalling equipment.

The PSCP shall ensure that the system must be an L1 fully addressable analogue system incorporating an auto-dialler / monitoring Facilities with the capability for remote site monitoring via an internet PC connection. The system shall be equipped with sufficient sounders to maintain sound outputs in different areas in accordance with SHTM 82, and incorporate visual strobe indicators for a fire condition in accordance with the requirements of the Disability Discrimination Act.

The PSCP shall ensure that the Facilities are divided into zones by ward / department / unit area as well as by floors with mimic or repeater panels at each nurse station (or equivalent) and at least one panel per floor located in a central circulation area. In the event of fire the Facilities shall be capable of individual zone evacuation with all other zones receiving awareness signalling. The PSCP shall ensure that all fire alarm panels are capable of giving details of system status for fire, fault, and alarm conditions including full text descriptions of location. All panels shall be capable of data / event logging and report generation. Manual call points must be provided at every exit and staircase with no point in the building being more than 30m travel from a call device.

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Materials and equipment shall be the catalogued products of manufacturers regularly engaged in production and installation of automatic fire detection systems and shall be manufacturer's latest standard design that complies with the Board's Construction Requirements.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

The PSCP shall ensure that this system will have a documented history of compatibility by design for a minimum of 15 years. Future compatibility shall be supported for no less than 10 years. Compatibility shall be defined as the ability to upgrade existing systems to current level of technology, and extend new field panels on a previously installed network.

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The PSCP to provide gaseous fire suppression systems ~~the undernoted rooms in ICT rooms~~ and main HV and LV switchrooms.

Commented [h94]: BAM – Gaseous fire suppression proposed for Core Server Rooms, UPS/Battery Room and HV Sub Stations Only – refer to H&K Scheme Design Approach

- Core Server Room
- UPS/Battery Room
- HV Substations

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Fire hose reels are not acceptable within the Facilities.

The PSCP shall review requirements for fire hydrants with The City of Edinburgh Council's Building Control Department and Lothian and Borders Fire Brigade.

A risk assessment and fire engineering assessment should be undertaken to establish whether a fire suppression system is required throughout the facility, rather than limited to specific ceiling voids and the like. HFS review documents should also be used as a reference for this requirement

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ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICES6.13 ~~6.13~~ Pneumatic Conveyancing

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The PSCP shall provide a pneumatic air tube delivery system as required to support the Board's Construction Requirements (Specific Clinical Requirements). The installation must be consistent with the overall communications policy of the hospital. The PSCP shall ensure the pneumatic air transport system shall be designed and installed in accordance with SHTM 2009 and be compatible on adequate interface capability to that already operational within the RIE adult facility

Commented [mod95]: HK – Note – global traffic performance criteria required to allow selection of tube circuits and no of blowers etc.

The PSCP shall provide a pneumatic tube delivery system to the areas identified in the table below.

<u>Department</u>	<u>Portal required</u>	<u>Comment</u>
<u>A1 Emergency Dept</u>	<u>✓</u>	<u>Prefer portal to be accessible in ward area i.e. next to treatment room or nurses base, rather than at ward entrance.</u>
<u>A2 Medical PAA</u>	<u>✓</u>	
<u>B1 Critical Care</u>	<u>✓</u>	
<u>C1.1 Medical Inpatient &amp; C2 Transitional Care</u>	<u>✓</u>	
<u>C1.2 Surgical Inpatient</u>	<u>✓</u>	
<u>C1.3 Neuroscience</u>	<u>✓</u>	
<u>C3 Haem/Onc</u>	<u>✓</u>	
<u>C4 Adolescent facilities</u>	<u>No</u>	
<u>C5 Neurophysiology</u>	<u>✓</u>	
<u>C6 Sleep Lab</u>	<u>No</u>	<u>Access Inpt facilities</u>
<u>C7 Classrooms</u>	<u>No</u>	
<u>D1 Outpatient dept</u>	<u>✓</u>	<u>Near main reception (Suite B)</u>

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ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICES

<u>D2 Cardio/Respiratory</u>	<u>None</u>	
<u>D3 Ophthalmology (orthoptics)</u>	<u>None</u>	<u>Access/Share OPD</u>
<u>D4 Audiology</u>	<u>None</u>	
<u>D5 Dentistry</u>	<u>√</u>	
<u>D6 Therapies</u>	<u>√</u>	<u>Shared with PDC</u>
<u>D7 Social Work</u>	<u>No</u>	
<u>D8 Medical Day care</u>	<u>√</u>	<u>At treatment room</u>
<u>D10 Plastics Dressings Clinic</u>	<u>√</u>	<u>Share with therapies</u>
<u>E1 Operating Theatres/Recovery</u>	<u>√</u>	
<u>E1 Surgical DCU</u>	<u>√</u>	
<u>E2 Acute Surgical Admissions</u>	<u>√</u>	
<u>F1 CAMHS</u>	<u>√</u>	
<u>G1 Radiology</u>	<u>√</u>	
<u>G2 Pharmacy</u>	<u>√</u>	
<u>G3 Medical Photography</u>	<u>No</u>	
<u>G4 Equipment library</u>	<u>No</u>	
<u>H1 Child, life &amp; health</u>	<u>No</u>	
<u>H2 Clinical Research facility</u>	<u>√</u>	
<u>H3 Clinical Education suite</u>	<u>No</u>	
<u>I1 Clinical teams Offices</u>	<u>No</u>	
<u>I2 CAMHS offices</u>	<u>No</u>	

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ROYAL HOSPITAL FOR SICK CHILDRENPART 6: DESIGN BRIEF - BUILDING SERVICES

<u>I3 Community paediatrics</u>	<u>No</u>	
<u>I4 Community Children's Nursing</u>	<u>No</u>	
<u>I5 Medical health Records</u>	<u>No</u>	
<u>I6 Health Records</u>	<u>No</u>	
<u>J2 Main Kitchen</u>	<u>No</u>	
<u>J5 Domestic Services</u>	<u>No</u>	
<u>J7 Central Staff changing</u>	<u>No</u>	
<u>J9 Bed store</u>	<u>No</u>	
<u>K1 Bereavement Suite</u>	<u>No</u>	
<u>K2 Spiritual &amp; Pastoral care</u>	<u>No</u>	
<u>K3 On-call suite</u>	<u>No</u>	<u>5</u>
<u>L1 Family Support</u>	<u>No</u>	
<u>L2 Family Hotel</u>	<u>No</u>	
<u>A1 Emergency Dept</u>	<u>√</u>	<u>Prefer portal to be accessible in ward area i.e. next to treatment room or nurses base, rather than at ward entrance.</u>
<u>A2 Medical PAA</u>	<u>√</u>	
<u>B1 Critical Care</u>	<u>√</u>	
<u>C1.1 Medical Inpatient &amp;</u>	<u>√</u>	
<u>C2 Transitional Care</u>		
<u>C1.2 Surgical Inpatient</u>	<u>√</u>	
<u>C1.3 Neuroscience</u>	<u>√</u>	

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

<u>C3 Haem/Onc</u>	<u>√</u>	
<u>C5 Neurophysiology</u>	<u>√</u>	
<u>D1 Outpatient dept</u>	<u>√</u>	<u>Near main reception (Suite B)</u>
<u>D2 Cardio/Respiratory</u>	<u>None</u>	<u>Access/Share OPD</u>
<u>D3 Ophthalmology (orthoptics)</u>	<u>None</u>	
<u>D4 Audiology</u>	<u>None</u>	
<u>D5 Dentistry</u>	<u>√</u>	
<u>D6 Therapies</u>	<u>√</u>	<u>Shared with PDC</u>
<u>D8 Medical Day care</u>	<u>√</u>	<u>At treatment room</u>
<u>D10 Plastics Dressings Clinic</u>	<u>√</u>	<u>Share with therapies</u>
<u>E1 Operating Theatres/Recovery</u>	<u>√</u>	
<u>E1 Surgical DCU</u>	<u>√</u>	
<u>E2 Acute Surgical Admissions</u>	<u>√</u>	
<u>F1 CAMHS</u>	<u>√</u>	
<u>G1 Radiology</u>	<u>√</u>	
<u>G2 Pharmacy</u>	<u>√</u>	
<u>H2 Clinical Research facility</u>	<u>√</u>	

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.14 Health & Safety Manuals

(w) Designer Duties

(x) Scope

~~(y) The designers shall identify how the requirements of Regulation 11 of the Construction (Design and Management) Regulations 2007 (CDM Regs) are complied with regarding the use of the structure as a workplace (with reference to The Workplace (Health, Safety and Welfare) Regulations 1992.)~~

~~(z) Specifically they shall identify the process for demonstrating that the principles of prevention that are identified within appendix A have been applied for the following items:~~

- ~~• The building fabric and any item attached to it or incorporated within it which requires access shall be accessible in a manner that addresses the hierarchy of control measures (with particular reference to The Work at Height Regulations 2005 Regulation 6.)~~
- ~~• The plant, services and equipment that is located within or on the building structure shall be accessible in a manner that addresses the hierarchy of control measures (with particular reference to The Work at Height Regulations 2005 Regulation 6.)~~
- ~~• The requirement to include confined spaces within the structure (with particular reference to The Confined Spaces regulations 1997 Regulation 4.)~~
- ~~• The inclusion within the structure of substances that are classified as hazardous to health address the hierarchy of control measures (with particular reference to The Control of Substances Hazardous to Health Regulations 2002 Regulation 7(7).)~~

(aa) Design Output

(bb) The output from the design process shall identify:

1. Details of areas where access may be required. These include but are not limited to:

- 1. Roof slabs.
- 2. Suspended slabs.
- 3. Walls.
- 4. Ceilings / soffits.
- 5. Raised floor systems / floor finishes.
- 6. Stairs and stairwells.
- 7. External works (e.g. decking).
- 8. Confined spaces (and why they cannot be designed out)
- 9. Plant & equipment.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 6: DESIGN BRIEF - BUILDING SERVICES**

(cc) The loading criteria for all structural elements where access may be undertaken.

(dd) The position of all items which will require access e.g. by identification on a drawing or within a schedule.

(ee) The activities that require to be undertaken, together with details of any items which require to be removed / replaced, including details of any particular issue e.g. working space for undertaking the activity, size of item(s), weight of item(s), the route through the building that any item will require to take.

\_\_\_\_\_ This includes details of the activity classification e.g.:

- 8. Operation.
- 9. Routine inspection.
- 10. Planned preventative maintenance.
- 11. Routine maintenance repairs.
- 12. Statutory inspection.
- 13. Statutory test.
- 14. Insurance inspection.
- 15. Warranty condition.
- 16. Replacement.
- 17. Cleaning.
- 18. Others (specify):

The frequency of the activity e.g.:

- \_\_\_\_\_ Daily.
- \_\_\_\_\_ Weekly.
- \_\_\_\_\_ Monthly.
- \_\_\_\_\_ Bi annually.
- \_\_\_\_\_ Annually.
- \_\_\_\_\_ As specified by manufacturer / supplier.
- \_\_\_\_\_ Other (specify):

The location of the supporting information e.g.:

- \_\_\_\_\_ Drawing(s).
- \_\_\_\_\_ Health & safety file.
- \_\_\_\_\_ O & M information.
- \_\_\_\_\_ Schedules of loading information.

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 6: DESIGN BRIEF - BUILDING SERVICES**

~~The activities that require to be undertaken, together with details of any items which require to be removed / replaced, including details of any particular issue e.g. working space for undertaking the activity, size of item(s), weight of item(s); the route through the building that any item will require to take.~~

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~~The drawings shall demonstrate the access strategy both vertically and horizontally, identifying how access is achieved. This shall include identifying the practicalities of the access strategy with regard to constraints e.g.:~~

~~Internal door widths~~

~~Position of furniture, fittings, equipment and features;~~

~~Access over around other elements of the building fabric~~

~~Turning circles and swept path.~~

~~The position and rating of all items provided to facilitate access through the building e.g. lifting beams, lifting frames, lifting points.~~

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~~(ff) **Building Manual**~~

~~(gg) **Purpose**~~

~~(hh) The Building Manual is to be a comprehensive information source and guide for owners and users of the completed Works. It should provide an overview of the main design principles and describe key components and systems to enable proper understanding, efficient and safe operation and maintenance.~~

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~~(ii) **Structure of the Building Manual**~~

~~(jj) Part 1: General~~

~~(kk) Part 2: Fabric~~

~~(ll) Part 3: Services~~

~~(mm) Part 4: The Health and Safety File.~~

~~(nn) **Content of the Building Manual Part 1: General**~~

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~~(oo) Content: Obtain and provide the following, including all relevant details not included in other parts of the manual:~~

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~~(pp) Index: list the constituent parts of the manual, together with their location in the document.~~

~~(qq) The Works:~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

- Description of the buildings and facilities.
- Ownership and tenancy, where relevant.
- Health and Safety information other than that specifically required by the Construction (Design and Management) Regulations.

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(rr) — The Contract:

- Names and addresses and contact details of all significant consultants, contractors, subcontractors, suppliers and manufacturers.
- Overall design criteria.
- Environmental performance requirements.
- Relevant authorities, consents and approvals.
- Third party certification, such as those made by "competent" persons in accordance with the Building Regulations.

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(ss) — Operational requirements and constraints of a general nature:

- Maintenance contracts and contractors.
- Fire safety strategy for the buildings and the site. Include drawings showing emergency escape and fire appliance routes, fire resisting doors, location of emergency alarm and fire fighting systems, services, shut off valves switches, etc.
- Emergency procedures and contact details in case of emergency.
- Other specific requirements: \_\_\_\_\_.

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(tt) — Description and location of other key documents.

(uu) — Content of the Building Manual Part 2: Building Fabric

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(vv) — Content: Obtain and provide the following, including all relevant details not included in other parts of the manual.

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(ww) — Detailed design criteria, including:

- Floor and roof loadings.
- Durability of individual components and elements.
- Loading restrictions.
- Insulation values.
- Fire ratings.
- Other relevant performance requirements.
- Construction of the building:

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**ROYAL HOSPITAL FOR SICK CHILDREN**

**PART 6: DESIGN BRIEF - BUILDING SERVICES**

~~(xx) — A detailed description of methods and materials used.~~

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~~(yy) — As built drawings recording the construction, together with an index.~~

~~(zz) — Information and guidance concerning repair, renovation or demolition/ deconstruction.~~

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~~(aaa) — Periodic building maintenance guide chart.~~

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~~(bbb) — Inspection reports.~~

~~(ccc) — Manufacturer's instructions index, including relevant COSHH data sheets and recommendations for cleaning, repair and maintenance of components.~~

~~(ddd) — Fixtures, fittings and components schedules and index.~~

~~(eee) — Guarantees, warranties and maintenance agreements obtain from manufacturers, suppliers and subcontractors.~~

~~(fff) — Test certificates and reports required in the specification or in accordance with legislation, including:~~

~~— Air permeability.~~

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~~— Resistance to passage of sound.~~

~~— Continuity of insulation.~~

~~— Electricity and Gas safety.~~

~~—~~

~~(ggg) — Other specific requirements:~~

~~— Ground investigation reports~~

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~~— Flood risk assessment~~

~~— Drainage impact assessment~~

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~~(hhh) — **Content of the Building Manual Part 3: Building Services**~~

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~~(iii) — Content: Obtain and provide the following, including all relevant details not included in other parts of the manual.~~

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~~(jii) — Detailed design criteria and description of the systems, including:~~

~~— Services capacity, loadings and restrictions.~~

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~~— Services instructions.~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

~~— Services log sheets.~~

~~— Manufacturers' instruction manuals and leaflets index.~~

~~— Fixtures, fittings and component schedule index.~~

~~— Detailed description of methods and materials used.~~

~~(kkk) As built drawings for each system recording the construction, together with an index, including:~~

~~— Diagrammatic drawings indicating principal items of plant, equipment and fittings.~~

~~— Record drawings showing overall installation.~~

~~— Schedules of plant, equipment, valves, etc. describing location, design performance and unique identification cross referenced to the record drawings.~~

~~— Identification of services—a legend for colour coded services.~~

~~(lll) Product details, including for each item of plant and equipment:~~

~~— Name, address and contact details of the manufacturer.~~

~~— Catalogue number or reference.~~

~~— Manufacturer's technical literature, including detailed operating and maintenance instructions.~~

~~— Information and guidance concerning dismantling, repair, renovation or decommissioning.~~

~~(mmm) Operation: A description of the operation of each system, including:~~

~~— Starting up, operation and shutting down.~~

~~— Control sequences.~~

~~— Procedures for seasonal changeover.~~

~~— Procedures for diagnostics, troubleshooting and faultfinding.~~

~~Guarantees, warranties and maintenance agreements—obtain from manufacturers, suppliers and subcontractors.~~

~~(nnn) Commissioning records and test certificates list for each item of plant, equipment, valves, etc. used in the installations—including:~~

~~— Electrical circuit tests.~~

~~— Corrosion tests.~~

~~— Type tests.~~

~~— Work tests.~~

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## ROYAL HOSPITAL FOR SICK CHILDREN

### PART 6: DESIGN BRIEF - BUILDING SERVICES

~~Start and commissioning tests.~~

~~(ooo) Equipment settings: Schedules of fixed and variable equipment settings established during commissioning.~~

~~(ppp) Preventative maintenance: Recommendations for frequency and procedures to be adopted to ensure efficient operation of the systems.~~

~~(qqq) Lubrication: Schedules of all lubricated items.~~

~~(rrr) Consumables: A list of all consumable items and their source.~~

~~(sss) Spares: A list of recommended spares to be kept in stock, being those items subject to wear and tear or deterioration and which may involve an extended delivery time when replacements are required.~~

~~(ttt) Emergency procedures for all systems, significant items of plant and equipment.~~

~~(uuu) Annual maintenance summary chart.~~

~~(vvv) Other specific requirements: \_\_\_\_\_.~~

~~(www) **Content of the Building Manual Part 4: The Health and Safety File**~~

~~(xxx) Content: obtain and provide the following, including all relevant details to the CDM co-ordinator:~~

~~Residual hazards and how they have been dealt with.~~

~~Hazardous materials used.~~

~~Information regarding the removal or dismantling of installed plant and equipment.~~

~~Health and safety information about equipment provided for cleaning or maintaining the structure.~~

~~The nature, location and markings of significant services.~~

~~Key information and as built drawings of the structure, its plant and equipment.~~

~~\_\_\_\_\_.~~

~~Presentation of the Building Manual~~

~~(yyy) Hard copy format: A4 size, plastics covered, loose leaf, four ring binders with hard covers, each indexed, divided and appropriately cover titled.~~

~~(zzz) Selected drawings needed to illustrate or locate items mentioned in the Manual: Where larger than A4, to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings.~~

~~(aaaa) As built drawings: The main sets may form annexes to the Manual.~~

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

Electronic copy format: ~~electronic read only (e.g. pdf)~~ + ~~electronic read / write (e.g. autocad for as-built drawings, word for project specific text)~~

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{ccc} Timescale for completion: \_\_\_\_\_.

{ddd} Submit to: \_\_\_\_\_.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

Appendix A — Principles of Prevention

- Avoid risks;
  - Evaluate the risks which cannot be avoided;
  - Combat the risks at source;
  - Adapt the work to the individual, especially as regards the design of workplaces, the choice of work equipment and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work rate and to reducing their effect on health;
  - Adapt to technical progress;
  - Replace the dangerous by the non-dangerous or the less dangerous;
  - Develop a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of factors relating to the working environment;
  - Give collective protective measures priority over individual protective measures; and
  - Give appropriate instructions to employees.
- (a)

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.14 ~~6.15~~ **Materials Resource Efficiency**

THE UNDERNOTED DOCUMENT HAS BEEN PREPARED BY WRAP ON BEHALF OF NHS Lothian

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By Others

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.15 ~~6.16~~ **Commissioning**

6.15.1 **Commissioning & Testing**

All buildings, services and equipment shall be commissioned by the PSCP to ensure that all they are compliant with the quality and performance specifications, including manufacturer's recommendations, and that all systems operate to ~~The Board~~ NHS Lothian's satisfaction.

The PSCP shall as a minimum commission the Facilities in accordance with SHTM's and the 'Guidance to Engineering Commissioning' published by The Institute of Hospital Engineers (1995).

The PSCP shall be responsible for demonstrating and certifying to ~~the Board~~ NHS Lothian the successful completion of all commissioning testing, and compliance with all relevant standards.

The PSCP shall provide a comprehensive set of Operations and Maintenance manuals in a format acceptable to NHS Lothian, including 'As Fitted Drawings' for all installed and commissioned equipment.

The PSCP shall provide staff training as deemed necessary by ~~the Board~~ NHS Lothian.

**FULL SECTION TO BE DEVELOPED IN CONJUNCTION WITH THE PSCP**

6.16 Infection Control

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

~~6.17 Infection Control~~

Mechanical and Electrical equipment selections and designs shall take cognisance of ~~HAI~~  
~~SCRIBE HAI-SCRIBE~~ in its entirety.

Services

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

6.17 ~~6.18~~ ~~Services Distribution~~

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6.17.1 ~~6.18.4~~ **Engineering Flexibility & Zoning**

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Heating, ventilation, electrical and medical gas zoning shall be configured to promote flexibility in order to enable re-modelling and re-planning to be undertaken at a future date.

All engineering services shall be zoned with isolation and safety provision, for the whole of the Facilities and for individual wards and departments. The PSCP shall also ensure that zoning accounts for:

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==

~~(b)~~ The requirement for "dirty" / "clean" separation;

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~~(c)~~ Solar movement; and

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~~(d)~~ The necessity for isolation of part of the Facilities without affecting the entire Facilities.

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6.17.2 ~~6.18.2~~ **Services Capacity Reserve**

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In accordance with Good Industry Practice, all plant, plant spaces and building services systems shall be specifically designed and provided with defined reserve capacity allowances and future expansion capabilities for the Facilities (e.g. distribution boards with 25% spare capacity for the ~~buildings~~building as designed).

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In addition to the reserved capacity allowances in relation to the PSCP shall also ensure reserve capacity, service termination, zoning and general arrangement supports any future extension of the building that may be an optional feature of the PSCP's designs.

6.17.3 ~~6.18.3~~ **Service Routes**

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All service voids, risers and other spaces shall allow for installation of additional services and shall provide a defined reserve of a minimum 25% of useable area through routing cross sectional area. All isolating valves and other items requiring particular access shall be positioned at convenient locations with permanent access provision and which do not impede execution of the clinical functions of the space.

Commented [mod96]: HK – Note this reserve is not included in current provision ( affordability /area issues )

Services shall be arranged in a clearly zoned spatial hierarchy in ceiling voids, risers and plant spaces as detailed in SHTM2023.

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ROYAL HOSPITAL FOR SICK CHILDREN

PART 6: DESIGN BRIEF - BUILDING SERVICES

Electrical services shall be segregated from wet services to ensure there are no wet services above the electrical services.

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Where dual supplies are being provided they shall be segregated to prevent single points of failure from occurring.

Access to services shall not be given in clinical areas.

All service voids, risers, plant rooms and other service / plant spaces shall be designed to easily facilitate the future removal of building services within each space.

In order to minimise potential disruption to ~~the Board~~NHS Lothian due to maintenance of building services, the PSCP shall where practicable route services through common spaces such as corridors and avoid through routing within department areas. Routing main services through individual rooms will ~~not only~~ be permitted with the specific agreement of NHS Lothian.

Commented [mod97]: HK – Note corridors shall be used for primary distribution routes for pipework and elec containment systems but not for main distribution ductwork as corridors are not wide enough and access cannot be provided within constraints. Therefore duct service routes shall be routed across / through rooms accordingly.

All new ductwork shall be provided to allow cleaning of internal surfaces and components to be undertaken in accordance with the Health and Safety Approved Code of Practice 33, and as detailed in the HVCA Document TR17 Cleanliness of Ventilation Systems.

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RESTRICTED - MANAGEMENT

Centre of Expertise: Programme and Project Management  
An authorised full-service OGC Gateway™ provider



# Gateway Review

PROJECT: **Reprovision of Royal Hospital for Sick Children,  
Edinburgh**

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Gateway Review 2  
(Delivery Strategy)

## RESTRICTED - MANAGEMENT

Report Status:	Final
Date/s of Review:	23/02/10 to 25/02/10
Draft Report Issued to SRO:	25/02/10
Final Report Issued to SRO & Copied to Centre of Expertise:	09/03/2010
Delivery Confidence Assessment:	Amber
Senior Responsible Owner:	Jackie Sansbury
Scottish Government's Accountable Officer:	Kevin Woods
Organisation's Accountable Officer:	James Barbour

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## Contents

1. Background .....	4
2. Purpose and Conduct of the Review .....	5
3. Gateway Review Conclusion.....	5
4. Findings and Recommendations.....	6
5. Previous Gateway Review Recommendations.....	11
6. Next Gateway Review .....	11
7. Distribution of the Gateway Review Report.....	11
Appendix A - Purpose of a Gateway Review 2: Delivery Strategy .....	12
Appendix B - Summary of Recommendations .....	13
Appendix C - Review Team and Interviewees.....	14



## 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 to replace the existing building in central Edinburgh. In addition to the services currently provided there, the new facility will also include the Child Adolescent and Mental Health Service and Mental Health Young People's Unit.

### 1.2 **Driving Force for the Project**

The key factors driving the need for change are;

the confirmed need to deliver high quality and clinically effective services

inadequacy and unsuitability of existing premises and facilities to deliver sustainable specialist services whilst meeting the challenge of a relatively small number of patients

desire for modernisation and development of support services to ensure the most efficient and effective use of resources

impact of Modernising Medical Careers, the Tooke Report and the European Working Time Directive on current workforce availability.

### 1.3 **Procurement/Delivery Status**

1.3.1 The project's Outline Business Case (OBC) was approved in August 2008 and thereafter a decision was taken to combine the build of the RHSC with the proposed Department of Clinical Neurosciences (DCN). In early 2009 Professional Services Contractors (PSC) and a Framework Principal Supply Chain Partner (PSCP) were appointed to take this combined project forward. In late 2009 Scottish Government Health Department advised that capital funding would not be available for the DCN and the two new builds have therefore been uncoupled.

The delivery team are now working towards the compilation of a detailed design and target price for the RHSC by the end of 2010, followed by submission of the Full Business Case. Occupation of the new Hospital is scheduled for 2013.

The project is therefore at a more advanced stage than may be customary for a Gate 2 but we have reviewed the project as it now stands and given the time elapsed since Gate 1, this would seem an appropriate stage at which to carry out this supporting task.

### 1.4 **Current Position Regarding Gateway Reviews**

1.4.1 A Gate1Review was carried out in June 2008.

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## 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. If 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 from 23 to 25 February 2010 at RHSC 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 Reprovision Team 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.

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## 3. Gateway Review Conclusion

3.1 **Delivery Confidence Assessment.** The Review Team finds that the overall delivery confidence assessment is AMBER.

We recognise that progress on this project was quite severely delayed by the initial decision to combine with the DCN and the subsequent uncoupling. Since that has been resolved we can see a clearer focus from the delivery team to move this project forward to achieve the new delivery date of 2013.

By comparison with our last Review the Core Project Team are now well resourced with experienced and competent construction professionals, complementing the work and strong support of clinical, management and Partnership colleagues. An advisory team is also in place and overall there is more assurance around the ability of the team to deliver.

Nonetheless the project is now facing a very challenging schedule of activities to be completed in a short period. The three most complex issues and greatest risks are;

- Resolution of the road layout between the new build and the RIE
- Assessment of likely construction costs for the building as now specified

Commented [u8]: insert a statement outlining the Review Team's view of the likelihood of the project/programme delivering successfully. Please refer to "Delivery Confidence – Guide for Review Teams", the statement should be an overview of the key issues that the Review Team consider have the greatest impact on Delivery Confidence. Additional evidence based views and recommendations should be included in the body of the report.

## RESTRICTED - MANAGEMENT

- The essential enabling works on the construction site which have to be carried out by Consort and, to maintain the current programme, have to start in May 2010.

The road layout is made complex by the need to find the best solution for RHSC while also ensuring no detrimental effect to the work of the adjoining RIE. Construction costs have not been checked for some time and pricing in the industry is currently unpredictable. The project has the additional challenge of the need to agree land purchase from Scottish Enterprise and the fact that NHSL have little leverage to apply to make Consort perform on programme.

These issues are being addressed by the project team but some elements are clearly out with their direct control.

For these reasons our level of delivery confidence is Amber.

RAG	Criteria Description
Green	Successful delivery of the project/programme to time, cost and quality appears highly likely and here 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**

4.1.1 As recommended in the OBC, the project has used the Health Facilities Scotland (HFS) Framework as a procurement route for a capital funded design and build of the new facility on a site adjacent to the Royal Infirmary of Edinburgh (RIE) at Little France. The Framework uses the NEC3 contract form and the client project management and advisory team (PSC) have also been appointed from the HFS framework.

This procurement route only became available to the Service in Scotland in late 2008. Knowledge and experience is therefore still quite limited around both client and provider organisations. HFS are charged with managing the Framework and supporting client organisations in an advisory role, as the new arrangements are bedded in.

Commented [ 9]: Insert instances of significant good practice found, especially those that may be transferable to other projects.

Commented [u10]: Insert brief paragraphs setting out the key findings then list the recommendations (in bold text). Each recommendation should have a unique identifier – eg R1, R2, R3 etc and an individual Critical/Essential/ Recommended. If there are no recommendations for a particular section then state 'NONE' for that section.

Experience on this project has been that HFS support has been useful in some early advice but as the project has developed and the client team has been strengthened by the appointment of experienced and highly capable staff, HFS advisers clearly need to adapt their role. In this case the need to adapt does not appear to have been fully recognised to the extent that they have been seen as 'meddling' in areas of direct service delivery that are now clearly the remit of NHS Lothian (NHSL) as the client to the contract. This is potentially damaging to the service the client receives from their advisers and needs to be resolved as soon as possible.

The initial lack of full understanding around Framework procedures appears to have allowed a situation to develop where the PSCP team is working on what some regard as a less than fully detailed and agreed project brief. While we recognise how this has arisen and all sides are working pragmatically to fill the gap, we would support the current moves to establish an appropriate and detailed brief for this stage, in advance of further design development.

Given the reported decline in UK construction activity since the Framework was tendered and the consequent sharpening of prices, we have heard a degree of concern around the competitiveness of some of the percentages enshrined in the contract and how this might impinge upon the project's ability to secure a vfm target price. The project team are committed to achieving a realistic solution but it may be worth running this past Scottish Government and HFS at a senior level to ensure coordination and lessons learned with other projects using the Framework.

There is quite a steep learning curve for all parties involved in this new form of contract and while there appears to have been a good partnering ethos developed to date, it is recognised that this may be severely tested in the later stages. It will be important for all concerned, particularly at the decision making levels in NHSL, to take some time to fully understand the NEC3 approach and to support the ethos as the project progresses through the later stages. This would include signing off the outstanding PSC contract documents.

**Recommendation 1:**

**Ensure full support is given to early completion of the client Project Brief.**

**4.2 Business case and stakeholders**

4.2.1 The Business case remains as we saw it as an OBC in June 2008 and the project have not used this as a 'living document' updated as the project progresses. There is therefore a substantial task ahead to prepare a Full Business Case for submission in early 2011.

A start has been made on identifying responsibilities for the various parts of the document but overall responsibility has been given to a new member of staff who though no doubt highly capable, only joined the project last month and has little experience of capital projects or FBC preparation. There are also new capital guidelines to be observed.

We believe it has to be recognised that the FBC will be this project's key output from the current stage and whatever support there may be for RHSC Re-provision, its future prospects will stand or fall on the quality of the final document. It is not only a financial proposal but a sales document and an indication of the quality and capability of the whole team charged with providing the new facility.

We understand that responsibility for managing drafting has to be shared around the team but we also see a need for clearer and more committed support and full understanding of the task from all members of the Core Team. There may even be an opportunity for a workshop approach, possibly using input from SG CIG Secretariat, to ensure that all those who will be involved in managing, drafting, overseeing and approving the FBC are fully conversant with the aims of the document and the strategy being adopted here.

Given the appointment of Davis Langdon as project managers, there is an opportunity to develop their overall responsibilities by greater involvement in managing this task, as envisaged in the NEC3 Professional Services Contract.

Evidence we have taken indicates very strong stakeholder support for the project and the team are to be commended for maintaining this support in spite of delays and changes around DCN. Management of the extensive web of groups and sub-groups in now under much clearer management control and this has been generally welcomed.

The original benefits realisation plan is generally recognised as not being fit for purpose. In our interviews we have had substantial input of good, measureable benefits that could be taken into a new plan and again this task needs to be allocated and supported to allow an early start to what will be another important component of the FBC.

Affordability for this stage has been difficult to re-assess as the only figures available are in the 8/08 OBC. Substantial proportions of the capital funds were to come from asset disposal and charitable donations which are both now under pressure. In addition the likely cost of the building requirements now being specified has yet to be confirmed. Commitments have been made from Scottish Government of support for the project but this will not be a blank cheque. Again, the whole affordability in capital and revenue terms will require to be determined and clearly set out in the FBC.

In accordance with a recommendation from the last Review, project governance has been adjusted and there is now a Core Project Team with an overseeing Investment Steering Group. This Group appears to act in an advisory capacity to the SRO who takes decisions with colleagues within more senior management meetings. This works within the NHSL range of other capital projects but there may be some benefit in considering whether the Group could be strengthened from NHSL Board level and then take more of a strategic leadership, guidance and decision making responsibility.

As a result of the inevitable interdependency between this project and other aspects of service delivery in NHSL, significant decision making takes place in quite a wide

variety of meetings, Boards and informal discussions. Consequently it can be difficult to follow an auditable trail of option development, appraisal and final decision making on some key issues. Nonetheless some of this kind of information will be required for the FBC and may also be required for any formal external auditing that may happen in the future. We therefore suggest that the project consider how such a record can be established and maintained.

#### **Recommendations:**

**2. The project should take steps to ensure better understanding, buy-in and senior ownership of FBC compilation.**

**3. Prepare a new Benefits Realisation Plan reflecting more fully the improvements that will derive directly from the new facility.**

#### **4.3 Risk Management**

4.3.1 There is now a full risk management process in place with an effective register used to allocate, assess and report risk levels. There is some evidence that the project is not yet fully engaged in using these tools to their fullest extent. There is no escalation of greatest risks to ISG and full attendance at Risk Workshops of some key Core Team members has been difficult to secure.

Given the stage the project is now entering and the complexity of some of the currently identified risks, this aspect of project management has room for improvement.

Potentially the greatest current risk to the project programme is around the ongoing engagement with and reliance on, the RIE PFI Providers. Purchase of land on which to relocate the car park and agreement on enabling works, in accordance with the programme, were issues at the last Review and largely due to the complexity of the negotiations they remain as outstanding risks.

#### **Recommendation 4:**

**Ensure that Core Team members and senior groups are more fully engaged in the Risk Management process.**

#### **4.4 Review of current phase**

4.4.1 For the purposes of the Review we are taking the current phase to be the period from OBC approval to this stage of completion of concept design. Next phase will be the period to submission of FBC.

The appointment of PSC project managers was made in early 2009 followed by appointment of BAM as Supply Chain Partners. Along with their design team they began to work with the various sub-groups to gain an understanding of requirements.

An experienced Project Director was employed by NHSL in August 2009 and he arranged some early changes to the project management service which has resulted

in a refresh of that team with new personnel at all levels. There is now evidence of considerable improvement in management and reporting throughout the project. In our view this level of change was certainly appropriate and from what we have seen of new reports to Core Team and ISG, along with the developing relationships between the Project Director, his advisory team and BAM, the project is now in a much better position to take forward future stages of design, costing and construction.

The team have found it difficult to maintain satisfactory progress in the absence of some key decisions on issues like the treatment of road access, the plan for A&E, pharmacy aseptic, laboratories etc. We know there are plans to come to decisions on these issues but it will be essential going forward to ensure that there are clear decision routes, delegated wherever possible to the project, to enable a very challenging programme to be achieved.

The relatively informal arrangements for direct contact between designers and specifying clinical sub-groups has helped the project to move quickly on development to this stage however there are potential dangers in allowing direct access to continue without some form of Core Team oversight. We know steps are being taken to improve control over this dialogue and again we would support the move to greater formality and standardisation over the development of briefing and design options.

We speak elsewhere of the continued stakeholder support and our interviews have also given reassurance that Clinicians and others have contributed well to the process so far and appear content that the current proposals will meet their operational needs.

#### **4.5 Readiness for next phase – investment decision**

4.5.1 In looking to the next phase, a major activity for the client will be in considering and giving decisions on the design proposals and resultant costs. There is also likely to be some 'engineering' of requirements should costs not come within budget. It will therefore be essential if programmes are to be maintained that this aspect of the client role is managed effectively. Consultation and review to date has been extensive but there may now be different priorities and clear messages will have to be given to all concerned on the need for prompt and final decision making when this is required.

Some work has already been done on changing roles and responsibilities around the project. Although this may have given a clear message on the Project Director's overall accountability for all aspects of the project, we have been given the impression that this is not widely understood, with some suggestion of a dual role with the Clinical Project Director. We believe it would strengthen the project going forward if this could be clarified by both 'deed and action'.

Similarly the external project manager may be able to make a better contribution if not merely restricted to construction management functions but given a wider role in key areas like management of the FBC process, attending and reporting to ISG.

We understand that the role of the Clinical Management Team in monitoring work from the sub-groups has been made more difficult by a lack of written information from these groups on why particular requests have been made or options chosen. This team have a key role and some improvement in this area would seem appropriate.

Another important area for the FBC will be the plan for the delivery of hard and soft FM in the new building. We understand there are some commercial and political issues to be taken into account but time is moving on and decisions will be needed soon.

#### **Recommendation 5:**

**Ensure early decision on FM plan for the new building and that the NHSL E&F team continue to be fully engaged with the delivery team.**

#### **5. Previous Gateway Review Recommendations**

5.1 Action has been taken on previous recommendations and detail is set out in the attached appendix D.

#### **6. Next Gateway Review**

The next Gateway Review, Gate 3 Investment Decision, is expected in early 2011.

#### **7. Distribution of the Gateway Review Report**

7.1 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.

7.2 The Review Team Members will not retain copies of the report nor discuss its content or conclusions with others.

7.3 A copy of the report is lodged with the Scottish Government's Centre of Expertise (CoE) for Programme and Project Management so that it can identify and share the generic lessons learned from Gateway Reviews. The 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.

7.4 The 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.

7.5 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.

## RESTRICTED - MANAGEMENT

## Appendix B - Summary of Recommendations

Ref No.	Report Section	Recommendation	Status (C.E.R.)
R1	Assessment of the Delivery Approach	Ensure full support is given to early completion of the client Project Brief.	C
R2	Business Case & Stakeholders	The project should take steps to ensure better understanding, buy-in and senior ownership of FBC compilation.	C
R3		Prepare a new Benefits Realisation Plan reflecting more fully the improvements that will derive directly from the new facility.	E
R4	Risk Management	Ensure that Core Team members and senior groups are more fully engaged in the Risk Management process.	C
R5	Readiness for Next Phase	Ensure early decision on FM plan for the new building and that NHSL E&F team continue to be fully engaged with the delivery team.	E

Commented [u14]: Use the relevant report section sub-heading in this column, e.g. Business Case and Stakeholders.

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:	Frances Duffy
	David McCluckie

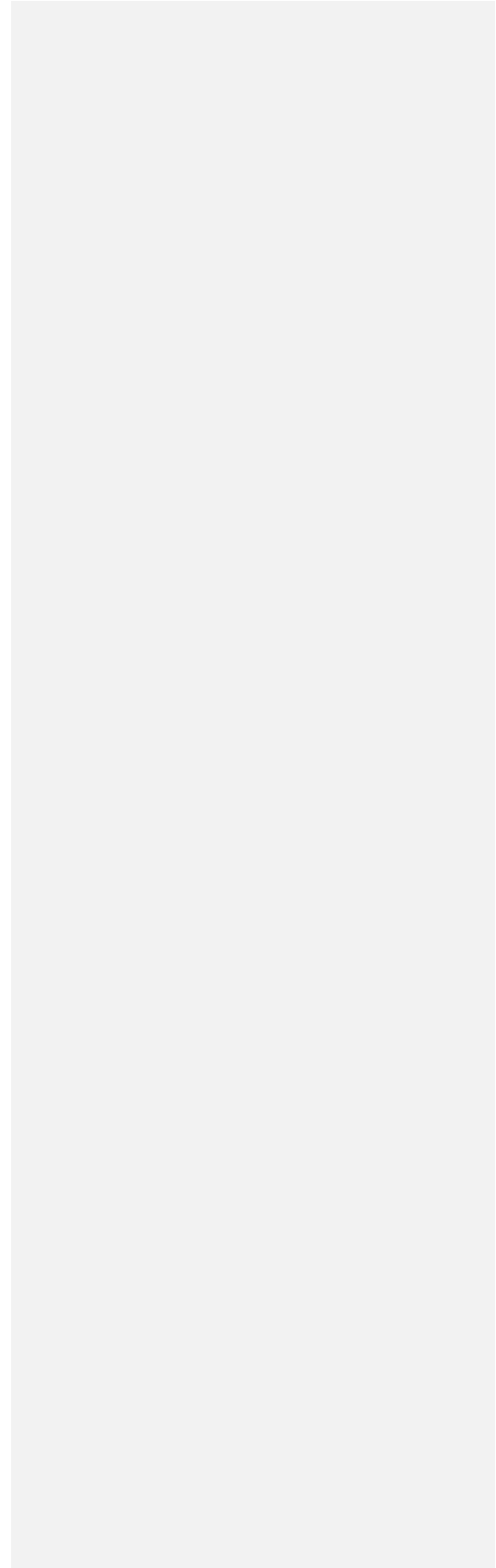
#### List of Interviewees:

Name	Organisation/Role
Jackie Sansbury	NHSL SRO
Brian Currie	NHSL Project Director
Fiona Mitchell	NHSL Director of Operations
Iain Graham	NHSL Director of Capital Planning
Susan Goldsmith	NHSL Director of Finance
Wilson McCracken	BAM Construction Manager
Fiona Halcrow	NHSL Service Planning Project Manager
Graeme Walker	Turner Townsend CDM Coordinator
Stuart Gray	Thomson Gray Cost Consultant
James McCaffrey	NHSL Chief Operating Officer
Zuzana Stofankova	NHSL Project Support
Fraser McQuarrie	Davis Langdon Project Manager
George Curley	NHSL Head of Estates Services
Janice Mackenzie	NHSL Chief Nurse
Nick Durham	Nightingale Assoc Lead Designer
Dr Dave Simpson	NHSL Associate Clinical Director
Paula Johnston	NHSL Partnership Representative

**Appendix D****GATEWAY REVIEW –Gate 1 - RECOMMENDATIONS**

Ref No.	Report Section	Recommendation	Status (R.A.G.) <sup>1</sup>	Action update as at 10.02.10	Progress
R1	Policy & business context	Ensure that the best practice guidance in Achieving Excellence in Construction is applied as appropriate to the project.	Green	Project Team appointed through Framework Scotland between February and April 2009; best practice guidance incorporated into the framework.	Ongoing
R2	Business case & stakeholders	Mitigate risk on the impact of timing of capital receipts by liaising with Scottish Government on the potential for capital brokerage.	Green	The discussion on timing of capital receipts between NHS Lothian and SGHD is ongoing as part of the financial and capital planning process.	Ongoing
R3		Prepare full benefits management plan.	Amber	Benefit Realisation Plan (Final Draft Ver 13) is in the final stages of development.	In progress
R4		Prepare a more detailed time plan for the remainder of the project.	Amber	BAM Master Delivery Programme HSC0296/6/6A version 4 dated 19 <sup>th</sup> January 2010 adopted by NHSL.	Brian Currie
R5	Risk management	Develop the Project Risk Register and Issues Log.	Amber	Developed and maintained by Davis Langdon, PM Consultants.	Ongoing
R6	Readiness for next phase	Within a period of three months, establish a new Project Board with appropriate user and supplier representation and clear levels of delegation and responsibilities.	Amber	An Investment Steering Group has been established. Membership includes Project Sponsor, Project Director, Director of Finance, Director of Operations, Project Clinical Director, Director of Communications, PSCP Project Manager and Framework Project Manager.  A Core Project Group with Framework Scotland partners and NHSL has been established.  The existing Project Board has been retained as a stakeholder board for consultation and communication.	Completed
R7		Within three months take action to appoint a fully dedicated and experienced Project Director to take overall responsibility for delivery.	Amber	Brian Currie appointed as Project Director to start August 2009.	Completed
R8		Within three months initiate procurement of consultancy support for a full project management service.	Amber	Davis Langdon appointed as Project Management Consultants to start January 2009.	Completed
R9		Review resourcing of the Core Team and identify the full resource implications of all project related activities.	Amber	NHSL Project Team Structure adopted January 2010	Brian Currie

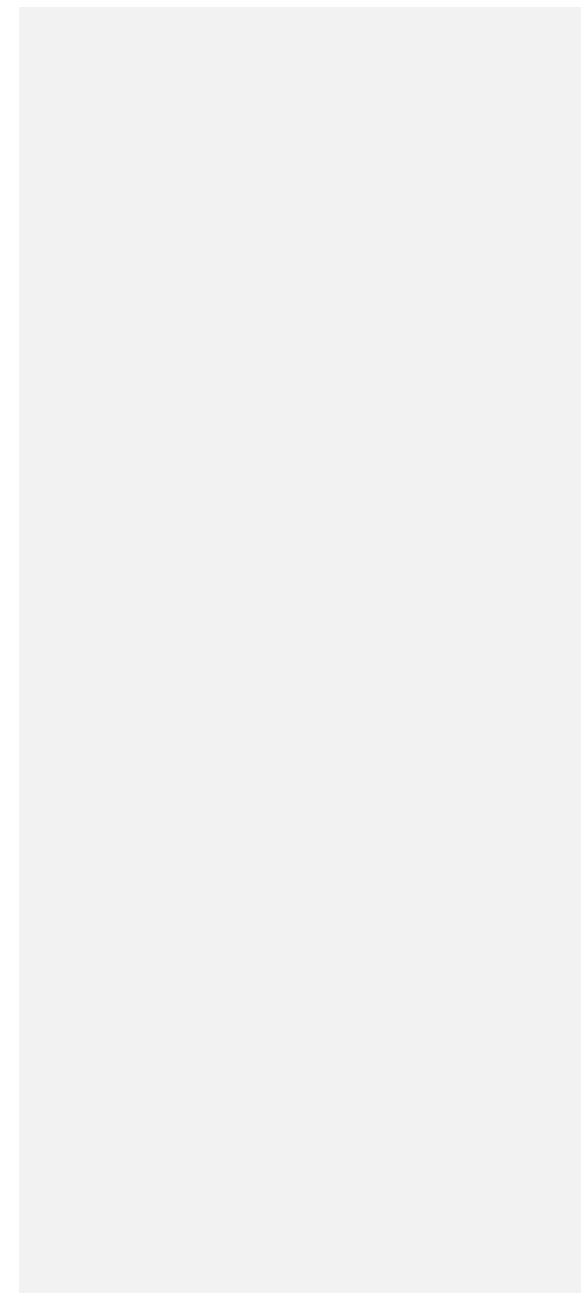
<sup>1</sup> Each recommendation has been given a Red, Amber or Green status. The definition of each status is as follows:-  
RED – Critical for immediate action.  
AMBER – Critical before next review.  
GREEN – Potential Improvements, i.e. the project is on target to succeed but may benefit from uptake of the recommendation.



## Gateway Review Actions (Gate 2 Feb 2010)

Ref No.	Report Section	Recommendation	Status (C.E.R.)	Progress/actions
R1	Assessment of the Delivery Approach	Ensure full support is given to early completion of the client Project Brief.	Critical	As at Oct 2010 project brief 90% and complete. 100% expected by Nov 2010.
R2	Business Case & Stakeholders	The project should take steps to ensure better understanding, buy-in and senior ownership of FBC compilation.	Critical	Fortnightly meetings with Project Sponsor and regular meeting with Capital Planning and Finance Directors
R3		Prepare a new Benefits Realisation Plan reflecting more fully the improvements that will derive directly from the new facility.	Essential	Benefits <u>Realisation P-</u> plan revised and included in FBC
R4	Risk Management	Ensure that Core Team members and senior groups are more fully engaged in the Risk Management process.	Critical	Risk Register updated regularly and fortnightly risk reviews <u>undertaken+required</u> . Corporate (NMHSL) Risk Register <u>and</u> -updated <u>regularly</u> - and communicated to senior managers_
R5	Readiness for Next Phase	Ensure early decision on FM plan for the new building and that NHSL E&F team continue to be fully engaged with the delivery team.	Essential	Discussions ongoing through fortnightly internal meetings with NHSiL and Consort_ <u>FM</u> strategy meetings/presentations, continue with NHSL E & F and Consort. E & F fully engaged with <u>all</u> aspects of brief and developing design. F M Delivery decision remains to be concluded.

Commented [u1]: Use the relevant report section sub-heading in this column, e.g. Business Case and Stakeholders.





The Scottish  
Government

Dear Colleague

## A POLICY ON DESIGN QUALITY FOR NHSSCOTLAND: 2010 REVISION

### Summary

1. This letter provides colleagues of a revised statement of the Scottish Government's Policy on Design Quality for NHSScotland ([Annex A](#)). This policy articulates the Scottish Government Health Directorates ambition for NHSScotland's asset base and to embed the need for well-designed, sustainable healthcare environments as an integral part of high quality service delivery.
2. The Policy also sets out the principles which a NHSScotland Body's strategic Design Action Plan and the supporting project-specific Design Statement should address ([Annex B](#)). Two further annexes provide reference to relevant Scottish Government Health Directorates asset-related policies and supporting guidance ([Annex C](#)) and, useful references and web links ([Annex D](#)).
3. This CEL and the attached policy statement supersedes NHS HDL(2006)58. This CEL also provides information on Design Assessment within the SGHD CIG Business Case process.

### Action

4. **Addressees should ensure that a copy of this CEL with Annexes is cascaded to all appropriate staff within their area of responsibility.**
5. **The revised Policy on Design Quality for NHSScotland and associated Mandatory Requirements take immediate effect.**

### Background

6. HDL(2006)58, issued in 2006, announced the first publication of a Policy on Design Quality for NHSScotland which provided a policy framework to implement the aims of the then Scottish Executive Health Department, supported by a 3-year Framework Agreement with Architecture and Design Scotland. This Framework Agreement has now ended and therefore a revised policy statement is required to ensure that

**CEL 19 (2010)**

**2 June 2010**

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### Addresses

#### For action

Chief Executives, NHS  
Boards.  
Chief Executives, Special  
Health Boards.

#### For information

Director, Health Facilities  
Scotland.  
Chief Executive, Architecture  
and Design Scotland.  
Chief Architect, SG  
Architecture and Place.  
Head of Building Standards.  
DG Health.  
NHSScotland Strategic  
Facilities Group.  
NHSScotland Property  
Advisory Group.

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### Enquiries to:

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Tel: [REDACTED]

Point of contact  
details [REDACTED]

[ian.grieve@scotland.gov.uk](mailto:ian.grieve@scotland.gov.uk)  
<http://www.scotland.gov.uk>  
<http://www.pcpd.scot.nhs.uk>



the outcomes of development projects meet the Scottish Government's objectives and expectations for public investment. Support for the implementation of the design agenda will be provided by means of a coordinated, tripartite working arrangement between Scottish Government Health Directorates (SGHD), Health Facilities Scotland (HFS) and Architecture and Design Scotland (A+DS) to facilitate the procurement of well-designed, sustainable, healing environments which support the policies and objectives of NHS Boards and the Scottish Government Health Directorates.

7. The attached policy statement reflects consultation with stakeholders in the Scottish Government, Architecture and Design Scotland and Health Facilities Scotland. It provides a concise definition of policy along with details of Mandatory Requirements which must be complied with by NHSScotland Bodies. For those Special Health Boards (and Operating Divisions within) which are not actively engaged in the procurement of new healthcare premises and refurbishment of existing health care premises for the purpose of service provision, the general principles of the attached policy should be applied, such as when considering premises for lease or occupation.
8. The principle upon which this policy is founded builds upon the core principle of the 2006 policy statement - to ensure that all NHSScotland bodies fully integrate design quality and sustainable development principles throughout all stages of the healthcare building procurement process as an integral part of the commitment to deliver a high quality, safe, sustainable environment for patient care.

## Implementation

9. SGHD, A+DS and HFS have developed a range of initiatives to assist NHSScotland in addressing design quality issues in the procurement of healthcare building projects, the summary objectives of which are to:
  - raise the level of design quality achieved through infrastructure investment;
  - increase the capacity of health boards and central agencies in respect of the above; and
  - assist in sharing good practices.
10. In order to meet the above objectives, A+DS will deliver 3 main activities on behalf of SGHD.

### *Activity 1*

Engaging with partner organisations and central procurement agencies in order to assist them in their work and in raising design awareness of 'external' parties involved in delivery.

### *Activity 2*

Providing, in partnership with HFS, a co-ordinated assessment of the potential quality of proposed projects to support those responsible for decision making within the business case process.

This will involve contributing particular expertise on the aspects of design relating to Government policy on design and place making to a process administered and led by HFS who will, in addition to the administrative elements, provide particular expertise

on the aspects of design relating to functionality, particularly technical and sustainability standards developed by HFS and the Department of Health in England.

*Activity 3*

Assisting in building a body of knowledge and evidence of good practice in both process and product across NHSScotland.

A strand of this activity is the development and management of a website, '**Healthier Places**', which has been designed to house information on good healthcare design to assist NHS Boards in the development of the project brief and to raise awareness of the good practice being developed and delivered across NHSScotland and elsewhere. In addition to providing guidance on the development of 'Design Statements' and, articles on healthcare design topics, the website holds a project resource - '**Pulse**' - a database of projects and examples of good practice.

<http://www.healthierplaces.org/>

**Design Assessment and the Business Case process**

11. An assessment of design quality is now part of the SGHD Business Case 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.
12. 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.
13. 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.
14. Additional guidance on Design Assessment and the Business Case process has been added to the [Scottish Capital Investment Manual](#). The guidance also includes advice on the preparation of the Design Statement.

Yours sincerely,

A large black rectangular redaction box covering the signature area.

**Mike Baxter**

Deputy Director, Capital Planning and Asset Management

# A Policy on Design Quality for NHSScotland



Scottish Government  
Health Finance Directorate  
Capital Planning and Asset Management

2010

## A POLICY ON DESIGN QUALITY FOR NHSSCOTLAND

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### Purpose

The purpose of this document is to provide NHSScotland Bodies<sup>1</sup> with a clear statement of policy on design quality. It also provides guidance on how NHSScotland Bodies can ensure that design quality is embedded within the healthcare building procurement process.

### Context

In recent years the value of good design has been increasingly recognised and a wealth of evidence based findings has demonstrated that good design adds value, not only from an economic perspective but also in terms of a range of social and environmental benefits. This capacity to add value is particularly important for healthcare environments, where the physical and psychological well-being of patients, staff and visitors is of paramount consideration.

In October 2000, the Prime Minister established a UK-wide 'Better Public Buildings' initiative to achieve a step change in the design quality of publicly procured buildings. Over the last decade, Scottish Ministers have in parallel, through their policies, sought to achieve a culture of quality in the procurement of publicly-funded buildings that embraces good design as a means of achieving value for money and sustainable development.

The Scottish Government has five strategic objectives; it is committed to creating a Scotland that is:

- wealthier and fairer;
- stronger and safer;
- healthier;
- greener; and
- smarter.

It is clear that the design quality of our built environment must, by necessity, play a vital part in our ability to meet all of these strategic objectives. Government, thus, continues to promote and to encourage investment in well-designed buildings and places in both the public and private sectors.

This document responds to Government's quality objectives within guidance and initiatives particular to NHSScotland.

Design quality is especially important in the context of healthcare building, where well-designed health buildings can help patients recover their spirits and their health and have a positive effect on staff performance and retention, as well as improving the efficiency of operational relationships and providing better value for money in the context of whole-life costs. The Scottish Government therefore recognises the importance of good building design as the physical means of delivery for a range of wider policy objectives.

The Scottish Government's Architecture and Place Division which was established to implement policy commitments, can offer advice on design and acts as the sponsor body for [Architecture and Design Scotland](#), an Executive Non Departmental Public Body established as the national champion for good architecture, design and planning in the built environment.

Health buildings can often be the places in which we may feel at our most vulnerable, whether as a patient, relative or friend. The quality of the building environment that we experience can provide us with calming reassurance or, conversely, it can accentuate our feeling of stress and unease.

Many factors can contribute to engendering a sense of ease, for instance: the first impression of the facility from the public realm, the entrance experience, the degree of natural light, brightness and airiness, colour and texture, an easily understood layout with clearly defined focal points, uncluttered signage and a clear distinction between the realms of public and private space, maintaining patient dignity.

In most health buildings, external public spaces are vitally important in that they can also provide the opportunity for positive respite for patients, visitors and staff in periods of stress. Sensitive landscaping and well-defined public space in a healthcare environment can provide far more than simply an attractive setting. Through careful design social or intimate, tranquil spaces can be created, providing an environment where people might want to sit or meet, even spaces for physical therapy and play and which further contribute to the healing process.

Scottish Ministers believe that a concern for the quality of Scotland's architecture must go far beyond the design of individual buildings. Distinctive, high quality places as well as high quality buildings are vitally important to the social, environmental and economic success of our cities, towns and rural communities.

The Scottish Government's National Outcomes set out what Scottish Ministers aim to achieve in the next ten years, and a key objective for the built environment is that "we live in well-designed, sustainable places where we are able to access the amenities and services we need".

A sustainable community is one which not only makes a positive contribution to mitigating the effects of climate change; a sustainable community is a place which is successful in the way that it continues to flourish socially and economically over time. The quality of healthcare facilities along with other public buildings and places can be a significant factor in making communities successful, because they can offer a great deal to the creation of a wider, attractive environment which people would wish to inhabit.

The overarching Purpose of the Scottish Government is to increase sustainable economic growth, and good place-making supports this Purpose in the following ways:

Good place-making can influence the economy of an area by making it an appealing place to live, to work, and to visit - It can provide environments and infrastructure which function well; link well with surrounding settlements; which attract business; and in which business can flourish;

- Good place-making can provide communities with an important cultural context, a sense of pride and belonging and, a sense of local and national identity;
- Through good design, safe, welcoming places can be created to which people would wish to return frequently, and which would have a greater chance of longevity;



- Good place-making can promote active, healthy, inclusive lifestyles by providing attractive and accessible green spaces, and through layouts which discourage car usage and which provide the right facilities within reasonable walking and cycling distance;
- Good place-making can embed community facilities into our communities in ways which are accessible and which provide a richness of opportunity for social interaction; and
- Good place-making can have a profound effect on the sustainability of our lifestyles, in respect of the impact that we have on the land and other scarce resources; how much energy we use; and, again, through reductions in car usage.

The Planning etc. (Scotland) Act 2006 requires Local Authorities to develop dynamic plans which describe a vision for the local community; establishing 'what goes where and why' in order to develop a community structure that supports strategic objectives. Health Boards are encouraged to be active participants in the development of these local development plans in order to:

- embed the principles of healthy urban development into the plan – those aspects needed to support local health promotion and help people make healthier lifestyle choices;
- embed the principle needs for the physical infrastructure needed to deliver on 'shifting the balance of care' such as the potential location of new healthcare facilities;
- establish major infrastructure strategies needed to support the delivery of the Single Outcome Agreement; and
- link the board's strategic asset management plan into the local development plan to consider both the beneficial use of public land assets and the transport implications of major changes in estate strategy.

The creation of a new or refurbished facility can bring with it the opportunity to show a positive civic presence, and the development of a high quality public building can do much to help the creation or regeneration of communities. It is thus also a matter of considerable importance that health buildings respond to the urban or rural contexts in which they sit. This includes considerations such as how they fit within historic contexts, how the approach and entrance act to welcome concerned families and friends, and how they contribute to the quality of their neighbourhoods, both in terms of the buildings themselves and the places they create around them. In considering the provision of healthcare facilities, it is important to also give careful thought to the opportunities for good 'place-making'.

Healthcare buildings play a significant part in the environment and, increasingly, patients are becoming "empowered" to demand better environments in which they receive healthcare. It is appropriate that we embrace such matters and introduce appropriate policies and initiatives in Scotland.

At the heart of this policy is the recognition that strong client commitment is required to deliver facilities that provide the high quality and sustainable caring environments we desire. We now expect NHSScotland bodies to develop their individual visions for the kind of places in which patients, staff and visitors would wish care to be provided:

- for patients - a welcoming, healing and reassuring place that supports life;
- for staff – a place that supports staff in their work and that will not constrain future work;

- for visitors – a place to meet and discuss, a place that I can leave loved ones.

These environments must be able to support the high quality healthcare services which are to be delivered within.

This aligns with the aims of the **Scottish Healthcare Quality Strategy**. The Strategy reflects the shared ambitions of everyone in Scotland whether a patient, a carer, or whether working for NHSScotland in a community, primary or acute care setting, to create high quality person-centred, clinically effective and safe healthcare services and to be recognised as being world-leading in our approach.

The aim is for everyone in Scotland to work together to ensure better health and higher quality healthcare services which are flexible and reactive to each individual circumstance. These principles are consistent with the aims of this policy, to embed the need for well designed, sustainable and safe healthcare environments as an integral part of service delivery.

**The term ‘good design’ is not merely a question of style or taste but describes what arises from the intelligent and creative synthesis of many interrelated factors such as: strategic planning of healthcare provision; social and physical regeneration; the local urban (or rural) context and forms; links to infrastructure and transport; sustainability agendas; the building’s sense of welcome; intelligibility of layout; security; unobtrusive supervision; ease of use and maintenance; efficiency; and, promotion of human dignity. It covers the way in which buildings sit within and, contribute to, their community as well as how they work and look. Successful healthcare design resolves a wide range of functional requirements efficiently whilst, at the same time, exploring the opportunities to provide an uplifting environment for patients, visitors and staff.**

Design, therefore, is just as much about process of change management as it is about what the final product looks like. Design is present in all projects - first you imagine what you are looking to achieve and test that this is possible. You then move on to sketching a limited number of possible worlds that, to varying degrees, will house and support your needs. By analysing these and making choices you narrow the options down to the world that you will build. You get the best result by using skill and a spark of creativity to make every element work hard to deliver more than one part of your vision. Therefore good design need not cost more and the difference between achieving good or poor quality outcomes is more often the result of having the right knowledge or advice, understanding, care and commitment.

#### **Good Design is the intelligent application of a scarce resource**

Good design can therefore be seen as largely objective. A design proposal can be evaluated through the use of appropriate tools such as Design Quality Indicators (DQIs) to assess whether the proposed building will function efficiently and effectively; whether there is clear evidence of thoughtful, imaginative and even inspirational proposals that will not only work, but will help the people within them to work and feel better; whether the proposed building will integrate with its surroundings in an appropriate manner and create a sense of place and; whether the materials, construction methods and the proposed layout will enhance long-term value for money. Indeed, Scotland’s Infrastructure Investment Plan 2008 establishes that good design is key to achieving best value from all public sector investment.

***“In developing Scotland's infrastructure, the Scottish Government recognises that good building design should be responsive to its social, environmental and physical context. It should add value and reduce whole life costs. Good building design should be flexible, durable, easy to maintain, sustainable, attractive and***

***healthy for users and the public; and it should provide functional efficient adaptable spaces ... Equally important to the design of individual buildings is the design of sustainable places. Well-designed buildings and places can revitalise neighbourhoods and cities; reduce crime, illness and truancy; and help public services perform better”.***

Design evaluation, in particular Post Project Evaluation and Post Occupancy Evaluation, can contribute to the emerging field of “evidence-based design” which is proving a valuable tool in the design process towards both reducing costs and improving outcomes. Research has shown that evidence-based design methods, introduced early in the process of facility programming and design can improve the experience of patients who will be treated within the healthcare facility and assist in health recovery which results in improving medical outcomes, shorter bed stays, greater throughput and a reduction in patient and staff stress.

## The Way Forward

The Scottish Government has set out an ambitious agenda to modernise NHSScotland and its infrastructure. This agenda challenges NHSScotland Bodies to modernise the way in which healthcare is delivered to patients and challenges them to ensure that the infrastructure developed, deployed and maintained is capable of supporting high quality, modern patient care.

The NHS in Scotland has a vision for:

***‘an estate designed with “a level of care and thought that conveys respect”;***  
***buildings that grow from the local history and landscape, that are developed in***  
***partnership with the local community. A work of joint learning and joint***  
***responsibility that is particular to that community and that place; “not off-the-***  
***shelf show boxes”.’<sup>A</sup>***

The **Better Health, Better Care Action Plan**, published in 2007, affirms the Scottish Government’s commitment to improving the physical and mental wellbeing of the people of Scotland through supporting the provision of well designed, sustainable places. The Action Plan also articulates the Scottish Government’s vision of a mutual National Health Service, a shift to a new ethos for health in Scotland that sees the Scottish people and the staff of the NHS as partners, or co-owners, in the NHS.

These policy changes place health and wellbeing and the over-arching issue of sustainability at the centre of the lives of the people of Scotland as the NHS strives to become more accountable and patient-focused. If the commitment to create a healthier, wealthier, fairer, safer and stronger Scotland is to be realised, NHS Boards must ensure that in the context of designing new facilities, they deliver not only high quality solutions but also realise benefits for community development and the wider environment.

(Ref <sup>A</sup>: From an interview with Dr Harry Burns, Chief Medical Officer - *A Vision of Health: NHSScotland’s agenda for realising value in the developing healthcare estate*, Architecture and Design Scotland 2009)

## Frameworks Scotland

Evidence exists that the traditional approach to construction procurement fails to satisfy clients and does not generate the efficiency improvements delivered in most other industries. With regard to NHSScotland, this means available capital and revenue resources must be used more effectively, to deliver better outcomes and make the best use of ‘client-side’ skills and capacity.



Health Facilities Scotland has, on behalf of the Scottish Government and NHSScotland, led the development of a collaborative construction procurement initiative. **Frameworks Scotland – Excellence in Healthcare Construction** is a strategic and flexible partnering approach to the procurement of publicly funded construction work and complements other procurement initiatives for the delivery of health facilities in Scotland.

This partnering approach reduces the adversarial attitudes which can make it more difficult to deliver successful project outcomes. Partnering arrangements reduce waste in both the process and product streams, promote quality and also facilitate the sharing of best practice and lessons learned from one project to another.

It should be recognised by anyone involved in planning, designing and delivering NHSScotland's healthcare estate that there is currently an unprecedented opportunity and a need both to ensure and to demand well-designed, 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 the Scottish Capital Investment Manual guidance, alongside the application of and, proper attention to, AEDET and BREEAM Healthcare requirements at the appropriate stages of a project.

Further information on the Frameworks Scotland initiative can be found on the [Health Facilities Scotland](#) website.

## **The 'hub' Programme**

The **'hub' Initiative** is a major programme of the Scottish Futures Trust.

'hub' is a procurement vehicle supporting a long term programme of investment in community infrastructure for local authorities, NHS Boards and other public sector bodies across Scotland. It will provide a mechanism for delivering assets more effectively through a single partner, with continuous improvement leading to better value for money. The opportunity for a private sector delivery partner is to be part of a systemic approach to infrastructure planning and delivery in a territory over an extended time period.

'hub' will deliver projects from a core identified scope and, in future, from wider service development business cases, in particular those projects that promote joint working amongst community planning partners. Projects will focus on new build but could also include the refurbishment and asset management services of existing infrastructure.

The overarching objective of 'hub' is to improve the efficiency of community infrastructure delivery – with a particular emphasis on supporting the provision of more joint services across local authorities, health boards and other community partners. In Scotland there are good examples of joint premises development, but these tend to be one-offs and do not offer a model for the long term strategic planning of joint premises development and joint services delivery. 'hub' should provide a systematic approach to service delivery, from a model predicated on continuous improvement in both cost and quality. This can be achieved by the public sector by working in close partnership with a private sector partner, where both the public and private sector stakeholders have a financial interest in a successful outcome.

The first two Pathfinder Territories are the South East and North. More details can be found at <http://www.hubscotland.org.uk/>

It is critical that design issues are addressed regardless of the procurement method used to deliver healthcare buildings and, that the outcomes specified for these buildings in terms of the care environment are reflected in their design. However, the implementation of design quality and the procurement route used have a particular relationship and therefore the procurement method used can have a significant bearing on the development of design quality during the process. Although it can be argued that good design is independent of cost, its relationship with design management and procurement in practice needs careful examination. The National Audit Office report "[Improving Public Services Through Better Construction](#)" (March 2005) supports this view and advocates that all key stakeholders should be involved and all proposals subjected to independent challenge before key design decisions are made and that design and decision-making be based on "whole-life value".

The concept of 'evidence-based design' has already been mentioned in the context of Post Project Evaluations. There has been a historical assumption that each healthcare building has to be unique in order to fulfil the vision and aspirations of the brief which can, unfortunately, result in the repetition of mistakes, albeit perhaps unintentionally. The starting point for any new healthcare building should, logically, be the successes of one or a number of existing buildings based on a careful analysis of what constitutes the 'good' and what constitutes the 'bad'.

Also of importance is the emerging field of 'supportive healthcare design'<sup>B</sup>. Traditionally, there has been an assumption that the main requirement placed upon a healthcare facility should be the mitigation of infection or the risk of exposure to disease. Additionally, through decades of advances in medical science and technology, many healthcare designers and technicians have been conditioned to create buildings that are successful delivery platforms for new technology. By concentrating on the need for functional efficiency and the pathogenic concept of disease and health, healthcare facilities have been procured which contain environments which can be considered stark, institutional, stressful to their occupants and thus detrimental to the quality of care they are intended to provide. In spite of evidence of the major stress caused by illness and the subsequent traumatic experience of hospitalisation, there has, historically, been comparatively little emphasis on the creation of surroundings which can calm patients, reinforce their ability to cope in such environments and generally address their social and psychological needs.

The process of 'supportive design' begins by eliminating the environmental characteristics which are known to contribute to stress or can have negative impacts on outcomes and, importantly, continues by emphasising the inclusion of characteristics in the healthcare environment which research has indicated have the ability to calm patients, reduce stress and strengthen their ability to cope and promote healthy, healing processes.

(Ref <sup>B</sup>: Ulrich R S, 2000 - 'Effects of Healthcare Environmental Design on Medical Outcomes'  
Ulrich R S, 2000 - 'Evidence based environmental design for improving medical outcomes. Proceedings of the conference: *Healing By Design: Building for Healthcare in the 21<sup>st</sup> Century*', McGill University Health Centre, Montreal)

**Due to the length of time that healthcare buildings may be in use, there is potential to constrain changes in delivery practices. It is therefore vitally important that design processes are an integral part of a robust procurement mechanism in order to ensure that buildings are not only functional when constructed but are flexible and adaptable over their entire lifetime.**

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SGHD will continue to play its part in supporting and implementing wider Scottish Government procurement strategies and policies by setting these within a healthcare-specific context.

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## Policy Aims

- The purpose of this policy is to articulate the Scottish Government Health Directorates ambition for NHSScotland's asset base and to embed the need for well-designed, sustainable healthcare environments as an integral part of high quality service delivery. It also provides guiding principles which a NHSScotland Body's strategic Design Action Plan and the supporting project-specific Design Statement should address ([Annex B](#)) and two further annexes providing reference to relevant Scottish Government Health Directorates asset-related policies and supporting guidance ([Annex C](#)) and, useful references and web links ([Annex D](#)).
- The Scottish Government is committed through its stated Purpose to encouraging sustainability by the development of infrastructure and place: "providing sustainable, integrated and cost-effective public transport alternatives to the car as well as a planning and development regime which is joined up and geared towards achieving sustainable places and sustainable economic growth". The Government recognises that the Scottish planning and building standards mechanisms have a role in the delivery of a high quality, sustainable physical infrastructure. However, the Government also recognises that everyone connected with the delivery of this infrastructure has a role to play in driving up standards for the planning, design and maintenance of the built and natural environment. The Scottish Government Health Directorates believe that improving the quality of our caring environments is crucial to delivering this commitment and to achieving the Government's National Outcome of ensuring that 'we live in well-designed sustainable places where we are able to access the amenities and services we need'. Improved caring environments also act in support of the 'Healthier' Strategic Objective to help people to sustain and improve their health, especially in disadvantaged communities, ensuring better, local and faster access to health care.
- **Therefore this policy statement requires that all NHSScotland Bodies, as an integral part of the commitment to deliver the highest quality of environment for patient care, ensure that design quality is fully integrated into the healthcare building procurement process and is apportioned appropriate emphasis throughout all stages of this process.**

## Scope

This policy must be considered alongside other Scottish Government Health Directorates policies and supporting guidance bearing upon NHSScotland assets including those for capital procurement, asset management, sustainable development, environmental management, fire safety, and, property transactions. Such central policy statements and supporting guidance are intended to inform the formulation and updating of an NHSScotland Body's operational policies and of supporting guidance. Such operational policies and asset strategies are important corporate expressions of a NHSScotland Body's intentions and as such should be a manifestation of integrated service planning and the appropriate involvement of all relevant interests.

This policy must also be considered alongside other relevant Health Directorates, Scottish Government and UK Government policies and commitments.

## Policy Statements

**Statement 1** All NHSScotland Bodies<sup>1</sup>, as clients, must commit to the integration of design quality in the procurement of healthcare building throughout all stages of the process, regardless of procurement route used.

**Statement 2** All NHSScotland Bodies must have a strategy for design quality – a Design Action Plan - consistent with and supportive of the Health Directorates and wider Scottish Government asset-related policy and supporting guidance (listed at Annex C) and, with the policy guidance contained within Annex B of this document.

**Statement 3** The SGHD must provide guidance on compliance with those aspects of statutory and mandatory requirements which are particular to the procurement, design and delivery of healthcare buildings and guidance on best practice. This will be effected through the support to be provided by Health Facilities Scotland and Architecture and Design Scotland under the tripartite working partnership with SGHD.

## Mandatory Requirements

1. Each NHSScotland Board must have a clear, articulated vision for its estate and strategy for using good design to deliver that vision – a Design Action Plan – consistent with Health Directorates and wider Scottish Government policy. The Design Action Plan must be appended to a Board's Property and Asset Management Strategy (PAMS) and reviewed annually as part of the PAMS review process.
2. Each NHSScotland Board must appoint a member of the NHS Board to act as Design Champion at a strategic level to assist in articulating and promoting the Board's design vision and, where not impractical, also a Senior Officer to act as supporting Design Champion at a technical level with knowledge and experience in capital investment procedures and expertise in technical matters.
3. All NHSScotland Bodies engaged in the procurement of both new build and refurbishment of healthcare buildings must do so in compliance with EU, UK and Scottish Government procurement policy and guidance.
4. All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must, prior to the submission to SGHD of the Initial Agreement, develop a Design Statement for each project as a means of establishing the design standards for which the project and how these will be assessed by the Board within the Business Case approvals process. The Design Statement must be consistent with the strategic Design Action Plan.
5. All NHSScotland Bodies, as clients, must ensure the development of a clear project brief which should not only describe the physical requirements of the building but should also articulate the Board's vision and aspiration consistent with the strategic Design Action Plan. The 'Design Statement' may be used or developed for to this purpose, and should be included in briefing and in the HLIP issued to prospective PSCPs
6. All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must carry out independent environmental accreditation for projects. The Scottish Capital Investment Manual requires that all new builds above £2m obtain a BREEAM Healthcare (or equivalent) 'Excellent' rating and all

refurbishments above £2m obtain a 'Very Good' rating. If the capital costs are less than £2m, projects should undertake a BREEAM pre-assessment to establish whether BREEAM Healthcare is a viable option.

7. All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must use and properly utilise the English Department of Health's Activity DataBase (ADB) as an appropriate tool for briefing, design and commissioning.

[If deemed inappropriate for a particular project and an alternative tool or approach is used, the responsibility is placed upon the NHSScotland Body to demonstrate that the alternative is of equal quality and value in its application.]

8. All NHSScotland Bodies must use Design Quality Indicator (DQI) tools as appropriate to manage their design requirements through the life of a project. The English Department of Health's Achieving Excellence in Design Evaluation Toolkit (AEDET Evolution) and associated supplementary tools such as ASPECT are recognised as the exemplars towards achieving the appropriate level of project design management.

## Monitoring

9. SGHD will monitor the integration of design quality into healthcare building procurement through the Business Case approvals process which will be facilitated through a coordinated assessment of the potential quality of proposed projects to support those responsible for decision making within the Business Case process.

This assessment will involve the contribution of particular expertise on the aspects of design relating to government policy on design and place-making from Architecture and Design Scotland and, of particular expertise on the aspects of design relating to functionality, particularly technical and sustainability standards, from Health Facilities Scotland.

10. All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must conduct thorough and, independent, Post Project Evaluations (PPEs) and Post-Occupancy Evaluations (POEs) and make available to SGHD any resulting evaluation data which will be used in the formulation of generic reports to inform future policy and disseminate nationally the lessons learned.

The planning of Post Project Evaluations and Post Occupancy Evaluations is a mandatory requirement of the Scottish Capital Investment Manual for all projects in excess of £1.5 million and should be considered best practice for all projects.

**For projects between £1.5m and £5m, the NHSScotland body's internal governance arrangements should ensure the production and reporting of PPEs and POEs. An annual summary report in respect of such projects should be submitted to the Scottish Government Capital Planning and Asset Management Division.**

**For projects in excess of £5m, PPE and POE Reports must be submitted to the Scottish Government Capital Planning and Asset Management Division. Timescales for the production and delivery of such reports will be monitored by SGHD in common with other key milestones in the project lifecycle.**

**Full Business Cases for capital projects will not be approved unless Post Project Evaluation and Post Occupancy Evaluation has been properly planned in advance and suitably incorporated into the Full Business Case.**

## Support

11. Support for the implementation of the design agenda will be provided by means of a coordinated, tripartite working arrangement between SGHD, [Health Facilities Scotland](#) and [Architecture and Design Scotland](#) to facilitate the procurement of well-designed, sustainable, healing environments which support the policies and objectives of NHS Boards and the Scottish Government Health Directorates.

<sup>1</sup> NHSScotland Bodies in the context of this document means all Health Boards, Special Health Boards and the Common Services Agency performing functions on behalf of Scottish Ministers



## Policy Guidance

A NHSScotland Body's **Design Action Plan** and supporting project-specific **Design Statement** should be consistent with and supportive of the guidance contained within this Annex and the policy and guidance documents listed at [Annex C](#).

[The following guidance aligns in part with the Scottish Government "*Construction Procurement Manual: Section 6 – Design quality in building procurement*" but with appropriate additions and amendments in order to apply to the healthcare context.]

## Contents:

### **Design quality**

[Establishing and evaluating design quality](#)

[General](#)

[Healthier Places website](#)

[Achieving Excellence in Design Evaluation Toolkit \(AEDET\)](#)

[Using AEDET Evolution](#)

[When to use AEDET Evolution](#)

[A Staff and Patient Environment Calibration Tool \(ASPECT\)](#)

[Inspiring Design Excellence and Achievements \(IDEASs\)](#)

[Role of Health Facilities Scotland \(HFS\)](#)

[Role of Architecture and Design Scotland \(A+DS\)](#)

[Role of the Scottish Futures Trust](#)

[NHSScotland Design Champions](#)

[Maintaining design quality on site](#)

### **Public space**

### **Travel and car-parking**

### **Use of the arts in healthcare**

### **Design quality in building procurement**

[Key issues](#)

[Achieving good design](#)

[Evaluating good design](#)

[The Business Case](#)

[Design Assessment](#)

[The Design Statement](#)

[Fire safety](#)

[Designing for equality](#)

[Designing for dementia](#)

### **Role of the client**

### **Project brief**

[Healthcare Acquired Infection \(HAI\)](#)

[Sustainability](#)

[Activity DataBase \(ADB\)](#)

### **The Design Team**

[Design Team selection](#)

[Quality Based Designer Selection \(QBS\)](#)

[Design competitions](#)

[Procedure for appointing the Design Team](#)

[Design Team selection criteria](#)

[Selection criteria at bidding stage](#)

[Relation of selection criteria to budget considerations](#)



## Design Quality

### Establishing and evaluating design quality

#### General

Boards are required to establish design quality criteria (non-negotiable project aims and benchmarks) for all development projects in the form of a project 'design statement'. As we use buildings, for the most part, to house and support human activity, these criteria are to be built around the needs of the people who the facility will directly impact upon and further expanded to include the elements needed to deliver on the broader responsibilities of using public money – that of addressing local and national needs. The Design Statement then includes the board's proposals for self assessment of the project as it progresses, describing the key stages at which the decisions will be checked against the established design quality criteria, how this will be done and what skills and information will be needed.

Assessing design quality is not a wholly subjective activity. Many other design issues can be assessed objectively - whether a building will function efficiently and effectively; whether there is clear evidence of thoughtful, imaginative and even inspirational proposals that will not only work, but support people to feel and work better; whether it responds positively to its surroundings; whether it provides well-defined and meaningful public spaces for patients and the community; and whether the materials, construction methods and the proposed layout will enhance long-term value for money. The Scottish Government [Construction Procurement Manual: Section 6 – Design quality in building procurement](#) lists a number of key issues to be considered in evaluating a design.

General guidance on achieving value for money (VFM) in works procurement, based on seeking to achieve an optimum combination of whole life cost and quality, is set out in [Section 2 of the Scottish Executive Construction Procurement Manual](#). Evaluating and achieving consensus on quality can be facilitated through the use of formal techniques and there are a number of tools which can help. The Construction Industry Council (CIC), for example, has developed its Design Quality Indicator (DQI) to evaluate the design quality of buildings throughout the development and life cycle of a project.

#### Healthier Places Website

This website has been designed to house information on good healthcare design to assist boards in brief development and to raise awareness of the good practice being developed and delivered across NHSScotland and elsewhere. In addition to providing guidance on the development of 'design statements' and, articles on healthcare design topics, the website holds a project resource - '[Pulse](#)' - a database of projects and examples of good practice that can be used in two main ways:

- **Search by project type** : to find out about recent and current developments in NHSScotland, and elsewhere, that are of a similar type to the one being considered by the client team. This will provide basic details on the project, the key team members involved and images where available. Key design documents, such as the 'Design Statement' and Post Occupancy Evaluations will be included once they are in the public realm to allow greater learning from what has gone before. It is envisaged client teams will use this search primarily at the outset of a project to
  - Establish similar works by colleagues in other boards
  - Facilitate contact to allow shared learning

- Establish possible visit lists for the client team and key stakeholders to raise awareness and understanding.
- **Search by area** : to find photographs of different areas of the healthcare estate (such as entrance areas and consulting rooms) to raise awareness of what has been achieved elsewhere. It is envisaged client teams will use this search primarily to assist benchmarking within the 'design statement' being developed for projects.

The '**Pulse**' resource will be maintained by A+DS using project information submitted to the NHSScotland Design Assessment Process (once the Business Case is in the public realm), case studies of completed developments, and supplemented by images submitted by users of the site. NHS Boards are encouraged to upload photographs taken during visits to inspirational developments (especially those outwith Scotland) to assist knowledge transfer between project teams.

#### Achieving Excellence Design Evaluation Toolkit (AEDET Evolution)

However, healthcare building design frequently involves complex concepts which are more difficult to measure and evaluate. In order to address these specifics in a DQI context the Department of Health (England) Estates and Facilities Directorate has developed the **Achieving Excellence Design Evaluation Toolkit (AEDET Evolution)**, the latest version of which is AEDET Evolution and is a tool specifically directed towards achieving excellence in design rather than ensuring compliance with legislation, regulation and guidance. High scores in AEDET do not therefore necessarily guarantee compliance with statute.

The AEDET Evolution toolkit assists NHS Bodies in managing their design requirements from initial proposals through to post-project evaluation. It is a benchmarking tool and forms part of the guidance for PPP, joint ventures including "hub" and, conventionally funded schemes. AEDET Evolution contains evaluation criteria which ensure that design takes place within a common, industry wide framework. The toolkit enables the user to evaluate a healthcare building design in a non-technical way that covers the three key areas of **impact, build quality and functionality**. AEDET Evolution tool is complemented by A Staff and Patient Environment Calibration Tool (ASPECT).

Unpublished research into the use of AEDET Evolution and ASPECT suggests these tools are reliable, presenting high correlations between different judges using them to evaluate healthcare design. More recent independent, unpublished research into the experience of collaboration between designers and clinicians using AEDET Evolution indicates that the tool facilitates improved design quality. It achieves this by further facilitating a recursive discovery and a mutual utilisation of the considerable skills and factual knowledge of the designers and clinicians thus serving to improve their skilled performance.

AEDET Evolution uses ten key criteria that have evolved from sources including the Commission for Architecture and the Built Environment (CABE) and the Construction Industry Council (CIC) to establish an industry-wide framework for assessing design. The ten key criteria are:

##### **Uses**

Service philosophy, functional requirements and relationships, workflow, logistics, layout, human dignity, flexibility, adaptability and security.

##### **Access**

Vehicles, parking, pedestrians, disabled people, wayfinding, fire and security.

**Spaces**

Space standards, guidance and efficient floor layouts.

**Character and innovation**

Excellence, vision, stimulation, innovation, quality and value.

**Citizen satisfaction**

External materials, colour, texture, composition, scale, proportion, harmony and, aesthetic qualities.

**Internal environment**

Patient environment, light, views, social spaces, internal layout and wayfinding.

**Urban and social integration**

Sense of place, siting, neighbourliness, town planning, community integration and landscaping.

**Performance**

Daylight, heating, ventilation, air conditioning, acoustics, passive thermal comfort.

**Engineering**

Emergency systems, fire safety, engineering standardisation and prefabrication.

**Construction**

Maintenance, robustness, integration, standardisation, prefabrication, health and safety.

### Using AEDET Evolution

AEDET Evolution is a tool for evaluating the quality of design in healthcare buildings. It delivers a profile that indicates the strengths and weaknesses of a design or an existing building. It is not meant to produce a simplistic single overall score. Because of the nature of design, which inevitably involves trade-offs, it may not be possible to produce a building which would have the maximum score for all the sections. Indeed it may quite often be the case that a high score for one statement reflects a design which inevitably may be scored low on another statement. A single overall score would thus be misleading and uninformative.

AEDET Evolution can either be used by individuals or in workshops by groups. In the latter case it is probably desirable that an independent experienced user of AEDET Evolution should facilitate the group to avoid excessively lengthy debate. AEDET Evolution can be a helpful tool in enabling a group to come to a common understanding with the help of a facilitator who can moderate group discussions.

AEDET Evolution can be used at different 'scales' in evaluating the design of a healthcare building, e.g. at a building scale, a department scale or a complete site scale. The level of detailed information available may dictate the scale of the evaluation.

AEDET Evolution is designed to be used by those involved in the commissioning, production and use of healthcare buildings. In particular public and private sector commissioning clients, developers, design teams, project managers, estates/facilities managers and design champions may find AEDET Evolution a helpful and useful tool. User clients such as patient representatives and members of the general public should also be able to use AEDET albeit within a workshop environment alongside other more experienced professionals.

### When to use AEDET Evolution

AEDET Evolution can be used to evaluate existing buildings in order to compare them or understand their strengths and weaknesses.

AEDET Evolution can be used on the plans for new buildings in order to evaluate and compare designs.

AEDET Evolution can be used on “imaginary” buildings in order to set standards for preparation of a brief.

AEDET can be used at various stages during the design of healthcare buildings – as the level of detail of the information available increases it should be possible to respond to more of the statements in the tool.

### A Staff and Patient Environment Calibration Tool (ASPECT)

To complement AEDET Evolution, the Department of Health (England) Estates and Facilities Directorate has developed the [ASPECT toolkit](#). ASPECT stands for A Staff and Patient Environment Calibration Tool and is based on a database of over 600 pieces of research. That research deals with the way the healthcare environment can impact on the levels of satisfaction shown by staff and patients and on the health outcomes of patients and the performance of staff.

This research and the ASPECT toolkit itself are set out under 8 headings. ASPECT can be used as a stand alone tool, or it can be used to support AEDET Evolution to provide a more comprehensive evaluation of the design of healthcare environments.

When used to support AEDET Evolution it enables the user to score the Staff and Patient Environment Heading of AEDET Evolution in a more detailed, accurate way.

The toolkit has 3 layers which allow users to create a design evaluation profile:

- the SCORING layer on which you score;
- the GUIDANCE layer that gives more detailed help;
- the EVIDENCE layer that points to available research evidence.

### Inspiring Design Excellence and Achievements

[Inspiring Design Excellence and Achievements](#) (IDEAs) is another useful design tool published by Department of Health (England) Estates and Facilities Directorate to assist in the generation of design briefs, proposals and schemes

IDEAs was conceived and developed by the University of Sheffield as a way of utilising the latest research evidence. IDEAs starts the design of healthcare places with people – patients, staff and visitors – and responds to the emotional and functional requirements of healthcare delivery.

IDEAs deals with activities rather than individual spaces or rooms. Examples of activities that occur in healthcare places include:

- arrival
- bathing

- bed / rest
- circulating
- consulting
- shopping
- sanctuary
- socialising
- waiting

IDEAs can be used either as a standalone tool within a workshop context or as a web-enabled integrated tool by individuals.

### Role of Health Facilities Scotland

Health Facilities Scotland (HFS) is a division of National Services Scotland and provides operational guidance to NHSScotland Bodies on non-clinical topics such as:

- estates engineering;
- building and architecture;
- procurement;
- fire safety;
- environment;
- energy;
- property management;
- clinical waste management;
- decontamination
- legionella and other estates related pathogenics;
- hazards and safety action notices.

This assists NHSScotland in meeting the Government's policy and strategic aims and the establishment of professional/technical standards and best practices, including the promotion of new initiatives in the field of healthcare practice and management. Clearly HFS can have a pivotal role to play in generally supporting the implementation of this Policy, through the provision of supporting guidance and through their Continuous Professional Development (CPD) programme which provides essential training to NHSScotland personnel on operational issues as impacted by national policies and objectives.

**With particular regard to the objectives of this Policy, HFS will lead the agenda through the central operation of Frameworks Scotland and through the administration of the Design Assessment process now mapped into the Business Case process. HFS will provide technical expertise including those aspects of design which relate to functionality and, particularly, technical and sustainability standards. This will underpin the strands of work identified to support the design agenda in NHSScotland through the coordinated tripartite working relationship between HFS, SGHD and A+DS and with NHSScotland stakeholders.**

### Role of Architecture and Design Scotland (A+DS)

Architecture and Design Scotland has been established by Scottish Ministers as the National Champion for Good Architecture, Design and Planning in the built environment. Its aim is to operate within the Scottish Government's policy framework on architecture and design, as well as in partnership with a range of bodies in the private and public sector to help turn the aspirations of policy into reality.

The aim is to raise the quality of new development, so that high standards of layout and design are the rule, not the exception. Overall, the development of well designed and

attractive cities, towns and villages will support the Scottish Government's National Outcomes for the built environment.

These Outcomes are designed to ensure that Scotland has the infrastructure, the physical services, the economic ability, the healthy environment, the cultural references and the social networks that allow our current and future generations to achieve their potential in a balanced manner.

SGHD and A+DS have developed a range of initiatives to assist NHSScotland in addressing design quality issues in the procurement of healthcare building projects, the summary objectives of which are to:

- raise the level of design quality achieved through infrastructure investment;
- increase the capacity of health boards and central agencies in respect of the above; and
- assist in sharing good practices.

In order to meet the above objectives, Architecture and Design Scotland will deliver 3 main activities on behalf of the Scottish Government Health Directorates.

#### **Activity 1**

Engaging with partner organisations and central procurement agencies in order to assist them in their work and in raising design awareness of 'external' parties involved in delivery. This will be done through actions such as:

- assisting in the development of policy and guidance relating to the procurement of, and design quality in, the built estate;
- participation in steering groups such as those developed for Frameworks Scotland and in the development of strategies and processes (such as team selection and KPIs) for central procurement agencies. Also assisting, as requested by such central teams, in providing advice to client teams on matters effecting design quality, particularly pertaining to preparation for the assessment described in 2 below; and
- assisting Health Facilities Scotland (HFS) and others in the development of training and awareness sessions.

#### **Activity 2**

Providing, in partnership with HFS, a co-ordinated assessment of the potential quality of proposed projects to support those responsible for decision making within the Business Case process.

This will involve contributing particular expertise on the aspects of design relating to government policy on design and place making to a process administered and led by Health Facilities Scotland who will, in addition to the administrative elements, provide particular expertise on the aspects of design relating to functionality, particularly technical and sustainability standards developed by HFS and the Department of Health in England.

#### **Activity 3**

Assisting in building a body of knowledge and evidence of good practice in both process and product across NHSScotland, through:

- the development and management of the web-based project resource, '[Pulse](#)';



- the development of case studies of projects on the ground;
- providing dedicated support to 'demonstration projects' where ambitious parties are taking on particular aspects of work, particularly around cross-sectoral working; and
- identifying and commissioning targeted pieces of work by relevant specialists to inform, test, and develop concepts and tools to support Health Boards and their stakeholders in their delivery of good design.

### **Role of the Scottish Futures Trust**

The Scottish Futures Trust is an independent company, established by the Scottish Government with a responsibility to deliver value for money across all public sector investment. SFT operates at arms length from the Government but works closely with the public sector to seek and deliver improved value for tax payers.

Currently the Scottish Government and other public sector bodies in Scotland invest some £5billion annually on infrastructure. By any measure this is a substantial amount of money and spend on investment is recognised to be a strong contributor to economic growth. In today's tight financial environment, improving the value for money of this spend, and finding innovative ways to finance infrastructure investment to enhance economic growth are imperative and are SFT's primary functions.

Recommendations from Audit Scotland, the National Audit Office and others have included the requirement for many of the services that SFT is now providing. The company brings focused commercial and financial skills in infrastructure financing, procurement and delivery into the public sector. SFT retains and grows this knowledge within infrastructure-investing organisations across the public sector.

SFT is leading the £1.25 Schools Investment Programme and has developed a National Housing Trust to deliver an initial £130million of housing. SFT is also involved in a wide range of major transport and accommodation infrastructure projects and by the end of 2010/11 SFT's portfolio of projects are expected to be valued at more than £7billion.

In relation to this policy SFT is responsible for managing the 'hub' programme. Their remit includes:

- Enabling the establishment and development of hub groups
- Help motivate change
- Help promote the strategy and disseminate best practice
- Steer the implementation of the procurements
- Develop processes, procedures, supporting documentation and guidance
- Support the drive for continuous improvement
- Manage the administration of the enabling fund
- Develop and implement methodology for benefits evaluation

SFT may also get involved in an advisory or validation role on other projects, and therefore has an interest across all healthcare work.

## NHSScotland Design Champions

The Scottish Government Health Directorates requires that NHS Board Chairs are responsible for nominating a member of the NHS Board and a Senior Officer to take on the roles of Design Champions for the Board. The Senior Officer should have knowledge and experience in capital investment procedures and expertise in technical matters. Both must be in a position to influence the overarching policies, procedures and ethos of the organisation, albeit in their own manner.

A Design Champion should be:

- well respected and an excellent communicator who is able to promote the need for good design to a wide variety of audiences, both within the Health Board and externally. Both appointees should be able to persuade colleagues and the wider community of the benefits of well designed healthcare buildings;
- a consensus builder, able to bring together the various stakeholders both within the local authority and the wider community; and
- able to see the 'bigger picture' and help develop a 'vision'.

The Design Champions, ideally, are in a position to influence the work undertaken by the Health Board but it is important that the roles are not created for status but, for action.

- The role of the Design Champion is not project specific but is to advocate design quality and to ensure that mechanisms are in place within the NHS Board to deliver the design agenda. NHS Design Champions will be supported, where possible, by Architecture and Design Scotland through ad hoc requests for assistance.

Design Champions will be expected to work with all the necessary disciplines. The role of the Design Champion is expected to include a responsibility to ensure that:

- the building promotes civic pride;
- patients and staff are consulted and their views addressed;
- the building fits into the local surroundings and settings;
- the building is fit for purpose;
- the building takes on board modern technology;
- the design considers sustainability issues;
- quality is questioned throughout the process; and
- there is support for resisting change which reduces quality and VFM.

The Design Champion should ensure that:

- aspirations for design quality underpin all projects undertaken across the NHS Board;
- a Board Design Action Plan is produced and delivered;



- a Design Statement is produced for all development projects establishing the design quality criteria for that project, the key points which these criteria must be given value and profile and, the process by which the board shall assess the developing project against those criteria. **The Design Champions must ensure that appropriate skills are utilised in the self assessment. Depending on their own background and role, this may be either by their own personal actions and involvement or through the appointment of others with appropriate skills;**
- an assessment is made of the current environment for patients, staff and visitors;
- the Achieving Design Excellence Evaluation Toolkit (AEDET) is used throughout a project where appropriate;
- the evaluation of tenders is based on VFM and not lowest cost;
- budgets and timetables are realistic;
- the Board has the correct skill mix to deliver the design agenda; and
- the scheme includes the full involvement of the local community and the support of clinical and other staff.

The Design Champion will raise the profile of design excellence by:

- encouraging the selection of designers with a proven track record of good design or design awards;
- promoting awareness of national and international best practice in healthcare design;
- encouraging schemes, either refurbishments or new build, to be put forward for local and national competitions and awards;
- maintaining a forum for regular review and feedback to the Board; and
- recognising the support, guidance and initiatives available.

It is important that NHS Boards acknowledge the fact that the role of Design Champion is one that requires a considerable amount of time. Design Champions are required to understand what constitutes good design across a range of different and, sometimes very technical, disciplines and the amount of time required to do so can easily be underestimated.

### **Maintaining design quality on site**

There is a risk that, once a project moves on to site, the client may underestimate the effort which will continue to be required to maintain design quality. Any shortcuts taken at this stage can put the overall design quality of the project at risk. The client's design advisers must be retained throughout the construction process in order to monitor the quality of design and finishes.

These advisers should also ensure that design aims are not sacrificed in the management of change during the running of the project. If design standards and quality thresholds are clearly defined, then the review process throughout the delivery stage should provide sufficient safeguards against quality dilution. A structured process of quality checks during construction is important to ensure that what has been agreed is actually being provided. All partners should be involved in these checks as the risks of unsupervised changes on site

can affect a wide range of matters, such as the provision of resource areas necessary for facilities management and the quality of finishes, which in turn may affect both cleaning and maintenance.

## Public Space

It is important that public space is not considered as an afterthought. New public buildings need to be responsive to their contexts, both in terms of their scale and form, and in the materials they use. It is not enough to simply respond to the appearance of surrounding buildings; it is important to also think in terms of the integrity of surrounding public spaces. In the creation of new public buildings, it is important that the design team is perceptive of the buildings' relationships to the maintenance or improvement of existing public spaces or the potential for new public spaces.

The creation of public buildings can also give something positive to the public realm rather than simply create residual areas around them, and clients may wish to consider whether the location of a building is sufficiently sensitive to merit the inclusion of an urban design specialist on the team. An approach is required which gives due consideration to the way in which the spaces created by buildings will be used, and to the needs of users in terms of accessibility, safety, lighting, shading, shelter, orientation, views, surfaces, seating, planting, and maintenance.

## Transport and car-parking

NHSScotland Bodies are required by Scottish Government policy to co-operate with local authorities, regional transport partnerships and other stakeholders in the planning and implementation of local and regional transport strategies towards ensuring that through integrated transport policies NHSScotland facilities, in particular new developments, are accessible to all by public transport, walking and cycling. NHSScotland Bodies operational policies should take into account the strategy for internal NHSScotland systems and car parking. The organisation's Travel Plan is the integral document to addressing these goals.

**Detailed guidance can be obtained from [Health Facilities Scotland](#).**

It is important to realise the need to adopt a robust design strategy for on-site car parking and people movement which is consistent with the NHS Body's Travel Plan. The design strategy should address:

- space utilisation;
- traffic and pedestrian flow;
- access for short-stay visitors, mobility-impaired persons and late night/shift workers;
- wayfinding and markings;
- landscaping;
- security, technology and lighting.

The availability of parking for both cars and cycles can influence transport choices for those using a facility. All new and re-development proposals should be designed for safety and the

convenience of all users. Good design and layout of a development can significantly improve the ease of access by non-car modes, for example:

- entrances to be as close as possible to pedestrian routes and bus stops; and
- links to cycle networks, with secure parking near the main entrance.

Proposals should be specifically tailored to local circumstances, aspirations and priorities, for example speed management strategies, attractive green space and landscaping, in order to bring a wide range of social and community benefits and improve quality of life. Design of public transport facilities should be user friendly and attractive as well as functional to encourage and retain modal shift.

### **Use of the arts in healthcare**

There may be scope for the involvement of artists or craftsmen in a project. When successfully implemented, artworks can help to create more distinctive and attractive buildings and urban spaces and enhance the public's experience of an architectural space. In a healthcare perspective, artwork can have an even more positive effect. NHSScotland can benefit in many ways from the adoption of the arts in healthcare programmes including better patient environments and an improvement in staff morale. It is recognised that art in healthcare can benefit the NHS through the promotion of user and staff involvement in the design of the healthcare environment and can subsequently have an impact on health outcomes. There is growing evidence that patient recovery rates and stress levels are improved by the adoption of appropriately selected art in healthcare programmes. The integration of art can also assist in improving the communication of health information and the redesign of services. The involvement of staff, patients, artists and local communities at the earliest stages of the design process for new buildings and refurbishments can result in innovative, creative solutions.

It is important to also realise that a person's perception of environmental stimuli is influenced by their feelings or emotional state. Although scientific research has produced evidence that emotionally appropriate art can improve certain patient outcomes, there is also evidence that inappropriate styles and subject matter can have an opposite effect. This is especially pertinent to psychiatric patients, who, by nature of their illness can be vulnerable to disturbing interpretations of visual arts, thus exacerbating their condition.

The use of art in a healthcare setting need not be restricted to the visual arts. Other arts activities which involve music, performing arts, storytelling and patient workshops can have therapeutic benefits and can have great value in certain healthcare environments. Art-related therapy, e.g. dance, music, drama or art creation, is recognised as an integral psychological and creative tool for the improvement of physical and mental well-being.

Some NHS Boards retain the services of "artists in residence". However, Boards may also wish to seek specialist advice from public art agencies with regard to including artwork within a project.

Boards may wish to consider allocating a specific budget for the inclusion of artwork as an integral element of a project. However, care should be taken to ensure that any resulting expenditure is proportionate to the benefits and is appropriate to the building's status and function, in order to avoiding subsequent criticism of the project for inappropriate use of public funds.

Traditional building procurement allows for a detailed design to be developed prior to building contracts being issued. However, under Public Private Partnerships (PPP) projects contractual commitments are made with the private sector partner before the detailed design is complete and thus once contractual agreements are in place any additions or changes to them will incur significant additional costs. The requirements of the design are defined in advance by identifying the outputs required which in turn set the framework for the design, within which more detailed specifications for the services to be provided can be accommodated. **To ensure that the arts are incorporated into both the building and maintenance contracts they must be part of the output specifications.**

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## Design quality in building procurement

### Key issues

- Good design is not an alternative to value for money (VFM), but is integral to its achievement. A good building project must also contribute to the environment in which it is located, deliver a wider range of social and economic benefits and be adaptable to accommodate the needs of future users. An enhanced built environment which incorporates principles of good design can improve the quality of life of those who use and work in public buildings. Throughout the life of a building, design excellence can improve the standard of public service delivery, make it more efficient and contribute to staff recruitment and retention. Good design can ensure that capital costs are competitive and that savings can be achieved on running costs through reduced maintenance, energy and operating costs without compromising the attractiveness and quality of the building. **Therefore investing in good design can make the most beneficial and effective use of resources, can add value and represents a sound investment in the future. High quality building design is therefore a key mechanism in providing VFM in the provision of healthcare services.**
- As the aim of any procurement exercise should be to achieve Value for Money, it is recommended that the "most economically advantageous" evaluation be employed. Value for Money is defined as the optimum combination of whole life costs and quality (or fitness for purpose) to meet the customer's requirements and can be taken to be largely analogous with "most economically advantageous".
- Using an evaluation based on the "most economically advantageous" offer gives the procuring organisation the opportunity to take factors other than price into account when awarding contracts.
- **Good design is not merely a question of visual style or personal perception but arises from the careful synthesis of many interrelated factors including architectural vision, functionality and efficiency, structural integrity and build quality, accessibility, security, sustainability, lifetime costing, flexibility in use and a sense of space in the community.**
- Clients must be clear about the level of funds available for a project from the outset and ensure that their aspirations for quality are underpinned by realistic and affordable assumptions.
- Clients must carefully assess and define their priorities before appointing design consultants.
- The process must allow for effective consultation with all stakeholders to establish a clear, well-defined brief.
- Sufficient time and resources should be allocated towards establishing the client's design quality aspirations.
- Post Project and Post Occupancy Evaluations of building programmes are mandatory for major projects and any lessons learned must be shared with the Scottish Government and other NHSScotland bodies.
- Quality Based Selection (QBS) is a structured procedure for selecting a design team and professional advisers. Design competitions are a means to primarily select specific design ideas or outline design ideas for a project, rather than the design team personnel.

- All public sector appointments, irrespective of the client's preferred nature of competition or reference to any other guidance on design competitions, must be consistent with EU procurement rules in terms of process and outcome. Generally, public sector clients must ensure that design team appointments follow the procedures described in [Section 3](#) of the works procurement guidance part of the Scottish Government Construction Procurement Manual. **However, in the NHSScotland context, detailed guidance on the appointment of consultants, conditions of contract and contract guidance in should be sought from [Health Facilities Scotland](#).**
- The role of an informed client is vital in ensuring the successful delivery of the project within the agreed timescale and budget and to the required standards and requirements of all users.

### Achieving good design

From the outset, clients must be clear about the level of funds available for a project and ensure that their aspirations for quality are underpinned by realistic and affordable assumptions through establishing the right budget. These quality matters and functional requirements must then be set out in a clear and thorough project brief. In order to monitor and control the procurement, design and construction processes, procedures and responsibilities should be clearly defined (and assigned). Ideally, designers should engage in challenging and constructive dialogue with the client, building users and those involved in supplying and manufacturing materials, goods and services. All concerned should work to a realistic and robust timetable, which gives the design team enough time to develop and achieve a good solution.

An informed, demanding and committed client is vital in ensuring that aspirations for quality are maintained throughout the procurement, design and construction processes.

By nature of their complexity, healthcare buildings can be expensive to manage and maintain due the imposition of build cost constraints during the procurement process in order to adhere to a short-term financial hurdle. The influence of design is fundamental to the successful outcome of a project not only in terms of how the building will deliver its intended functions but also its long-term operational efficiency. An appropriate level of investment in the design stage early in the process incurs a comparatively small capital outlay but ultimately influences the revenue streams associated with the operation of the facility and also influences the successful provision of the services to be delivered. **It is therefore imperative that the process recognises the need to address the whole-life cycle of the building and the integral part that good design can play in mitigating potential future financial and operational penalties imposed by the adoption of short-term vision. Whole-life costing must be the standard for investment decisions. Those involved in the making of such decisions will be ultimately judged on the lifetime VFM of their decisions rather than whether they managed to get a project past the initial financial hurdle.**

Healthcare facilities and the associated equipment used therein must be designed to support all the people who are likely to use them in order to operate effectively. It is therefore vital that all potential users of a proposed facility – staff, public and patients – are involved early in the design process and throughout its progress. Additionally, stakeholders such as regulators, professional bodies, community bodies, etc, should also be engaged throughout the process as this has the potential to provide a valuable source regarding the projected use of the facility, the processes which will be undertaken therein and how the facility's users will work or interact with it. Early user involvement in the design process can help ensure that a planned facility will support the people who are to use it.



The standardisation of systems and processes to be carried out within a proposed facility, layouts, room orientation, human interfaces, wayfinding and even storage can provide many benefits for patients, staff and visitors. Standardisation can help reduce mental workload and thus reduce errors, can make errors and departures from normal working easier to detect and can allow the transfer of skills and staff between departments with reduced training needs. Thus standardisation in conjunction with a wider engagement with users and stakeholders can also enhance safety.

**The Scottish Government Health Directorates requires that NHS Boards appoint Design Champions at Board and Senior Officer level to consolidate a commitment to the championing of good design.**

### Evaluating good design

Design evaluation can be structured around a number of key design issues. To support the continual improvement of the construction and procurement process, Post Project Evaluations (PPEs) and Post Occupancy Evaluations (POEs) of building programmes are mandatory for major projects with a cost in excess of the delegated limits and are an integral requirement of the [Scottish Capital Investment Manual](#). However, it is recognised that all projects would benefit from such evaluation and any lessons learned should be shared with the Scottish Government and other NHSScotland bodies in order to inform best practice and future policies. Independent PPEs should be carried out before the break up of the design team to review the success of the project against its original objectives, its performance in terms of time, cost and quality outcomes and whether it has delivered value for money.

Guidance on Post Project Evaluations and Post Occupancy Evaluations can be found within the [Scottish Capital Investment Manual](#).

Post-Occupancy Evaluations have a significant role. The key advantage of POEs is the opportunity to achieve improvements in the ways future buildings will support operational objectives. Participants often identify areas where design improvements could be made and ways in which buildings and equipment could be used more cost effectively. These may only be minor, but they could produce significant benefits to future designs. The process of evaluation can provide important feedback on whether resources are being targeted at the most important areas. This can also enable poorly functioning or seldom used features to be eliminated from future designs and the repetition of mistakes to be avoided.

The nature of PPE and POE reports must be set out and agreed at the start, and project sponsors must ensure that provision is made for the independent preparation of both when setting budgets and timetables.

PPEs and POEs can be valuable in the formulation of “evidence based design” methodology. As has been stated in the preambles to this policy document, the field of “evidence-based design” is proving a valuable tool in the design process towards both reducing costs and improving outcomes. Research has shown that evidence-based supportive design methods, introduced early in the process of facility programming and design can have significant impact on the design of physical environments which can affect patient medical outcomes and care quality. An important impetus for the growing international awareness of healthcare facility design has been mounting scientific evidence that certain environmental design strategies can promote improved outcomes whereas other approaches can worsen patient health.

## The Business Case

The Business Case process must include statements of expectation for design quality. Discussions with professional advisers at the earliest stage will assist in determining and defining design priorities and setting project objectives. Consideration of the design issues must continue throughout the entire process.

Detailed mandated guidance on the preparation of the business case is contained within the [Scottish Capital Investment Manual](#).

## Design Assessment

An assessment of design quality is now part of the SGHD Business Case 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.

There are two complimentary areas of consideration in the design of healthcare buildings. These can broadly be described as healthcare specific design aspects – the areas generally covered by guidance issued by Health Facilities Scotland - and general good practice in design considering the human experience of being in and around buildings. These are brought together in this process and in the collaboration between Health Facilities Scotland and Architecture and Design Scotland in the NHSScotland Design Assessment Group which reports to the SGHD Capital Investment Group. This process forms part of the coordinated tripartite working relationship with SGHD and A+DS.

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 improve the level of design quality achieved across NHSScotland and, ultimately, the outcomes achieved by doing so.

**CEL 19 (2010)** which announces this Policy also announces commencement of this requirement and its incorporation into the Scottish Capital Investment Manual. The SCIM also addresses the Scottish Government's sustainability objectives in the context of the [Business Case Guide](#).

## The Design Statement

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.

The design statement is a means of setting out a Board's objectives in a series of agreed statements of intent and subsequently then describing a benchmark for how the physical result of the project will help deliver those investment objectives but not by giving a pre-determined design outcome, rather a view of what "success" might look like.



NHS Boards should also use the completed Design Statement as:

- a **briefing tool** to describe the design intention, or design vision, supplemented by more detailed briefing materials such as schedules of accommodation, key adjacencies and room data sheets as and when prepared;
- a **communication tool** to communicate the direction of the project to stakeholders and allow some early view of the benefits to assist both in building momentum/obtaining buy-in and in allaying the concerns that often accompany the commissioning of a new facility;
- an **advertising tool** to build confidence in the market in the direction and, by showing preparedness, viability of the project; and to motivate the market to bring its best and most appropriate skills to the table (in terms of the vision described).

Further guidance on the development and use of Design Statements can be found within the [Scottish Capital Investment Manual](#) and on the [Healthier Places website](#).

### Fire safety

Fire safety legislation and standards generally state that all people should be evacuated from a building in the event of fire. In terms of healthcare premises, this is not the case due to certain circumstances. Fire in a hospital or other healthcare building can be especially serious because of the difficulties and dangers associated with the emergency evacuation of patients, many of whom will be highly dependent. Therefore in such buildings the concept of progressive horizontal evacuation is the norm and is cited as so within the [Technical Handbooks to the Building \(Scotland\) Regulations 2004](#). However, because of other special requirements particular to fire safety in healthcare buildings, guidance and recommendations contained in NHSScotland Fire Safety Management guidance, including NHSScotland Firecode, which is additional to the mandatory requirements set out in the Technical Handbooks to the Building (Scotland) Regulations 2004, must be adhered to. This additional guidance is ratified by the [Scottish Government Health Directorates' Fire Safety Policy](#). The requirements of NHSScotland Firecode must be considered throughout the design process in addition to the requirements of the Building (Scotland) Regulations 2004. NHSScotland Firecode is published by [Health Facilities Scotland](#).

Clients must ensure that there is close collaboration between all those who have an interest in the fire safety provisions of the proposed premises at the earliest stage in the design and, be satisfied that all such premises comply with all statutes bearing upon fire safety.

### Designing for equality

NHSScotland, as a provider of services, is subject to equality legislation which requires the provision of services which are accessible to everyone. In a healthcare environment, it is important to recognise the complexity and the number of difficulties with which patients, staff and visitors may have to cope on a day-to-day basis. Sensory impairments, perceptual problems, reduced mobility, chronic pain, communication barriers, are but a few. Informed planning and design plays an important role in enabling people of all abilities access to services and facilities. It is therefore essential that the concept of "access and egress for all" is incorporated early in the design process and throughout its progress and that best practice guidelines are followed. By considering equality issues early in the design process, costs associated with addressing equality issues can be minimised which would inevitably prove more onerous if addressed retrospectively.

Egress for all in the case of an emergency must also be considered during the design process. Everyone rightly expects that if they are in a public building when an emergency occurs they should be subject to evacuation procedures which come into force to ensure their safety. However, in healthcare buildings there may be many persons who, by nature of their presence there or otherwise, may be particularly vulnerable. In particular, in larger healthcare buildings such as hospitals it will not be possible to ascertain the number of people who may have an impairment, let alone the type of impairment, or the number of people who may have cognitive or communication or language difficulties. Addressing the needs of all in the context of emergency egress early and throughout the design process will have significant benefit towards the procurement of a facility which ensures the safety of patients, staff and the general public.

To assist NHSScotland bodies in complying with the current equality and diversity legislative framework, the Scottish Government has produced an [Equality and Diversity Impact Assessment Toolkit](#) which was issued under cover of [NHS HDL \(2005\)9](#).

### Designing for dementia

There are over 65,000 people living in Scotland who have dementia and they, in common with other people with cognitive impairment, are users of healthcare facilities on a day to day basis across the country. Most people with dementia (60-80%) live in the community, and many of them have multiple health centre and hospital appointments and admissions in any year. As with designing for equality, designing for people with dementia embraces the concept of 'inclusive' design which tries to ensure that the built environment does not present insurmountable barriers to those who use it. Users will include people with physical, sensory and cognitive impairments, which may be progressive, intermittent or permanent and may also include people who may have temporary disabilities

**Considering equality issues and the needs of those with dementia throughout the design process will benefit everyone, including people who use wheelchairs and walking aids, have other types of impairment, older people and families.**

The University of Stirling Dementia Services Development Centre published guidance on designing for dementia in 2007. '**Best Practice in Healthcare Design for People with Dementia**' is a resource pack on dementia-friendly design which reflects a growing awareness of the need to create caring environments that meet the needs of people with dementia. Many of the features identified are the result of researched case studies and/or international best practice. The Dementia Services Development Centre at the University of Stirling has a specialist online library and information service and holds a large collection of documents relating to care of people with dementia: [www.dementia.stir.ac.uk](http://www.dementia.stir.ac.uk) .

A component of the dementia resource pack is a **Dementia Design Checklist** prepared by Health Facilities Scotland and intended for use across all healthcare properties. It covers areas of healthcare premises, including primary care premises and those operated by independent contractors, where people with dementia are likely to attend as patients or visitors. Although the Checklist has been developed primarily for use in existing buildings it can provide a useful reference throughout the project design development process. The Dementia Design Checklist is available from the Health Facilities Scotland website: [www.hfs.scot.nhs.uk](http://www.hfs.scot.nhs.uk) .

### Role of the Client

The key role of the client is to develop a clear, well-defined brief. At the beginning of the project, the client will need to establish the nature and scale of what is required. Clients should establish the views and aspirations of all stakeholders, and their aims will become the

reference point throughout the design and construction stages and can be used to test the overall success of the project over the long term. As with any building project, the initial stages are vital and a period when the most value can be added. Providing sufficient time and resources for strategic thinking will produce dividends in the long run. An informed and motivated client is critical to the success of a project.

As part of their responsibilities, the client must:

- fully develop a client strategy which has identified the need for the building whilst setting and securing a budget for the project. Understand that the budget cannot be finally established until the brief is settled;
- set a realistic and achievable timetable allowing sufficient time for consultation, brief development and for design;
- involve their Design Champion throughout the briefing and project delivery and listen to their comments;
- allocate sufficient time and resources to establish the client's design quality aspirations and set out clear benchmarks which the client must reinforce through all stages of the process;
- consider the skills and experience required of individual client team members, assess in-house skills and, where necessary, engage external consultants;
- where appropriate, appoint a Client Design Adviser to aid in the preparation of the brief and the assessment of the schemes that come forward through any competitive design process;
- consult with stakeholders to establish a clear, well-defined brief;
- be informed and demanding about operational requirements and quality objectives to get the best possible outcome from the procurement process;
- articulate the Board's requirements not only through the use of DQIs but in a clearly expressed brief that establishes and communicates their vision for the development;
- show commitment to achieving a well-designed and constructed project by giving design quality a high percentage in the assessment of bids and publishing that ratio. Make sure that bidders understand that poor or mediocre developments are not acceptable;
- establish clear and effective routes for communication between the Client Team and the bidding Design Teams during the bidding process so that the Board's needs and aspirations can be more fully discussed and incorporated into the designs that are brought forward;
- choose a Delivery/Design Team which is committed to achieving the best quality possible within the agreed budget and timetable; allow sufficient fee budgets for the work that the designers must do;
- not allow design time to be squeezed in order to recover time lost in the programme for other reasons – good design takes time; and

- carry out Post project Evaluations (PPEs) and Post Occupancy Evaluations (POEs) and ensure that the reports from these are available to SGHD for formulation of generic reports which can properly feed back into future procurement processes.

## Project Brief

A vital factor in achieving high quality design is that clients have a firm and well-developed view of what they want, before appointing design consultants, and that this is clearly stated in project briefs. A well-developed brief, with common consensus on operational and quality priorities, is essential for the provision of better design. A rigorous approach to this stage of work will significantly improve the client's capacity to deliver a quality project.

On the other hand, proceeding with sketchy and under-investigated assumptions can be detrimental to the outcome of the project. Statements that set out the client's aspirations on design in terms of matters such as character and durability should be incorporated into briefs.

**Detailed guidance can be obtained from [Health Facilities Scotland](#).**

## Healthcare Associated Infection (HAI)

Of particular importance in the context of healthcare buildings is the need for the Project Brief to incorporate policy, guidance and best practice in relation to reducing Healthcare Associated Infections (HAI). It is vitally important to have a clear understanding of how the briefing, planning, design, procurement, construction, commissioning and ongoing maintenance of our healthcare property can contribute to the prevention and control of HAI. Guidance to ensure that prevention and control of infection issues are identified, analysed and planned for at the earliest stage of the provision of new or refurbished healthcare facilities is contained within Scottish Health Facilities Note 30 (SHFN 30): 'Infection Control in the Built Environment: Design and Planning', published by [Health Facilities Scotland](#). Additionally, Health Facilities Scotland has developed a system which aims to assess and manage the risk of infection in the built healthcare environment called HAI-SCRIBE, an acronym for Healthcare Associated Infection System for Controlling Risk in the Built Environment. HAI-SCRIBE has been designed as an effective tool for the identification and assessment of potential hazards in the built environment and the management of these risks. The tool should be applied from the design and planning stages of a project through to the occupation and operation of the facility.

## Sustainability

The project brief should also contain statements on the client's desired approach to sustainability. Integral to the design and procurement process, a commitment to sustainable design can bring real benefits in terms of reduced running costs and quality of environment for users. Further general guidance on achieving sustainability in construction procurement is set out in [Section 7 of the Scottish Executive Construction Procurement Manual](#).

Construction of new NHSScotland premises also provides an ideal opportunity to significantly reduce an organisation's environmental footprint. Designing the building and the processes that will be carried out within it with the aim of minimising the whole life costs and environmental impact of the facility can cut costs, improve client satisfaction, improve the healthcare body's public image and help deliver the nation's environmental objectives.

A NHSScotland Body, when setting specifications and letting contracts, should emphasise and promote environmentally preferable features in both the construction and the operation/running of buildings and, in the organisation of the services delivered within them,

to ensure sustainability over the projected property lifespan. The decision making criterion for selection of components and equipment should take into consideration the whole life costs and the environmental impact by setting out all the operational and physical components and risk aspects that contribute to these. Environmentally preferable solutions should be preferred unless there is clear evidence that their adoption would have outweighing disadvantages elsewhere.

To assist NHSScotland Bodies in delivering sustainable solutions and embedding energy efficiency into healthcare building projects, Health Facilities Scotland has developed a **Sustainable Development Strategy for NHSScotland** which provides a framework for sustainability issues in NHSScotland, including new builds and refurbishments. The use of this guidance in the preparation of Business Cases is a requirement of the Scottish Capital Investment Manual. Further useful guidance is also available within the Scottish Ecological Design Association Design Guides on design and detailing for more sustainable construction: **Design and Detailing for Deconstruction**; **Design and Detailing for Airtightness** and; **Design and Detailing for Toxic Chemical Reduction in Buildings**.  
<http://www.seda.uk.net/guides/>

The Project Brief should also cite the use of the exemplar Environmental Management System, GREENCODE, through which NHSScotland Bodies can continually aim to improve the environmental performance of their property and, the exemplar energy efficiency guidance, EnCO<sub>2</sub>de, which aims to ensure that everyone involved in procuring, managing and using healthcare buildings and equipment thinks about the implications of energy use.

### Activity DataBase (ADB)

Activity DataBase (ADB) is the briefing, design & commissioning tool for both new-build and refurbishment of healthcare buildings. It is a briefing and design package with an integrated textual and graphical database, an interface with AutoCAD and an extensive graphical library - the complete tool for briefing and design of the healthcare environment.

ADB is produced by the Department of Health in England and is mandated for use in Scotland by the Scottish Government Health Directorates as the preferred briefing and design system for NHSScotland (see Mandatory Requirement 7 of this Policy). It has been developed to assist in the construction, briefing development, design and alteration of healthcare facilities.

Spaces designed using ADB data automatically comply with English planning guidance (such as Health Building Notes (HBNs) and Health Technical memoranda (HTMs) as ADB forms an integral part of the English guidance publication process. Whilst Scottish users can create their own project-specific briefs and designs using ADB's extensive library of integrated graphics and text which includes room data sheets, room layouts and departmental room schedules, extreme care should be taken to ensure that such data generated by the package are consistent and compliant with Scottish-specific guidance\* such as Scottish Health Planning Notes, Scottish Health Facilities Notes (SHFNs) and Scottish Health Technical Memoranda (SHTMs) as published by Health Facilities Scotland.

\* In the near future, all technical guidance will be available from the 'Space for health web resource. The Space for Health website will provide a single portal to the knowledge and expertise of the four UK health organisations. It will draw together the technical guidance published by HFS, the DoH and their equivalents in Northern Ireland and Wales. Further information is available from Health Facilities Scotland.



## The Design Team

### Design Team selection

There are several methods of selecting the appropriate design team for a project, including Quality Based Designer Selection (QBS) which is a structured procedure for selecting a design team and, design competitions, which primarily select specific design ideas or outline designs for a project, rather than the design team personnel.

Where **Frameworks Scotland** is the chosen project procurement method, the design team will form part of the Principal Supply Chain Partner's (PSCP) delivery team and the members of the design team will have been assessed during the process of selecting the PSCP from the Framework. Although the design team will be managed by the PSCP they will work closely with the NHS Client in a collaborative fashion in delivering the design. (Further detail of the PSCP Appointment Process is available in the **Frameworks Scotland** section of the [Health Facilities Scotland website](#)).

The Scottish Government [Construction Works Procurement Guidance: Section 3 – Procurement Strategies and the Appointment of Consultants and Contractors](#) provides general information on some of the different procurement strategies available and the consultancy roles and professional advice that may be required at the various projects stages. Further general advice can be found on the [Office of Government Commerce website](#).

**In the NHSScotland context, detailed guidance should be sought from [Health Facilities Scotland](#), and, for 'hub' projects, [Scottish Futures Trust](#).**

Regardless of the procurement strategy adopted, the appointment of a design team, consultants, professional advisers, etc, should be based upon the principles adhered to in Quality Based Selection methodology, outlined below. The [Royal Institute of British Architects \(RIBA\)](#), together with the [Construction Industry Council](#), has published a booklet of Guidance for Clients to Quality Based Selection.

### Quality Based Designer Selection (QBS)

QBS looks for an appropriate balance of design skills, experience, innovation, and an ability to perform on schedule to the required standards and within budget. A client, or client committee, selects a team based upon a weighted scoring of a list of relevant factors, including technical capacity, resources, previous experience of similar projects, deliverability of the design and partnering arrangements, aimed at determining which design team is most able to handle the project successfully and deliver a high quality result.

Throughout a building project, designs will be developed through constant dialogue with the design team, so it's essential that a key selection consideration is inter-personal skills; the client must feel that it has the ability to work with the designers.

It is essential to know that a design team's claimed expertise is actually currently available. The question of whether a design team has completed major quality projects within the past five years may give a more fair comparison between long established and new design teams. It is important to ensure that the principal designer responsible for successful past projects is present for the interview, and such individuals should be named in the contract if that design team is successful.

## Design competitions

A competition to select an outline design, rather than the design team members, requires the client to have a well-developed brief for the project. Design competitions may be appropriate where there is either a unique problem that will benefit from a wide range of design approaches being explored (along with likely considerable public interest - which may be the case on a major new public building) or where the competition promoter wishes to encourage the development of new talent.

## Procedure for appointing the Design Team

All public sector appointments, irrespective of the client's preferred nature of competition or reference to any other guidance on design competitions, must be consistent with EU procurement rules in terms of process and outcome.

The appointment or competition must therefore:

- strike the correct balance between quality and price to achieve whole-life VFM;
- evaluate the quality and price aspects against clear, unambiguous and pre-determined criteria;
- assess the technical and financial capacity of the design team (including design partnership arrangements) to deliver the project to the required standards of quality as well as the project on time and within budget; and
- maintain a full and transparent record of all aspects of the competitive process from start to conclusion, including the evaluation of the pre-qualification questionnaires as well as the selection and award stages.

Generally, as Public Sector clients, NHS Bodies are required to ensure that design team appointments follow the procedures described in [Section 3](#) of the works procurement guidance part of the Scottish Government Construction Procurement Manual. **However, in the NHSScotland context, detailed guidance should be sought from [Health Facilities Scotland](#).**

## Design Team selection criteria

Selection criteria should include design ability, aspiration, financial status, insurance provisions and technical capacity; the last of these enables consideration to be given to resources, technical suitability and past performance. This stage also aids production of an objective and transparent short list of the most suitable organisations, from all those that expressed interest in providing design services.

## Selection criteria at the bidding stage

The award criteria enables a further qualitative assessment to be made of the specific proposals for the project - not just technical merit of the design proposals but also other aspects of successful delivery such as proposed team-working, management arrangements, and project team organisation.

Where design partnerships are proposed - perhaps to combine the innovative skills of a new or small design practice with the experience and resources of a longer-established designer - the award criteria enables the client to assess the ability of both parties to fulfil their responsibilities and to evaluate the compatibility of working cultures and practices. Visits to

the design offices of all candidates, including those forming partnerships, should follow a consistent approach and involve the same personnel.

NHSScotland Bodies, as clients, should consider the benefits to be accrued from requesting an Interim Bid Submission from bidders, particularly in a PPP or joint venture (such as 'hub') initiative context. This should be based upon clearly specified requirements within the Invitation To Negotiate (ITN) documentation and should be undertaken at an approximate mid-point stage through the period from release of OJEU to the return of ITN documentation with clear expectations on outputs from bidders that are measured but, not too cumbersome, perhaps structured by means of the use of the AEDET Evolution design evaluation tool.

Client organisations should consider the merits of visiting completed buildings by the shortlisted teams to investigate both their past work and allow the opportunity to meet previous clients and hear their experience of working with the team. Although this does take some time, the investment is small in comparison to the necessary investment of time and resources in the new project, and the potential learning in terms of the bidding teams ability and working relationships is invaluable.

### **Relation of selection criteria to budget considerations**

The qualitative criteria adopted at the selection and award stages should be appropriate for the individual project and weighted to suit the circumstances. It is important that these aspects aren't considered in isolation but should be assessed as part of the VFM evaluation which takes account of fee proposals. Section 3 of the Scottish Government Construction Procurement Manual describes other aspects of appointing consultants, including the various ways of paying for professional services. In circumstances where *ad valorem* (usually percentage) fee structures are appropriate, consideration must always be given to the application of an abatement or capping mechanism in order to contain fee costs at a fair and appropriate level.

Criteria used during selection and award stages must be applied consistently by all of those involved in that stage of the procurement procedure. In other words, once selection and award criteria are established, individual members of a sift or tender evaluation panel must not apply different criteria. Furthermore, once selection criteria are established, they should be made available to candidates. Award criteria must be set out in either the OJEU contract notice or the contract documents; however it is recommended that criteria be advertised in the OJUE notice to demonstrate the client's commitment to valuing quality in the selection and hence assist in attracting similarly ambitious teams.



## Scottish Government Health Directorates asset-related policies

### Scottish Capital Investment Manual for NHSScotland [NHS CEL 19 (2009)]

Scottish Government Health Directorates  
[http://www.sehd.scot.nhs.uk/mels/CEL2009\\_19.pdf](http://www.sehd.scot.nhs.uk/mels/CEL2009_19.pdf)

### Provision of Single Room Accommodation and Bed Spacing [NHS CEL 48 (2008)]

Scottish Government Health Directorates  
[http://www.sehd.scot.nhs.uk/mels/CEL2008\\_48.pdf](http://www.sehd.scot.nhs.uk/mels/CEL2008_48.pdf)

### Fire Safety Policy [NHS CEL 25 (2008)]

Scottish Government Health Directorates  
[http://www.sehd.scot.nhs.uk/mels/CEL2008\\_25.pdf](http://www.sehd.scot.nhs.uk/mels/CEL2008_25.pdf)

### Environmental Management Policy for NHSScotland [NHS HDL(2006)21]

*(Currently under review)*

Scottish Government Health Directorates  
[http://www.sehd.scot.nhs.uk/mels/hdl2006\\_21.pdf](http://www.sehd.scot.nhs.uk/mels/hdl2006_21.pdf)

### Sustainable Development Strategy for NHSScotland [NHS CEL 15 (2009)]

*(Currently under review)*

Scottish Government Health Directorates  
[http://www.pcpd.scot.nhs.uk/PDFs/CEL2009\\_15.pdf](http://www.pcpd.scot.nhs.uk/PDFs/CEL2009_15.pdf)

### NHSScotland Property Transactions [NHS HDL(2001)15]

*(Currently under review)*

Scottish Government Health Directorates  
[http://www.sehd.scot.nhs.uk/mels/HDL2001\\_15.htm](http://www.sehd.scot.nhs.uk/mels/HDL2001_15.htm)

### Property Management Policy and Other Related Matters [NHS HDL(1999)44]

Scottish Government Health Directorates  
[http://www.sehd.scot.nhs.uk/mels/1999\\_44.pdf](http://www.sehd.scot.nhs.uk/mels/1999_44.pdf)

## Supporting guidance

### Scottish Capital Investment Manual website

Scottish Government Health Directorates

### Capital Planning and Investment website

Scottish Government Health Directorates

### Healthier Places website

A project resource to assist clients in the development of design statements, the briefing of projects and in learning from what is being achieved across NHSScotland and elsewhere.

[www.healthierplaces.com](http://www.healthierplaces.com)

### IDEAS

A design tool to aid NHS clients and their architects and design consultants to develop their briefs and design ideas.

<http://ideas.dh.gov.uk/>

### Achieving Excellence in Design Evaluation Toolkit (AEDET)

The AEDET Evolution toolkit evaluates a design by posing a series of clear, non-technical statements, encompassing the three key areas of Impact, Build Quality and Functionality.

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_082089](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_082089)

### A Staff and Patient Environment Calibration Tool (ASPECT)

ASPECT is a tool for evaluating the quality of staff and patient environments in healthcare buildings and can be used as a stand-alone tool or in conjunction with AEDET to provide a more comprehensive design evaluation of healthcare environments.

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_082087](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_082087)

[Activity Database](#)

The briefing, design & commissioning tool for both new-build and refurbishment of healthcare buildings.  
<http://adb.dh.gov.uk/>

[Brief Introduction to the Planning System](#)

<http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/>

[NHSScotland Fire Safety Management / NHSScotland Firecode](#)

[Health Facilities Scotland](#)

[NHSScotland Asset Management System](#)

[Health Facilities Scotland](#)

[GREENCODE](#)

[Health Facilities Scotland](#)

[EnCO<sub>2</sub>de](#)

[Health Facilities Scotland](#)

[Scottish Health Facilities Note 30: Infection Control in the Built Environment: Design and Planning](#)

[Health Facilities Scotland](#)

[HAI-SCRIBE: HAI System for the Control of Risk of Infection in the Built Environment](#)

[Health Facilities Scotland](#)

[NHSScotland Property Transactions Handbook](#)

*(Currently under review)*

Scottish Government Health Directorates

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## Useful references and web links

### General

#### Health Facilities Scotland

Provides operational guidance to NHSScotland healthcare bodies on non-clinical topics including: building and architecture, procurement, property management, estates engineering, energy & environment.

<http://www.hfs.scot.nhs.uk/>

#### Architecture and Design Scotland

The Scottish national champion for good architecture, design and planning in the built environment. This site incorporates sections relating to specific programmes of activity including; [Scottisharchitecture.com](http://www.scottisharchitecture.com) a network of digital resources relating to architecture and the built environment and [SUST - Sustainable Design in Architecture and the Built Environment](#) – which aims to raise awareness of the importance of a sustainable approach to design in the built environment by providing increased access to guidance, tools and techniques for clients, design teams and community-based groups.

<http://www.ads.org.uk/>

#### Space for Health

Space for Health provides a single ‘front door’ portal to the knowledge and expertise of the four UK health organisations. It draws together the technical guidance published by HFS, the DoH and their equivalents in Northern Ireland and Wales.

*Note: As of publication of this Policy, Space for Health is under development – further information should be sought from [Health Facilities Scotland](#).*

<http://www.spaceforhealth.nhs.uk/>

#### University of Stirling Dementia Services Development Centre

The Dementia Services Development Centre promotes good practice for those working in the field of dementia care including guidance on designing for dementia.

<http://www.dementia.stir.ac.uk/>

#### Centre for Architecture and the Built Environment

The UK government's advisor on architecture, urban design and public space.

<http://www.cabe.org.uk/>

#### Construction Industry Council

The representative forum for the professional bodies, research organisations and specialist business associations in the construction industry.

<http://www.cic.org.uk/>

#### Art in Healthcare

A forward-looking arts-in-health organisation formed from Paintings in Hospitals Scotland and the Friends of Paintings in Hospitals Scotland.

<http://www.artinhealthcare.org.uk/>

### Scottish Government links

#### Scottish Government Built Environment

The provision of planning guidance and advice, construction procurement guidance and technical advice for Scottish Government Directorates and other bodies.

<http://www.scotland.gov.uk/Topics/Built-Environment>

#### Scottish Government Architecture and Place Division

Promoting and encouraging better architecture.

<http://www.scotland.gov.uk/Topics/Arts-Culture/arch/intro>

#### Scottish Government Construction Procurement Manual

Provides the Scottish Government Directorates, Executive Agencies and most sponsored bodies (as well as the Scottish Parliament Corporate Body and the Forestry Commission in Scotland) with mandatory policy and procedures for understanding construction works projects.

<http://www.scotland.gov.uk/Publications/2005/11/28100404/04066>

### Scottish Government Sustainable Development

Sustainable development is integral to the Scottish Government's overall purpose - to focus government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.

<http://www.scotland.gov.uk/Topics/Environment/SustainableDevelopment>

### Scottish Government Capital Planning and Asset Management website

Responsibility for the Health Directorates capital planning policy and strategy for NHSScotland and advice on all asset management matters impacting upon the Scottish Government Health Directorates responsibilities for NHSScotland.

<http://www.pcpd.scot.nhs.uk/>

### Scottish Government Capital Planning and Investment website

Policy and guidance on planning NHS capital developments including those developed through public private partnerships.

<http://www.pfcu.scot.nhs.uk/>

## **Department of Health (England) links and publications**

### The architectural healthcare environment and its effect on patient health outcomes

A research project funded by the Department of Health and led by Professor Bryan Lawson and Dr Michael Phiri of the University of Sheffield School of Architecture, in collaboration with John Wells-Thorpe. The document is available for purchase from The Stationery Office, ISBN 011322480X.

<http://www.tsoshop.co.uk/bookstore.asp?Action=Book&ProductId=011322480X>

### The Healing Environment

English Department of Health report which looks at the components of a healing environment and the effect on patients and staff.

[http://www.dh.gov.uk/en/Managingyourorganisation/Leadershipandmanagement/Healthcareenvironment/Browsable/DH\\_4116478](http://www.dh.gov.uk/en/Managingyourorganisation/Leadershipandmanagement/Healthcareenvironment/Browsable/DH_4116478)

## **Other references**

### OGC Procurement Guide 09: Design Quality

Office of Government Commerce 2004

Part of the OGC Achieving Excellence Procurement Guides

<http://www.ogc.gov.uk/assets/images/cp0069.pdf>

A guide to quality based selection of consultants: a key to design quality  
Published 1998, £15.00 ISBN 1 898671 14 1

Construction Industry Council recommends this Guide as an inclusive guide and method for delivering construction clients with the consultants services they require and to realise the real economies and benefits to be had from good design.

<http://www.cic.org.uk/services/publicationsCIC.shtml>

<p><b>NEC3 ENGINEERING AND CONSTRUCTION CONTRACT (ECC)</b>                  (June 2005; with amendments June 2006)</p> <p><b>OPTION C – PRICED CONTRACT WITH ACTIVITY SCHEDULE</b></p>	<p><b>TEMPLATE;</b>  <b>SECTION 1</b>  <b>-THE AGREEMENT AND CONTRACT FOR THE APPOINTMENT OF A PRINCIPAL SUPPLY CHAIN PARTNER TO THE SCHEME CONTRACT</b></p> <p><b>SECTION 2</b>  <b>MODEL FORMS FOR THE SCHEME CONTRACT AND ASSOCIATED PROPOSALS</b></p>																																												
<p>Section 1 – Agreement and contract                  Section 2 – Model Forms of Proposal                  Section 3 - Works Information                  Section 4 - Site Information</p>																																													
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<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Rev</th> <th style="width:15%;">Date</th> <th style="width:20%;">Approved By</th> <th style="width:55%;">Details of revision</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">14/01/10</td> <td></td> <td>NHSL and DL comments incorporated</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">15/06/10</td> <td></td> <td>Appendix 8 – Contract Clarification Letter added</td> </tr> <tr> <td style="text-align: center;">3</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">5</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">6</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">7</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">8</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">9</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">10</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Rev	Date	Approved By	Details of revision	1	14/01/10		NHSL and DL comments incorporated	2	15/06/10		Appendix 8 – Contract Clarification Letter added	3				4				5				6				7				8				9				10			
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**NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT**

**The Agreement, and Contract for the appointment of a Principal Supply Chain Partner;**

**NHS Lothian**

**Reprovision of Royal Hospital for Sick Children  
And Department of Clinical Neurosciences**

The whole Agreement comprises documents as follows;

### **Section 1 – Form of Agreement and contract**

**Part One** - Form of Agreement – for any of the Scheme Contract Stages.  
~~Stage 1 – Initial Agreement~~  
Stage 3 - FBC

**Part Two** - Appendices to the Form of Agreement – Agreements to proceed  
~~A – OBC, Stage 2 – Agreement to proceed~~  
  
B - FBC Stage 3 – Agreement to proceed  
  
C – Stage 4 – Completion and design, RIBA Stage E and handover.

**Part Three** - Contract Data Part one – Data provided by the *Employer*

**Part Four** - Schedule of Cost Components amended for this contract

### **Section 2 – Model Forms for PSCP appointment to the Scheme contract and associated proposals**

**Part One** – Draft letter of appointment of PSCP

**Part Two** – PSCP Pro forma Contract Data Part two, Entry Form of Scheme Proposal and gateway proposals

Attachment C – Stage 3 Pricing Workbook  
Attachment G – Accepted Programme

### **Section 3 – Works Information**

#### **1 Introduction**

- 1.1 The *Employer's* objectives
- 1.2 The *Employer's* Strategy
- 1.3 Contract philosophy and general principles of application
- 1.4 The Scheme contract documentation
- 1.5 Developing the Scheme Contract
- 1.6 The design
- 1.7 Definitions
- 1.8 Performance

#### **2 Description of works**

- 2.1 Introduction
- 2.2 Initial Agreement (Stage 1 IA)
- 2.3 Outline Business Case (Stage 2 OBC)
- 2.4 Full Business Case (Stage 3 FBC)
- 2.5 Construction (Stage 4 - Completion and design, RIBA Stage E and handover)
- 2.6 Construction (Design and Management) Regulations 2007.
- 2.7 Enabling Works

NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

**3 Plant and Materials**

- 3.1 Materials and workmanship specifications
- 3.2 Items of Plant to be provided by the *Employer*
- 3.3 Items of Materials to be provided by the *Employer*
- 3.4 Storage of Plant and Materials
- 3.5 *Employer's* requirements for provision of spares for Plant provided by the PSCP
- 3.6 Vendor data for Plant provided by the PSCP

**4 Health and Safety**

- 4.1 Construction (Design and Management) Regulations 2007
- 4.2 Health Board health and safety regulations for the *Employer's* facility
- 4.3 The Scheme Pre-construction information
- 4.4 The Construction Stage plan
- 4.5 *Employer* constraints
- 4.6 Security

**5 The Principal Supply Chain Partner's design**

- 5.1 Design provided by the *Employer*
- 5.2 The PSCP assumes design responsibility for the *works*
- 5.3 Procedures which the PSCP is to follow in carrying out his design
- 5.4 Works Information for the PSCP's design

**6 Completion**

- 6.1 The work required to be done by the Completion Date for the whole of the *works*

**7 Working with the *Employer* and Others**

- 7.1 Development of the design and programme
- 7.2 Details of Others identified by the *Employer*
- 7.3 Details of Others identified by the PSCP following appointment and development of the design up to agreement of the target total of the Prices
- 7.4 The *Employer* provides the following services
- 7.5 The *Employer* provides the following things
- 7.6 The PSCP provides the following services
- 7.7 The PSCP provides the following things to the *Employer*

**8 Subcontracting**

- 8.1 Acceptable Subcontractor's
- 8.2 Work which should not be subcontracted
- 8.3 Work that is to be subcontracted
- 8.4 Commercial requirements applicable to Subcontractors including Consultants



**NHS Lothian  
Royal Hospital for Sick Children Reprovision Project**

**9 Programme**

- 9.1 Introduction
- 9.2 First programme for acceptance
- 9.3 Stage programmes
- 9.4 The programme for construction and handover (Stage 4)
- 9.5 Design programme
- 9.6 Procurement programme
- 9.7 *Employer* identified milestone dates and Key Dates

**10 Tests**

- 10.1 Tests and inspections
- 10.2 Details of Materials, facilities and samples to be provided by the PSCP and by the *Employer* for tests
- 10.3 Details of Plant and Materials which are to be inspected or tested before delivery to the Working Areas, including details or referring to the design and standards to be adopted
- 10.4 Definition of tests of Equipment, Plant and Materials outside the Working Areas which have to be passed before marking by the *Supervisor*
- 10.5 Details of preparation of Equipment, Plant and Materials for marking by the *Supervisor*

**11 Title**

- 11.1 Plant and Materials outside the Working Areas
- 11.2 Objects and materials within the Site

**12 Acceptance or procurement procedures**

- 12.1 The Prices at award of contract
- 12.2 PSCP's Fee and Rates
- 12.3 PSCM/Consultant Fee and rates
- 12.4 PSCP resources – people
- 12.5 Appointment of the PSCP at the Initial Agreement Stage
- 12.6 Continuation from Initial Agreement - IA to OBC
- 12.7 Appointment of the PSCP at commencement of Outline Business Case
- 12.8 Continuation from OBC to FBC
- 12.9 Appointment of the PSCP at commencement of Full Business Case
- 12.10 Preparing the Full Business Case for Stage 4 approval by the *Employer*  
Establishing the target total of the Prices
- 12.11 The Cost Plan leading to the target
- 12.12 Identification and management of risk
- 12.13 The PSCP's initial cost plan includes risk
- 12.14 Risk management prior to agreement of the target total of the Prices
- 12.15 Setting the target total of the Prices
- 12.16 Risk Management during construction and handover Stage 4
- 12.17 Scheme Quality Plan
- 12.18 Scheme Execution Plan
- 12.19 Continuation from FBC to construction
- 12.20 Handover

**13 Commercial requirements, accounts and records**

- 13.1 Forecast of Defined Cost, cash flow and expenditure projections
- 13.2 Records of Defined Cost
- 13.3 Assessment Procedures
- 13.4 Early Warning / Risk Reduction Meetings
- 13.5 Compensation events
- 13.6 Changes to Works Information during IA, OBC, FBC and agreement of the target total of the Prices

**14 Parent company guarantee**

**15 Appendices**

Appendix 1 – Details of User Groups

Appendix 2 – Scheme Programme

Appendix 3 – Scheme Brief

Appendix 4 - Consultant and Contractor Endorsement for the Prevention of HAI for NHS Scotland

Appendix 5 – Health Board Cost Plan

Appendix 6 – Risk Register

Appendix 7 – Site Information

Appendix 8 – Contract Clarification Letter

**Section 4 – Site Information**

**Contents**

- 1 Access to Site Information
- 2 List of Site Information Available
- 3 Boundary Limits

**Form of Scheme Agreement and Contract**

**Part One -** Form of Agreement – for any of the Scheme Contract Stages IA, OBC, FBC, Completion and design, RIBA Stage E and handover

**Part Two -** Appendices to the Form of Agreement – Agreements to proceed

A - OBC, Stage 2 - Agreement to proceed

B - FBC Stage 3 – Agreement to proceed

C –Stage 4 – Completion and design, RIBA Stage E and handover

**Part Three -** Contract Data Part one – Data provided by the *Employer*

**Part Four -** Schedule of Cost Components

NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

**Part One - Form of Agreement – for any of the Scheme Contract Stages IA, OBC, FBC, Completion and design, RIBA Stage E and handover**

The Scheme Contract dated **30 March 2009**

between

NHS Lothian (the Employer)

And

BAM Construction Limited (the PSCP)

This Agreement incorporates the undertakings of Frameworks Scotland and the NEC3 Engineering and Construction Contract (June 2005, with amendments June 2006) Option C target contract with activity schedule; secondary Option clauses as stated in Contract Data, Part one – Data provided by the *Employer*.

Notes on procedures to be adopted for completion of the documents;

- The Scheme delivery is controlled by a 'Gateway Process' leading through the stages in the contract
- Stage 1: IA (Initial Agreement), Stage 2: OBC (Outline Business Case), Stage 3: FBC (Full Business Case) and Stage 4: Completion and design, RIBA Stage E and handover) are stages in the contract
- On initiating this Agreement identify the scheme entry level in the following parts by striking through the stages preceding the appointment of the PSCP.
- Do not delete Appendices provided for subsequent stages of the Form of Agreement; leave open to be completed on the *Employer's* agreement/instruction to the PSCP to continue to Provide the Works for the next stage of the Scheme.

**Note:**

**~~This note may be deleted on completion of the documents prior to entry into the Agreement;~~**

~~This template requires insertion of scheme specific information, process and detail to form the scheme contract.~~

~~In order to ensure that Frameworks Scotland is not compromised, any amendment of this standard form to change the principles and processes identified in the framework is not to be undertaken without prior discussion and agreement of Health Facilities Scotland.~~

**NHS Lothian**

ROYAL HOSPITAL FOR SICK CHILDREN  
AND DEPARTMENT OF CLINICAL NEUROSCIENCES

REPROVISION PROJECT

AGREEMENT – SIGNED AT FBC

**FORM OF AGREEMENT – SCHEME CONTRACT STAGES 1, 2, 3 and 4**  
**[Entry level \* Stage 1: IA / Stage 2: OBC / \* Stage 3: FBC / \* Stage 4:**  
**Construction and handover]**  
**(\*delete as appropriate)**

**(Proposal Reference )** ~~Depends on where you enter and at what time~~

AGREEMENT BETWEEN

- NHS Lothian
- Of Deaconess House, 148 Pleasance, Edinburgh EH8 9RS  
(the *Employer*)  
and by
- BAM Construction Limited  
Of Breakspear Park, Breakspear Way, Hemel Hempstead,  
Hertfordshire, HP2 4FL (the "PSCP" [*Contractor*])

Whereas the *Employer* wishes to have provided the *works* for;

- 1.1 **Royal Hospital for Sick Children and Department of Clinical Neurosciences Reprovision Project**
- 1.2 The reprovision of the Royal Hospital for Sick Children which is a 180 bed hospital for children and young people and the Department of Clinical Neurosciences and is being constructed on a site adjacent to the Royal

**NHS Lothian  
Royal Hospital for Sick Children Reprovision Project**

Infirmery of Edinburgh. The project includes the provision of links to the existing Royal Infirmery Building

Comprising: Management and delivery of the design and construction services for the scheme Stages as follows

{Note:

~~Identify entry level — Stage 1 / Stage 2 / Stage 3 / Stage 4 by striking through preceding non-applicable Stages as such work has been undertaken by the Employer, Subsequent Stages being subject to Appendix to Form of Agreement to proceed DO NOT DELETE, leave blank until required]~~

- ~~a) Stage 1: Providing assistance to NHSScotland Client team in developing the clinical need and preparing the Initial Agreement (IA) for acceptance by the NHSScotland Client (the Employer).~~
- ~~b) Stage 2 Providing assistance to NHSScotland Client team in preparing the Outline Business Case (OBC) for acceptance by the NHSScotland Client (The Employer)~~
- c) Stage 3 Substantial design development and assistance to NHSScotland Client Team in preparing the Full Business Case (FBC) including setting a Target Cost for acceptance by the NHSScotland Client (The Employer).
- d) Stage 4 When the Scheme and [target total of the Prices] are approved by the NHSScotland Client (The Employer); completion of design, construction and handover for the target total of the Prices as stated in the re-affirmed Form of Agreement.

**NOW IT IS AGREED THAT:**

1. The Principal Supply Chain Partner will provide the Works in accordance with the principles stated in this Agreement entered into under the Construction Integrated Supply Chain for NHSScotland Framework.
2. The Employer will pay the Principal Supply Chain Partner the amount due in accordance with the conditions of contract applicable to each Stage of the Scheme, principles outlined in the Construction Integrated Supply Chain for NHSScotland Framework and as may be detailed in the Works Information.
3. The documents forming part of this Agreement are:
  1. The Employer's letter of appointment/award of contract dated 10 July 2009 [Note this is the Contract Date unless otherwise stated]

NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

2. the Construction Integrated Supply Chain for NHS Scotland Framework dated 9 and 22 January 2009
3. Contract Data part one – data provided by the *Employer*
4. The Principal Supply Chain Partner's proposal including:
  - Contract Data part two - Data provided by the Principal Supply Chain Partner including
  - Contract Data part two Attachments C and G
- the following documents:

None

NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

Executed for and on behalf of the *Employer* at  
on the    day of            2010 as follows:-

.....

(Authorised official)

Before this witness:-

.....

.....Full name

..... Address

.....

Executed for and on behalf of the Principal Supply Chain Partner at  
on the    day of            2010 as follows:-

.....

(Director/Authorised Signatory)

Before this witness:-

.....

.....Full name

..... Address

.....



NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

**Part Two - Appendices to the Form of Agreement – Agreements to Proceed  
'B' - Stage 3 FBC - Agreement to Proceed**

1 Pro forma documents

Pro forma documents are provided in the following pages for *Employer's* 'Agreement to Proceed' at each gateway as follows:

- ~~Stage 1 – Initial Agreement (IA) – (Form of Agreement)~~
- ~~Stage 2 – Outline Business Case (OBC) – Agreement to proceed~~
- **Stage 3 - Full Business Case (FBC) – Agreement to proceed**
- **Stage 4 – Completion and design, RIBA Stage E and handover**

**[NHSScotland Client]**

**[Scheme Name]**

**Appendix 'A' to Form of Agreement**

**Stage 2 OBC, Agreement to proceed**

**(Proposal Reference .....**)

Agreement  
of

(the *Employer*)

Whereas the *Employer* wishes the Principal Supply Chain Partner [*the Contractor*] to continue to Provide the Works through the following Stage

**Stage 2** ~~Providing assistance to NHSScotland Client team in preparing the Outline Business Case (OBC) for acceptance by the NHSScotland Client (the Employer).~~

The documents added to the Agreement by this Appendix are:

- ~~Contract Data part one~~ Data provided by the *Employer* amended to OBC
- ~~Proposal~~ for ~~OBC~~ Stage continuation from ~~IA~~ Reference.....dated.....
- ~~Contract Data part two~~ Data provided by the Principal Supply Chain

NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

\_\_\_\_\_ Partner including Appendices 1 to 11 amended

\_\_\_\_\_ to OBC

• ~~Contract Data part two~~ Attachments amended to OBC

• the following documents:

Signed for by the *Employer* at \_\_\_\_\_ on the \_\_\_\_\_ day of \_\_\_\_\_ 200•  
as follows:-

\_\_\_\_\_

~~(Authorised official)~~

**NHS Lothian**

**Reprovision of the Royal Hospital for Sick Children  
and Department of Clinical Neurosciences**

**Appendix 'B' to the Form of Agreement –**

**Stage 3 FBC - Agreement to Proceed**

**(Proposal Reference HFS/Lothian/02 )**

Agreement

of

NHS Lothian

(the *Employer*)

Whereas the *Employer* wishes the Principal Supply Chain Partner [*the Contractor*] to continue to Provide the Works through the following Stage

**Stage 3      Substantial design development and assistance to NHSScotland Client Team in preparing the Full Business Case (FBC) including setting the target total of the Prices for acceptance by the NHSScotland Client.**

The documents added to the Form of Agreement by this Appendix are:

- Contract Data part one - Data provided by the *Employer* amended to FBC
- Proposal for FBC Stage continuation from OBC
- Contract Data part two - Data provided by the Principal Supply Chain Partner including Appendices [1] to [7] amended to FBC

NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

- Contract Data part two - Attachments amended to FBC

- the following documents:

None

Signed for by the *Employer* at

on the      day of              2010 as follows:-

.....

(Authorised official)

[NHSS Scotland Client]

**Reprovision of the Royal Hospital for Sick Children  
and Department of Clinical Neurosciences**

**Appendix 'C' to the Form of Agreement –**

**Stage 4 Construction and handover**

**Confirmation of agreement to complete the *works*  
(Proposal Reference tbc)**

Agreement between

•

of

(the *Employer*)

and by

•

of

(the Principal Supply Chain Partner [*the Contractor*])

Whereas the *Employer* wishes the Principal Supply Chain Partner to continue to Provide the Works through to Completion of the whole of the *works*

**Stage 4          Completion of design and construction of the *works* for the total  
of the Prices**

Now it is re-affirmed that

1. The Principal Supply Chain Partner will continue to Provide the Works in accordance with the principles stated in this Agreement and the Construction Integrated Supply Chain for NHSScotland Framework.

NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

2. The *Employer* will pay the Principal Supply Chain Partner the amount due in accordance with the conditions of contract applicable to each Stage of the Scheme and as may be detailed in the Works Information.

3. The documents forming part of this Agreement are:

- The *Employer's* letter of appointment/award of contract dated.....

[Note this is the Contract Date unless otherwise stated]

- Construction Integrated Supply Chain for NHSScotland Framework

- Contract Data part one – data provided by the *Employer*

Reference.....dated.....

- Contract Data part two - Data provided by the Principal Supply Chain Partner including Appendices • to • amended to Construction

- Contract Data part two - Attachments amended to Construction

- the following documents:

(other documents to be listed here)

NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

Executed for and on behalf of the *Employer* at • on the • day of •  
200• as follows:-

.....

(Authorised official)

Before this witness:-

.....

..... Full name  
..... Address  
.....

Executed for and on behalf of the Principal Supply Chain Partner at • on the  
• day of • 200• as follows:-

.....

(Director/Authorised Signatory)

Before this witness:-

.....

..... Full name  
..... Address  
.....



**Part Three – Contract Data Part One –  
Data Provided By The *Employer***

Note;

This Contract Data Part one is only reproduced once in this document.

For the Scheme contract it may be necessary to update the Contract Data for each stage as gateways are met. The Contract Data Part one should be re-issued to the PSCP accordingly.

NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

[Entry Stage ~~\*/A\*/OBC/~~ \*FBC / \*Construction]

[Updated to Stage ~~\*OBC / \*FBC / \*Construction~~ – Date .....

(\*Strike through stages not applicable above)

**Contract Data Part one - Data provided by the Employer**

**Statements given in all Contracts**

1. General

- The *conditions of contract* are the core clauses and the clauses for main Option C, dispute resolution Option W2 and secondary Options – X1, X2, X5, X7, X15, X16, X18, X20, Y(UK)2 and Z of the NEC3 Engineering and Construction Contract June 2005 (with amendments June 2006).

- The *works* are

Management and delivery of design and construction services for the

- 1.2 Royal Hospital for Sick Children and Department of Clinical Neurosciences Reprovision Project (“the Scheme”)

as described in Works Information

- The *Employer* is

Name: **NHS Lothian**

Address: Deaconess House  
 148 Pleasence  
 Edinburgh, ED8 9RS

- The *Project Manager* is

Name: Fraser McQuarrie

Address: **Davis Langdon LLP**  
 7<sup>th</sup> Floor, Aurora  
 120 Bothwell Street  
 Glasgow, G2 7JS

- The *Supervisor* is

Name: David Stillie

Address: **Mott MacDonald**  
 3<sup>rd</sup> Floor, Caledonian Exchange  
 19a Canning Street  
 Edinburgh, EH3 8EG

NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

- The *Adjudicator* is

John Hunter  
Hunter Consulting  
Kirk House  
Kirk Road  
Bearsden  
Glasgow G61 3RG

or

David Carrick  
Hill International  
Conference House  
152 Morrison Street  
The Exchange  
Edinburgh  
EH3 8EB

or

Alex Warrander  
Brewer Consulting  
Earlsgate House  
35 St Ninian's Road  
Stirling  
FK8 2HE

or

George Ross  
Morrison Ross Limited  
21 Melville Terrace  
Stirling  
FK8 2NQ

or

Gordon Bathgate  
Scott Wilson  
Citypoint 2  
25 Tyndrum Street  
Glasgow  
G4 0JY

NHS Lothian  
ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

- The Works Information is in:  
Section 3
- The Site Information is in:  
Section 4
- The *boundaries of the site* are:  
To be agreed at Stage 4
  
- The *language of the contract* is English
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland
- The *period for reply* is:  
Reply to *Contractor's* design package submitted for acceptance is [two weeks] (2) weeks  
Reply to all other communications is as stated in this contract.
- The *Adjudicator nominating body* is:  
The Royal Institution of Chartered Surveyors
- The *tribunal* is the Scottish Courts
- The following matters will be included in the Risk Register:  
Refer to Risk Register included in **Appendix 6**

3. Time

- The *starting date* is 30 March 2009

The *access dates* are not applicable at this stage

Part of the Site	Date
1. ....	.....
2. ....	.....
3. ....	.....
4. ....	.....

- The *Contractor* submits revised programmes at intervals no longer than ~~four (4) weeks~~, alternatively calendar monthly.

4. Testing and Defects

- The *defects date* is 104 weeks after Completion of the whole of the *works* (retention to be released after 52 weeks in accordance with the remaining terms of the Contract).
- The *defect correction period* is: to be agreed during Stage 3

5. Payment

- The *currency of this contract* is the pound sterling (£)
- The *assessment interval* is ~~four (4) weeks or alternatively~~ calendar monthly.
- The *interest rate* is 8% above the rate of the base rate.
- Base rate is calculated by reference to the Bank of England base rate on 31 December or 30 June depending on when the date of the debt falls due. If the debt falls due in the first half of the year the base rate published on 31 December is used; for debts falling due in the second half of the year the base rate applicable on 30 June is used

Optional Statements for Clause 5

The *Contractor's share percentages* and the *share ranges* are applied to Stages 1, 2 and 3 of the Scheme as follows:

**Stage 1 – Assistance in preparation of IA**

The *Contractor's share percentages* and the *share ranges* are

<i>share range</i>	<i>Contractor's share percentage</i>	
<i>less than</i>	100%	<del>Nil%</del>
<i>greater than</i>	100%	<del>Nil%</del>

**Stage 2 – preparation of OBC**

The Contractor's share percentages and the share ranges are

share range		Contractor's share percentage
less than	100%	Nil%
greater than	100%	Nil%

**Stage 3 – Substantial design development and preparation of FBC**

The Contractor's share percentages and the share ranges are

share range		Contractor's share percentage
less than	100%	Nil%
greater than	100%	Nil%

**Stage 4 – Design completion, construction, commissioning and handover**

The Contractor's share percentages and the share ranges are

share range		Contractor's share percentage
less than	95%	Nil %
from	95% to 100%	50%
Greater than	100%	100%

The Contractor prepares forecasts of Defined Cost for the works at intervals no longer than four (4) weekly alternatively calendar monthly.

6. Compensation events

- *The place where weather is to be recorded is:*  
Edinburgh Gogarbank Met Office Weather Station
- *The weather measurements to be recorded each calendar month are*
  - the cumulative rainfall (mm)
  - the number of days with rainfall more than 5mm
  - the number of days with minimum air temperatures less than Zero degrees Celsius
  - the number of days with snow lying at 08.00 hrs GMT
  - and these measurements

Windspeed

.....  
.....  
.....

- The weather measurements are supplied by The Met Office,

Met Office,  
Fitzroy Road,  
Exeter,  
Devon, EX1 3PB,  
United Kingdom



The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at

Gogarbank Met Office Edinburgh

.....  
.....

*Where no recorded data are available*

- Assumed values for ten years return *weather data* for each *weather measurement* for each calendar month are:

8. Risks and insurance

- The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is **[£10,000,000.00 (ten million pounds sterling)]**.

- The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is  
**[£10,000,000.00 (ten million pounds sterling)].**
- The amount of the minimum limit of indemnity for insurance in respect of loss or damage to the *works* in connection with this contract is the replacement cost  
and  
the amount for replacement of any Plant and Materials provided by the *Employer* is to be identified by the *Employer* prior to agreement of the total of the Prices.

(Contractors All Risk)

- The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract for any one event is  
**[\*in any one event / \*in the aggregate of £10,000,000 (ten million pounds sterling) – Project Specific]**  
*Contractor* to provide documentary evidence to which insurance option is being provided
- The *Contractor* provides all other insurances required by the law
- The *Employer* provides these insurances from the Insurance Table

1. *Insurance against:*

Cover/indemnity is:

The deductibles are: No insurances provided by employer

2. *Insurance against:*

Cover/indemnity is:

The deductibles are:

~~If additional insurances are to be provided~~

- ~~The *Employer* provides these additional insurances~~



NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

~~1. Insurance against:~~

~~Cover/indemnity is:~~

~~The deductibles are:~~

~~2. Insurance against:~~

~~Cover/indemnity is:~~

~~The deductibles are:~~

~~If additional insurances are to be provided~~

- ~~• The Contractor provides these additional insurances~~

~~1. Additional Public Liability Insurance for extension/refurbishment~~

~~where~~

- ~~a. the works involve works to any existing building or structure of the Employer, or where the Site includes any existing building or structure of the Employer, and~~
- ~~b. to the extent that the Contractor's Public Liability insurance does not provide the following cover:~~

~~the Contractor will provide insurance in the joint names of the Parties in line with Clause 84.2 against liability for loss of or damage to property (except the works, Plant and Materials and Equipment), due to activity in connection with this contract.~~

~~The minimum amount of cover or minimum limit of indemnity of such additional cover will be five million pounds (£5,000,000) or fifteen per cent (15%) of the target total of the prices, whichever shall be the greater, with cross liability so that the insurance applies to the Parties separately.~~

~~Cover/indemnity is:~~

~~The deductibles are:~~

~~2. Insurance against:~~

~~Environmental Impairment Liability~~

~~Cover/indemnity is:~~

~~The deductibles are:~~

NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

Optional  
 Statements

If the *Employer* has decided the *completion date* for the whole of the works

- The *completion date* for the whole of the works is  
 To be confirmed at Stage 4

If the *Employer* is not willing to take over the works before the *Completion Date*

- The *Employer* is not willing to take over the works prior to the *Completion Date*  
 To be agreed at Stage 4

~~If no programme is identified in part two of the Contract Data~~

- ~~• The *Contractor* is to submit a first programme for acceptance within • weeks of the *Contract Date*~~

~~(Note;~~

~~This programme is required during the period prior to signing of the Agreement)~~

If the *Employer* has identified work which is to meet a stated *condition* by a *key date*

- The *key dates* and *conditions* to be met are  
*condition* to be met *key date*

Additional  
 Compensation  
 Events

*If there are additional compensation events*

- These are additional compensation events  
 Expenditure of provisional amounts as compensation events where such are identified during the risk process and included within the total of the Prices and Accepted Programme for Stage 4. If such amounts are not expended in part or in whole the balance remaining is deducted from the total of the Prices.

*If there are additional Employer's risks*

- These are the additional *Employer's* risks
  1. Completion is delayed as a result of a *Contractor's* insurable event; insurable events include fire, lightning, explosion, storm, tempest, flood, bursting or overflowing water tanks, apparatus or pipes, earthquake, aircraft and other aerial devices or articles dropped there from.  
  
Where there is delay as a result of the *Contractor's* insurable event the Completion Date is changed, but there is no effect on the Prices; cost incurred in remedy of the event is a Disallowed Cost. The *Project Manager* notifies a compensation event if timing or sequence of operations is to be changed to alleviate the effect of the delay.
  2. Any variance in the rate of insurance due to market conditions, will form part of the [total of the Prices], and be adjusted in line with the provisions for inflation.
  3. **The works are delayed or suspended due to an act of terrorism.**

*[If Option X1 is used – where the contract period is less than 24 months X1 is not used*

- **Price adjustment for inflation in respect of Stages (1, 2, and 3) for IA, OBC, FBC and subcontract design during design completion/construction will be every two years from [26 May 2008]**
- **Price adjustment for inflation in respect of Stage (4) construction and handover, if the period from agreement of the target for the total of the Prices to Completion exceeds 24 months from the date of the agreement is applied as follows.....**

$$R(\text{new}) = \{ R \times i(2)/i(1) \} \times [i(2)/i(1)]$$
- **The proportions used to calculate the Price Adjustment Factor are**  
*Note: \*Applies / \*Does-not-apply [less than 24 month construction period – not applicable] – \*delete as necessary*
- **The base date for indices is the RPI X at the date of acceptance of the target total of the Prices**
- **The indices are those prepared by: ' Office for National Statistics'**

*If Options X5 and X7 are used together*

- **Delay damages for the sections of the works (amounts to apply are to be determined during stages 1 - 3)**

<b>section</b>	<b>description</b>	<b>amount per day</b>
<b>4</b>	<b>Stage 4</b>	
<b>4.1</b>	.....	.....
<b>4.2</b>	.....	.....
<b>4.3</b>	.....	.....
<b>4.4</b>	.....	.....
<b>4.5</b>	.....	.....

*If Option X16 is used*

- The retention free amount is 100% for IA, OBC and FBC, Scheme Stages 1, 2 and 3.
- The retention percentage is 2 ½ % applied to Scheme Stage 4 and excludes IA, OBC and FBC amounts.

*If Option X7 is used (whether or not Option X5 is also used) -Scheme specific*

- Delay damages for the whole of the works are ..... Pounds Sterling per day.

[Note; Agree amounts for inclusion during the Stage 3 development of the total of the Prices]

*If Option X18 is used*

- The Contractor's liability to the Employer for indirect or consequential loss is limited to 10% of the initial total of the Prices.
- The Contractor's liability for Defects due to his design which are not listed on the Defects Certificate is limited to £10,000,000.00.

- [project specific]  
 Not applicable at this stage

*If Option X20 is used*

- **[The incentive schedule for Key Performance Indicators is NOT USED]**
- A report of performance is prepared at 3 month intervals
  - Client Satisfaction – Product
  - Client Satisfaction – Service
  - Cost predictability – design and construction
  - Time predictability – design and construction
  - Safety (based on accident incident rates)
  - Defects at handover
 [to be completed/discussed]

*If Option Z is used*

The *additional conditions of contract* are

**Z 1 New Clause – Assignment**

- The *Employer* has the right to assign this contract to another NHSScotland body without having to seek the *Contractor's* consent.
- The *Employer* notifies the *Contractor* of the intention to assign the contract to another NHSScotland body.
- The *Employer* notifies the *Contractor* of the assignment of the contract to another NHSScotland body.

**Z 2 Identified and Defined Terms - Additions to Clause 11.2**

11.2(34) The Principal Supply Chain Partner (PSCP) is the *Contractor*.

11.2(35) The Principal Supply Chain Member (PSCM) is a *Subcontractor*.

**Z 3 Number Not Used**

**Z 4 Identified and Defined Terms - Amendment to clause 11.2 (25)**

At end of first bullet point after 'records' add: 'including amounts for invoices that the *Contractor* is liable to pay but has not paid within 28 days from having been included in the *Project Manager's* assessment until such time that they are paid, when such amounts shall cease to be treated automatically as Disallowed Costs and may be treated as Defined Costs subject to the remaining terms of this contract',

**Z 5 Interpretation and the law – Amendment to Clause 12**

Delete Clause 12.4

**Z 6 General – Amendment to Clause 19**

Delete Clause 19

**Z 7 Payment - Amendment to Clause 51**

- 51.1 Third sentence, after "change in the amount due since the last Certificate" add "The change in amount due is limited to the *Contractor's* total expenditure cash flow forecast amount (including the Fee) for the *assessment interval* as shown in the *Contractor's* current related cash flow forecast"

**Z 8 Payment - Addition to Clause 51**

- 51.5 If Defined Cost plus Fee amount and the *Project Manager's* assessment exceed the amount for the assessment interval as shown in the *Contractor's* cash flow forecast, then the *Project Manager* certifies payment up to the amount forecast. Any amount exceeding the forecast is not certified but held over to the next assessment interval, where if the Defined Cost plus Fee again exceeds the *Contractor's* cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the *Contractor* provides a reason for an exception to the limitation acceptable to the *Project Manager*.

**Z 9 Compensation events – Amendment to Clause 60.1**

Delete Clause 60.1 (19)

**Z 10 Employer's Risks - Amendment to clause 80.1**

Bullet point 7, second line after 'power,' add 'terrorism,'

**Z 11 Reasons for termination – Additions to Clause 91**

- 91.8 The *Employer* may terminate prior to or if the submitted Interim Agreement proposal is not acceptable (R22)
- 91.9 The *Employer* may terminate prior to or if the submitted Outline Business Case (OBC) proposal is not acceptable (R23)

91.10 The *Employer* may terminate prior to or if the submitted Full Business Case (FBC) proposal is not acceptable (R24)

91.11 The *Employer* may terminate if the *Project Manager* notifies that he has been unable to agree a total of the Prices with the *Contractor* prior to submitting the Full Business Case (FBC) (R25).

#### Z 12 Procedures on termination – Addition to 92.2

P5 The *Contractor* hands over to the *Project Manager* all hard copy and electronic data for the *Contractor's* design including material prepared by a Subcontractor, the Works Information for the *Contractor's* design and Site Information obtained so far as prepared at termination. At such termination the *Employer* has the right to use such material for completion of the *works*.

#### Z 13 Termination Table – additions

Terminating Party	Reason	Procedure	Amount due
The <i>Employer</i>	R22, R23, R24 and R25	P1, P2 and P5	A1 (excluding principle bullet point 3), A2

#### Z 14 – Amendment to Option X18: Limitation of Liability

Delete X18.2 and X18.4

#### Z 15 Add new clause 11.2(36)

##### **“Acceptance procedure for Defined Cost exceeding the forecast total of the Prices for each of the Stages 1, 2 and 3**

Where the Defined Cost during Stage 1, 2 or 3 exceeds the agreed forecast total of the Prices for the Stage and the *Contractor* has:

- adhered to the forecast procedures in this contract  
and  
given early warning that the agreed forecast total of the Prices will be exceeded

then the amount exceeding the forecast total of a Prices for the Stage is not considered by the *Project Manager* as Disallowed Cost, Clause 11.2 (25) bullet points 4 & 5.

#### Z 16 Rights of Third Parties – new clause

Nothing in this contract confers or purports to confer any right to enforce any of its terms on any person who is not a party to it.

**Part Four – Schedule of Cost Components Amended and included in this contract**

**(Items struck through and noted as ‘Deleted’ are included in the Fee. Note amendment to clause 4.44)**

This schedule is part of the *conditions of contract* only when Option C, D or E is used. In this schedule the *Contractor* means the *Contractor* and not his Subcontractors. An amount is included only in one cost component and only if it is incurred in order to Provide the Works.

**People 1**

The following components of the cost of

- people who are directly employed by the *Contractor* and whose normal place of working is within the Working Areas and
- people who are directly employed by the *Contractor* and whose normal place of working is not within the Working Areas but who are working in the Working Areas.

Clarification – exclusion to People

Company executives, directors, managers and other people visiting the Working Areas for the purpose of meetings and liaison are excluded from those identified in the second bullet point in People 1. Their costs are included in the Fee.

- 11 Wages, salaries and amounts paid by the *Contractor* for people paid according to the time worked while they are within the Working Areas.
- 12 Payments to people for
- (a) bonuses and incentives
  - (b) overtime
  - (c) working in special circumstances
  - (d) special allowances
  - (e) absence due to sickness and holidays
  - (f) severance related to work on this contract.

Note;

1. In the event of an extended period of absence and where the person is not covered by a sickness benefit scheme reimbursement to the *PSCP* in respect of any payments to the person is limited to one (1) week
2. Holidays are those applying under statutory obligations and company schemes



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- 13 Payments made in relation to people for
- (a) travel
  - (b) subsistence and lodging
  - ~~(c) relocation Deleted~~
  - (d) medical examinations
  - ~~(e) passports and visas deleted~~
  - ~~(f) travel insurance deleted~~
  - ~~(g) items (a) to (f) for dependants deleted~~
  - (h) ~~protective clothing Deleted~~ and included within 25 - Payments for the purchase price of Equipment which is consumed.
  - (i) meeting the requirements of the law
  - (j) pensions and life assurance
  - (k) death benefit
  - (l) occupational accident benefits
  - (m) medical aid
  - (n) a vehicle
  - (o) safety training.
- 14 The following components of the cost of people who are not directly employed by the *Contractor* but are paid for by him according to the time worked while they are within the Working Areas.

Amounts paid by the *Contractor*.

- Equipment** 2 The following components of the cost of Equipment which is used within the Working Areas (including the cost of accommodation but excluding Equipment cost covered by the percentage for Working Areas overheads).
- 21 Payments for the hire or rent of Equipment not owned by
- the *Contractor*,
  - his parent company or
  - by a company with the same parent company
- at the hire or rental rate multiplied by the time for which the Equipment is required
- 22 Payments for Equipment which is not listed in the Contract Data but is
- owned by the *Contractor*,
  - purchased by the *Contractor* under a hire purchase or lease agreement
  - or
  - hired by the *Contractor* from the *Contractor's* parent company or from a company with the same parent company at open market rates, multiplied by the time for which the Equipment is required.

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- 23 Payments for Equipment purchased for work included in this contract listed with a time-related on cost charge, in the Contract Data, of
- the change in value over the period for which the Equipment is required and
  - the time-related on cost charge stated in the Contract Data for the period for which the Equipment is required.

The change in value is the difference between the purchase price and either the sale price or the open market sale price at the end of the period for which the Equipment is required. Interim payments of the change in value are made at each assessment date. A final payment is made in the next assessment after the change in value has been determined.

If the *Project Manager* agrees, an additional item of Equipment may be assessed as if it had been listed in the Contract Data.

- 24 Payments for special Equipment listed in the Contract Data. These amounts are the rates stated in the Contract Data multiplied by the time for which the Equipment is required.

If the *Project Manager* agrees, an additional item of special Equipment may be assessed as if it had been listed in the Contract Data.

- 25 Payments for the purchase price of Equipment (including People 13 (h) protective clothing) which is consumed.

- 26 Unless included in the hire or rental rates, payments for
- transporting Equipment to and from the Working Areas other than for repair and maintenance,
  - erecting and dismantling Equipment and
  - constructing, fabricating or modifying Equipment as a result of a compensation event.

- 27 Payments for purchase of materials used to construct or fabricate Equipment.

- 28 Unless included in the hire rates, the cost of operatives is included in the cost of people.

**Plant and  
 Materials**

- 3 The following components of the cost of Plant and Materials

- 31 Payments for
- purchasing Plant and Materials,

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- delivery to and removal from the Working Areas,
- providing and removing packaging and
- samples and tests.

32 Cost is credited with payments received for disposal of Plant and Materials unless the cost is disallowed.

**Charges**

4 The following components of the cost of charges paid by the *Contractor*.

41 Payments for provision and use in the Working Areas of

- water,
- gas and
- electricity.

42 Payments to public authorities and other properly constituted authorities of charges which they are authorised to make in respect of the *works*.

43 Payments for

- (a) cancellation charges arising from a compensation event
- (b) ~~buying or leasing land Deleted~~
- (c) ~~compensation for loss of crops or buildings Deleted~~
- (d) royalties
- (e) inspection certificates
- (f) charges for access to the Working Areas
- (g) facilities for visits to the Working Areas by Others
- (h) specialist services
- (i) consumables and equipment provided by the *Contractor* for the *Project Manager's* and *Supervisor's* use

44 Charges for overhead costs incurred within the Working Areas (Amendment)

The charges are recovered against Priced activities to be identified and included in the total of the Prices activity schedule for Stage 4. The activity includes provision and use of equipment, supplies and services, but excluding accommodation, for

- (a) catering (excluding food)
- (b) medical facilities and first aid
- (c) ~~recreation (deleted included in the Fee)~~
- (d) sanitation
- (e) security
- (f) copying
- (g) telephone, telex, fax, radio and CCTV
- (h) surveying and setting out
- (i) computing

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 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

(j) hand tools not powered by compressed air.

The above items may be grouped or provided as individual activities.

The requirement to provide a Working Areas overhead percentage with the Contract Data Part two data provided by the *Contractor* is removed from Stages 1, 2 and 3.

However, a percentage based on the stage 4 activities, and balanced against the number of own people resourced in the target total of the Prices for Stage 4, may be agreed for use in compensation event quotations where there is an effect on the Prices

**Manufacture and fabrication**

5

The following components of the cost of manufacture and fabrication of Plant and Materials which are

- wholly or partly designed specifically for the *works* and
- manufactured or fabricated outside the Working Areas.

51 The total of the hours worked by employees multiplied by the hourly rates stated in the Contract Data for the categories of employees listed.

52 An amount for overheads calculated by multiplying this total by the percentage for manufacturing and fabrication overheads stated in the Contract Data.

**Design**

6

The following components of the cost of design of the works and Equipment done outside the Working Areas.

61 The total of the hours worked by employees multiplied by the hourly rates stated in the Contract Data for the categories of employees listed.

62 An amount for overheads calculated by multiplying this total by the percentage for design overheads stated in the Contract Data.

63 The cost of travel to and from the Working Areas for the categories of design employees listed in the Contract Data.

**Insurance**

7

The following are deducted from cost

- the cost of events for which this contract requires the *Contractor* to insure and
- other costs paid to the *Contractor* by insurers.

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Royal Hospital for Sick Children Reprovision Project**

**Section 2 - Model Forms for PSCP appointment to the scheme contract and associated proposals**

Part one – letter of appointment of PSCP dated 10 July 2009 and response dated 15 July 2009

Part two – PSCP Pro forma Entry Form of Scheme Proposal and gateway proposals

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Part one – draft letter of appointment of PSCP

~~\*Insert NHS Health Board Name and  
Address~~

~~\*Insert PSCP Name  
and Address~~

Date : \*Insert date  
Reference : \*Insert reference

Dear P.S.C.P. (\*Insert Name)

**RE: [\*NAME OF SCHEME]**

Further to your expression of interest and our meeting on [\*insert date] at [\*insert place] please accept this letter as notification of your appointment as the Principal Supply Chain Partner (PSCP) for the above named scheme and that you are instructed to proceed as follows:

The appointment is in accordance with the Construction Integrated Supply Chain NHSScotland Framework Agreement and incorporates the Template for the Scheme Contract (NEC3 ECC Option C) that details the contract obligations, payment and other processes. The ECC processes including programme and cost forecasting are to be entered into from commencement of work associated with this appointment

The Contract Date is:

The date of acceptance of the appointment by the PSCP entered in the 'Confirmation of acceptance of appointment as PSCP' appended to this letter for return to the NHSScotland Health Board at the above address.

As PSCP you are not authorised to commence work until the 'Confirmation of acceptance of appointment as PSCP' has been received and acknowledged by the NHSScotland Health Board at [the above address].

It is confirmed that the scope of work is as detailed in the scheme pack issued by the NHSScotland Health Board for registration of expression of interest by the PSCP

[\*insert brief description of Project Specific Scheme Contract].

The affordability amount for the whole scheme, is:

[£..... Words .....(excluding VAT)]

The limit of authorised expenditure by the PSCP as Defined Cost plus the Fee in the period prior to submission of the PSCP's Entry Form of Proposal and signing of the Form of Agreement for the Scheme Contract by the NHSScotland Health Board and the PSCP is:

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[£..... Words .....(excluding VAT)]

~~For avoidance of doubt; there are no contract payments in excess of the stated limit prior to signing of the Form of Agreement by the Parties except that 'the limit is changed by the Employer where the Parties have complied with the contract procedures'.~~

~~The period for providing the Form of Proposal and entering into the Form of Agreement between the Parties during which the authorised expenditure is discharged is [Insert number of weeks .....~~

~~I/We confirm your entry into the scheme is at the  
\*[pre-IA] [IA] [OBC] [FBC] phase.~~

~~The pre-start meeting for this scheme \*is to be arranged/\*has been arranged for:-~~

~~[\*Insert date and time] at [\*Insert location]~~

~~In the meantime the Project Manager with whom you may communicate on any matter concerning the contract is:~~

~~[\*Insert name]  
[\*insert location]  
[\*insert tel no];~~

~~Please note the person named is the only person authorised to give instructions in accordance with the contract on behalf of the NHSScotland Health Board.~~

~~I/We look forward to a successful working relationship and if you have any queries please do not hesitate to contact [\*me/\*the undersigned/\*other stated person].~~

~~Yours sincerely~~

.....  
NHSScotland ..... Date  
(Health Board authorised signatory)

Tear off strip.....

to  
\*Insert NHS Scotland Health Board Name and Address

Dear Sirs,

**RE: [\*NAME OF SCHEME]**

~~Confirmation of acceptance of appointment as PSCP~~

~~I/We confirm acceptance of the appointment and entry into the first stage of the contract with limitations as stated in the letter of appointment~~

..... Date of acceptance  
The PSCP \_\_\_\_\_  
(Appointed signatory)

See Letter of Appointment overleaf



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**Part two – PSCP Pro forma Contract Data Part two; Entry Form of Scheme Proposal and gateway proposals**

**Introduction**

The process of Scheme Proposal submissions by the Principal Supply Chain Partner and subsequent acceptance by the *Employer* leading to the signing of the Form of Agreement is described in detail in Works Information.

The following addresses the main points of the process;

**1 The first or initial Entry Form of Scheme Proposal is provided by the PSCP as follows;**

1.1 Following acceptance and appointment of the PSCP, by the *Employer* issuing the letter of appointment and the PSCP's acceptance the PSCP works with the *Project Manager* to confirm Contract Data Part one – Data provided by the *Employer*, identify the scope, resources and programme appropriate to the delivery of requirements for the entry stage of the contract e.g. IA, OBC or FBC,

1.2 On agreement of the scope, resources and programme appropriate to the delivery of requirements for the entry stage of the contract the *Project Manager* assisted by the PSCP prepares and issues the Contract Data Part one together with Works Information and Site Information incorporating the agreements.

1.3 The PSCP prepares, within the time stated in the letter of appointment, and submits for acceptance by the *Employer*;

- The scheme Entry Form of Scheme Proposal together with;
  - Contract Data Part two – data provided by the *Contractor*
  - The *activity schedule*
  - Pricing matrix for the stage
  - Overall and stage programmes for acceptance
  - Attachments as listed in the proposal

1.4 The submitted proposal being acceptable to the *Employer* the Parties seal the Scheme Contract by signing the Form of Agreement.

1.5 Thereafter the PSCP's submission of a Form of Scheme Proposal for each subsequent Stage of the contract is an offer to continue to Provide the Works at Prices for the scheme that incorporates the development of Contract Data Part one, Works Information, Site Information as agreed between the *Project Manager* and the PSCP being recorded in the relevant documents to the contract (Contract Data Part one, Works Information, Site Information) together with progress in the PSCP's design.

1. The PSCP submission for OBC and FBC proposals include;

- Contract Data Part two for the Stage updated by the PSCP, together with;
  - The *activity schedule* where the Prices are amended to reflect development of the design and the associated cost plan prepared by the PSCP in conjunction with the *Project Manager*

**NHS Lothian  
Royal Hospital for Sick Children Reprovision Project**

- Pricing matrix for the stage
- Overall and stage programmes for acceptance
- Attachments as listed in the proposal

- 1.6 The PSCP's Fee and other obligations remain as stated in the ITT except that changes to Works Information as a result of the developing design initiated by or agreed with the *Employer* may result in adjustment to the Prices. Such changes are identified by the PSCP in his forecasts of the total Defined Cost for the whole of the *works* and included in the Stage Form of Proposal (Gateway update) submission for acceptance by the *Employer*.

Once the target total for the Prices has been ascertained and an acceptable Stage 4 programme has been established in agreement with the *Project Manager* the PSCP prepares and submits to the *Employer* the Stage 4 Form of Project Proposal.

- 1.7 The procedure for entering Stage 4 Construction is supplemented by both Parties agreeing the target total of the Prices and its programme prior to inclusion in the Form of Scheme Proposal for Stage 4 construction and thereafter completing the Appendix to the Form of Agreement

## **2 Appendices to the Scheme Contract**

- 2.1 When the *Employer* is satisfied the Stage Form of Proposal submission acceptable he prepares, signs and issues the Appendix to the Scheme Agreement to the PSCP as a confirmation that the Scheme may proceed to the next Stage under the modified Agreement.
- 2.2 The PSCP does not proceed from the current Stage until he has received the signed Appendix to the Scheme Contract.
- 2.3 The procedure for entering Stage 4 Construction is achieved by both Parties signifying agreement of the target total for the Prices by signing Appendix D to the Agreement completed by the *Employer* and provided to the *PSCP* in duplicate
- 2.4 Pro forma Agreement to Proceed documents for completion and attachment to the Agreement are included in Section 1 – Part 2

## **3 Pro forma documents for submission of the Scheme Proposals**

- 3.1 Pro forma documents to be completed for the Scheme Proposals are included hereinafter at 4.
- 3.2 The example Summary of Prices schedules shown as Attachments to the Scheme Proposals are for information only. When preparing his Proposal the PSCP completes the Pricing workbook (available from the Construction Integrated Supply Chain NHSScotland framework web site) and includes a hard copy of the Summary and Activity Schedules together with the completed CD in the proposal submission.
- 3.3 Attachments to be included with each Scheme Proposal as appropriate to the Stage are identified at 4.0 following.

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#### 4 Example Scheme Proposals

4.1 The Proposals following are structured on the PSCP being appointed at Stage 1 – IA

4.2 Where a PSCP is appointed at a later Stage than IA then it is necessary to;

- amend the opening statement by removing reference in the first line 'continue'
- Insert at (a)

The scheme pack and invitation to submit a Proposal that includes;

- Contract Data Part one – data provided by the *Employer*
- Works Information
- Site Information.

4.3 Attachments to the Scheme Proposal

4.3.1 The following Attachments are required;

- ~~A – Preparation of Initial Assessment – Stage 1 IA, pricing work book~~
- ~~B – Preparation of Outline Business Case Stage 2 OBC, pricing work book~~
- C - Preparation of Full Business Case Stage 3 FBC, pricing work book See Attachment C
- D - Construction and handover Stage 4, pricing work book
- ~~E – Programme previously accepted by the *Project Manager* – Stage IA~~
- ~~F – Programme previously accepted by the *Project Manager* – Stage OBC~~
- G – Programme previously accepted by the *Project Manager* – Stage FBC
- H – Programme previously accepted by the *Project Manager* – Construction and handover Stage

4.3.2 The construction and handover pricing workbook provided for identification of the following activities

1. Design - This activity is specific to the PSCP's off-Site design outside of the Working Areas, for which payment at the framework Defined Cost rates for *staff* apply.
2. Completion of the substantial design achieved during FBC Stage
3. Provide continuing detailed design attendance during construction

The following activities may be used as groups related to the total of the Prices excluding design activities above. Structure of the Activity Schedule as related to Accepted Programme would be agreed during target Price negotiations.

**NHS Lothian  
Royal Hospital for Sick Children Reprovision Project**

4. Administration staff for the period
  5. Commercial activities
  6. Detailed construction activities and sequences
  7. Commissioning
  8. Handover and document completion
- 4.4 Model Contract Data Part two – data provided by the *Contractor*
- 4.4.1 Complete the following as necessary to provide the Contract Data for the particular stage proposal being submitted;

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*Entry level ~~\*IA\*~~OBC / \* FBC / \*Construction and handover at [Date]*

*Updated to level \*OBC / \*FBC / \*Construction and handover on [Date]*

**Contract Data Part Two – Data provided by the Contractor**

**Statements given in all contracts**

- The Contractor is  
 Name: BAM Construction Ltd  
 Address: Breakspear Park  
 Breakspear Way  
 Hemel Hempstead  
 Herts HP2 4FL
- The direct fee percentage is 7.1%
- The subcontracted fee percentage is 7.1%

The working areas are the site and ... to be confirmed at Stage 4

- The key people are – refer to the Fee Proposal for Stage 3 FBC dated 21 August 2009 to 13 August 2010 included in Section 2, Attachment C
- The following matters will be included in the Risk Register.

**As set out in Appendix 6**

*Optional  
 Statements*

**If the Contractor is to provide Works Information for his design**

- The Works Information for the Contractor's design is in  
**To be provided at Stage 4**

**If a programme is to be identified in the Contract Data**

The programme identified in the Contract Data is incl in **Section 2, Attachment G**

**If the Contractor is to decide the completion date for the whole of the works**

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The *completion date* for the whole of the works is

**Not applicable**

The *activity schedule* is; **to be completed and identified here in the Format provided for attachment to the proposal at each stage following appointment.**

- The proposed total of the Prices for the proposal is  
**As stated in the Proposal Submission Pricing Workbook in Section 2, Attachment C**

If Option A or C is used

- Option C - the *activity schedule* is incl in **Section 2, Attachment C**

~~• Option A — the *activity schedule* is~~

Data for Schedule of  
 Cost Components

- The listed items of Equipment purchased for work on this contract, with an on cost charge, are:  
**to be completed and identified here for attachment to the proposal at each stage following appointment**

Equipment	time-related charge	per time period
-----------	---------------------	-----------------

- The rates for special Equipment are: **to be completed and identified here for attachment to the proposal at each stage following appointment**

Equipment	size or capacity	Rate
-----------	------------------	------

The percentage for Working Areas overheads is: to be confirmed at Stage 4

This item removed from Schedule of Cost Components.

Now an activity in the activity schedule

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Note; The Parties may insert an agreed percentage for use in compensation event quotations based on the agreed activity amount

..... % addition to people for use in compensation events

The hourly rates for Defined Cost of manufacture and fabrication outside the Working Areas are:

**To be defined and completed prior to agreement of the Prices for stage 4**

The percentage for manufacture and fabrication overheads is:

**To be defined and completed prior to agreement of the Prices for stage 4**

Data for Schedule of Cost

The hourly rates for Defined Cost of design outside the Working Areas are:

Components

**In accordance with the Activity Schedule contained within Section 2, Attachment C**

- The percentage for design overheads is:

**Nil%**

- The categories of design employees whose travelling expenses to and from the Working Areas are included as a cost of design of the Works and Equipment done outside the Working Areas are:

**In accordance with the Activity Schedule contained within Section 2, Attachment C**

Data for the Shorter Schedule of Cost Components

**The Shorter Schedule of Cost Components is not used in this contract – see Z19**

*Other data to be provided by the Contractor*

**Insurance policies**

- **The Contractor submits policies and certificates for the insurances which he is to provide**

85.4

- *The Contractor states the amount of deductibles (excess) applicable to each insurance policy he provides:*

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- loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) due to activity in connection with this contract  
amount
- death or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract  
amount
- (CAR) in respect of loss or damage to the *works* in connection with this contract  
amount
- Professional Indemnity Insurance for design liability in connection with this contract  
amount
- all other insurances required by the law  
amount

4.5 Principal Supply Chain Partner proposals to be submitted to the *Employer* for acceptance of the Prices for each stage within this contract



NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

~~[NHS Scotland Health Board]~~

~~[Scheme Name]~~

~~Stage 1 Form of Scheme Proposal: IA~~

~~(Proposal Reference .....~~

NHS Scotland Health Board

Address

Dear Sirs,

We hereby offer to Provide the Works in accordance with:

(a) ~~The scheme pack and invitation to submit a Proposal that includes;~~

- ~~• Contract Data Part one — data provided by the *Employer*~~
- ~~• Works Information~~
- ~~• Site Information.~~

(b) ~~This IA Proposal that includes;~~

- ~~• Contract Data Part two — data provided by the *Contractor*~~
- ~~• Appendices and attachments~~

and

~~Appendix 'A' [Stage 1] to Form of Scheme Proposal — Summary total of the Prices~~

(c) ~~The forecast amount for Stage 1 [IA] including the Fee being~~

~~£ ..... (Excluding VAT)~~

~~words~~

and

~~The *\*initial estimate / \*updated (\*delete as appropriate)* forecast for the total of the Prices that includes the Fee for all Stages, is:~~

~~£ ..... (Excluding VAT)~~

~~words~~

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~~We accept the target total of the Prices is developed throughout the pre-construction stages of the scheme with the agreement of the total of the Prices for construction being the target amount agreed for the FBC submission in accordance with the provisions of this Contract.~~

~~On receipt of your written acceptance thereof and completion of the Agreement we shall commence Stage 1 IA in accordance with the Accepted Programme.~~

Dated this ● day of ● 200●

.....  
on behalf of [*Principal Supply Chain Partner*]

Name \_\_\_\_\_ and \_\_\_\_\_ address \_\_\_\_\_ of \_\_\_\_\_ Supply \_\_\_\_\_ Chain \_\_\_\_\_ Partner

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~~[NHS Scotland Health Board]~~

~~[Scheme Name]~~

~~Stage 1 Form of Scheme Proposal: IA~~

~~Appendix 'A' to Form of Scheme Proposal: IA~~

~~(Proposal Reference .....~~

**SUMMARY TOTAL OF THE PRICES**

~~The Principal Supply Chain Partner, hereinafter, enters copy of the summary total of the Activity Schedule(s) prepared for the Prices;~~

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~~NHSScotland Health Board~~

~~[Scheme Name]~~

\_\_\_\_\_

~~Stage 2 Form of Scheme Proposal: OBC  
(Proposal Reference .....~~

~~NHSScotland Health Board~~

~~Address~~

Dear Sirs,

We hereby offer to continue to Provide the Works in accordance with:

(a) ~~The updated documentation for this contract that includes;~~

- ~~• Contract Data Part one — data provided by the *Employer*~~
- ~~• Works Information~~
- ~~• Site Information.~~

(b) ~~This OBC Proposal including;~~

- ~~• Contract Data Part two — Data provided by the *Contractor*~~
- ~~• Appendices and attachments~~

and

Appendix 'A' [Stage 2] to Form of Scheme Proposal — Summary total of the Prices

(c) ~~The forecast amount for Stage 2 OBC including the Fee is;~~

£ ..... (Excluding VAT)

words

and

The ~~\*initial estimate / \*updated~~ (~~\*delete as appropriate~~) forecast for the total of the Prices that includes the Fee for all Stages, is:

\_\_\_\_\_

£ ..... (Excluding VAT)

NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

words

~~We accept the target total of the Prices is developed throughout the pre-construction stages of the scheme with the agreement of the total of the Prices for construction being the target amount agreed for the FBC submission in accordance with the provisions of this Contract.~~

~~On receipt of your written acceptance thereof and \*completed Agreement to proceed/  
\*completion of the Agreement, we shall commence Stage 2 OBC In accordance with the Accepted Programme.~~

·

Dated this · day of · 200·

.....  
on behalf of Principal Supply Chain Partner

Name and address of Principal Supply Chain Partner

NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

~~{NHSScotland Health Board}~~

~~{Scheme Name}~~

~~Stage 2 Form of Scheme Proposal: OBC~~

~~Appendix 'A' to Form of Scheme Proposal: OBC~~

~~\*(Proposal Reference \_\_\_\_\_)~~

**~~SUMMARY TOTAL OF THE PRICES~~**

~~The Principal Supply Chain Partner, hereinafter enters copy of the summary total of the Activity Schedule(s) prepared for the Prices;~~

~~;~~

\_\_\_\_\_

**NHS Lothian**  
**Reprovision of the Royal Hospital for Sick Children**  
**and Department of Clinical Neurosciences**

**Stage 3 Form of Scheme Proposal: FBC**  
**(Proposal Reference HFS/Lothian/02 )**

NHS Lothian  
Royal Hospital for Sick Children  
1 Rillbank Terrace  
Edinburgh  
EH9 1LN

For the Attention of Brian Currie – Project Director

Dear Sirs,

We hereby offer to continue to Provide the Works in accordance with:

- (a) The updated documentation for this contract that includes;
- Contract Data Part one – data provided by the *Employer*
  - Works Information
  - Site Information.
- (b) This FBC Proposal, including;
- Contract Data Part two – data provided by the *Contractor*
  - Appendices and attachments

and

Appendix 'A' Stage 3 to Form of Scheme Proposal – Summary Total of the Prices

- (c) The forecast amount for Stage 3 FBC including the Fee is;

£ 6,064,784.39..... (Excluding VAT)

Six Million and Sixty Four Thousand, Seven Hundred and Eighty Four Pounds and Thirty Nine pence.

and





**NHS Lothian**

**Re Provision of Royal Hospital for Sick Children  
and Department of Clinical Neurosciences**

**Stage 3 Form of Scheme Proposal: FBC**

**Appendix 'A' to form of Scheme Proposal: FBC**

**(Proposal Reference HFS/Lothian/01)**

**SUMMARY TOTAL OF THE PRICES**

The Principal Supply Chain Partner hereinafter enters copy of the summary total of the Activity Schedule(s) prepared for the Prices;

Refer to Activity Schedules within Section 2, Attachment C

[NHSScotland Health Board]

[Scheme name]

**Stage 4 Form of Scheme Proposal: Construction and handover**

**(Proposal Reference )**

NHSScotland Health Board

Address

Dear Sirs,

We hereby offer to complete the whole of the *works* in accordance with:

- (a) The updated documentation for this contract that includes;
  - Contract Data Part one – data provided by the *Employer*
  - Works Information
  - Site Information.

- (b) This Construction and handover Proposal including;
  - Contract Data Part two – data provided by the *Contractor*
  - Appendices and attachments

and

Appendix 'A' Stage 4 to Form of Scheme Proposal – Summary Total of the Prices

- (d) The total of the Prices for Stage 4 Construction and handover including the Fee is;

£ ..... (Excluding VAT)

words

and

The total of the Prices that includes the Fee for all Stages is;

£ ..... (Excluding VAT)

NHS Lothian  
Royal Hospital for Sick Children Reprovision Project

words

The total of the Prices has been developed throughout the pre-construction stages of the scheme with the total of the Prices for the whole of the *works* now being the amount accepted by the *Employer* at FBC in accordance with the provisions of this Contract.

On your written acceptance thereof and signing of Attachment C to the Form of Agreement we shall commence Stage 4 construction and handover in accordance with the Accepted Programme.

Dated this • day of • 200•

.....  
on behalf of Principal Supply Chain Partner

Name and address of Principal Supply Chain Partner

[NHSScotland Health Board]

[Scheme Name]

**Stage 4 Form of Scheme Proposal: Construction and handover**

**Appendix 'A' to form of Scheme Proposal: Construction and handover**

**\*(Proposal Reference ..... )**

**SUMMARY TOTAL OF THE PRICES**

The Principal Supply Chain Partner hereinafter enters copy of the summary total of the Activity Schedule(s) prepared for the Prices;

ATTACHMENT C

Stage 3 Pricing Workbook

## **BAM PSCP RHSC Stage 3 Fee Proposal to FBC**

**[Based on RHSC & DCN Master Delivery Programme HSC0296/6/1B**

**Version 5 dated 21 August 2009]**

### **SUMMARY**

No	Heading	Description	Total
1.1	PSCP	BAM Construction Ltd	531,481.11
	M&E Subcontractor	BBES Ltd	63,610.35
	M&E Subcontractor	FES Ltd	47,747.82
	Project Managers	Turner & Townsend	
	Architect	Nightingale Associates	2,238,598.57
	Architect	Boswell Mitchell Johnston	INCL
	Civil & Struct Engineers	Ove Arup	773,482.28
	M & E Engineering	Hulley & Kirkwood	490,844.60
	M & E Engineering	DSSR	
	Cost Managers	Doig & Smith	306,114.26
	Healthcare Planning	Tribal Consulting	332,000.00
	Planning	Nightingale Associates	
	Planning	Boswell Mitchell Johnston	
	Planning	Tribal Consulting - Planning	
	Environmental Impact Assessment	Arup	133,337.10
	Transportation Consultancy	Arup	39,122.10
	Fire Engineering	Arup	65,303.78
	Acoustic Engineering	Arup	41,054.96
	Surveys & Site Investigation Reports [Subject to PM Instruction] - Budget Allowance with final costs to be agreed		100,000.00
	Planning Application & Warrant Submission Fees [Budget Allowance pending receipt of quotes and costs being agreed]		500,000.00
			5,662,696.91
		Add 7.1%	402,051.48
	<b>TARGET PRICE FOR STAGE 3 TO FBC [51 WEEK PERIOD]:-</b>		<b>6,064,748.39</b>







**BAM PSCP RHSC, Edinburgh FBC Fee from 24 August 2009 to 13 August 2010**

**Summary of Resources / Costs based on Detailed Development Programme**

Fee Development Template

NB: Fees exclude VAT and expenses to be charged at cost

**BAM Construction Ltd**

	Contracts Manager		Project Manager (Design)		Project Manager (Services)		Pre-Construction Manager		Pre-Construction Manager		Services Design Engineer		Cost Planner		Senior Project Surveyor		Document Controller		Project Director		Total		Assumptions					
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost						
<b>Rate</b>	<b>1,867.50</b>	<b>71.51</b>	<b>400.00</b>	<b>57.36</b>	<b>400.00</b>	<b>57.36</b>	<b>787.50</b>	<b>50.74</b>	<b>1,727.50</b>	<b>50.74</b>	<b>672.00</b>	<b>44.41</b>	<b>1976.00</b>	<b>77.11</b>	<b>0.00</b>	<b>46.39</b>	<b>609.00</b>	<b>31.08</b>	<b>320.00</b>	<b>77.31</b>	<b>0.00</b>	<b>0.00</b>						
<b>DELIVERABLES</b>																												
NHSL, PSC, Task team & Project Core Group Meetings	225.00	16,089.75	18.00	917.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	7,791.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	341.00	£24,738.51					
Workshops e.g. Risk, NEC, RACI, BREEAM, etc.	56.00	4,004.66	24.00	1,376.84	24.00	1,376.84	0.00	0.00	0.00	0.00	24.00	1,055.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	128.00	£7,823.68					
Attendance at Clinical Design Meetings	150.00	10,726.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	150.00	£10,726.50					
PSCP Design team & Co-ordination Meetings	187.50	13,408.13	60.00	3,441.00	60.00	5,506.66	90.00	4,568.60	188.00	6,530.12	66.00	4,263.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	717.50	£40,726.37				
Construction Planning and Programming	187.50	13,408.13	0.00	0.00	32.00	1,835.52	90.00	4,568.60	282.00	14,308.68	64.00	2,842.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	655.50	£36,961.17				
CEC Submissions e.g. Planning, Building Warrant, Statutory Permissions, etc	75.00	5,363.25	20.00	1,147.20	0.00	0.00	37.50	1,902.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	132.50	£8,413.20				
Gateway Reviews, GI, etc.	48.00	3,217.95	48.00	2,753.28	0.00	0.00	0.00	0.00	0.00	0.00	18.00	799.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	111.00	£6,770.61				
NHSL & Consort. Enabling & Interface works: Planning, Meetings, Surveys, etc.	75.00	5,363.25	0.00	0.00	20.00	1,147.20	0.00	0.00	3,424.95	188.00	9,539.12	128.00	5,884.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	478.50	£25,169.00			
Input into production of Tender Information	150.00	10,726.50	60.00	3,441.00	60.00	3,441.00	60.00	2,856.81	160.00	7,811.00	96.00	4,263.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	572.50	£32,350.97			
Tender Appraisal & Interviews	150.00	10,726.50	60.00	3,441.00	60.00	3,441.00	60.00	2,841.44	182.00	9,234.08	24.00	1,055.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	632.00	£30,761.66			
Concept Design (includes review & attendance at meetings)	41.50	2,867.67	32.00	1,835.52	8.00	458.88	0.00	0.00	0.00	0.00	20.00	888.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	101.50	£6,160.27			
Schemes Design (includes review & attendance at meetings)	75.00	5,363.25	40.00	2,294.40	20.00	1,147.20	75.00	3,895.50	75.00	3,830.87	32.00	1,421.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	317.50	£17,962.34			
Detailed Design (includes review & attendance at meetings)	75.00	5,363.25	40.00	2,294.40	80.00	4,568.80	225.00	11,418.50	380.00	19,281.20	170.00	7,549.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	970.00	£50,493.95			
Project Management	375.00	26,816.25	0.00	0.00	0.00	0.00	90.00	4,568.60	282.00	14,308.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	747.00	£45,891.53			
Project Administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	600.00	£18,636.00			
Attendance at CSIS, Procurement & Open Book Auditing Meetings													150.00	11,596.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	150.00	£11,596.50			
Preparing / Assessing / Overseeing Cost Planning Process													190.00	14,688.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	190.00	£14,688.90		
Advising & Reporting on Headline Project Cost Issues													226.00	17,472.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	226.00	£17,472.06		
Design & Cost Liaison between PSCMs and NHSL													40.00	3,092.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	£3,092.40		
Procurement - Strategy, Implementation & Delivery													350.00	27,058.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350.00	£27,058.50		
Market Testing / Tendering and Assessment of returns to preparation of Target Cost Framework Commercial Administration (Assessments, etc)													650.00	51,024.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	650.00	£51,024.60		
Value Management / Value Engineering													200.00	15,462.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200.00	£15,462.00		
Checking, collating & preparing works information for Target Cost submission													0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	£0.00	
													0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	£0.00	
<b>Sub Total</b>	<b>1867.50</b>	<b>£ 133,544.93</b>	<b>400.00</b>	<b>£ 22,944.00</b>	<b>400.00</b>	<b>£ 22,944.00</b>	<b>787.50</b>	<b>£ 30,057.75</b>	<b>1727.50</b>	<b>£ 87,653.35</b>	<b>672.00</b>	<b>£ 29,843.52</b>	<b>1976.00</b>	<b>£ 152,764.58</b>	<b>0.00</b>	<b>£ -</b>	<b>600.00</b>	<b>£ 18,636.00</b>	<b>300.00</b>	<b>£ 23,193.00</b>	<b>8730.50</b>	<b>£ 531,481.11</b>						
Contingency (0%)	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0				
<b>Total</b>	<b>1867.50</b>	<b>£ 133,544.93</b>	<b>400.00</b>	<b>£ 22,944.00</b>	<b>400.00</b>	<b>£ 22,944.00</b>	<b>787.50</b>	<b>£ 30,057.75</b>	<b>1727.50</b>	<b>£ 87,653.35</b>	<b>672.00</b>	<b>£ 29,843.52</b>	<b>1976.00</b>	<b>£ 152,764.58</b>	<b>0.00</b>	<b>£ -</b>	<b>600.00</b>	<b>£ 18,636.00</b>	<b>300.00</b>	<b>£ 23,193.00</b>	<b>8730.50</b>	<b>£ 531,481.11</b>						





BISG, Edinburgh Forecast FRC Fees for 24 August 2009 to 13 August 2010

24 August 2009 to 13 August 2010

Est. Number	Description	Name	Estimated No. Hours
	Cost to Manage	A Macdon	400.00
	Project Manager	ISA	400.00
	Cost planner	ISA	300.00
	Assistant cost planner	ISA	300.00

24/08/09	31/08/09	07/09/09	14/09/09	21/09/09	28/09/09	05/10/09	12/10/09	19/10/09	26/10/09	02/11/09	09/11/09	16/11/09	23/11/09	30/11/09	07/12/09	14/12/09	21/12/09	28/12/09	04/01/10	11/01/10	18/01/10	25/01/10	01/02/10	08/02/10	15/02/10	22/02/10	01/03/10	08/03/10	15/03/10	22/03/10	29/03/10	05/04/10	12/04/10	19/04/10	26/04/10	03/05/10	10/05/10	17/05/10	24/05/10	31/05/10	06/06/10	13/06/10	20/06/10	27/06/10	04/07/10	11/07/10	18/07/10	25/07/10	01/08/10	08/08/10	15/08/10	22/08/10	29/08/10	05/09/10	12/09/10	19/09/10	26/09/10	03/10/10	10/10/10	17/10/10	24/10/10	31/10/10	06/11/10	13/11/10	20/11/10	27/11/10	04/12/10	11/12/10	18/12/10	25/12/10	01/01/11	08/01/11	15/01/11	22/01/11	29/01/11	05/02/11	12/02/11	19/02/11	26/02/11	05/03/11	12/03/11	19/03/11	26/03/11	02/04/11	09/04/11	16/04/11	23/04/11	30/04/11	07/05/11	14/05/11	21/05/11	28/05/11	04/06/11	11/06/11	18/06/11	25/06/11	02/07/11	09/07/11	16/07/11	23/07/11	30/07/11	06/08/11	13/08/11	20/08/11	27/08/11	03/09/11	10/09/11	17/09/11	24/09/11	01/10/11	08/10/11	15/10/11	22/10/11	29/10/11	05/11/11	12/11/11	19/11/11	26/11/11	03/12/11	10/12/11	17/12/11	24/12/11	31/12/11	06/01/12	13/01/12	20/01/12	27/01/12	03/02/12	10/02/12	17/02/12	24/02/12	03/03/12	10/03/12	17/03/12	24/03/12	31/03/12	06/04/12	13/04/12	20/04/12	27/04/12	04/05/12	11/05/12	18/05/12	25/05/12	01/06/12	08/06/12	15/06/12	22/06/12	29/06/12	06/07/12	13/07/12	20/07/12	27/07/12	03/08/12	10/08/12	17/08/12	24/08/12	31/08/12	06/09/12	13/09/12	20/09/12	27/09/12	04/10/12	11/10/12	18/10/12	25/10/12	01/11/12	08/11/12	15/11/12	22/11/12	29/11/12	05/12/12	12/12/12	19/12/12	26/12/12	01/01/13	08/01/13	15/01/13	22/01/13	29/01/13	05/02/13	12/02/13	19/02/13	26/02/13	05/03/13	12/03/13	19/03/13	26/03/13	02/04/13	09/04/13	16/04/13	23/04/13	30/04/13	07/05/13	14/05/13	21/05/13	28/05/13	04/06/13	11/06/13	18/06/13	25/06/13	02/07/13	09/07/13	16/07/13	23/07/13	30/07/13	06/08/13	13/08/13	20/08/13	27/08/13	03/09/13	10/09/13	17/09/13	24/09/13	01/10/13	08/10/13	15/10/13	22/10/13	29/10/13	05/11/13	12/11/13	19/11/13	26/11/13	03/12/13	10/12/13	17/12/13	24/12/13	31/12/13	06/01/14	13/01/14	20/01/14	27/01/14	03/02/14	10/02/14	17/02/14	24/02/14	03/03/14	10/03/14	17/03/14	24/03/14	31/03/14	06/04/14	13/04/14	20/04/14	27/04/14	04/05/14	11/05/14	18/05/14	25/05/14	01/06/14	08/06/14	15/06/14	22/06/14	29/06/14	06/07/14	13/07/14	20/07/14	27/07/14	03/08/14	10/08/14	17/08/14	24/08/14	31/08/14	06/09/14	13/09/14	20/09/14	27/09/14	04/10/14	11/10/14	18/10/14	25/10/14	01/11/14	08/11/14	15/11/14	22/11/14	29/11/14	05/12/14	12/12/14	19/12/14	26/12/14	01/01/15	08/01/15	15/01/15	22/01/15	29/01/15	05/02/15	12/02/15	19/02/15	26/02/15	05/03/15	12/03/15	19/03/15	26/03/15	02/04/15	09/04/15	16/04/15	23/04/15	30/04/15	07/05/15	14/05/15	21/05/15	28/05/15	04/06/15	11/06/15	18/06/15	25/06/15	02/07/15	09/07/15	16/07/15	23/07/15	30/07/15	06/08/15	13/08/15	20/08/15	27/08/15	03/09/15	10/09/15	17/09/15	24/09/15	01/10/15	08/10/15	15/10/15	22/10/15	29/10/15	05/11/15	12/11/15	19/11/15	26/11/15	03/12/15	10/12/15	17/12/15	24/12/15	31/12/15	06/01/16	13/01/16	20/01/16	27/01/16	03/02/16	10/02/16	17/02/16	24/02/16	03/03/16	10/03/16	17/03/16	24/03/16	31/03/16	06/04/16	13/04/16	20/04/16	27/04/16	04/05/16	11/05/16	18/05/16	25/05/16	01/06/16	08/06/16	15/06/16	22/06/16	29/06/16	06/07/16	13/07/16	20/07/16	27/07/16	03/08/16	10/08/16	17/08/16	24/08/16	31/08/16	06/09/16	13/09/16	20/09/16	27/09/16	04/10/16	11/10/16	18/10/16	25/10/16	01/11/16	08/11/16	15/11/16	22/11/16	29/11/16	05/12/16	12/12/16	19/12/16	26/12/16	01/01/17	08/01/17	15/01/17	22/01/17	29/01/17	05/02/17	12/02/17	19/02/17	26/02/17	05/03/17	12/03/17	19/03/17	26/03/17	02/04/17	09/04/17	16/04/17	23/04/17	30/04/17	07/05/17	14/05/17	21/05/17	28/05/17	04/06/17	11/06/17	18/06/17	25/06/17	02/07/17	09/07/17	16/07/17	23/07/17	30/07/17	06/08/17	13/08/17	20/08/17	27/08/17	03/09/17	10/09/17	17/09/17	24/09/17	01/10/17	08/10/17	15/10/17	22/10/17	29/10/17	05/11/17	12/11/17	19/11/17	26/11/17	03/12/17	10/12/17	17/12/17	24/12/17	31/12/17	06/01/18	13/01/18	20/01/18	27/01/18	03/02/18	10/02/18	17/02/18	24/02/18	03/03/18	10/03/18	17/03/18	24/03/18	31/03/18	06/04/18	13/04/18	20/04/18	27/04/18	04/05/18	11/05/18	18/05/18	25/05/18	01/06/18	08/06/18	15/06/18	22/06/18	29/06/18	06/07/18	13/07/18	20/07/18	27/07/18	03/08/18	10/08/18	17/08/18	24/08/18	31/08/18	06/09/18	13/09/18	20/09/18	27/09/18	04/10/18	11/10/18	18/10/18	25/10/18	01/11/18	08/11/18	15/11/18	22/11/18	29/11/18	05/12/18	12/12/18	19/12/18	26/12/18	01/01/19	08/01/19	15/01/19	22/01/19	29/01/19	05/02/19	12/02/19	19/02/19	26/02/19	05/03/19	12/03/19	19/03/19	26/03/19	02/04/19	09/04/19	16/04/19	23/04/19	30/04/19	07/05/19	14/05/19	21/05/19	28/05/19	04/06/19	11/06/19	18/06/19	25/06/19	02/07/19	09/07/19	16/07/19	23/07/19	30/07/19	06/08/19	13/08/19	20/08/19	27/08/19	03/09/19	10/09/19	17/09/19	24/09/19	01/10/19	08/10/19	15/10/19	22/10/19	29/10/19	05/11/19	12/11/19	19/11/19	26/11/19	03/12/19	10/12/19	17/12/19	24/12/19	31/12/19	06/01/20	13/01/20	20/01/20	27/01/20	03/02/20	10/02/20	17/02/20	24/02/20	03/03/20	10/03/20	17/03/20	24/03/20	31/03/20	06/04/20	13/04/20	20/04/20	27/04/20	04/05/20	11/05/20	18/05/20	25/05/20	01/06/20	08/06/20	15/06/20	22/06/20	29/06/20	06/07/20	13/07/20	20/07/20	27/07/20	03/08/20	10/08/20	17/08/20	24/08/20	31/08/20	06/09/20	13/09/20	20/09/20	27/09/20	04/10/20	11/10/20	18/10/20	25/10/20	01/11/20	08/11/20	15/11/20	22/11/20	29/11/20	05/12/20	12/12/20	19/12/20	26/12/20	01/01/21	08/01/21	15/01/21	22/01/21	29/01/21	05/02/21	12/02/21	19/02/21	26/02/21	05/03/21	12/03/21	19/03/21	26/03/21	02/04/21	09/04/21	16/04/21	23/04/21	30/04/21	07/05/21	14/05/21	21/05/21	28/05/21	04/06/21	11/06/21	18/06/21	25/06/21	02/07/21	09/07/21	16/07/21	23/07/21	30/07/21	06/08/21	13/08/21	20/08/21	27/08/21	03/09/21	10/09/21	17/09/21	24/09/21	01/10/21	08/10/21	15/10/21	22/10/21	29/10/21	05/11/21	12/11/21	19/11/21	26/11/21	03/12/21	10/12/21	17/12/21	24/12/21	31/12/21	06/01/22	13/01/22	20/01/22	27/01/22	03/02/22	10/02/22	17/02/22	24/02/22	03/03/22	10/03/22	17/03/22	24/03/22	31/03/22	06/04/22	13/04/22	20/04/22	27/04/22	04/05/22	11/05/22	18/05/22	25/05/22	01/06/22	08/06/22	15/06/22	22/06/22	29/06/22	06/07/22	13/07/22	20/07/22	27/07/22	03/08/22	10/08/22	17/08/22	24/08/22	31/08/22	06/09/22	13/09/22	20/09/22	27/09/22	04/10/22	11/10/22	18/10/22	25/10/22	01/11/22	08/11/22	15/11/22	22/11/22	29/11/22	05/12/22	12/12/22	19/12/22	26/12/22	01/01/23	08/01/23	15/01/23	22/01/23	29/01/23	05/02/23	12/02/23	19/02/23	26/02/23	05/03/23	12/03/23	19/03/23	26/03/23	02/04/23	09/04/23	16/04/23	23/04/23	30/04/23	07/05/23	14/05/23	21/05/23	28/05/23	04/06/23	11/06/23	18/06/23	25/06/23	02/07/23	09/07/23	16/07/23	23/07/23	30/07/23	06/08/23	13/08/23	20/08/23	27/08/23	03/09/23	10/09/23	17/09/23	24/09/23	01/10/23	08/10/23	15/10/23	22/10/23	29/10/23	05/11/23	12/11/23	19/11/23	26/11/23	03/12/23	10/12/23	17/12/23	24/12/23	31/12/23	06/01/24	13/01/24	20/01/24	27/01/24	03/02/24	10/02/24	17/02/24	24/02/24	03/03/24	10/03/24	17/03/24	24/03/24	31/03/24	06/04/24	13/04/24	20/04/24	27/04/24	04/05/24	11/05/24	18/05/24	25/05/24	01/06/24	08/06/24	15/06/24	22/06/24	29/06/24	06/07/24	13/07/24	20/07/24	27/07/24	03/08/24	10/08/24	17/08/24	24/08/24	31/08/24	06/09/24	13/09/24	20/09/24	27/09/24	04/10/24	11/10/24	18/10/24	25/10/24	01/11/24	08/11/24	15/11/24	22/11/24	29/11/24	05/12/24	12/12/24	19/12/24	26/12/24	01/01/25	08/01/25	15/01/25	22/01/25	29/01/25	05/02/25	12/02/25	19/02/25	26/02/25	05/03/25	12/03/25	19/03/25	26/03/25	02/04/25	09/04/25	16/04/25	23/04/25	30/04/25	07/05/25	14/05/25	21/05/25	28/05/25	04/06/25	11/06/25	18/06/25	25/06/25	02/07/25	09/07/25	16/07/25	23/07/25	30/07/25	06/08/25	13/08/25	20/08/25	27/08/25	03/09/25	10/09/25	17/09/25	24/09/25	01/10/25	08/10/25	15/10/25	22/10/25	29/10/25	05/11/25	12/11/25	19/11/25	26/11/25	03/12/25	10/12/25	17/12/25	24/12/25	31/12/25	06/01/26	13/01/26	20/01/26	27/01/26	03/02/26	10/02/26	17/02/26	24/02/26	03/03/26	10/03/26	17/03/26	24/03/26	31/03/26	06/04/26	13/04/26	20/04/26	27/04/26	04/05/26	11/05/26	18/05/26	25/05/26	01/06/26	08/06/26	15/06/26	22/06/26	29/06/26	06/07/26	13/07/26	20/07/26	27/07/26	03/08/26	10/08/26	17/08/26	24/08/26	31/08/26	06/09/26	13/09/26	20/09/26	27/09/26	04/10/26	11/10/26	18/10/26	25/10/26	01/11/26	08/11/26	15/11/26	22/11/26	29/11/26	05/12/26	12/12/26	19/12/26	26/12/26	01/01/27	08/01/27	15/01/27	22/01/27	29/01
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**BAM PSCP RHSC, Edinburgh FBC Fee from 24 August 2009 to 13 August 2010**

**Summary of Resources / Costs based on Detailed Development Programme**

Fee Development Template

NB: Fees exclude VAT and expenses to be charged at cost

**Balfour Beatty Engineering**

	Contracts Manager		Project Manager		Cost Planner		Assistant Cost planner								Total		Assumptions
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	
					0.00		0.00		0.00		0.00		0.00		0.00		
Programme item 10 Concept Design(from 24th of August to 6th of October)8 week Contracts Manager attending Meetings 1 day per fortnight	30.00	1395.00													30.00	1395.00	
Programme item 13 Schedule Design(from 19th of october to 19th of January)16 weeks Contracts Manager attending meetings(1 day per fortnight),Project Manager attending meetings and design review(1 day per fortnight)	60.00	2790.00	60.00	2265.60											120.00	5056.60	
Programme item 15 Detailed design(22nd of Febuary to 11th of June 2010)16 weeks Contracts Manager(3 days per week and Project Manager(2 days per week) attending meetings and design review	360.00	16740.00	225.00	8496.00											585.00	25236.00	
Programme item 18 Markel Testing Contracts Manager(3 days per week and Project Manager(2 days per week) attending meetings and design review(for 9 weeks period in programme over laps with programme item 15) Cost planner and assistant for 2 days per week for 18 weeks	202.50	9416.25	150.00	5664.00	285.00	9630.15	285.00	7213.35							922.50	31924.35	
<b>WORKSTREAM MEETINGS</b>																	
<b>WHOLE HOSPITALGROUP MEETINGS</b>																	
<b>FACILITATED WORKSHOP FORUMS</b>																	
<b>Sub Total</b>	<b>652.50</b>	<b>£ 30,341.25</b>	<b>435.00</b>	<b>£ 16,425.60</b>	<b>285.00</b>	<b>£ 9,630.15</b>	<b>285.00</b>	<b>£ 7,213.35</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>1657.50</b>	<b>£ 63,610.35</b>	
Contingency (0%)																	
<b>Total</b>	<b>652.50</b>	<b>£ 30,341.25</b>	<b>435.00</b>	<b>£ 16,425.60</b>	<b>285.00</b>	<b>£ 9,630.15</b>	<b>285.00</b>	<b>£ 7,213.35</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>1657.50</b>	<b>£ 63,610.35</b>	













RHSC, Edinburgh Forecast FBC Fees for 24 August 2009 to 13 August 2010

Table with columns: PSCM Name, Description, Rate, Estimated. Lists various PSCM names and their associated rates.

24 August 2009 to 13 August 2010

Main data table for the period 24 August 2009 to 13 August 2010. Columns include dates from 24/08/09 to 13/08/10 and corresponding values.

Table with columns: PSCM Name, Description, Rate, Estimated. Lists various PSCM names and their associated rates.

Main data table for the period 14 August 2009 to 13 August 2010. Columns include dates from 14/08/09 to 13/08/10 and corresponding values.

Summary table on the right side of the page, containing totals for various categories and dates.



















**BAM PSCP RHSC, Edinburgh FBC Fee from 24 August 2009 to 13 August 2010**

**Summary of Resources / Costs based on Detailed Development Programme**

Fee Development Template

NB: Fees exclude VAT and expenses to be charged at cost

**Arup - Environmental Impact Assessment**

	Principal		Professional P1 (>10yrs)		Professional P2 (5-10yrs)		Professional P3 (<5yrs)		Technical T1 (>10yrs)		Technical T2 (5-10yrs)		Technical T3 (<5yrs)		Admin A1		Total		Assumptions
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	
Rate	0.00	117.37	0.00	93.16	0.00	77.44	0.00	65.34	0.00	64.13	0.00	54.44	0.00	42.35	0.00	0.00	0.00	0.00	
<b>DELIVERABLES</b>																			
Screening Report	0.00	0	0.00	0	15.00	1162	37.50	2450	0.00	0	7.50	408	0.00	0	0.00	0	60.00	4020	
Scoping Report	0.00	0	0.00	0	75.00	5808	150.00	9801	15.00	962	7.50	408	0.00	0	0.00	0	247.50	16979	
Baseline	0.00	0	0.00	0	75.00	5808	300.00	19602	0.00	0	0.00	0	0.00	0	0.00	0	375.00	25410	
Impact Assessment	0.00	0	0.00	0	150.00	11616	450.00	29403	0.00	0	0.00	0	0.00	0	0.00	0	600.00	41019	
Mitigation Development	0.00	0	0.00	0	75.00	5808	150.00	9801	22.50	1443	22.50	1225	0.00	0	0.00	0	270.00	18277	
Environmental Statement Preparation	0.00	0	37.50	3494	75.00	5808	150.00	9801	37.50	2405	112.50	6125	0.00	0	0.00	0	412.50	27632	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
<b>Sub Total</b>	0.00	£ -	37.50	£ 3,493.50	465.00	£ 36,009.60	1237.50	£ 80,858.25	75.00	£ 4,809.75	150.00	£ 8,166.00	0.00	£ -	0.00	£ -	1965.00		
Contingency (0%)	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
<b>Total</b>	0.00	£ -	37.50	£ 3,493.50	465.00	£ 36,009.60	1237.50	£ 80,858.25	75.00	£ 4,809.75	150.00	£ 8,166.00	0.00	£ -	0.00	£ -	1965.00	£133,337.10	













**BAM PSCP RHSC, Edinburgh FBC Fee from 24 August 2009 to 13 August 2010**

**Summary of Resources / Costs based on Detailed Development Programme**

Fee Development Template

NB: Fees exclude VAT and expenses to be charged at cost

**Arup Fire**

	Principal		Professional P1 (>10yrs)		Professional P2 (5-10yrs)		Professional P3 (<5yrs)		Technical T1 (>10yrs)		Technical T2 (5-10yrs)		Technical T3 (<5yrs)		Admin A1		Total		Assumptions
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	
Rate	157.30		0.00		94.99		78.66		0.00		0.00		0.00		0.00		0.00		
<b>DELIVERABLES</b>																			
Fire Strategy development	25.00	3933	0.00	0	20.00	1900	100.00	7866	0.00	0	0.00	0	0.00	0	0.00	0	145.00	13698	
Assisting architect with preparation of fire strategy drawings	17.50	2753	0.00	0	7.00	665	177.50	13962	0.00	0	0.00	0	0.00	0	0.00	0	202.00	17380	
Liaison with other disciplines / coordination	15.00	2360	0.00	0	10.00	950	50.00	3933	0.00	0	0.00	0	0.00	0	0.00	0	75.00	7242	
Internal quality assurance/design reviews/checking exercises	20.00	3146	0.00	0	15.50	1472	25.00	1967	0.00	0	0.00	0	0.00	0	0.00	0	60.50	6585	
Meetings	65.00	10225	0.00	0	45.00	4275	60.00	4720	0.00	0	0.00	0	0.00	0	0.00	0	170.00	19219	
<b>Sub Total</b>	<b>142.50</b>	<b>£ 22,415.25</b>	<b>0.00</b>	<b>£ -</b>	<b>97.50</b>	<b>£ 9,261.53</b>	<b>412.50</b>	<b>£ 32,447.25</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>652.50</b>	<b>£ 64,124.03</b>	
<b>Total</b>	<b>142.50</b>	<b>£ 22,415.25</b>	<b>0.00</b>	<b>£ -</b>	<b>97.50</b>	<b>£ 9,261.53</b>	<b>412.50</b>	<b>£ 32,447.25</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>0.00</b>	<b>£ -</b>	<b>652.50</b>	<b>£ 64,124.03</b>	















BAM PSCP RHSC & DCN FBC Fee to 13th Aug 10

Summary of Resources / Costs based on Outline Design Delivery Programme SC0296/6/2A 4th Aug 09

Fee Development Template

NB: Fees exclude VAT and expenses to be charged at cost

Hulley & Kirkwood

Rate	Principal		Professional P1 (>10yrs)		Professional P2 (5-10yrs)		Professional P3 (<5yrs)		Technical T1 (>10yrs)		Technical T2 (5-10yrs)		Technical T3 (<5yrs)		Admin A1		Total		Assumptions
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	
	97.92		71.07		63.70		57.09		57.09		43.00		35.45		0.00		0.00		
<b>DELIVERABLES</b>																			
<b>CONCEPT DESIGN</b>																			
DEVELOP CONCEPT PLANT STRATEGY	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	0.00	0	0.00	0	75.00	4822	
DEVELOP CONCEPT PLANT ACCOMMODATION STRATEGY	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	0.00	0	0.00	0	75.00	4822	
SITE INVESTIGATIONS & INFORMATION COLLECTION	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	0.00	0	0.00	0	75.00	4822	
DEVELOP SERVICE REPLACEMENT STRATEGY & PHASING	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	0.00	0	0.00	0	75.00	4822	
DEVELOP ENERGY STRATEGY OPTIONS APPRAISAL	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	0.00	0	0.00	0	75.00	4822	
UTILITIES AND INFRASTRUCTURE CONCEPT LAYOUTS	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	45.00	1596	0.00	0	120.00	6418	
BREEAM CONCEPT ASSESSMENT	15.00	1469	10.00	711	0.00	0	80.00	4567	0.00	0	0.00	0	0.00	0	0.00	0	105.00	6747	
DEVELOP ENABLING WORKS REQUIREMENTS	15.00	1469	10.00	711	0.00	0	70.00	3996	0.00	0	20.00	860	0.00	0	0.00	0	115.00	7036	
DEVELOP SERVICE RISER STRATEGY	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	0.00	0	0.00	0	75.00	4822	
CONCEPT SERVICES SCHEMATICS	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	0.00	0	0.00	0	75.00	4822	
CONCEPT DISTRIBUTION STRATEGY LAYOUTS	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	120.00	4255	0.00	0	195.00	9077	
CONCEPT OUTLINE DESCRIPTION OF SERVICES	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	30.00	1064	0.00	0	105.00	5886	
THERMAL MODELLING SINGLE BEDROOMS	15.00	1469	15.00	1066	0.00	0	25.00	1427	0.00	0	20.00	860	40.00	1418	0.00	0	115.00	6241	
MEETINGS	75.00	7344	40.00	2843	0.00	0	40.00	2284	0.00	0	0.00	0	0.00	0	0.00	0	155.00	12470	
	270.0	26438	225.0	15991	0.0	0	465.0	26547	0.0	0	240.0	10320	235	8333	0.0	0	1435.0	87629	
<b>SCHEME DESIGN</b>																			
SELECT ENERGY STRATEGY OPTIONS AND DEVELOP SCHEME LAYOUT	30.00	2938	45.00	3198	0.00	0	80.00	4567	0.00	0	30.00	1290	0.00	0	0.00	0	185.00	11993	
UTILITIES AND INFRASTRUCTURE SCHEME DESIGN LAYOUTS	30.00	2938	50.00	3554	0.00	0	100.00	5709	0.00	0	30.00	1290	50.00	1773	0.00	0	260.00	15263	
BREEAM SCHEME DESIGN ASSESSMENT	20.00	1958	40.00	2843	0.00	0	110.00	6280	0.00	0	30.00	1290	0.00	0	0.00	0	200.00	12371	
DEVELOP ENABLING WORKS	32.00	3133	90.00	6396	0.00	0	100.00	5709	0.00	0	30.00	1290	0.00	0	0.00	0	252.00	16529	
SUPPORT ARCHITECTS 1:50 DEVELOPMENT	30.00	2938	40.00	2843	0.00	0	70.00	3996	0.00	0	30.00	1290	0.00	0	0.00	0	170.00	11087	
VERIFY SERVICE RISER STRATEGY	30.00	2938	40.00	2843	0.00	0	70.00	3996	0.00	0	30.00	1290	0.00	0	0.00	0	170.00	11087	
ENVIRONMENTAL STRATEGY LAYOUTS	30.00	2938	40.00	2843	0.00	0	70.00	3996	0.00	0	30.00	1290	0.00	0	0.00	0	170.00	11087	
SCHEME DESIGN SERVICES SCHEMATICS	33.50	3280	40.00	2843	0.00	0	70.00	3996	0.00	0	30.00	1290	200.00	7092	0.00	0	373.50	18501	
SCHEME DESIGN DISTRIBUTION STRATEGY LAYOUTS	40.00	3917	40.00	2843	0.00	0	100.00	5709	0.00	0	30.00	1290	200.00	7092	0.00	0	410.00	20851	
SCHEME DESIGN OUTLINE DESCRIPTION OF SERVICES	40.00	3917	40.00	2843	0.00	0	90.00	5138	0.00	0	30.00	1290	0.00	0	0.00	0	200.00	13188	
SERVICES INPUT INTO RDS & C SHEETS	40.0	3917	85.0	6041	0.0	0	180.0	10276	0.0	0	60.0	2580	0.0	0	0.0	0	365.00	22814	
MEETINGS	60.0	5875	40.0	2843	0.0	0	64.0	3654	0.0	0	0.0	0	0.0	0	0.0	0	164.00	12372	
	415.50	40686	590.00	41931	0.00	0	1104.00	63027.35	0.00	0.00	360.00	15480.00	450.00	15957.00	0.00	0.00	2919.50	177081.42	
<b>DETAIL DESIGN &amp; MARKET TESTING</b>																			
Develop Detailed Design to Support Pricing , FBC & Construction	40.0	3917	200.0	14214	0.0	0	925.00	52808	0.00	0	300.00	12900	752.50	26684	0.00	0	2217.50	110523	
Develop design for Pricing	40.00	3917	77.50	5508	0.00	0	180.00	10276	0.00	0	75.00	3225	200.00	7092	0.00	0	572.50	30018	
Schedule Plant & Equipment	40.00	3917	70.00	4975	0.00	0	180.00	10276	0.00	0	75.00	3225	0.00	0	0.00	0	365.00	22393	
Provide Technical Specifications	40.00	3917	70.00	4975	0.00	0	180.00	10276	0.00	0	75.00	3225	0.00	0	0.00	0	365.00	22393	
Support to PSCP during Market Testing and meeting attendance	36.50	3574	70.00	4975	0.00	0	180.00	10276	0.00	0	75.00	3225	0.00	0	0.00	0	361.50	22050	
MEETINGS	75.00	7344	40.00	2843	0.00	0	81.00	4624	0.00	0	0.00	0	0.00	0	0.00	0	196.00	14811	
	271.50	26585	527.50	37489	0.00	0.00	1726.00	98537.34	0.00	0.00	600.00	25800.00	952.50	33775.65	0.00	0.00	4077.50	222187.70	
<b>FBC</b>																			
Provide Services Information to Support FBC	30.0	2938	20.0	1421	0.0	0	30.00	1712.70	0.00	0	0.00	0	40.00	1418	0.00	0	120.00	7490.10	
MEETINGS	20.0	1958	10.0	711	0.0	0	0.00	0.00	0.00	0	0.00	0	0.00	0	0.00	0	30.00	2669.10	
	50.0	4896	30.0	2132	0.0	0.0	30.00	1713	0	0	0	40	1418	0.00	0.00	0.00	150.00	10159.20	
<b>Sub Total</b>	1007.00	98605.44	1372.50	97543.58	0.00	0.00	3325.00	189824.25	0.00	0.00	1200.00	51600.00	1677.50	59484.15	0.00	0.00	8582.00	497057.42	
Expenses	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
<b>Total</b>	1007.00	98,605.44	1372.50	97,543.58	0.00	0.00	3325.00	189,824.25	0.00	0.00	1200.00	51,600.00	1677.50	59,484.15	0.00	0.00	8582.00	497,057.42	







**BAM PSCP RHSC, Edinburgh FBC Fee from 24 August 2009 to 13 August 2010**

**Summary of Resources / Costs based on Detailed Development Programme**

Fee Development Template

NB: Fees exclude VAT and expenses to be charged at cost

**Doig+Smith**

Rate	Principal		Professional P1 (>10yrs)		Professional P2 (5-10yrs)		Professional P3 (<5yrs)		Technical T1 (>10yrs)		Technical T2 (5-10yrs)		Technical T3 (<5yrs)		Admin A1		Total		Assumptions
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	
<b>DELIVERABLES</b>	<b>80.54</b>		<b>87.77</b>		<b>58.73</b>		<b>56.86</b>		<b>66.49</b>		<b>42.08</b>		<b>24.75</b>		<b>24.48</b>		<b>0.00</b>		
Dates below are taken from the Outline Design delivery Programme SC0296/6/2A dated 4 August 2009																			
<b>Draft Cost Plan</b>																			
<b>Cost Plan Confirmation [24 August 09 - 15 November 09] :</b>																			
Resources management	10.00	805.40	10.00	877.70	0.00	-	0.00	-	0.00	0	0.00	-	0.00	-	0.00	-	20.00	1,683.10	
Development of Draft Cost Plan from Concept Design	10.00	805.40	0.00	-	90.00	5,285.70	80.00	4,548.80	0.00	0	0.00	-	200.00	4,950.00	0.00	-	380.00	15,589.90	
Agreeing Draft Cost Plan with TG	20.00	1,610.80	0.00	-	50.00	2,936.50	20.00	1,137.20	0.00	0	0.00	-	0.00	-	0.00	-	90.00	5,684.50	
Market testing for Cost Plan	0.00	-	0.00	-	30.00	1,761.90	40.00	2,274.40	0.00	0	0.00	-	0.00	-	0.00	-	70.00	4,036.30	
Value Management / Engineering	0.00	-	5.00	438.85	50.00	2,936.50	20.00	1,137.20	0.00	0	0.00	-	50.00	1,237.50	0.00	-	125.00	5,750.05	
Life Cycle Costing	0.00	-	1.72	150.96	0.00	-	0.00	-	0.00	0	0.00	-	0.00	-	0.00	-	1.72	150.96	
Monthly Cost Reports	0.00	-	0.00	-	30.00	1,761.90	20.00	1,137.20	0.00	0	0.00	-	0.00	-	0.00	-	50.00	2,899.10	
Seminars and Workshops	20.00	1,610.80	5.00	438.85	40.00	2,349.20	50.00	2,843.00	0.00	0	0.00	-	11.00	272.25	0.00	-	126.00	7,514.10	
Meetings	27.00	2,174.58	0.00	-	58.00	3,406.34	31.00	1,762.66	0.00	0	0.00	-	0.00	-	0.00	-	116.00	7,343.58	
<b>to FBC</b>																			
<b>Cost Plan Development [16 November 09 - 21 March 10] :</b>																			
Resources management	20.00	1,610.80	20.00	1,755.40	50.00	2,936.50	10.00	568.60	0.00	-	0.00	-	0.00	-	0.00	-	100.00	6,871.30	
Project Meetings, Workshops, Seminars and Actions	30.00	2,416.20	7.92	695.14	100.00	5,873.00	95.00	5,401.70	0.00	-	0.00	-	50.00	1,237.50	0.00	-	282.92	15,623.54	
Overview / Checking	30.00	2,416.20	10.00	877.70	50.00	2,936.50	75.00	4,264.50	0.00	-	0.00	-	0.00	-	0.00	-	165.00	10,494.90	
Cost Plan Development / Elemental / Detailed Measurements	20.00	1,610.80	5.00	438.85	120.00	7,047.60	250.00	14,215.00	0.00	-	0.00	-	300.00	7,425.00	0.00	-	695.00	30,737.25	
Market testing for Cost Plan	0.00	-	0.00	-	44.00	2,584.12	150.00	8,529.00	0.00	-	0.00	-	114.00	2,821.50	0.00	-	308.00	13,934.62	
Life Cycle Cost Planning	0.00	-	5.00	438.85	20.00	1,174.60	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	25.00	1,613.45	
Monthly Cost Reports	16.00	1,288.64	10.00	877.70	80.00	4,698.40	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	106.00	6,864.74	
<b>Tender Documentation [22 March 10 - 20 June 10] :</b>																			
Resources management	20.00	1,610.80	20.00	1,755.40	20.00	1,174.60	10.00	568.60	0.00	-	0.00	-	0.00	-	0.00	-	70.00	5,109.40	
Project Meetings, Workshops, Seminars and Actions	20.00	1,610.80	7.06	619.66	60.00	3,523.80	30.00	1,705.80	0.00	-	0.00	-	0.00	-	0.00	-	117.06	7,460.06	
Overview / Checking	20.00	1,610.80	10.00	877.70	80.00	3,523.80	65.00	3,695.90	0.00	-	0.00	-	0.00	-	0.00	-	155.00	9,708.20	
Bills of Quantities / Builder's Quantities	0.00	-	0.00	-	350.00	20,555.50	250.00	14,215.00	0.00	-	565.00	23,775.20	350.00	8,662.50	0.00	-	1515.00	67,208.20	
Tendering / Market Testing	0.00	-	0.00	-	152.75	8,971.01	60.00	3,411.60	0.00	-	315.00	13,255.20	121.25	3,000.94	0.00	-	649.00	28,638.75	
Updating Cost Plan	0.00	-	0.00	-	50.00	2,936.50	25.00	1,421.50	0.00	-	0.00	-	0.00	-	0.00	-	75.00	4,358.00	
Monthly Cost Reports	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	
Life Cycle Costing	0.00	-	5.00	438.85	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	5.00	438.85	
Risk Workshops, updates, registers, actions	20.00	1,610.80	0.00	-	54.25	3,186.10	15.00	852.90	0.00	-	0.00	-	0.00	-	0.00	-	89.25	5,649.80	
Value Engineering	14.25	1,147.70	5.00	438.85	101.25	5,946.41	16.25	923.98	0.00	-	62.50	2,630.00	0.00	-	0.00	-	199.25	11,086.93	
<b>Reviewing Tenders / Reporting [21 June 10 - 13 August 10] :</b>																			
Resources management	17.04	1,372.40	5.00	438.85	5.00	293.65	5.00	284.30	0.00	-	0.00	-	0.00	-	0.00	-	32.04	2,389.20	
Project Meetings, Workshops, Seminars and Actions	20.00	1,610.80	5.00	438.85	50.00	2,936.50	50.00	2,843.00	0.00	-	0.00	-	0.00	-	0.00	-	125.00	7,829.15	
Overview / Checking	20.00	1,610.80	5.00	438.85	50.00	2,936.50	50.00	2,843.00	0.00	-	0.00	-	0.00	-	0.00	-	125.00	7,829.15	
Value Engineering / Savings	20.00	1,610.80	5.00	438.85	50.00	2,936.50	55.00	3,127.30	0.00	-	0.00	-	0.00	-	0.00	-	130.00	8,113.45	
Assist with reviewing tender returns / answering queries	0.00	-	3.96	347.57	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	3.96	347.57	
Monthly Cost Reports	0.00	-	5.00	438.85	5.00	293.65	10.00	568.60	0.00	-	0.00	-	0.00	-	0.00	-	20.00	1,301.10	
Assist with Agreeing Target Cost	10.00	805.40	0.00	-	14.00	822.22	4.00	227.44	0.00	-	0.00	-	0.00	-	0.00	-	28.00	1,855.06	
<b>WORKSTREAM MEETINGS</b>																			
	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0.00	-	
<b>WHOLE HOSPITALGROUP MEETINGS</b>																			
	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0.00	-	
<b>FACILITATED WORKSHOP FORUMS</b>																			
	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0.00	-	
<b>Sub Total</b>	<b>384.29</b>	<b>£ 30,950.72</b>	<b>155.66</b>	<b>£ 13,662.28</b>	<b>1834.25</b>	<b>£ 107,725.50</b>	<b>1486.25</b>	<b>£ 84,508.18</b>	<b>0.00</b>	<b>£ -</b>	<b>942.50</b>	<b>£ 39,660.40</b>	<b>1196.25</b>	<b>£ 29,607.19</b>	<b>0.00</b>	<b>£ -</b>	<b>5999.20</b>	<b>£ 306,114.26</b>	
Contingency (0%)	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	
<b>Total</b>	<b>384.29</b>	<b>£ 30,950.72</b>	<b>155.66</b>	<b>£ 13,662.28</b>	<b>1834.25</b>	<b>£ 107,725.50</b>	<b>1486.25</b>	<b>£ 84,508.18</b>	<b>0.00</b>	<b>£ -</b>	<b>942.50</b>	<b>£ 39,660.40</b>	<b>1196.25</b>	<b>£ 29,607.19</b>	<b>0.00</b>	<b>£ -</b>	<b>5999.20</b>	<b>£ 306,114.26</b>	





RHSC, Edinburgh Forecast FBC Fees for 24 August 2009 to 13 August 2010

Item	Description	Name	Rate	Unit
1.1	Professional Fee (1st Year)	£100.00	per hour	
1.2	Professional Fee (2nd Year)	£100.00	per hour	
1.3	Professional Fee (3rd Year)	£100.00	per hour	
1.4	Professional Fee (4th Year)	£100.00	per hour	
1.5	Professional Fee (5th Year)	£100.00	per hour	
1.6	Professional Fee (6th Year)	£100.00	per hour	
1.7	Professional Fee (7th Year)	£100.00	per hour	
1.8	Professional Fee (8th Year)	£100.00	per hour	
1.9	Professional Fee (9th Year)	£100.00	per hour	
1.10	Professional Fee (10th Year)	£100.00	per hour	
1.11	Professional Fee (11th Year)	£100.00	per hour	
1.12	Professional Fee (12th Year)	£100.00	per hour	
1.13	Professional Fee (13th Year)	£100.00	per hour	
1.14	Professional Fee (14th Year)	£100.00	per hour	
1.15	Professional Fee (15th Year)	£100.00	per hour	
1.16	Professional Fee (16th Year)	£100.00	per hour	
1.17	Professional Fee (17th Year)	£100.00	per hour	
1.18	Professional Fee (18th Year)	£100.00	per hour	
1.19	Professional Fee (19th Year)	£100.00	per hour	
1.20	Professional Fee (20th Year)	£100.00	per hour	
1.21	Professional Fee (21st Year)	£100.00	per hour	
1.22	Professional Fee (22nd Year)	£100.00	per hour	
1.23	Professional Fee (23rd Year)	£100.00	per hour	
1.24	Professional Fee (24th Year)	£100.00	per hour	
1.25	Professional Fee (25th Year)	£100.00	per hour	
1.26	Professional Fee (26th Year)	£100.00	per hour	
1.27	Professional Fee (27th Year)	£100.00	per hour	
1.28	Professional Fee (28th Year)	£100.00	per hour	
1.29	Professional Fee (29th Year)	£100.00	per hour	
1.30	Professional Fee (30th Year)	£100.00	per hour	
1.31	Professional Fee (31st Year)	£100.00	per hour	
1.32	Professional Fee (32nd Year)	£100.00	per hour	
1.33	Professional Fee (33rd Year)	£100.00	per hour	
1.34	Professional Fee (34th Year)	£100.00	per hour	
1.35	Professional Fee (35th Year)	£100.00	per hour	
1.36	Professional Fee (36th Year)	£100.00	per hour	
1.37	Professional Fee (37th Year)	£100.00	per hour	
1.38	Professional Fee (38th Year)	£100.00	per hour	
1.39	Professional Fee (39th Year)	£100.00	per hour	
1.40	Professional Fee (40th Year)	£100.00	per hour	
1.41	Professional Fee (41st Year)	£100.00	per hour	
1.42	Professional Fee (42nd Year)	£100.00	per hour	
1.43	Professional Fee (43rd Year)	£100.00	per hour	
1.44	Professional Fee (44th Year)	£100.00	per hour	
1.45	Professional Fee (45th Year)	£100.00	per hour	
1.46	Professional Fee (46th Year)	£100.00	per hour	
1.47	Professional Fee (47th Year)	£100.00	per hour	
1.48	Professional Fee (48th Year)	£100.00	per hour	
1.49	Professional Fee (49th Year)	£100.00	per hour	
1.50	Professional Fee (50th Year)	£100.00	per hour	
1.51	Professional Fee (51st Year)	£100.00	per hour	
1.52	Professional Fee (52nd Year)	£100.00	per hour	
1.53	Professional Fee (53rd Year)	£100.00	per hour	
1.54	Professional Fee (54th Year)	£100.00	per hour	
1.55	Professional Fee (55th Year)	£100.00	per hour	
1.56	Professional Fee (56th Year)	£100.00	per hour	
1.57	Professional Fee (57th Year)	£100.00	per hour	
1.58	Professional Fee (58th Year)	£100.00	per hour	
1.59	Professional Fee (59th Year)	£100.00	per hour	
1.60	Professional Fee (60th Year)	£100.00	per hour	
1.61	Professional Fee (61st Year)	£100.00	per hour	
1.62	Professional Fee (62nd Year)	£100.00	per hour	
1.63	Professional Fee (63rd Year)	£100.00	per hour	
1.64	Professional Fee (64th Year)	£100.00	per hour	
1.65	Professional Fee (65th Year)	£100.00	per hour	
1.66	Professional Fee (66th Year)	£100.00	per hour	
1.67	Professional Fee (67th Year)	£100.00	per hour	
1.68	Professional Fee (68th Year)	£100.00	per hour	
1.69	Professional Fee (69th Year)	£100.00	per hour	
1.70	Professional Fee (70th Year)	£100.00	per hour	
1.71	Professional Fee (71st Year)	£100.00	per hour	
1.72	Professional Fee (72nd Year)	£100.00	per hour	
1.73	Professional Fee (73rd Year)	£100.00	per hour	
1.74	Professional Fee (74th Year)	£100.00	per hour	
1.75	Professional Fee (75th Year)	£100.00	per hour	
1.76	Professional Fee (76th Year)	£100.00	per hour	
1.77	Professional Fee (77th Year)	£100.00	per hour	
1.78	Professional Fee (78th Year)	£100.00	per hour	
1.79	Professional Fee (79th Year)	£100.00	per hour	
1.80	Professional Fee (80th Year)	£100.00	per hour	
1.81	Professional Fee (81st Year)	£100.00	per hour	
1.82	Professional Fee (82nd Year)	£100.00	per hour	
1.83	Professional Fee (83rd Year)	£100.00	per hour	
1.84	Professional Fee (84th Year)	£100.00	per hour	
1.85	Professional Fee (85th Year)	£100.00	per hour	
1.86	Professional Fee (86th Year)	£100.00	per hour	
1.87	Professional Fee (87th Year)	£100.00	per hour	
1.88	Professional Fee (88th Year)	£100.00	per hour	
1.89	Professional Fee (89th Year)	£100.00	per hour	
1.90	Professional Fee (90th Year)	£100.00	per hour	
1.91	Professional Fee (91st Year)	£100.00	per hour	
1.92	Professional Fee (92nd Year)	£100.00	per hour	
1.93	Professional Fee (93rd Year)	£100.00	per hour	
1.94	Professional Fee (94th Year)	£100.00	per hour	
1.95	Professional Fee (95th Year)	£100.00	per hour	
1.96	Professional Fee (96th Year)	£100.00	per hour	
1.97	Professional Fee (97th Year)	£100.00	per hour	
1.98	Professional Fee (98th Year)	£100.00	per hour	
1.99	Professional Fee (99th Year)	£100.00	per hour	
2.00	Professional Fee (100th Year)	£100.00	per hour	

24 August 2009	31 August 2009	03 September 2009	06 September 2009	13 September 2009	20 September 2009	27 September 2009	04 October 2009	11 October 2009	18 October 2009	25 October 2009	01 November 2009	08 November 2009	15 November 2009	22 November 2009	29 November 2009	06 December 2009	13 December 2009	20 December 2009	27 December 2009	03 January 2010	10 January 2010	17 January 2010	24 January 2010	31 January 2010	07 February 2010	14 February 2010	21 February 2010	28 February 2010	06 March 2010	13 March 2010	20 March 2010	27 March 2010	03 April 2010	10 April 2010	17 April 2010	24 April 2010	01 May 2010	08 May 2010	15 May 2010	22 May 2010	29 May 2010	05 June 2010	12 June 2010	19 June 2010	26 June 2010	03 July 2010	10 July 2010	17 July 2010	24 July 2010	31 July 2010	07 August 2010	14 August 2010	21 August 2010	28 August 2010	04 September 2010	11 September 2010	18 September 2010	25 September 2010	02 October 2010	09 October 2010	16 October 2010	23 October 2010	30 October 2010	06 November 2010	13 November 2010	20 November 2010	27 November 2010	04 December 2010	11 December 2010	18 December 2010	25 December 2010	01 January 2011	08 January 2011	15 January 2011	22 January 2011	29 January 2011	05 February 2011	12 February 2011	19 February 2011	26 February 2011	05 March 2011	12 March 2011	19 March 2011	26 March 2011	02 April 2011	09 April 2011	16 April 2011	23 April 2011	30 April 2011	07 May 2011	14 May 2011	21 May 2011	28 May 2011	04 June 2011	11 June 2011	18 June 2011	25 June 2011	02 July 2011	09 July 2011	16 July 2011	23 July 2011	30 July 2011	06 August 2011	13 August 2011	20 August 2011	27 August 2011	03 September 2011	10 September 2011	17 September 2011	24 September 2011	01 October 2011	08 October 2011	15 October 2011	22 October 2011	29 October 2011	05 November 2011	12 November 2011	19 November 2011	26 November 2011	03 December 2011	10 December 2011	17 December 2011	24 December 2011	31 December 2011	07 January 2012	14 January 2012	21 January 2012	28 January 2012	04 February 2012	11 February 2012	18 February 2012	25 February 2012	04 March 2012	11 March 2012	18 March 2012	25 March 2012	01 April 2012	08 April 2012	15 April 2012	22 April 2012	29 April 2012	06 May 2012	13 May 2012	20 May 2012	27 May 2012	03 June 2012	10 June 2012	17 June 2012	24 June 2012	01 July 2012	08 July 2012	15 July 2012	22 July 2012	29 July 2012	05 August 2012	12 August 2012	19 August 2012	26 August 2012	02 September 2012	09 September 2012	16 September 2012	23 September 2012	30 September 2012	07 October 2012	14 October 2012	21 October 2012	28 October 2012	04 November 2012	11 November 2012	18 November 2012	25 November 2012	02 December 2012	09 December 2012	16 December 2012	23 December 2012	30 December 2012	06 January 2013	13 January 2013	20 January 2013	27 January 2013	03 February 2013	10 February 2013	17 February 2013	24 February 2013	03 March 2013	10 March 2013	17 March 2013	24 March 2013	31 March 2013	07 April 2013	14 April 2013	21 April 2013	28 April 2013	05 May 2013	12 May 2013	19 May 2013	26 May 2013	02 June 2013	09 June 2013	16 June 2013	23 June 2013	30 June 2013	07 July 2013	14 July 2013	21 July 2013	28 July 2013	04 August 2013	11 August 2013	18 August 2013	25 August 2013	01 September 2013	08 September 2013	15 September 2013	22 September 2013	29 September 2013	06 October 2013	13 October 2013	20 October 2013	27 October 2013	03 November 2013	10 November 2013	17 November 2013	24 November 2013	01 December 2013	08 December 2013	15 December 2013	22 December 2013	29 December 2013	05 January 2014	12 January 2014	19 January 2014	26 January 2014	02 February 2014	09 February 2014	16 February 2014	23 February 2014	02 March 2014	09 March 2014	16 March 2014	23 March 2014	30 March 2014	06 April 2014	13 April 2014	20 April 2014	27 April 2014	04 May 2014	11 May 2014	18 May 2014	25 May 2014	01 June 2014	08 June 2014	15 June 2014	22 June 2014	29 June 2014	06 July 2014	13 July 2014	20 July 2014	27 July 2014	03 August 2014	10 August 2014	17 August 2014	24 August 2014	31 August 2014	07 September 2014	14 September 2014	21 September 2014	28 September 2014	05 October 2014	12 October 2014	19 October 2014	26 October 2014	02 November 2014	09 November 2014	16 November 2014	23 November 2014	01 December 2014	08 December 2014	15 December 2014	22 December 2014	29 December 2014	05 January 2015	12 January 2015	19 January 2015	26 January 2015	02 February 2015	09 February 2015	16 February 2015	23 February 2015	02 March 2015	09 March 2015	16 March 2015	23 March 2015	30 March 2015	06 April 2015	13 April 2015	20 April 2015	27 April 2015	04 May 2015	11 May 2015	18 May 2015	25 May 2015	01 June 2015	08 June 2015	15 June 2015	22 June 2015	29 June 2015	06 July 2015	13 July 2015	20 July 2015	27 July 2015	03 August 2015	10 August 2015	17 August 2015	24 August 2015	31 August 2015	07 September 2015	14 September 2015	21 September 2015	28 September 2015	05 October 2015	12 October 2015	19 October 2015	26 October 2015	02 November 2015	09 November 2015	16 November 2015	23 November 2015	01 December 2015	08 December 2015	15 December 2015	22 December 2015	29 December 2015	05 January 2016	12 January 2016	19 January 2016	26 January 2016	02 February 2016	09 February 2016	16 February 2016	23 February 2016	02 March 2016	09 March 2016	16 March 2016	23 March 2016	30 March 2016	06 April 2016	13 April 2016	20 April 2016	27 April 2016	04 May 2016	11 May 2016	18 May 2016	25 May 2016	01 June 2016	08 June 2016	15 June 2016	22 June 2016	29 June 2016	06 July 2016	13 July 2016	20 July 2016	27 July 2016	03 August 2016	10 August 2016	17 August 2016	24 August 2016	31 August 2016	07 September 2016	14 September 2016	21 September 2016	28 September 2016	05 October 2016	12 October 2016	19 October 2016	26 October 2016	02 November 2016	09 November 2016	16 November 2016	23 November 2016	01 December 2016	08 December 2016	15 December 2016	22 December 2016	29 December 2016	05 January 2017	12 January 2017	19 January 2017	26 January 2017	02 February 2017	09 February 2017	16 February 2017	23 February 2017	02 March 2017	09 March 2017	16 March 2017	23 March 2017	30 March 2017	06 April 2017	13 April 2017	20 April 2017	27 April 2017	04 May 2017	11 May 2017	18 May 2017	25 May 2017	01 June 2017	08 June 2017	15 June 2017	22 June 2017	29 June 2017	06 July 2017	13 July 2017	20 July 2017	27 July 2017	03 August 2017	10 August 2017	17 August 2017	24 August 2017	31 August 2017	07 September 2017	14 September 2017	21 September 2017	28 September 2017	05 October 2017	12 October 2017	19 October 2017	26 October 2017	02 November 2017	09 November 2017	16 November 2017	23 November 2017	01 December 2017	08 December 2017	15 December 2017	22 December 2017	29 December 2017	05 January 2018	12 January 2018	19 January 2018	26 January 2018	02 February 2018	09 February 2018	16 February 2018	23 February 2018	02 March 2018	09 March 2018	16 March 2018	23 March 2018	30 March 2018	06 April 2018	13 April 2018	20 April 2018	27 April 2018	04 May 2018	11 May 2018	18 May 2018	25 May 2018	01 June 2018	08 June 2018	15 June 2018	22 June 2018	29 June 2018	06 July 2018	13 July 2018	20 July 2018	27 July
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ATTACHMENT G

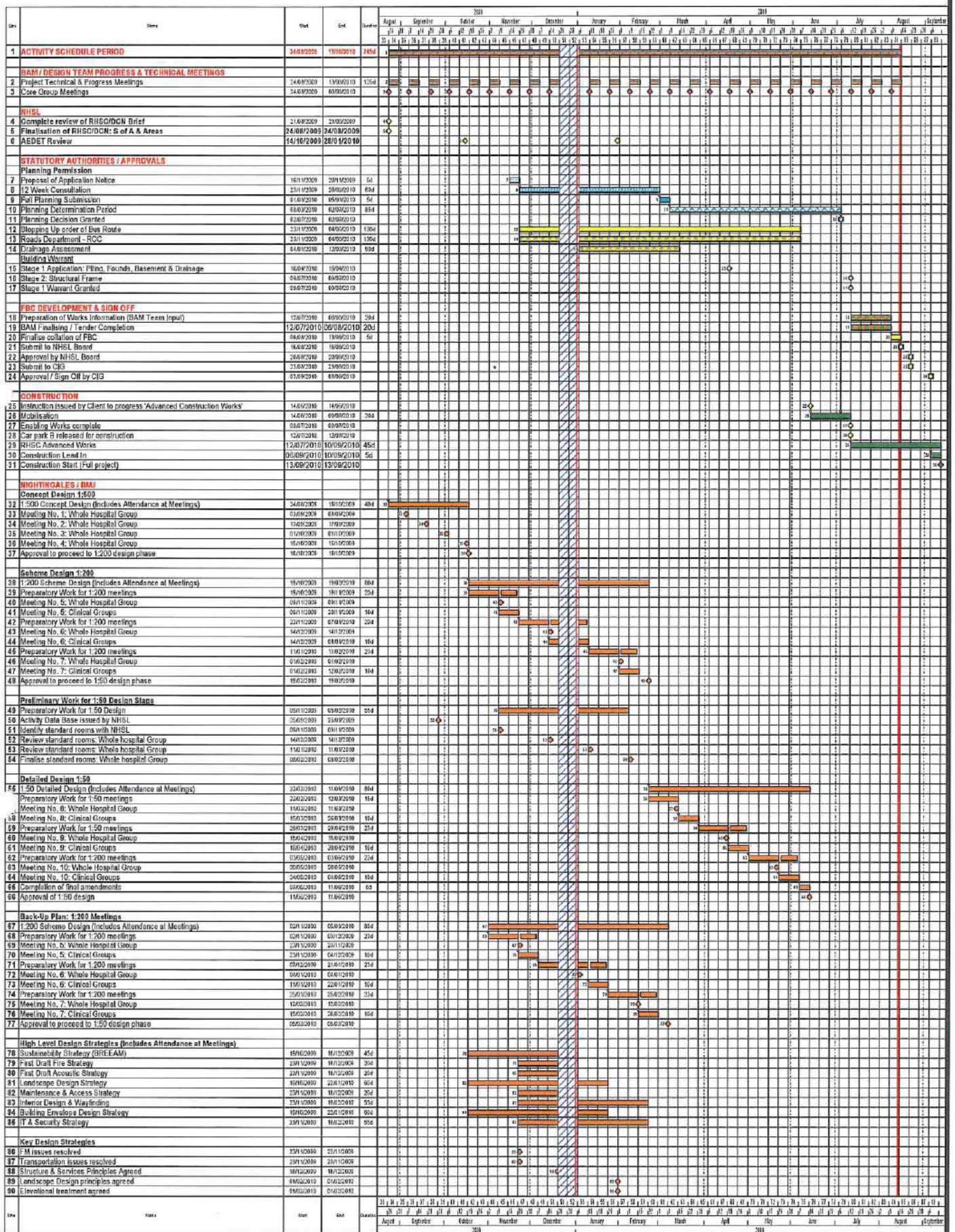
Accepted Programme



**BAM Construction Limited**  
 Kelvin House  
 Buchanan Gate Business Park  
 Stepps, Glasgow  
 Scotland, G33 6FB  
 Tel: 0141 779 8888  
 Fax: 0141 779 8889

**RHSC/DCN, Edinburgh**  
**STAGE 3 Development Programme**

Prepared: 14 December 2009













<p><b>NEC3 ENGINEERING AND CONSTRUCTION CONTRACT</b></p> <p><b>June 2005 (with amendments June 2006)</b></p> <p><b>OPTION C – PRICED CONTRACT WITH ACTIVITY SCHEDULE</b></p>	<p><b>TEMPLATE:</b></p> <p><b>SECTION 3 - WORKS INFORMATION</b>  <b>SECTION 4 – SITE INFORMATION</b></p>																																																
<p>Section 1 – Agreement and contract                  Section 2 – Model Forms of Proposal                  Section 3 - Works Information                  Section 4 - Site Information</p>																																																	
<p>Prepared by R M Shaw</p> <p>Date: .....</p> <p>Document Author (Signature)</p>	<p><b>Controlled Copy Number</b></p> <table border="1" style="width: 100%; height: 40px; margin-top: 10px;"> <tr> <td style="width: 70%;"></td> <td style="width: 30%;"></td> </tr> </table>																																																
<p>Reviewed By S G Gray</p> <p>Date: .....</p> <p>(Signature)</p> <p>Approved by</p> <p>.....</p> <p>(Signature)</p>	<p>This document is the property of Health Facilities Scotland (HFS)                  It shall not be reproduced in whole or in part, nor disclosed to a third party, without the written permission of HFS</p>																																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Rev</th> <th style="width: 15%;">Date</th> <th style="width: 20%;">Approved By</th> <th style="width: 55%;">Details of revision</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">14/01/10</td> <td></td> <td>NHSL and DL comments incorporated</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">15/06/10</td> <td></td> <td>Appendix 8 – Contract Clarification Letter added</td> </tr> <tr> <td style="text-align: center;">3</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">5</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">6</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">7</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">8</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">9</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">10</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Rev	Date	Approved By	Details of revision	1	14/01/10		NHSL and DL comments incorporated	2	15/06/10		Appendix 8 – Contract Clarification Letter added	3				4				5				6				7				8				9				10							
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## NOTE

This template requires insertion of scheme specific information, process and detail to form the scheme contract.

In order to ensure that the integrity of the Frameworks Scotland framework agreement is not compromised any amendment of this standard form to change the principles and processes identified in the framework agreement is not to be undertaken without prior discussion and agreement of Health Facilities Scotland.

## Section 3 – Works Information

### 1 Introduction

- 1.1 The *Employer's* objectives
- 1.2 The *Employer's* strategy
- 1.3 Contract philosophy and general principles of application
- 1.4 The Scheme contract documentation
- 1.5 Developing the Scheme Contract
- 1.6 The design
- 1.7 Definitions

### 2 Description of works

- 2.1 Introduction
- 2.2 Initial Agreement (Stage 1 IA)
- 2.3 Outline Business Case (Stage 2 OBC)
- 2.4 Full Business Case (Stage 3 FBC)
- 2.5 Construction (Stage 4 - Completion of design (from RIBA Stage E), construction and handover)
- 2.6 CDM co-ordinator
- 2.7 Enabling Works

### 3 Plant and Materials

- 3.1 Materials and workmanship specifications
- 3.2 Items of Plant to be provided by the *Employer*
- 3.3 Items of Materials to be provided by the *Employer*
- 3.4 Storage of Plant and Materials
- 3.5 *Employer's* requirements for provision of spares for Plant provided by the PSCP
- 3.6 Vendor data for Plant provided by the PSCP

### 4 Health and Safety

- 4.1 Construction (Design and Management) Regulations 2007
- 4.2 Health Board health and safety regulations for the *Employer's* facility where the *works* are being provided
- 4.3 The Scheme Pre-construction information
- 4.4 The Construction Stage plan
- 4.5 *Employer* constraints
- 4.6 Security

### 5 The Principal Supply Chain Partner's design

- 5.1 Design provided by the *Employer*
- 5.2 The PSCP assumes design responsibility for the *works*
- 5.3 Procedures which the PSCP is to follow in carrying out his design
- 5.4 Works Information for the PSCP's design

### 6 Completion

- 6.1 The work required to be done by the Completion Date for the whole of the *works*

## **7 Working with the *Employer* and Others**

- 7.1 Development of the design and programme
- 7.2 Details of Others identified by the *Employer* prior to appointment of the PSCP
- 7.3 Details of Others identified by the PSCP following appointment and development of the design up to agreement of the target total for the Prices
- 7.4 The *Employer* provides the following services
- 7.5 The *Employer* provides the following things
- 7.6 The PSCP provides the following services
- 7.7 The PSCP provides the following things to the *Employer*

## **8 Subcontracting**

- 8.1 Acceptable Subcontractors
- 8.2 Work which should not be subcontracted
- 8.3 Work that is to be subcontracted
- 8.4 Commercial requirements applicable to Subcontractors including Consultants

## **9 Programme**

- 9.1 Introduction
- 9.2 First programme for acceptance
- 9.3 Stage programmes
- 9.4 The programme for construction and handover (Stage 4)
- 9.5 Design programme
- 9.6 Procurement programme
- 9.7 *Employer* identified milestone dates and Key Dates

## **10 Tests**

- 10.1 Tests and inspections
- 10.2 Details of Materials, facilities and samples to be provided by the PSCP and by the *Employer* for tests
- 10.3 Details of Plant and Materials which are to be inspected or tested before delivery to the Working Areas, including details or referring to the design and standards to be adopted
- 10.4 Definition of tests of Equipment, Plant and Materials outside the Working Areas which have to be passed before marking by the *Supervisor*
- 10.5 Details of preparation of Equipment, Plant and Materials for marking by the *Supervisor*

## **11 Title**

- 11.1 Plant and Materials outside the Working Areas
- 11.2 Objects and materials within the Site

## **12 Acceptance or procurement procedures**

- 12.1 The Prices at award of contract
- 12.2 PSCP's *fee percentage* and rates
- 12.3 PSCM/Consultant *fee percentage* and rates
- 12.4 PSCP resources – people
- 12.5 Appointment of the PSCP at the Initial Agreement Stage
- 12.6 Continuation from Initial Agreement - IA to OBC

- 12.7 Appointment of the PSCP at commencement of Outline Business Case
- 12.8 Continuation from OBC to FBC
- 12.9 Appointment of the PSCP at commencement of Full Business Case
- 12.10 Preparing the Full Business Case for Stage 4 approval by the *Employer*
  - Establishing the target total for the Prices
- 12.11 The Cost Plan leading to the target
- 12.12 Identification and management of risk
- 12.13 The PSCP's initial cost plan includes risk
- 12.14 Risk management prior to agreement of the target total for the Prices
- 12.15 Setting the target total for the Prices
- 12.16 Risk Management during construction and handover Stage 4
- 12.17 Scheme Quality Plan
- 12.18 Scheme Execution Plan
- 12.19 Continuation from FBC to construction
- 12.20 Handover

**13 Commercial requirements, accounts and records**

- 13.1 Forecast of Defined Cost, cash flow and expenditure projections
- 13.2 Records of Defined Cost
- 13.3 Assessment Procedures
- 13.4 Early Warning / Risk Reduction Meetings
- 13.5 Compensation events
- 13.6 Changes to Works Information during IA, OBC, FBC and agreement of the target total for the Prices

**14 Parent company guarantee**

**15 Appendices**

Appendix 1 – Details of User Groups

Appendix 2 – Scheme Programme

Appendix 3 – Scheme Brief

Appendix 4 - Consultant and Contractor Endorsement for the Prevention of HAI for NHS Scotland

Appendix 5 – Health Board Cost Plan

Appendix 6 – Risk Register

Appendix 7 – Site Information

Appendix 8 – Contract Clarification Letter

## **Section 4 – Site Information**

### **Contents**

- 1 Access to Site Information
- 2 List of Site Information Available
- 3 Boundary Limits



### Section 3 – Works Information

#### 1. Introduction

##### 1.1 The Employer's objectives

- (i) The Employer's objectives for the scheme are to;
- Appoint a Contractor as the PSCP to manage the design and delivery of the works;
  - Achieve Completion of the whole of the works by the Completion Date, and
  - Provide, in a target cost "risk and reward" contract strategy, an environment that will promote harmonious and cooperative conduct encompassing the whole of the human resources necessary to complete the scheme.

##### 1.2 The Employer's strategy

- (i) In entering into the Agreement the Parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery of the works by the PSCP;
- to the standard and functionality to meet with the Employer's requirements set out in this Works Information to a quality which meets or exceeds these requirements
  - at a cost to the Employer that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the works through the application of the principles of management engineering, whilst providing the opportunity for the PSCP to make a profit
  - to the timescale acceptable to the Employer and agreed between the Parties without compromising health and safety or the Employer's required standards and the quality of the completed works and in any event before the Completion Date or dates set out in the Agreement, and
  - with an appropriate allocation of the risks associated with the works to the Party best able to manage such risks.
  - The Employer requires a policy of 'no Defects at Completion' to apply to the works; and for the PSCP to allow sufficient time to accommodate this principle in his programmes submitted for acceptance.

##### 1.3 Contract philosophy and general principles of application

- (i) Contract philosophy:

- The basis of the contract is the NEC3 Engineering and Construction Contract Option C – Target contract with activity schedule stated in the template Section 1 – The Agreement and contract for appointment of a Principal Supply Chain Partner to the scheme contract
- Following selection of the PSCP by tender the scheme contract is initiated by the *Employer's* letter of appointment and the PSCP's acceptance
- The Parties enter into the Agreement within the time stated in the letter of appointment
- The PSCP undertakes to carry out the management and be responsible for the delivery, design and construction of the *works* in accordance with the Agreement, and
- work and liaise with the *Employer*, the Supply Chain and any Professional Adviser as necessary, appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

(II) General principles of application

- The scheme contract will be awarded to the PSCP at the Stage identified in Contract Data Part one
- Phasing of the scheme necessitates structuring of the documents forming the contract in such a manner as will enable them to be reviewed and updated as work proceeds through the appropriate Stages up to agreement of the target total for the Prices. On approval of the Prices by the health Board the Agreement is re-affirmed in the amount of the target total for the Prices and the attendant updated contract information prior to entering Stage 4 construction,
- The principles of the Construction Integrated Supply Chain NHSScotland Frameworks Scotland Agreement are applied to Stages of the scheme, irrespective of the balance of *share range* or *percentages* within Contract Data Part one specific to each Stage

1.4 The Scheme contract documentation

The scheme specific documentation to be reviewed and updated for each Stage up to agreement of the target total for the Prices during Stage 3 includes;

- Form of Agreement and Appendices
- PSCP's Stage Form of Proposal (Gateway update) submission
- Contract Data Part one
- Contract Data Part two

- Attendant Appendices and/or Attachments
- Works Information referred to in Contract Data Part one - Data provided by the *Employer*.
- Site Information referred to in Contract Data Part one – data provided by the *Employer*.

Site Information obtained by the *Project Manager* and/ or the PSCP during Stages of IA, OBC and FBC prior to agreement of the target total for the Prices should be added to any documentation issued at PSCP appointment as information available to the PSCP prior to agreeing the Prices.

- Agreement of the target total for the Prices  
 To take into consideration all Site Information in the public domain together with Site Information obtained by the CDM co-ordinator, *Project Manager* and/ or the PSCP during Stages of IA, OBC and FBC; thereafter the principles of ECC clause 60.2 apply.
- Works Information referred to in Contract Data Part two. Data provided by the PSCP for the PSCP's design.  
 This is to be developed by the PSCP during the period of design to provide a construction manual for use by the PSCP, *Project Manager*, *Supervisor* and all other persons engaged in the scheme where required for the completion of their services.

## 1.5 Developing the Scheme Contract

- (i) In Providing the Works the appointed PSCP co-operates and works with the *Project Manager* and the *Project Manager's* Cost Advisor; developing and establishing during each pre-construction Stage of the scheme;
  - Contract Data Part one – Data provided by the *Employer*, and
  - Contract Data Part two – Data provided by the PSCP.
- (ii) This Works Information may not in itself be a complete contract document at appointment of the PSCP; the *Employer* requires the *Project Manager*, in conjunction with the appointed PSCP, during the Stages up to and including agreement of the target total for the Prices during Stage 3, to complete Works Information together with the other contract documentation to be scheme specific for Stage 4 construction.
- (iii) The process of completing the Works Information for a scheme requires the compiler of the scheme specific documentation to assess and amend the lists and/or processes and operations identified in the Scope of Work (Section 2) to provide a comprehensive Works Information to be included in the scheme contract at each of the applicable Stages.

## 1.6 The design

The PSCP manages and delivers development of the design for the whole of the *works* through the applicable Stages of the project, taking into account any design options identified by the *Employer* or user groups during the process of IA, OBC, FBC and completion of the design.

The Scottish Government Health Directorate's service level agreement with Architecture and Design Scotland (ADS), together with the Gateway Review process may consider the quality of the designs developed for the scheme and if it considers it appropriate will recommend that improvements are made.

The PSCP:

- Maintains continuity of design staff in so far as may be practical;
- Impresses on all persons under his direction the need for dedication to completion of the scheme;
- Maintains hard copy dossiers for Works Information for the design together with electronic data;
- Reviews the *Employer's* preliminary considerations in establishing the Health Board affordability envelope for the scheme;
- Incorporates recommendations arising from the ADS Panel and Gateway Review process accepted by the NHS Client.

#### 1.6.1 Continuation of the *Employer's* design

Where the Health Board has undertaken design prior to appointment of the PSCP the design thus developed may be passed to the PSCP for acceptance and the PSCP may be requested to engage the Health Board's designer to complete the design under the PSCP's design liability.

Such transfer of design and the relative liabilities are to be identified in part 5 of this Works Information.

#### 1.7 Definitions

For the purposes of this contract the following definitions apply

- Affordability envelope;
  - the estimated amount (excluding VAT) that the Health Board has established for the management, design and construction of the scheme prior to appointment of the PSCP.
- Construction and handover Stage;
  - the contract Stage, following *Employer's* acceptance of the target total for the Prices, during which the PSCP completes the design and constructs and hands over the *works* for operation, correcting Defects until the *defects date* period.

## 2 Description of works

### 2.1 Introduction

- (i) The general scope of work is for the PSCP to provide management and delivery of design and construction services for the whole of the works.
- (ii) The works are undertaken in Stages;
- Initial Agreement (Stage 1)
  - Outline Business Case (stage 2)
  - Full Business Case (Stage 3)
  - Construction and handover (Stage4)
- (iii) The works are:

FBC Stage 3 – Design and pre construction advice to assist in the preparation of a full business case and agreed Target Cost for the provision of a new facility on the Royal Infirmary of Edinburgh site for the re-provision of the Royal Hospital for Sick Children which is being relocated from the current Sciennes Road site and the Department of Clinical Neurosciences which is being transferred from the Western General Hospital..

In line with the Full Business Case and Target Cost to be operational by April 2013 (Completion date January 2013)  
~~[Provide description of the overall scope of the scheme including pre-construction stages]~~

and optional statements

The Health Board affordability amount for the scheme that the PSCP is to observe as the maximum forecast amount in development of the Prices

NHS cost plan item and description (See breakdown in Appendix 6) ( <i>Outline Business Case detail</i> )	NHS affordability amount (excl VAT)
Stage 1	Incl
Stage 2	Incl
Stage 3	129,780,298
Stage 4	Incl
Total £	129,780,298

The PSCP provides an iteration report considering validity of the Health Board's cost plan within four (4) weeks of appointment and not later than entering into the Agreement.

- (iii) The Stages of the scheme and the services to be provided by the PSCP are as follows:

[Scheme Works Information Drafting notes;

1. The services should be reviewed and amended by the *Project Manager* during development of the design with the PSCP to suit the emerging and individual requirements of the scheme.
2. Strike through Stages in this document that are not required for the scheme contract]

## 2.2 Initial Agreement (Stage 1 IA)

- ~~(i) The PSCP provides services in the IA Stage of pre-construction work and where appointed acts as Principal Contractor and Designer for Providing the Works.~~
- ~~(ii) The IA Stage of the scheme requires the PSCP to provide services of staff and other expertise to assist the *Project Manager* in preparing the Initial Assessment for presentation to the NHS Health Board for approval.~~
- ~~(iii) The services for IA~~

~~The following list should be reviewed in relation to the Scottish Capital Investment Manual (SCIM).~~

~~The services for IA include but are not limited to:~~

~~[note: strike through those items that do not apply]~~

- ~~• Develop IA scheme brief for the *Project Manager*~~
- ~~• Develop an Initial Assessment submission for the *Project Manager's* submission to NHS [Health Board] for approval~~
- ~~• Establish an initial Price for the project~~
- ~~• Engage in an affordability review~~
- ~~• Prepare an outline life cycle cost exercise for development through Stages 2 and 3~~
- ~~• Produce initial design and drawings~~
- ~~• Submit outline planning for approval~~
- ~~• Review the equipment strategy~~
- ~~• Undertake an environmental assessment using BREEAM for Healthcare~~
- ~~• Undertake a design quality review, e.g. using AEDET (Achieving Excellence Design Quality Evolution Toolkit)~~
- ~~• Prepare strategic scheme contract documents for Stage 2~~
- ~~• Participate in risk and value management process~~

- ~~(iv) The PSCP provides the following scheme specific services:~~

- ~~• [list specific requirements for the IA Stage]~~
- ~~• The PSCP provides such further services during the IA Stage as the *Project Manager* may require from time to time. Such further services are compensation events and will be notified in accordance with the requirements of the contract.~~

- ~~(v) The PSCP undertakes the following enabling works during this Stage:~~

- ~~• [Describe enabling works]~~

### 2.3 Outline Business Case (Stage 2 OBC)

- (i) The PSCP provides services in the OBC Stage of pre-construction work and where appointed acts as Principal Contractor and Designer for Providing the Works.
- (ii) The OBC Stage of the scheme requires the PSCP to provide services of staff and other expertise to assist the *Project Manager* in preparing the OBC revised cost iteration for presentation to the *Employer* for approval.
- (iii) The services for Stage 2 OBC include;

The following list should be reviewed in relation to the Scottish Capital Investment Manual (SCIM):

The services for OBC include but are not limited to:

[note: strike through those items that do not apply]

- Prepare OBC scheme brief for the *Project Manager*
- Develop the OBC, including manage and expand the Price for the scheme
- Update of NHS [Health Board] affordability review
- Review the NHS [Health Board] life cycle cost exercise
- Develop design/option studies
- Produce design to level required for OBC presentation to the *Employer*
- If instructed prepare for/and submit a detailed Planning Permission Application
- Review the equipment strategy
- ii) Update the environmental assessment using BREEAM for Healthcare
  - Update the design quality review, e.g. using AEDET (Achieving Excellence Design Quality Evolution Toolkit)
  - Participate in the scheme risk and value management process
  - Undertake financial analysis including Optimism Bias
  - Prepare strategic scheme contract documents for FBC Stage
  - Enact enabling works where identified in the scope of the works



or instructed by the *Project Manager*

- ~~Participate in Stakeholder review workshops~~

~~(iv) The PSCP provides the following scheme specific services:~~

- ~~[list scheme specific services]~~

- ~~The PSCP provides such further services during the OBC Stage as the *Project Manager* may require from time to time. Such further services are compensation events and will be notified in accordance with the requirements of the contract.~~

~~(v) The PSCP undertakes the following enabling works during this Stage:~~

- ~~[Describe enabling works]~~

## 2.4 Full Business Case (Stage 3 FBC)

- i) The PSCP provides services in the FBC Stage of pre-construction work continuing to act as Principal PSCP and Designer for Providing the Works.
- ii) The FBC Stage of the scheme requires the PSCP to provide services of staff and other expertise to assist the *Project Manager* in preparing the final FBC for presentation to the *Employer* for approval.
- iii) The process for the *Employer* confirming construction of the scheme is dependant on the FBC including an agreed target total for the Prices for the works; failure to agree the Prices may result in the *Employer* terminating the contract prior to seeking approval from the Scottish Government Health Directorate.

iv) The services for FBC include:

The following list should be reviewed in relation to the Scottish Capital Investment Manual (SCIM).

The services for FBC include but are not limited to:

[note: strike through those items that do not apply]

- Prepare FBC scheme brief for the *Project Manager*.
- Develop the OBC design and Prices, including manage and expand the Price (target) for the scheme prior to submission for agreement of the target total for the Prices
- Update of NHS Health Board affordability review
- Review the NHS Health Board life cycle cost exercise

- Produce the design, including where instructed, earlier design/option studies undertaken by NHS Health Board, to level of RIBA Stage E required for FBC presentation to the *Employer*.
  - Prepare Works Information for the PSCP's design
  - When instructed prepare for submission of the detailed Planning Permission Application
  - Review the equipment strategy
  - Update the environmental assessment using BREEAM for Healthcare
  - Update the design quality review, e.g. using AEDET (Achieving Excellence Design Quality Evolution Toolkit)
  - Participate in risk and value management process,
  - Undertake financial analysis including Optimism Bias
  - Prepare strategic scheme contract documents for completion of substantial design, construction and handover
  - Enact enabling works where instructed by the *Project Manager*
  - Participate in Stakeholder review workshops
- (v) The PSCP provides the following scheme specific services:
- The PSCP provides such further services during the FBC Stage as the *Project Manager* may require from time to time. Such further services will be notified in accordance with the requirements of the contract for compensation events.
  - Site and Investigation Reports
  - Topographical Survey
- (iv) The PSCP undertakes the following enabling works during this Stage:
- All works where instructed by the Project Manager

## 2.5 Construction and handover (Stage 4 Completion of design (from RIBA Stage E), construction and handover)

- i) The PSCP continues to provide services to complete the *works*, acting as Principal Contractor and Designer for Providing the Works.
- ii) This Stage of the *works* for construction and handover includes but is not limited to:

- Completing the design, produced for FBC and accepted by the *Employer*
- Update Works Information for the PSCP's design
- Provide a construction manual incorporating all necessary instructions and procedures developed during production of the design
- Review the equipment strategy
- Update the environmental assessment using BREEAM for Healthcare
- Update the design quality review, e.g. using AEDET (Achieving Excellence Design Quality Evolution Toolkit)
- Participate in risk and value management process
- Participate in Stakeholder review workshops
- Construction, including provision of materials and plant necessary to complete the *works* in accordance with the accepted design
- Commissioning
- Handover

## 2.6 Construction (Design and Management) Regulations 2007

The PSCP co-operates with the CDM co-ordinator to provide such detail and information as the CDM co-ordinator may require conforming to Regulations regarding pre-construction information

Such information is incorporated in the Construction Stage plan to be prepared by the PSCP for inclusion in the FBC submission for construction approval.

## 2.7 Enabling Works

Enabling works known and required to be carried out prior to the construction Stage, should be stated and defined within the Scope for the applicable Stage (IA, OBC or FBC).

For enabling work not identified in the Scope prior to entry into the applicable Stage a change to Works Information should be initiated.

### 3 Plant and Materials

#### 3.1 Materials and workmanship specifications

Materials and workmanship is to conform to recognised European Standards and the following NHS specifications and standards whichever are the most onerous. The PSCP is to use the 'best' available guidance and the following list of precedence should be applied for the use of health building notes and technical memorandum:

- SHTM's and SHBN's in the new 00 format
- NHS Estates HTM's and HBN's in the new 00 format
- SHTM's and SHBN's
- NHS Estates HTM's and HBN's
- Memoranda, standards and NHSScotland Guidance Notes such as SHTM's etc. are to be established and listed by the PSCP during the design process

In addition

- The standards to be employed in the parts of the *works* designed by the PSCP are to be confirmed identified and stated by the PSCP within the Works Information for the PSCP's design; to be submitted by the PSCP with his design packages for acceptance.

#### 3.2 Items of Plant to be provided by the *Employer*

The *Employer* provides the following items for incorporation in the *works*:

- [List of Plant – provide storage details/delivery dates and/or location for collection by the PSCP] To be confirmed during Stage 3

#### 3.3 Items of Materials to be provided by the *Employer*

The *Employer* provides the following items for incorporation in the *works*:

- [List of Materials – provide storage details/delivery dates and/or location for collection by the PSCP] To be confirmed during Stage 3

#### 3.4 Storage of Plant and Materials

- (i) The storage of Plant and Materials by the PSCP is to conform with requirements of the Vendor and the relevant specification.
- (ii) The PSCP determines scheme specific storage requirements and submits them to the *Project Manager* for acceptance during design of the *works* and development of the target total for the Prices.
- (iii) Particular storage requirements are;
  - [Identify any known available storage areas or requirements] To be confirmed at Stage 3

3.5 *Employer's* requirements for provision of spares for Plant provided by the PSCP

The PSCP provides operational spares for Plant as follows:

- [List particular requirements] to be confirmed during Stage 3

Alternatively

- The PSCP identifies proposed operational spares for Plant during the design process and submits details to the *Project Manager* for acceptance.

3.6 Vendor data for Plant provided by the PSCP

The PSCP ensures Vendor data for Plant incorporated in the *works* is available during commissioning and transferred to the *Employer* before Take Over of the *works* or section of the *works*.

#### 4 Health and Safety

##### 4.1 Construction (Design and Management) Regulations 2007

- (i) The PSCP acts as designer for the *works*
  - The PSCP assumes the duty of the designer when he is appointed to the scheme. Refer to 10 g) ii) *Employer's* responsibility
- (ii) Principal Contractor
  - The PSCP assumes the duty of Principal Contractor when he is appointed to the scheme.

##### 4.2 Health Board health and safety regulations for the *Employer's* facility where the *works* are being provided

- (i) The Health Board health and safety regulations are contained in the following documents;
- [List documents] to be confirmed during Stage 3

##### 4.3 The scheme Pre-construction information

Where a CDM co-ordinator has been appointed prior to appointment of the PSCP

- (i) The current Pre-construction information is to be provided during Stage 3

alternatively

- ~~(ii) The PSCP being appointed at the conceptual or IA Stage of the scheme and being appointed as a designer collects pre-construction information for handover to the CDM co-ordinator when appointed.~~

##### 4.4 The Construction Stage plan

- i) Preparation of the PSCP's Construction Stage plan in compliance with Regulation 23 is commenced in outline during the later stages of preparation of the design in the FBC Stage.
- ii) The Construction Stage plan takes account of the CDM co-ordinator's pre-construction information provided in compliance with Regulation 20 and collated with reference to Regulation 10 during IA, OBC and FBC stages as appropriate.
- iii) The outline construction Stage plan is prepared prior to agreement of the target total for the Prices in order that the health and safety requirements of the Plan can be included in the target agreement.

- iv) The outline construction Stage plan prepared for the target is developed during completion of the substantial design and construction in accordance with the Regulations; and submitted to the CDM co-ordinator in sufficient time for acceptance prior to commencement of work in the Working Areas to become the construction Stage plan.
- v) The *Employer* requires the PSCP to liaise with the *Employer* User Groups and Health Board Estates management for established facilities to ensure current and up to date local rules and requirements are considered and included in the construction Stage plan.

#### 4.5 Employer constraints

- (i) The following constraints on how the PSCP Provides the Works are notified by the *Employer* and are to be incorporated in the PSCP's construction Stage plan;
  - The safety of patients, staff and visitors is of absolute importance throughout the *works*
  - All clinical services are to remain uninterrupted throughout the duration of the *works*. Any necessary mains services shutdowns or other reasons for unavailability of any part of the services and/or buildings outside of the area within the PSCP's Site are to be agreed with the *Employer* at least ten working days before implementation.
  - All In-patient facilities systems are to be security tested and accepted prior to submission for handover.

#### 4.6 Security

- (i) The PSCP complies with Health Board security policy and procedures for existing facilities.
  - For *works* within the boundaries of existing Health Board facilities the PSCP provides all regular contract employees with photo identification cards ;
  - Casual visitors are to be issued with day passes to be returned at the end of each day of the visit;
  - The PSCP complies with the *Employer* specific security procedures.

#### 4.7 Healthcare associated infection

The PSCP complies with the requirements contained in;

- HAI-SCRIBE;

- Scottish Health Facilities Note 30, Infection control in the built environment; Design and Planning.

## 5 The Principal Supply Chain Partner's Design

### 5.1 Design provided by the *Employer*

(i) The following elements of the design have been undertaken by the *Employer*:

- None

(ii) The *Employer* accepts design responsibility for the following elements of the *scheme*:

- None

(iii) The *Employer's* design aims, functionality requirements and design brief for the *scheme* are:

- Provided in the following documents,

~~[Provide design brief or statement]~~ as incl in Appendix 3

and/or to be further developed

- To be established in conjunction with the PSCP during the IA, OBC and FBC Stages of the *works* and recorded hereinafter during the process up to agreement of the target total for the Price

Recorded as follows

[Enter records (As per the Project execution Plan)]

### 5.2 The PSCP assumes design responsibility for the *works*:

The PSCP assumes design responsibility for the *works* and in respect of providing the design for the *scheme* is to:

- provide the design for the *works* within the economic envelope of affordability for the *scheme*
- review and report on the *Employer's* preliminary or specific designs provided for the *scheme* not otherwise reserved in 5.1 (ii) above
- notify the *Project Manager* when such *Employer's* preliminary or specific designs cannot be accepted and through the Early Warning procedure provide economic, functional and aesthetically acceptable design solutions



- [Other specific obligations – develop during the IA, OBC and FBC Stages]
- 5.3 Procedures which the PSCP is to follow in carrying out his design
- (i) The PSCP provides a Quality System that includes the following;
- Lead designer
  - Number of design packages and their names to be submitted to the *Project Manager* for acceptance
    - Items of design to be undertaken by Supply Chain Members (PSCMs) are to be separately identified
  - Designer responsible for each package
  - Incorporation of the *Employer's* design
  - Process for each package, checking and certification prior to submission for acceptance
  - Process for unique document reference
  - Process for document transmittal
  - Information request procedure
  - Notification of intention to submit design change proposals
- (ii) Electronic transmission of design documents to the *Project Manager*.
- Electronic transmission of design documents by the PSCP is only permitted by prior agreement where the *Project Manager* and the Health Board have compatible systems available to receive such detail.
- (iii) The PSCP assumes design responsibility for the *works* and in respect of providing the design for the *scheme* is to:
- within the economic envelope of affordability for the scheme, provide the design for the *works*; and
  - review the *Employer's* preliminary or specific designs provided for the *scheme*.
- 5.4 Works Information for the PSCP's design
- (i) The PSCP develops and provides Works Information for the his design.

(ii) The Works Information for the PSCP's design is:

- Provided in a form that gives all necessary information to supplement the design drawings and identify the standards, specifications, codes of practice and construction requirements identified during production of the design and required to be employed in Providing the Works.
- Hard copies are made available/provided to the *Employer / Project Manager / Supervisor* and PSCP's staff supervising the works.

(iii) The Works Information for the PSCP's design includes:

- Those tests and acceptances to be undertaken during construction and commissioning
- Those test and inspections the PSCP requires the *Supervisor* to witness and accept

## 6 Completion

### 6.1 Completion

This contract recognises that Works Information is under continual review and development by the Parties up to agreement of the target total for the Prices. It is important therefore that the following principles are understood and maintained during the pre-construction Stages of this scheme;

- The Works Information should state what work is to be done before Completion; disputes can arise if this is not done clearly and unambiguously. This provides flexibility for the *Employer* to specify Completion at the level he requires and largely avoids the uncertainty associated with terms such as 'substantial completion' or 'partial completion', the Works Information will be written so that work is free of Defects before Completion.
- Completion is a state, not a date. Completion may actually occur before, on or after the Completion Date."

### 6.2 The work required to be done by the Completion Date for the whole of the *works*

The requirements of this part of Works Information are to be further developed and included hereinafter during the pre-construction Stages of the *works* and confirmed within the programme prepared for the agreement of the target total for the Prices.

#### (i) No Defects at Completion

As stated in 1.2 The *Employer's* Strategy to be adopted by the PSCP is a policy of 'no Defects at Completion'.

#### (ii) Whole of the *works*

Work to be done by Completion is:

- Construction of the building and its services
- External work
- Commissioning of Plant and other installed equipment
- Handover of maintenance manuals
- Operator training
- Security systems proving and certification
- Interior decorations and furnishings
- Rectification of Defects that
  - could affect security of the scheme in use
  - require access to patient occupied areas

#### (iii) Sections of the *works*



**Working with the *Employer* and Others**

7.1 Development of the design and programme

Development of the design and associated construction programme, including for enabling works, identifies when the *Employer* and or Others require to occupy or have access to occupy parts of the *works* in order to carryout their work whether part of the *works* or not.

7.2 Details of Others identified by the *Employer* prior to appointment of the PSCP

Refer to Appendix 1 Details of User Groups

Others identified by the *Employer* prior to appointment of the PSCP are;

Name of Other	Work to be Undertaken	Period of Occupation in the Working Areas
.....	.....	.....
To be confirmed during Stage 3		
.....	.....	.....

• **Liaison with User Groups**

- The PSCP agrees procedures for ad hoc liaison with User Groups with the Project Manager.
- User Group liaison meetings will be chaired by the *Project Manager* or delegate
- User Groups with interests in the scheme are given at Appendix 1 to this document

7.3 Details of Others identified by the PSCP following appointment and development of the design up to agreement of the target total for the Prices are:

Name of Other	Work to be Undertaken	Period of Occupation in the Working Areas
To be confirmed during Stage 3		
.....	.....	.....
.....	.....	.....
.....	.....	.....

7.4 The *Employer* provides the following services

(i) The *Employer* provides the following services

[List items such as

- Office facilities to include the use of
- Power
- Water
- Rates etc]

To be confirmed at Stage 4

(ii) Identify who pays the amounts due to statutory undertakers and suppliers

(iii) Identify who pays for connections and restorations

7.5 The *Employer* provides the following things

[List such things and the point where they are provided] to be confirmed at Stage 4

7.6 The PSCP provides the following services

(i) The PSCP provides the following services to the *Employer*

[List such services and the point where they are provided] to be confirmed at Stage 4

(ii) All amounts due to statutory undertakers and suppliers are paid by the PSCP

(iii) All amounts due in connection with restorations and / or connections are to be paid for by the PSCP

7.7 The PSCP provides the following things to the *Employer*

[List such things their extent and the point where they are to be provided; they could include:

- Offices
- Conference facilities
- Transport
- Secretarial services
- Computing
- Telephones
- PPE]

To be confirmed at Stage 4

## 8 Subcontracting

### 8.1 Acceptable Subcontractors

- (i) Acceptable Subcontractors are those Subcontractors identified in the PSCP's supply chain identified in his Frameworks Scotland framework agreement
- (ii) The *Employer* lists the following Subcontractors who have been previously employed within the Health Board's property, and are classed as acceptable should the PSCP wish to consider their use, are as follows:

### 8.2 Work that should not be subcontracted

The following elements should not be wholly subcontracted, that is where there is no direct PSCP management control over the operations:

- Management of the *works* including design
- Health and Safety Management
- Quality control

### 8.3 Work that is to be subcontracted

The principles of Frameworks Scotland incorporate belief in a strong and experienced supply chain. It is not intended that the Health Board should need to state work that is to be subcontracted. It is expected the PSCP will already have established long term relationships with Subcontractors providing expertise in some or all of the following:

- Designers for all aspects of construction
- Installation of security systems
- Installation of instrumentation and communication systems
- Provision and installation of specialist Plant, e.g. boiler plant
- Provision and erection of structural steelwork
- Specialist building fabric including roofs and windows
- Heating and ventilating systems
- Patent ceilings
- Shop fitting
- Groundwork generally
- Landscaping
- Roads and footpaths
- Painting and decorating

### 8.4 Commercial requirements applicable to subcontractors including Consultants

- (i) The rates and percentages applicable in respect of Frameworks Scotland PSCP's supply chain PSCM's/SCM's are the rates and percentages to be included in the subcontract agreements. The tendered rates are, as shown in the Frameworks Scotland framework tender work books.

NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

- (ii) Where a Consultant is currently working on the scheme for a Health Board and there is a subsequent agreement between the Parties to novate the Consultant to the PSCP then, in such case, the appropriate rates are as agreed during the novation process.
- (iii) Proposals by the PSCP for PSCM's / Consultants identified in the Frameworks Scotland framework agreement are based on best value.
- (iv) Proposals by the PSCP for engagement of PSCMs / Consultants other than those identified in the Frameworks Scotland framework agreement are subject to the qualification procedure for such as applied for Frameworks Scotland framework agreement in respect of designers and other professionals to be engaged during IA, OBC and FBC Stages of the scheme together with completion of the design following FBC.
- (v) The engagement of PSCMs and Consultants for the construction, and handover Stage of the scheme should consider the following:

- Where the NEC3 Engineering and construction subcontract / NEC3 Professional Services Contract (PSC) is used the choice of main Option is open to the PSCP. Secondary Options and Z clauses as identified for the Frameworks Scotland framework agreement should be included whenever possible. When engaging its Supply Chain the PSCP uses the appropriate contract from the NEC3 Suite of Contracts.

or

Subcontracts not based on the NEC3 suite of contracts should reflect the principles contained within and forming Frameworks Scotland framework agreement and the NEC3 suite of contracts.

- Use of the Construction Industry Board's 'Code of Practice for the Selection of Subcontractors' other than those Subcontractors identified in the PSCP's Frameworks Scotland framework agreement.
  - Reference Thomas Telford Publishing, ISBN: 9780727725424, Item Code: 2259
- The PSCP obtaining a statement from PSCMs /SCMs that they are aware of and agree to comply fully with the provisions of this contract, including the obligation to act in a spirit of mutual trust and cooperation.
- PSCMs/SCMs and Consultants maintaining a system of records compatible with the PSCP's obligations in this contract.
- During the course of inviting subcontract Prices, either for inclusion in the target total for the Prices or post target agreement, providing potential subcontractors with fully prepared Contract Data Parts one and two together with the



amended Schedule of Cost Components (SCC) and other details compatible with the Frameworks Scotland scheme contract.

- Use of the Shorter Schedule of Cost Components (SSoCC) for low value subcontracts. If so this is stated in the PSCP's subcontract invitation.
  - Adopting the Contract Administration Toolkit Pro forma (CAT) procedure for communications and notifications appropriately amended for the subcontract.
  - Providing in each subcontract / consultancy contract specific Works Information and Site Information documentation.
  - Maintaining a complete documented record of all subcontract / consultancy pre appointment communications for each proposed subcontract / consultancy agreement both (for both pre and post target agreements). This should include records of pre appointment assessments for each proposed subcontract / consultancy Agreement.
- (vi) PSCM/SCM/ Consultant Early Warning notifications and Risk Reduction Meetings
- The PSCP adopts the Frameworks Scotland CAT Pro forma procedure for subcontractor early warning notifications, and includes appropriately amended examples in the subcontract / consultancy invitation.
  - The PSCP maintains a register of subcontract early warning notifications and Risk Reduction Meetings and provides the *Project Manager* with information relevant to the Risk Register for this contract. The Risk Register for this contract is updated by the Project Manager and made available to the PSCP.
- (vii) Allowances within the target total for the Prices for subcontracted work
- Inclusion of amounts within the target for work and services proposed to be subcontracted is to be considered a Provisional Amount unless the amount included is based on a firm quotation and not subject to negotiation / market testing following agreement of the target total for the Prices unless otherwise accepted by the *Project Manager*.
- Refer to Works Information, 12.8 Setting the target total for the Prices, item (vi) for details of procedure for adjusting the Prices for Provisional Amounts following agreement of the target.

## 9 Programme

### 9.1 Introduction

- (i) In complying with ECC clause 31.2 the PSCP, working in collaboration with the *Project Manager*, provides the programme during IA, OBC and FBC Stages as:
- An outline programme, reflecting the anticipated periods of pre-construction planning and design work, e.g. IA, OBC and FBC as appropriate, together with anticipated sequences for the construction Stage
  - The programme is supported by a hierarchy of inter-dependant sub programmes
- (ii) The programme and linked sub-programmes are provided in a format that can be electronically transmitted
- (iii) Prior to target total for the Prices agreement the hierarchy of inter-dependant sub-programmes may include:
- A design programme for the pre-construction and construction Stages identifying milestones for design package submissions and acceptances
  - Procurement programme linked to design and construction activities
  - Individual cash flow / expenditure programmes for the pre-construction Stages based on the scheme work book to be submitted with the Form of Proposal for each stage 1,2 and 3.
    - The individual workbook disciplines form the basis of the programme activities up to completion of the FBC Stage.
    - The cash flow / expenditure programmes include provision for enabling works within this contract
- (iv) The PSCP includes in the programmes any other activities he requires to Provide the Works and maintain the relationship with the activity schedule for the scheme Stage.

### 9.2 First programme for acceptance

- (i) The early submission of the first programme for acceptance is required to confirm the entry Stage to the scheme and specific requirements and constraints.

- (ii) On receipt of the *Employer's* letter of appointment the PSCP consults with the *Project Manager* and prepares the first programme for acceptance for the whole of the *works*; incorporating known milestones and operations for pre-construction Stages (IA, OBC or FBC as may be identified in the scheme pack where provided). This programme is the programme to be included within the scheme Agreement.
- (iii) The first programme for acceptance provides for critical path analysis of activities.

### 9.3 Stage programmes

- (i) The first programme for acceptance includes a sub-programme for the Stage current at the time of appointment of the PSCP.
- (ii) Sub-programmes specific to each Stage are closed out at the end of the relevant Stage.
- (iii) Up to and including FBC the PSCP consults with the *Project Manager* and develops the Accepted Programme to incorporate revised planning and any new activities established as a result of the continued planning and design of the scheme.
- (iv) A Stage sub-programme is developed by the PSCP in consultation with the *Project Manager* for inclusion in the submission for each Stage Form of Proposal.
- (v) The latest Accepted Programme for the whole of the *works* is identified in Contract Data Part two – Data provided by the PSCP to be submitted to the *Employer* with the appropriate Stage Form of Proposal for acceptance by the Health Board.

### 9.4 The programme for construction and handover (Stage 4)

- (i) During the process of design in the Stages up to agreement of the target total for the Prices the PSCP will have provided programmes for acceptance as described in 9.1 and 9.2 above.
- (ii) For agreement of the target total for the Prices the PSCP prepares a design completion and construction Stage programme incorporating identified activities.
- (iii) The programme for acceptance is supported by a hierarchy of inter-dependant sub-programmes in the format previously described and include;
  - A programme for completion of the design
  - A detailed construction programme
  - The construction Subcontract / Consultant procurement programme linked to design and construction

- Cash flow / expenditure programme demonstrating the target agreement
- Commissioning programme, including Health Board / User interfaces
- Handover programme showing sectional or Staged completions as identified during scheme development during FBC Stage
- Work that the Works Information as developed during the Stages 1, 2 and 3 states may be done after Completion.

#### 9.5 Design programme

- (i) The this contract requires the PSCP to provide, within the hierarchy of programmes, a design programme for acceptance by the *Project Manager*.
- (ii) The PSCP identifies in the programme the lead designer and scope of the work to be designed by each designer engaged for the design of the works.
- (iii) Activities to be identified in the design programme are to include the following;
  - PSCP quality procedures
  - Planning meetings (including end users clinicians and others shown to have a legitimate interest in the design)
  - Design co-ordination meetings required by the Planning Supervisor where there is more than one designer
  - PSCP review milestones
  - Design validation by independent designers, including where required by the *Employer*
  - Subcontract / consultant design Stages
  - Milestone dates for submission of design packages for acceptance
  - Periods for *Project Manager's* acceptance of design packages
  - Hold points for the *Employer* review
  - Statutory permission submission dates
  - Submission for Gateway Reviews to the Scottish Government

Health Directorate and Design Reviews by Architecture and Design Scotland, including contingency periods for responding to their comments.

- (iv) Design programmes specific to each Stage, up to the agreement of the target total for the Prices, are closed at the end of the relevant Stage, impacting information and milestones etc. are carried forward as necessary.
- (v) The Stage 4 programme showing activities for completion of the substantial design during the construction Stage includes provision for design attendance in respect of review or amendment after completion of the design.

#### 9.6 Procurement programme

- (i) The PSCP provides a procurement programme within the sub-programme hierarchy.
- (ii) The programme identifies PSCP procedures and timing for establishment of subcontracts, utilities services, Plant and Materials; together with identification of *Employer* provided Plant and Materials, clinical or other specialist equipment
- (iii) The programme identifies each item and service to be procured as established during the design up to the end of FBC Stage together with procurement and purchasing arrangements for long lead items
- (iv) Generally a procurement programme should identify
  - Design completion dates
  - Enquiry preparation and tender/quotation invitations
  - assessment period for tendered packages
  - Placement of order – earliest / latest date
  - Suppliers design programme
  - Manufacturer design co-ordination meetings.
  - Hold points
  - Quality assurance and control procedures / audits
  - Acceptance points
  - Commencement/delivery dates
  - Dates when title is to be transferred for items not yet delivered to the Site

- Installation dates
- Completion dates

#### 9.7 *Employer identified milestone dates and Key Dates*

- (i) The milestone dates identified by the *Employer* for inclusion in the scheme programme are listed below. The PSCP, during the IA, OBC and FBC Stages of the contract, is required to monitor such dates against the developing requirements of the design and proposed construction programme; where deviations are identified these are to be drawn to the attention of the *Project Manager* using the early warning procedure.
- (ii) *Employer identified milestone dates are;*
- Submission of Final Business Case – TBC
  - ICIC Meeting – TBC
  - Capital Investment Group Meeting – TBC
  - Approval of Final Business Case – TBC
- (iii) Key Dates included in Contract Data Part one – Data provided by the *Employer*;
- During the IA, OBC and FBC Stages of the contract, the PSCP is required to monitor such dates against the developing requirements of the design and proposed construction schedule; where deviations are identified these are to be drawn to the attention of the *Project Manager* using the early warning procedure.
  - Agreed deviations and new Key Dates are to be entered in Contract Data Part one during the design Stages prior to agreement of the target total for the Prices. The revised Contract Data is identified and referenced in the Form of Proposal submitted at each Stage gateway.

## 10 Tests

### 10.1 Tests and inspections [40.1]

- (i) Tests to be undertaken in this contract for Plant, Materials and workmanship are to be undertaken during the *works* and comply with the standards and specifications adopted for the scheme.
- (ii) The PSCP is required to consult with the *Project Manager* during the design Stages to agree and schedule those tests to be applied in this contract. Such tests are to be included in the PSCP's quality plan for the scheme; developed and provided for the target total for the Prices agreement.

### 10.2 Details of Materials, facilities and samples to be provided by the PSCP and by the *Employer* for tests [40.2]

- (i) ~~Where the design is substantially developed by the *Employer* this section is completed by listing the required details or referring to the design and standards to be adopted.~~
  - [List details – if none or relying on 10.2 (ii) strike through]
- (ii) Where the design is to be developed and completed by the PSCP then such details are to be included in the PSCP's quality plan for the scheme; developed and provided for the target total for the Prices agreement.

### 10.3 Details of Plant and Materials which are to be inspected or tested before delivery to the Working Areas, including details of the inspection or test [41.1]

- (i) ~~Where the design is substantially developed by the *Employer* this section is completed by listing the required details or referring to the design and standards to be adopted.~~
  - [List details – if none or relying on 10.3 (ii) strike through]
- (ii) Where the design is to be developed and completed by the PSCP then such details are to be included in the PSCP's quality plan for the scheme; developed and provided for the target total for the Prices agreement.

### 10.4 Definition of tests of Equipment, Plant and Materials outside the Working Areas which have to be passed before marking by the *Supervisor* [41.1]

- (i) ~~Where the design is substantially developed by the *Employer* this section is completed by listing the required details or referring to the design and standards to be adopted.~~
  - [List details – if none or relying on 10.4 (ii) strike through]
- (ii) Where the design is to be developed and completed by the PSCP then such details are to be included in the PSCP's quality plan for the

scheme; developed and provided for the target total for the Prices.

- 10.5 Details of the preparation of Equipment, Plant and Materials for marking by the *Supervisor*
- (i) ~~Where the design is substantially developed by the *Employer* this section is completed by listing the required details or referring to the design and standards to be adopted.~~
- (ii) Marking Equipment, Plant and Materials outside the Working Areas by the *Supervisor*
- The PSCP or his supplier sets aside the Equipment, Plant and Materials in an agreed secure area
  - Where necessary or specified, covered storage is provided
  - The PSCP or his supplier prepares Equipment, Plant and Materials for marking in accordance with the scheme quality plan
  - [List details – if none or relying on 10.5 (iii) strike through]
- (iii) Where the design for Equipment or Plant is to be developed and completed by the PSCP then such details are to be included in the PSCP's quality plan for the scheme; developed and provided for the target total for the Prices.



**11 Title****11.1 Plant and Materials outside the Working Areas**

Where the PSCP requires to be paid for Plant and Materials prior to bringing them to the Working Areas, he identifies procurement of such items on the Accepted Programme as an activity to accord with the cash flow forecast.

**11.2 Objects and materials within the Site**

- The PSCP has title to materials from excavation and demolition where to be used solely within the Site
- The PSCP submits to the *Project Manager* the proposals for the disposal of surplus materials from excavation and demolition
- Where the PSCP's proposals are for other than disposal at licensed tips and include for use or sale of such surplus outside of the Working Areas the PSCP credits all benefit to Defined Cost

## 12 Acceptance or procurement procedures

### 12.1 The Prices at award of contract

#### Introduction

- (i) Following appointment of the PSCP and entering into the Agreement the Prices for each Stage are to be developed throughout the pre-construction Stages of the scheme. The agreed Prices for Stage 4 being the target total for the Prices agreed on acceptance of the PSCP's Form of Proposal for Stage 4.
- (ii) On receipt of the letter of appointment, the PSCP co-operates with the *Project Manager* to establish the extent of the services and the resources required for the particular Stage of the appointment to the scheme.
- (iii) The PSCP having agreed services and resources for the scheme entry Stage prepares and submits to the *Employer* for acceptance a Stage Form of Proposal, (see contract template Section 2).
- (iv) The resources agreed between the *Project Manager* and the PSCP are valued at Frameworks Scotland framework agreement rates together with any other appropriate amount to arrive at a forecast of Defined Cost for the Stage and included in the Stage Form of Proposal. Amounts are entered in individual activities within the *activity schedules*.
- (v) The commencement Price for the design and total construction cost (construction, commissioning and handover) can be entered initially
  - as stated in 2.1 Description of the *works* item (iii), or
  - NHS Health Board pre-estimate of the value of total construction cost.
- (vi) The total Price for each *activity schedule* (Stage 1, 2 and 3) is adjusted to the amount of the total Defined Cost plus Fee that is accepted and certified by the *Project Manager* on completion of the Stage up to and including FBC; such amounts are included in the target total for the Prices as fixed amounts with no application of *share percentage*.

### 12.2 PSCP's fee percentage and rates

- (i) *Fee percentage*.
  - The PSCP's (*fee percentage*) is to be recorded in Contract Data Part two.
- (ii) Hourly rates for design during IA, OBC and FBC Stages;
  - The PSCP's hourly rates for design are those included in the

Frameworks Scotland Agreement.

- Inflation is to be calculated in accordance with the Contract Data

### 12.3 PSCM /Consultant *fee percentage* and rates

- (i) The Frameworks Scotland Agreement contains the PSCM/Consultant *fee percentage* and rates for design; these are to be the basis of the PSCP's design subcontracts and entered in the appropriate contract agreement between the PSCP and PSCM/Consultant (ECC Subcontract/NEC3 Professional Services Contract).
- (ii) *Fee percentage.*
  - The PSCM/Consultant *fee percentage* is to be entered in the subcontract Contract Data Part two. This requires amendment of the Professional Services Contract, if used or inclusion of the fee within the PSCM/Consultant's rates.
- (iii) Hourly rates for design during IA, OBC and FBC Stages
  - The PSCM/Consultant hourly rates for design are the recorded Frameworks Scotland Agreement rate per hour.
  - Inflation is to be calculated in accordance with the Contract Data.
- (iv) Hourly rates for design after FBC Stage and agreement of the target total for the Prices
  - The PSCM/Consultant Agreement rates for design apply for all design work undertaken, including after FBC and within the target total for the Prices.
  - If a beneficial agreement is subsequently negotiated between the PSCP and the PSCM then the benefit should be credited to the target total for the Prices
- (v) Engagement of PSCM designers and other professionals as either PSCMs or Consultants is dependant on the PSCP's procurement policy for the scheme and in either case the appropriate NEC3 conditions are used unless agreed otherwise by the *Project Manager*.

### 12.4 PSCP resources - people

The PSCP engages persons from the key people set out in the Contract Data – Part two in the Frameworks Scotland Agreement.

- Performance of services to be provided by the PSCP under the scheme Agreement should be undertaken by the key people identified in the Frameworks Scotland Agreement.
- Other persons are not engaged on a scheme unless they meet the criteria of qualification and the acceptance of the *Employer*.

- The PSCP ensures that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer*.

#### 12.5 Appointment of the PSCP at the Initial Agreement Stage

- (i) Prior entering into the Agreement the PSCP in collaboration with the *Project Manager* provides a Form of Scheme Proposal submission for acceptance by the *Employer* identifying key people required by the *Project Manager* to assist in determining, developing and presenting the Initial Agreement for acceptance and;
- The PSCP establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk.
  - The PSCP establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk being the forecast Prices for the OBC and FBC Stages.
  - The PSCP includes the overall scheme programme and other information as required by the pro forma Form of Proposal (given in the template for the scheme contract Section 2 Part 2)
- (ii) On entering into the Agreement the PSCP;
- Provides the agreed people and resources in accordance with the Accepted Form of Proposal and programme for the IA Stage of the works.
  - Carries out the scope of works for the Stage.
  - Monitors and manages the resources throughout the period of IA. It is the PSCP's responsibility, as soon as he becomes aware, to advise the *Project Manager* and take actions necessary to promptly provide further resources necessary to maintain progress and meet the Accepted Programme.
  - Ensures the *Project Manager* is in agreement with those resources proposed to remain on hold during the period the *Employer* seeks approval to proceed to OBC. Where resources, including those of PSCM's and Consultants, are shown to be not required for the period of approval, the PSCP makes arrangements for them to be returned during the OBC Stage where necessary.
- (iii) Where the PSCP requires additional time and or resources to complete the scope of work required of him during the IA Stage and this is due to a reason foreseeable by the PSCP when the programme and resources were initially determined then

- ~~Corrective action is implemented in agreement with the *Project Manager* but issue of a compensation event is not applicable.~~
  - ~~The PSCP takes such action as necessary to limit the impact of time and Defined Cost~~
  - ~~Defined Cost in excess of the Stage target is paid to the PSCP providing the acceptance procedure has been followed and the amount is acceptable to the *Project Manager* otherwise Disallowed Cost applies.~~
- (iv) ~~During IA in the period prior to submission of the PSCP Form of Proposal for the OBC Stage the PSCP;~~
- ~~Establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the PSCP's Form of Proposal for OBC in respect of float and risk.~~
  - ~~Establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk being the forecast Prices for the FBC Stage.~~
  - ~~Includes the revised overall scheme programme and other information as required by the pro forma Form of Proposal (given in the template for the scheme contract Section 2 Part 2)~~
  - ~~Ensures the *Project Manager* is in agreement with those resources proposed to remain on hold during the period the *Employer* considers the proposal and issues Agreement to proceed to OBC and~~
    - ~~Where resources, including those of PSCMs and Consultants, are shown to be not required for the period of approval the PSCP makes arrangements for them to be returned during the OBC Stage where necessary.~~

#### 12.6 ~~Continuation from Initial Agreement – IA to OBC~~

- (i) ~~Where the PSCP is appointed at commencement of the IA Stage (or earlier) the *Employer's* acceptance of the PSCP's OBC Proposal is given as an Agreement to proceed (given in the template for the scheme contract Section 1, Part 2 A). The *Project Manager* confirms as the Accepted Programme the OBC programme included in the PSCP's proposal to the *Employer*.~~
- (ii) ~~On receipt of the Agreement to Proceed the PSCP provides the proposed resources and carries out the scope of work for the Stage.~~
- (iii) ~~The *Project Manager* notifies, as a compensation event, additional work instructed for developing the OBC, e.g. ground investigation not anticipated during IA preparation of the Proposal for OBC.~~

NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

- (v) ~~Where the PSCP requires additional time and or resources to complete the scope of work required of him during the IA Stage and this is due to a reason foreseeable by the PSCP when the programme and resources were initially determined then~~
- ~~• Corrective action is implemented in agreement with the *Project Manager* but issue of a compensation event is not applicable.~~
  - ~~• The PSCP takes such action as necessary to limit the impact of time and Defined Cost~~
  - ~~• Defined cost in excess of the Stage target is paid to the PSCP providing the acceptance procedure has been followed and the amount is acceptable to the *Project Manager* otherwise Disallowed Cost applies~~
- (vi) ~~During OBC in the period prior to submission of the PSCP Form of Proposal for the FBC Stage the PSCP;~~
- ~~• The PSCP establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk being the forecast Prices for the FBC Stage.~~
  - ~~• The PSCP includes the revised overall scheme programme and other information as required by the pro forma Form of Proposal (given in the template for the scheme contract Section 2 Part 2)~~
  - ~~• Ensures the *Project Manager* is in agreement with those resources proposed to remain on hold during the period the *Employer* considers the proposal and issues Agreement to proceed to FBC and
 
    - ~~○ Where resources, including those of PSCM's and Consultants, are shown to be not required for the period of approval the PSCP makes arrangements for them to be returned during the FBC Stage where necessary.~~~~

12.7 ~~Appointment of the PSCP at commencement of Outline Business Case~~

- (i) ~~On acceptance of the *Employer's* letter of appointment the PSCP in collaboration with the *Project Manager* provides a Form of Scheme Proposal submission for acceptance by the *Employer* identifying key people required by the *Project Manager* to assist in determining, developing and presenting the Outline Business Case for acceptance and;~~
- ~~• Establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk.~~

NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

- Establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk being the forecast Prices for the OBC and FBC Stages.
  - Includes the overall scheme programme and other information as required by the pro forma Form of Proposal (given in the template for the scheme contract Section 2 Part 2)
- (ii) On entering into the Agreement at OBC the PSCP;
- Provides the agreed people and resources in accordance with the Accepted Form of Proposal and programme for the OBC Stage of the works.
  - Carries out the scope of works for the Stage.
  - Monitors and manages the resources throughout the period of OBC. It is the PSCP's responsibility, as soon as he becomes aware, to advise the *Project Manager* and take actions necessary to promptly provide further resources necessary to maintain progress and meet the Accepted Programme.
  - Ensures the *Project Manager* is in agreement with those resources proposed to remain on hold during the period the *Employer* seeks approval to proceed to FBC and
    - Where resources, including those of PSCM's and Consultants, are shown to be not required for the period of approval, the PSCP makes arrangements for them to be returned during the FBC Stage where necessary.
- (iii) During the period prior to submission of the PSCP Form of Proposal for the FBC Stage the PSCP;
- The PSCP establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk being the forecast Prices for the FBC Stage.
  - The PSCP includes the revised overall scheme programme and other information as required by the pro forma Form of Proposal (given in the template for the scheme contract Section 2 Part 2)
  - Ensures the *Project Manager* is in agreement with those resources proposed to remain on hold during the period the *Employer* considers the proposal and issues Agreement to proceed to FBC.
- (iv) Where the PSCP requires additional time and/or resources to complete the scope of work required of him during the OBC Stage and this is due to a reason foreseeable by the PSCP when the programme

NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

and resources were initially determined then

- ~~Corrective action is implemented in agreement with the *Project Manager* but issue of a compensation event is not applicable.~~
- ~~The PSCP takes such action as necessary to limit the impact of time and Defined Cost~~
- ~~Defined cost in excess of the Stage target is paid to the PSCP providing the acceptance procedure has been followed and the amount is acceptable to the *Project Manager* otherwise Disallowed Cost applies.~~

12.8 Continuation from OBC to FBC

- (i) Where the PSCP is appointed prior to the FBC Stage the *Employer's* acceptance of the PSCP's FBC Proposal, prepared and submitted during OBC, is given as an Agreement to proceed (given in the template for the scheme contract Section 1, Part 2 B). The *Project Manager* confirms as the Accepted Programme the FBC programme included in the PSCP's proposal to the *Employer*.
- (ii) On receipt of the Agreement to Proceed the PSCP provides the proposed resources and carries out the scope of work for the Stage and
  - Monitors and manages the resources throughout the period of FBC. It is the PSCP's responsibility, as soon as he becomes aware, to advise the *Project Manager* and take actions necessary to promptly provide further resources necessary to maintain progress and meet the Accepted Programme.
  - Ensures the *Project Manager* is in agreement with those resources proposed to remain on hold during the period the *Employer* seeks approval to proceed to Stage 4 and
    - Where resources, including those of PSCM's and Consultants, are shown to be not required for the period of approval, the PSCP makes arrangements for them to be returned during Stage 4 where necessary.
- (iii) The *Project Manager* notifies, as a compensation event, additional work instructed for developing the FBC, e.g. ground investigation not anticipated during OBC preparation of the Proposal for FBC.
  - Where the PSCP requires additional time and or resources to complete the scope of work required of him during the FBC Stage and this is due to a reason foreseeable by the PSCP when the programme and resources were initially determined then
  - Corrective action is implemented in agreement with the *Project Manager* but issue of a compensation event is not applicable.



- The PSCP takes such action as necessary to limit the impact of time and Defined Cost
- Defined cost in excess of the Stage target is paid to the PSCP providing the acceptance procedure has been followed and the amount is acceptable to the *Project Manager* otherwise Disallowed Cost applies

#### 12.9 Appointment of the PSCP at commencement of Full Business Case

- (i) On acceptance of the *Employer's* letter of appointment the PSCP in collaboration with the *Project Manager* provides a Form of Scheme Proposal submission for acceptance by the *Employer* identifying key people required by the *Project Manager* to assist in determining, developing and presenting the Initial Agreement for acceptance and;
- Establishes with the *Project Manager* the amount of resources, time and Defined Cost to be included in the Form of Proposal in respect of float and risk.
  - Includes the overall scheme programme and other information as required by the pro forma Form of Proposal (given in the template for the scheme contract Section 2 Part 2)
- (ii) On entering into the Agreement at FBC the PSCP;
- Provides the agreed people and resources in accordance with the Accepted Form of Proposal and programme for the FBC Stage of the *works*.
  - Carries out the scope of works for the Stage.
  - Monitors and manages the resources throughout the period of FBC. It is the PSCP's responsibility, as soon as he becomes aware, to advise the *Project Manager* and take actions necessary to promptly provide further resources necessary to maintain progress and meet the Accepted Programme.
  - Ensures the *Project Manager* is in agreement with those resources proposed to remain on hold during the period the *Employer* seeks approval to proceed to Stage 4 and
    - Where resources, including those of PSCM's and Consultants, are shown to be not required for the period of approval, the PSCP makes arrangements for them to be returned during Stage 4 where necessary.
- (iii) Where the PSCP requires additional time and or resources to complete the scope of work required of him during the FBC Stage and this is due to a reason foreseeable by PSCP when the programme and resources were initially determined then;
- Corrective action is implemented in agreement with the *Project*

*Manager* but without a compensation event

- The PSCP takes such action as necessary to limit the impact of time and Defined Cost

#### 12.10 Preparing the Full Business Case for Stage 4 approval by the *Employer*

The PSCP develops the design to an agreed level of Completion, normally RIBA Stage E, and assists and collaborates with the *Project Manager* in preparation of the Full Business Case for the *Employer* as required by the scope of work that includes;

- Establishing the target total for the Prices for scheme Completion supported by a Programme for Acceptance that includes the full range of requisite sub-programmes
- Identification of risks and allocation of risk ownership
- Updating the scheme Quality Plan
- Updating the scheme Execution Plan
- Providing the construction phase plan (CDM 2007)
- Allowance within the target total for the Prices for the PSCP' operations between FBC Proposal submission and completion of Appendix C to the Form of agreement; Stage 4 - Construction delivery (includes total of the Prices in the re-affirmed Form of Agreement)

#### 12.11 Establishing the target total for the Prices

##### (i) What is the Target Price?

In this contract the 'target' is the forecast probable cost of the scheme management, development, design, construction and handover identified in Works Information.

- The target includes all risk for design, construction and commissioning and handover and includes the PSCP's fee.
- The 'target total for the Prices', submitted by the PSCP as the Form of Proposal and accepted during by the *Employer* is for Completion of the *works* and includes all PSCP obligations in this contract.

##### (ii) The process for arriving at the target total for the Prices is ongoing throughout the Stages 1, 2 and 3. The following procedures provide a framework within which the Parties will work;

1. The NHS Health Board will prepare (possibly assisted by the PSCP in addition to its own advisors) the Initial Agreement (IA) with associated outline scheme information and further develop

- the scheme until such time as a PSCP is selected from the framework or expressions of interest are invited
2. PSCP's may be invited to confirm their interest in the specific scheme where a direct appointment is not to be made.
  3. If more than one PSCP confirms an interest in the scheme, then a preferred PSCP is chosen by the NHS Health Board and will be invited to enter into the scheme contract Agreement.
  4. The PSCP (and, where appropriate, its PSCM's in collaboration with the *Project Manager* will develop the scheme and associated target total for the Prices to an FBC level acceptable to the *Employer* for submission for Health Board approval.
  5. Following Health Board approval of the FBC proposal, the PSCP and its PSCM's enter into Stage 4, which is construction and handover and includes completion of the design. If the Price for Work Done to Date on completion of the whole of the works by use of management engineering and other efficiency measures is less than the final total of the Prices, savings will be *shared* in accordance with the contract.
  6. In all cases PSCP's are required to collaborate in the target setting process at an early stage in accordance with the above and agree the target total for the Prices prior to commencement of Stage 4.
  7. The Prices at agreement of the target total for the Prices and Completion are to be capable of analysis and presentation showing departmental and on-cost areas.
  8. During the target setting process the PSCP should take account of not only the cost of design and construction but also the wider aspects of whole life costs and best value to the Health Board. The impact on whole life costs when setting targets for design / construction must be carefully considered during scheme evolving towards the agreement of the target total for the Prices for Stage 4.
  9. The use of the cost model format for presenting the proposed target total for the Prices to the Health Board for Scottish Government approval is a process that may not reflect the Activity Schedule pricing required by the ECC Option C contract; however the figures must be capable of effective comparison.
- (iv) The PSCP provides the target Price for Stage 4, identifying completion of substantial design, construction, commissioning and handover to include amounts for risk. The target building process will examine the value (Time and Defined Cost) of included risks, validate and allocate risk ownership to establish a valid target total for the Prices for

agreement.

- (v) The Site based management resource included in the target total for the Prices should be robust enough to administer the scheme procedures including for compensation events.
- (vi) The target is maintained within the parameters of the Health Board affordability amount for the scheme. If at any time prior to agreement of the target total for the Prices the affordability amount is exceeded the PSCP provides an economic solution without prejudicing the functionality or design of the scheme. In the event this proves unattainable the *Project Manager* seeks advice from the *Employer*.

#### 12.11 The Cost Plan leading to the target

- (i) The PSCP consults with the *Project Manager*, following appointment, as a first step in the scheme process of establishing the Prices to confirm the preferred format of the cost plan to be implemented for forecasts of Defined Cost and development of the Target Price.
- (ii) The Health Board cost plan may be provided;
  - See Appendix 6
 or
  - ~~[Is not available — none prepared]~~
  - [Is included as an attachment to this Works Information ]
- (iii) The cost plan preferred format will be capable of being converted to for the purpose of the *Employer* reporting structure and subsequent validation of the Prices by testing and comparison against the price of other schemes.
- (iv) The PSCP includes within his initial cost plan a forecast for each of the applicable IA, OBC and FBC Stages dependant on the point of entry into the Agreement together with completion of the substantial design during construction; this in addition to any preliminary estimate of total construction cost or scheme affordability provided by the *Employer*.
- (v) The target amounts included within the cost plan for the scope of work for IA, OBC and FBC Stages, having in mind the additional condition of contract Z Clause acceptance procedure, are updated at the forecast intervals stated in Contract Data Part one.
- (vi) The PSCP initial forecast of the target amount for total construction is subject to revised forecasts at intervals stated in Contract Data Part one for Stages up to FBC agreement of the target total for the Prices
- (vii) The PSCP submits revised expenditure profiles with each forecast of Defined Cost up to the end of the FBC Stage or such time as the target total for the Prices replaces the cost plan.

- (viii) Where there is more than one construction option identified and followed multiple forecasting is undertaken.

#### 12.12 Identification and management of risk

- (i) Risk may be viewed as the combination of the probability of an event and its consequence and risk management as the process by which an organisation identifies, prioritises and develops management action to control the risks.
- (ii) Under the Frameworks Scotland the *Project Manager* and the PSCP are required to proactively and collaboratively manage the risks which may arise during the scheme with reference to the risk register.
- (iii) The *Employer* may provide a generic Risk Matrix; this risk matrix would form the basis of the Risk Register and all risk evaluation.
- (iv) The *Project Manager* and the PSCP are required to carry out an initial qualitative and quantitative risk assessment as soon as practical, and in any case not later than week 8 (eight) of Stage 3 FBC, identifying the following:
- the potential risks which may impact on the costs, build programme and/or quality of the Scheme;
  - the probability of the identified risks occurring;
  - a financial estimate of each risk's most likely consequences; and
  - whether the PSCP or Health Board is best placed to manage the identified risk.
- (v) The Health Board may request the PSCP to provide a facilitator who will facilitate the workshop and provide software and personnel to compile to the results of the risk assessment process and complete the Scheme Risk Register for acceptance by the *Project Manager*.
- (vi) Risk champions and allocation of risk is established by use of risk workshops to arrive at the target total for the Prices
- (vii) The key to the success of a risk register is bullet point 4 (iv) above; it is not a question of each Party seeking to push an unpalatable risk on to the other, the emphasis is on ensuring that the Party best able to manage a risk assumes it.
- (viii) The risk register is reviewed and updated by the Project Manager and PSCP at regular project meetings during each Stage and at a formal review carried out at the end of each Stage.
- (ix) Employer's risk is outside of the Prices and brought into an amended target by the Project Manager using the compensation event process. Unless Provisional Amounts are included within the

target total for the Price for expenditure as compensation events if incurred, any balance of the Provisional Amount not expended is owned by the *Employer*.

- 12.13 The PSCP's initial cost plan includes risk.
- (i) The PSCP identifies risks within any initial cost plan he prepares.
  - (ii) The identified risks are allocated time and Defined Cost amounts by the PSCP during the IA, OBG and FBC Stages for inclusion in the Scheme Risk Process.
  - (iii) The PSCP adds risks to his risk register as the scheme develops and until the *Employer* undertakes the first scheme risk workshop. The PSCP risks are reviewed and added to the risk workshop risk schedule
  - (iv) Subsequent to the first scheme risk workshop the PSCP advises the *Project Manager* of all emerging risks and provides an estimate of time and Defined Cost impact where applicable.
  - (v) Following the first scheme risk workshop all Risks are managed within the Scheme Risk Process
- 12.14 Risk management prior to agreement of the target total for the Prices
- (i) The *Project Manager* identifies initial *Employer* risks in conjunction with the Project Director and establishes the scheme Risk register.
  - (ii) The PSCP issues the initial cost plan risk schedule to the *Project Manager* together with any assessed amounts for time and Defined Cost.
  - (iii) The *Project Manager* sets the programme for quantitative risk management leading to the target total for the Prices.
  - (iv) Following the first qualitative risk workshop a quantitative risk workshop is held and the identified qualitative risks are subjected to quantitative analysis that includes the cost plan..
  - (v) The *Project manager* provides the PSCP with Risk Register and schedules of qualitative and quantitative risks established from the risk workshop for management jointly between the *Project Manager* and PSCP.
  - (vi) The *Project Manager* and PSCP jointly review the risk schedules at least once during each assessment interval.
  - (vii) Risks that become evident between reviews are identified and added to the Risk Register, preliminary assessments of Time and Defined Cost are prepared by the *Project Manager*/PSCP for inclusion in the target and more detailed examination during the succeeding risk workshop.

- (viii) The *Project Manager* and PSCP subject significant risks emerging in the intervening period between scheduled risk workshops to examination. If a major impact is identified the *Project Manager* may convene an intermediate risk workshop to assess the impact and agree a solution.

#### 12.15 Setting the target total for the Prices

- (i) The development of the Prices through IA, OBC, FBC is to be in the *activity schedule* format supplemented by a cost plan. As a consequence, and so that the Prices can be provided in the NHS cost model format required by the *Employer* the PSCP structures the Prices for the target total for the Prices within the *activity schedule(s)* as activities that can be related to the Accepted Programme and the NHS cost model format.
- (ii) Use of scheme cost information
- Scheme cost information provided by PSCP's may be taken and stored on a Frameworks Scotland database for benchmarking and performance measurement purposes. Therefore it is essential that both the target total for the Prices and the Price for Work Done to Date are submitted to the Frameworks Scotland in the required cost model format.
  - The PSCP will undertake cost planning processes throughout the Stages in accordance with industry best practice. In support of the targets PSCP's submit the target total for the Prices and the final Price for Work Done to Date in BCIS elemental cost analysis format for each clinical department
- (iii) Risk champions and allocation of risk is established by use of risk workshops to arrive at the target total for the Prices.
- (iv) *Employer's* risk is outside of the target total for the Prices and managed by the *Project Manager* using the compensation event process; except where Provisional Amounts are included within the target total for the Prices for expenditure as compensation events when an identified risk occurs. The Provisional Amount when not expended in whole or in part is owned by the *Employer* and deducted from the target total for the Prices by an *Employer's* risk compensation event.
- (v) Where a risk identified and included in the target total for the Prices occurs the Provisional Amount is adjusted according to the accepted compensation event quotation.
- (vi) Procedure for adjusting the Prices following agreement of the target total for the Prices
- Where the agreed target total for the Prices includes PSCP allowances for work that is to be subcontracted and a varied price is subsequently obtained by negotiation or tendering then where the varied price is less than the included amount the

difference in Price is deducted from the target total for the Prices by an *Employer's* risk compensation event

- Increases in the difference amount are added to the target total for the Prices by an *Employer's* risk compensation event
- This procedure equally applies to providers of Plant and Materials
- Savings arising from Value Engineering and innovation are not affected by this procedure

#### 12.16 Risk Management during construction and handover Stage 4

- (i) The *Project Manager* manages the *Employer* risks identified by the risk workshop as being outside of the agreed target total for the Prices
- (ii) The *Project Manager* and PSCP agree a programme for risk review workshops that may be required by the *Employer* following target total for the Prices agreement.
- (iii) The *Project Manager* and PSCP jointly manage those risks included within the agreed target total for the Prices and;
  - Appoint a risk manager (who may be a PSCP employee) to undertake analysis of the reviewed Risk Register and issue a monthly risk report .
  - Hold joint meetings at intervals of no longer than four weeks to update the target total for the Prices financial risk profile
  - The *Project Manager* records Risk Reduction meetings and financial reviews and forwards a copy to the risk manager
  - The risk manager enters review data into the risk profile and produces a monthly risk report
  - New risks are identified and impact assessed in the same format as the established risk process, detail is passed to the risk manager for inclusion in the monthly update for the Risk register
  - Emerging significant risks are subjected to an intermediate risk workshop if required by either the *Project Manager* or PSCP.
- (iv) The *Project Manager* arranges for NHS Health Board and User Groups to attend the risk reduction meetings/workshops.
- (v) The PSCP attends and participates in the risk workshops, also arranging for PSCM's / consultants and others in his supply chain to take part and/or provide information required for the risk process.



## 12.17 Scheme Quality Plan

The PSCP provides a scheme Quality Plan within four weeks of appointment as follows;

- (i) The scheme Quality Plan incorporates quality procedures and quality controls demonstrated by the PSCP during appointment to the Frameworks Scotland
- (ii) The PSCP develops the scheme Quality Plan during the Stages of the *works* to encompass all quality procedures and controls necessary for Completion of the *works*.
- (iii) Design submission and acceptance protocol to be included in the scheme Quality Plan
  - Establishment of a work plan reconcilable with RIBA stages and NHS design development procedures and processes
  - Determination of the anticipated outputs of each Stage such as reports and / or register of drawings to be produced
  - Identification for each output the means of acceptance by the *Project Manager*, by the Health Board, user group review, or requiring a workshop.
  - Projected timescale for the issuing of each report and / or drawing, including return date for comments.
  - For the purpose of programming it should be assumed that a;
    - (i) workshop decision requires 10 working days for approval,
    - (ii) user group decision requires 10 working days and

*Project Manager* acceptance is the *period* for reply where he does not have to refer to the *Employer* or Others.
- (iv) NHS Health Board procedures applying to existing structures/plant/buildings etc.
- (v) Interface with the *Project Manager's* quality plan/scheme procedures
- (vi) Interface with the *Supervisor* and his duty.
- (vii) The PSCP issues the Quality Plan with subcontract / consultant enquiries.
- (viii) PSCMs/SCMs including consultants comply with the Quality Plan.

#### 12.18 Scheme Execution Plan

- (i) The PSCP prepares, develops and maintains a scheme execution plan during the Stages of the *works*.
- (ii) The plan should be limited to a general statement as to how and when the *works* will be carried out, more particularly on larger construction schemes. It is not expected to be a specification type document.
- (iii) The plan should identify all target milestone dates, interfaces and obligations of the Parties so that a structured and more comprehensive knowledge base regarding proposed execution of the scheme is available to PSCP, the *Employer's* staff and the *Employer's* User Groups for reference.
- (iv) The plan could identify the existence and location of all manuals and procedures such as the
  - Pre-construction information
  - CDM - Construction Stage Plan
  - PSCP's Quality Plan
  - PSCP's sustainability / management plan

#### 12.19 Continuation from FBC to construction

The *Employer* and the PSCP confirm the target total for the Prices in the Agreement by completion of Appendix C to the Agreement – Appendix 'C' – Stage 4 - Construction and handover (includes the total of the Prices in the re-affirmed Form of Agreement) and the *works* continue accordingly. Failure to enter into the Agreement Appendix 'C' results in termination of this contract.

#### 12.20 Handover

- (i) The PSCP proposes the handover procedure that recognises the policy of 'no Defects at Completion'.
- (ii) Handover procedures are developed in conjunction with the *Employer* requirements for occupation.
- (ii) For this contract handover of the new building requires inspection and pre handover snagging to have taken place; and a certification of a Defect free condition to have been issued by the *Supervisor* prior to handover acceptance.

### 13 Commercial requirements, Accounts and records

#### 13.1 Forecast of Defined Cost, cash flow and expenditure projections

- (i) The PSCP prepares forecasts of the total Defined Cost for the whole of the *works* as stated in Clause 20.4 of this Contract.
- (ii) The forecast of the total Defined Cost prepared by the PSCP is to separately identify the forecast of the total Defined Cost for each of the Stages comprising the whole of the *works*
- (iii) Cash flow and expenditure projections are prepared by the PSCP in graphic format to coincide with the forecast of the total Defined Cost for each of the Stages and the whole of the *works*.
  - Pro forma Stage pricing work books are available from the Frameworks Scotland web site for use in providing resource schedules, cost plans and forecasts for Stages 1, 2 and 3.
  - Forecast tools for the whole scheme are included in the contract administration toolkit (CAT) pro forma, monthly assessment and reporting (Form 9A)
- (iv) The cash flow and expenditure projections demonstrate the initial forecasts and current forecasts for each Stage at each assessment interval.

#### 13.2 Records of Defined Cost

- (i) The PSCP maintains a computerised Purchase Order driven cost allocation system showing order value, delivery and paid amount for each item. This system or similar is required to confirm the Defined Cost in assessment applications and, where appropriate, items in compensation event quotations
- (ii) The PSCP maintains copies of all goods received notes available for inspection by the *Project Manager*.
- (iii) The PSCP maintains records of all amounts paid to PSCM's/SCM's and other suppliers together with details of how the amounts were calculated.
- (iv) The PSCP maintains records of all correspondence and meetings relevant to amounts of Defined Cost due to or paid to PSCM's, SCM's and other suppliers.
- (v) The PSCP keeps records of daily allocation of hours for his design and other staff for which he is reimbursed at Design rates to support Defined Cost included in payment applications.
- (vi) The PSCP ensures PSCMs and SCMs keep records of daily allocation of hours for their design and other staff for which they are reimbursed at Design rates to support Defined Cost included in payment

applications

### 13.3 Assessment Procedures

- (i) The PSCP submits an application for payment to the *Project Manager* prior to each assessment date.
- (ii) The payment application does not exceed the amount forecast by the PSCP's expenditure profile and projection established for Stages 1, 2 and 3 and/or the agreed target total for the Prices established for Stage 4 (cash flow forecast – Z clauses 7 and 8).
- (iii) The PSCP holds in readiness for review by the *Project Manager* all data and calculations supporting the payment application
- (iv) The PSCP includes with each application for payment a list (aged creditors) showing those creditors with payments outstanding at the time of the application.
- (v) The PSCP discusses and where appropriate adjusts the payment application with the *Project Manager's* cost advisor prior to the *Project Manager's* assessment.
- (vi) The PSCP, on receipt of the *Project Manager's* certificate, submits his VAT invoice in the manner required by the *Employer*.
- (vii) Invoices are to be submitted to:

NHS Lothian  
 Royal Royal Hospital for Sick Children  
 1 Rillbank Terrace  
 Edinburgh  
 EH9 1LN  
 For the Attention of Brian Currie – Project Director

### 13.4 Early Warning / Risk Reduction Meetings

- (i) The Frameworks Scotland Contract Administration Toolkit (CAT) pro forma is used for early warning notifications/risk reduction meeting requests/records. Notifications/records are not to be transmitted verbally or by other communication.
- (ii) The *Employer* requires the PSCP limits early warning to the procedures stated in this contract.
- (iii) Risk reduction meeting discussions are to be limited to the matter notified and not expanded into more general discussion. Where more than one matter of risk is to be discussed each has its own agenda and individual record of the proposals considered and the decisions taken.
- (iv) Early Warning notifications or Risk Reduction Meetings are not

normally given / held for compensation events that have been notified in accordance with the contract.

### 13.5 Compensation events

- (i) Limitation of *Project Manager's* authority to accept or notify compensation events
- The *Employer* limits the *Project Manager's* authority to accept or notify compensation events to £100,000 per. event for all events that have a potential to increase the amount of the agreed target total for the Price.
  - The PSCP accepts time for reply by the *Project Manager* in response to a PSCP notification for such an event expected to exceed £100,000 is amended to 4 weeks. This is to allow the *Project Manager* sufficient time to obtain expenditure authority from the *Employer*.
  - If a compensation event in this contract has a potential to exceed the *Project Manager's* authority limit, the *Employer* endorses the *Project Manager's* notification of acceptance and instruction for the PSCP to submit a quotation.
  - If a quotation for a compensation event in this contract exceeds the *Project Manager's* authority limit the *Employer* endorses the *Project Manager's* notification of acceptance of a quotation.
- (ii) Compensation events are instructed / notified using the pro forma notification included in CAT.
- (iii) A compensation event is not considered to be instructed / notified if any communication other than the CAT pro forma is used.
- (iv) The compensation event notification is a 'live' document and is transmitted between the parties and recorded in the CAT master register as a record of submission, requirements and acceptance.
- (v) Compensation event quotations are to be detailed and supported by contemporary records / allocation sheets where the effect of the event is on 'the Defined Cost of the work already done'.
- (vi) Compensation events notified by the PSCP relevant to PSCM / Consultant events are supported by the PSCP's statement of validity of contractual entitlement in accordance with the terms of the subcontract / consultancy agreement.
- (vii) Compensation event quotations that do not have an impact on *sectional*, Completion Dates for Completion or the Completion Date do not require revision of the programme to be submitted with the quotation unless instructed by the *Project Manager*.
- (viii) For the avoidance of doubt, the principles of the contract apply to compensation events for all pre-construction Stages of the scheme,

e.g. OBC and FBC.

- (ix) The PSCP includes additional management resources in compensation event quotations only where the scheme management structure and resources cannot contain the effect.

### 13.6 Changes to Works Information during IA, OBC, FBC and agreement of the target total for the Prices

In this contract instructions by the *Project Manager* to change Works Information to incorporate additional work within the Scope during IA, OBC and FBC Stages prior to agreement of the target total for the Prices are not compensation events (Clause 60.1) in the contract with regard to the definition of the Scope.

- The change is managed as part of the scheme development; except that any necessary increase to previously agreed PSCP resources for the IA/OBC/FBC Stage in developing the design and the Prices are managed as a compensation event within the Stage.

**14 Parent company guarantee**

14.1 A Parent Company Guarantee is to be provided by the PSCP when requested by a Health Board

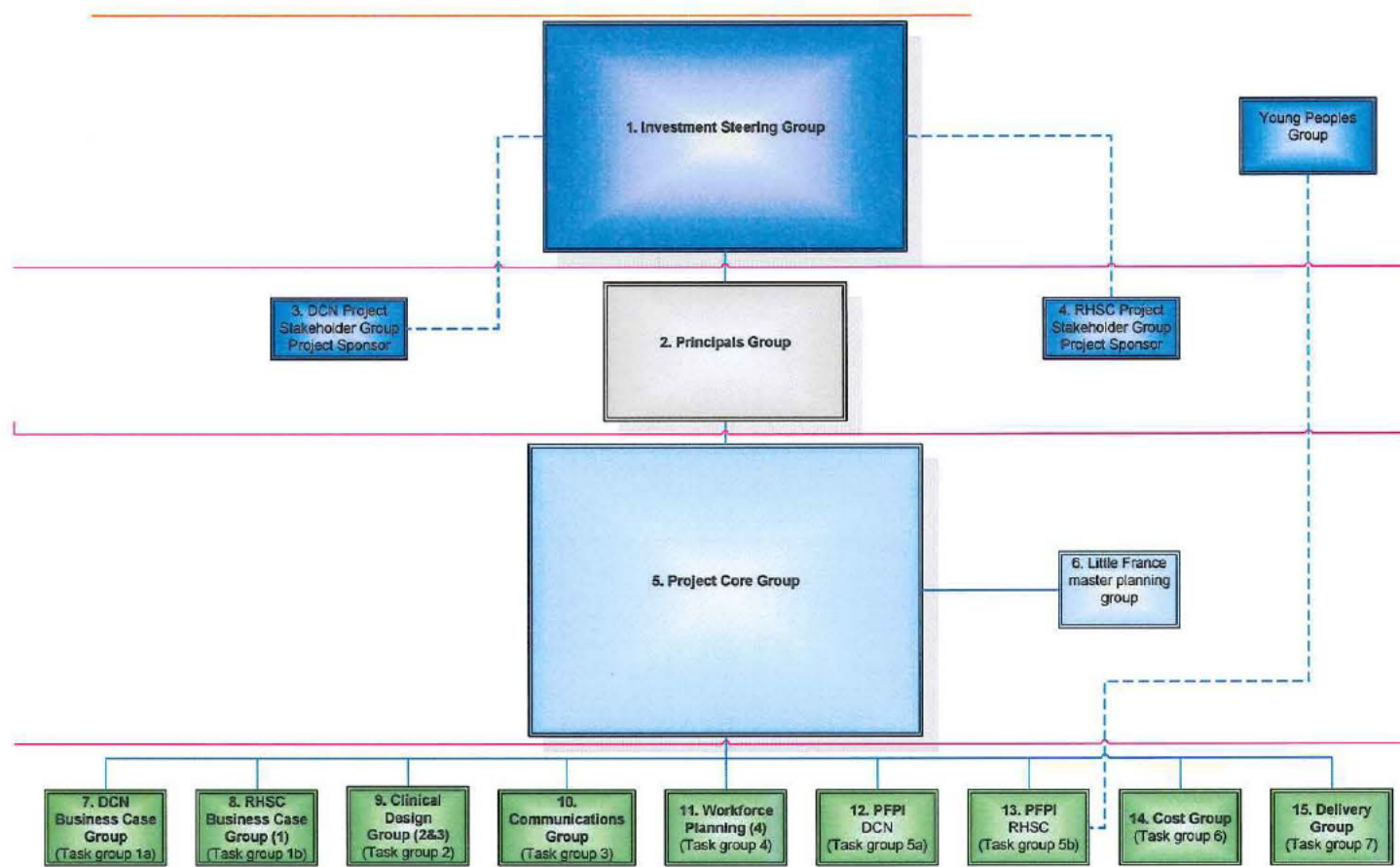
- The guarantee should be in the form agreed for Frameworks Scotland

**15 Appendices**



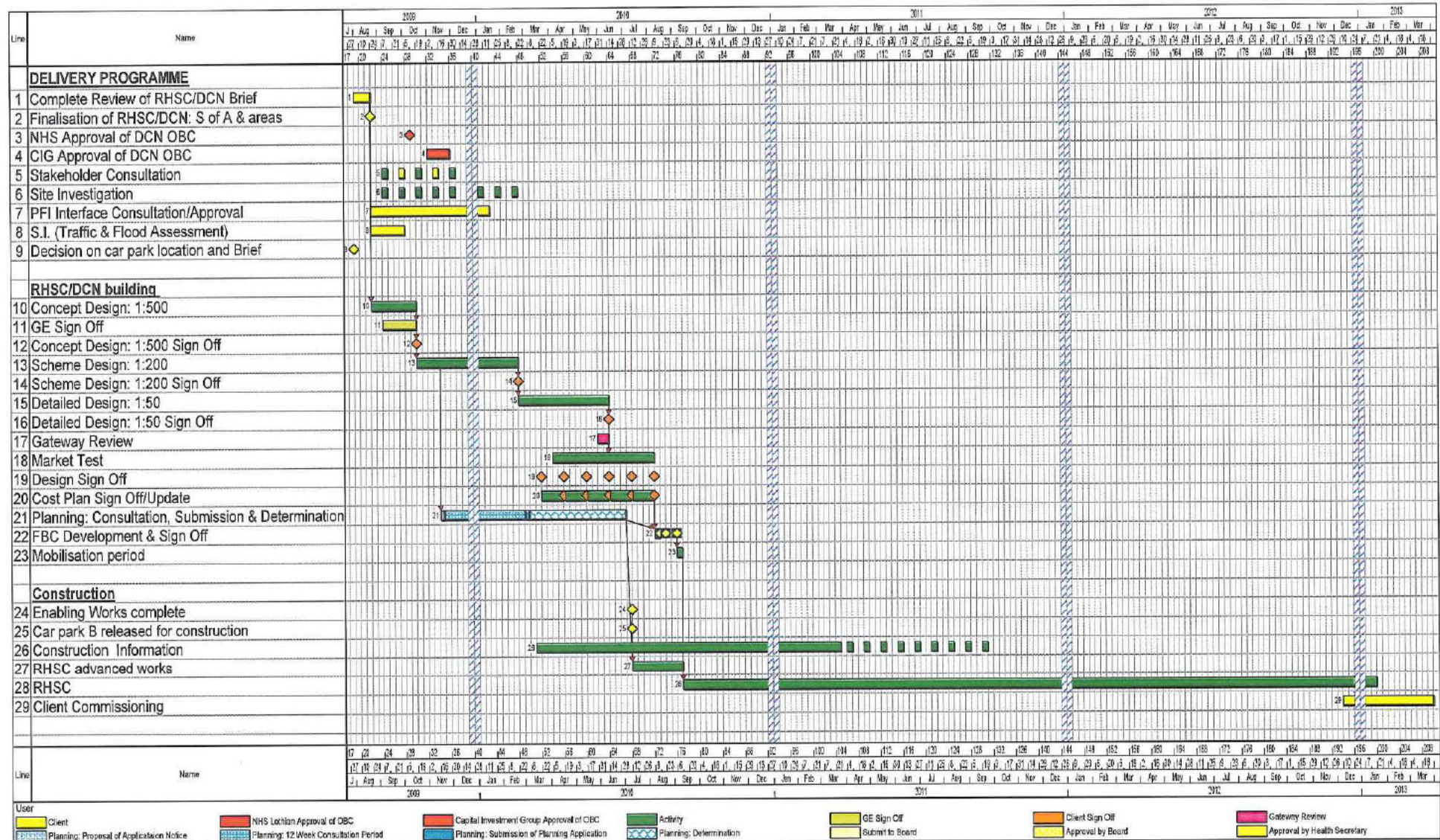
## APPENDIX 1

### Details of User Groups



APPENDIX 2

Scheme Program



APPENDIX 3

Scheme Brief



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**RHSC Re-Provision Project**

**Briefing Requirements**

**October 2009**

DRAFT

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**Revision History**

<b>Issue Number</b>	<b>Purpose of Issue</b>	<b>Issue date</b>
1	First Issue (contents and initial comments only)	00.00.00
2		
3		
4		
5		



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## **INTRODUCTION**

This document has been created with the intent to inform NHS Lothian of the requirements in preparation of a robust brief for the RSHC re-provision.

The aim of this particular document is to facilitate an informed discussion with NHSL to clarify how and by whom this documentation should be collated. Whilst Davis Langdon can facilitate any discussion the inputs required will be plentiful requiring the inputs of various stakeholders.

The contents list set out in this paper is for guidance only. It is considered that the contents page shall in its own right be a live document until such time as the briefing process is considered complete, after which it will constitute a section within the Works Information Requirements together with the information to which it refers.

The following Tables list the high level requirements and likely Appendices together with a proposed detailed Contents List.



INSERT LOGO's as REQUIRED

<b>BRIEFING DOCUMENT</b>	Action	Status	Comp? Y/N	Comments
1. Contract (Stage 4) inc. Testing and Commissioning Requirements / Necessary Consents	<b>DL/ MMc</b>			
2. Project Overview inc. WRAP, BREEAM & Sustainability Targets	<b>NHSL</b>			See Section 4.10 (Sustainability) of Dec 2008 Design Brief
Reference to made to appendices documentation; in particular:- <ul style="list-style-type: none"> <li>• Accommodation Schedules</li> <li>• Room Data Sheets</li> <li>• Relationship Diagrams</li> <li>• Proposed Bed Model</li> </ul>				
3. Project Interface Requirements with Existing Hospital	<b>NSHL</b>			
4. Clinical Description / Design Brief	<b>NSHL</b>			
5. Operational Policy	<b>NSHL</b>			Refer to EW 005 RHSC Operational Policy Document – Version 3 is in circulation.
6. Technical Requirements for the Building Fabric (inc. GE Workflow inputs)	<b>NSHL</b>			
7. Technical Requirements for the Building Services	<b>NSHL</b>			
8. Facilities Management Briefing for Hard FM	<b>NSHL</b>			Nothing in circulation.
9. Derogations Schedule	<b>BAM</b>			



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<b>Appendices (Non-technical)</b>			
<b>A:</b> Completed Check Lists (relevant to the type of facility)	<b>NHSL</b>		
<b>B:</b> Completed Access Audit	<b>NHSL</b>		
<b>C:</b> RDS index (referencing RDS & 1:50 Layouts)	<b>BAM</b>		Refer to EW 006 Room data sheets available for RHSC / Nothing for DCN
<b>D1:</b> Accommodation Schedules RHSC & DCN	<b>Tribal</b>		Version 6 dated 21 October 2009
<b>D2:</b> Accommodation Schedules RHSC	<b>Tribal</b>		Refer to EW 001 Further discussion required on target for these
<b>D3:</b> Accommodation Schedules DCN	<b>Tribal</b>		Refer to EW 001 Further discussion required on target for these
<b>E:</b> Relationship Diagrams / Key Clinical Adjacencies & Access Routes	<b>NHSL / BAM</b>		See Concept Design October 2009
<b>F:</b> Proposed Bed Model	<b>NHSL</b>		Ongoing
<b>G:</b> Clinical Staff Accommodation	<b>NHSL</b>		
<b>H:</b> Statement of Derogations	<b>BAM</b>		
<b>Appendices (Technical)</b>			
<b>I:</b> List of Acronyms	<b>DL</b>		
<b>J:</b> List of Current & Relevant Guidance	<b>MMc</b>		
<b>K:</b> Agreed BREEAM List	<b>BAM</b>		NB: BREEAM Excellent Health is a requirement not NEAT as currently referred to in Design Brief 2008.
<b>L:</b> List of Mock Up Requirements and or drawings / photographic records completed and agreed mock ups	<b>NHSL</b>		
<b>M:</b> Construction Drawings of the Existing Royal Infirmary			Floor layouts received only. Detailed Construction information required.



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<b>CONTENTS</b>	Action	Status	Comp Y/N.	
<b>PART 1: CONTRACT</b>	NHSL			
<b>PART 2: PROJECT OVERVIEW</b>	NHSL			
<b>Project Title &amp; Location (inc. Red Line Boundary)</b>	NHSL			
<b>Project Description / Provision (High level description)</b>	NHSL			Develop Section 1-3 of Dec 2008 Design Brief
<b>Project Stakeholders</b>	NHSL /DL			
<b>Clinical Activity – Overview - Inc.</b> General Principles for Patient Environments Age Appropriate Care Single Room Accommodation Unscheduled care Services Critical Care Services Theatres & Day Surgery Scheduled Inpatient Care Out Patient & Medical Day Care Clinical Support Services inc. Pharmacy, Clinical Radiology, Laboratories Child & adolescent Mental Health Services	NHSL			Develop Section 4.6 of Dec 2008 Design Brief NB: Some aspect of this brief are duplicated within this proposed brief / others are not. For consistency of approach relevant information is required in respect to each aspect.



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<p><b>Character &amp; Innovation</b>                  Vision                  Innovation                  Therapeutic Environment                  Art                  Light                  Interior Design                  Informatics Strategy                  School Rooms</p>	<p>NHSL</p>			<p>NB: Potential overlaps with technical requirements. Aspirational and prescriptive requirements to be co-ordinated.</p>



INSERT LOGO's as REQUIRED

<b>PART 3: PROJECT INTERFACE REQUIREMENTS</b>				
<b>SECTION A: Master Plan Development (inc transport)</b>	NHSL			
<b>SECTION B: Available Information</b>	NHSL			
<b>SECTION C: Construction Interface</b>	NHSL			
<b>SECTION D: Building Services Interface</b>	NHSL			
<b>SECTION E: Clinical Interface &amp; Required Adjacencies</b>	NHSL			
<b>SECTION F: Operational Interface</b>	NHSL			
<b>SECTION G: Facilities Management Interface</b>	NHSL			



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<b>PART 4: CLINICAL DESCRIPTION / DESIGN BRIEF</b>	Action	Status	Comp Y/N.	
<b>GENERAL INTRO</b>	NHSL			
Spaces	NHSL			See Section 4.5 of Dec 2008 Design Brief
Departmental Adjacencies				See Section 4.4 (Departmental Adjacencies) of Dec 2008 Design Brief
<b>SECTION A: A&amp;E ASSESSMENT WARD</b>				
A1 - Emergency Department	NHSL			
A2 – Medical Paediatric Acute Assessment and Admissions(27 Beds)	NHSL			
<b>SECTION B1: CRITICAL CARE / HDU / NEONATAL SURGERY</b>	NHSL			See Section 4.6 (Critical Care services) of Dec 2008 Design Brief
B1 – PICU AND HDU'S – 24 Beds	NHSL			
<b>SECTION C1: INPATIENT PATHWAY / WARD CARE</b>				See Section 4.6 (Scheduled Inpatient Care) of Dec 2008 Design Brief
C1 – Medical/Surgical/Neuroscience Inpatients (46 Beds)	NHSL			
C2 – Transitional Care	NHSL			
C3 – Haematology/ Oncology Ward (10 inpatients beds & 5 daycase beds)	NHSL			
C4 – Adolescent Inpatient Facility – 13 Beds	NHSL			
C4.1 Shared Support	NHSL			
C5 - Neurophysiology	NHSL			
C6 – Sleep Lab	NHSL			
C7 - School	NHSL			



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<b>SECTION D1: OUTPATIENT DEPARTMENTS / MEDICAL DAYCARE</b>				
<b>SECTION E1: THEATRES / ANAESTHETICS / DAY SURGERY</b>				See Section 4.6 (Theatres & Day Surgery) of Dec 2008 Design Brief
E1 – Operating Theatres/ Surgical Day Case Unit	NHSL			
E2 – Acute Surgical Admissions Area (10 beds)	NHSL			
<b>SECTION F1: CHILD AND ADOLESCENT MENTAL HEALTH (CAMHS)</b>				See Section 4.6 (Child & adolescent Mental Health Services) of Dec 2008 Design Brief
F1 – Child and Adolescent mental Health Services (12 Inpatients beds)	NHSL			
<b>SECTION G1: CLINICAL SUPPORT</b>	NHSL			See Section 4.6 (Clinical Support Services) of Dec 2008 Design Brief
G1 - Radiology	NHSL			
G2 - Pharmacy	NHSL			
G3 – Medical Photography	NHSL			
G4 – Equipment Library	NHSL			
<b>SECTION H1: ACADEMIC</b>				
H1 – Child Life & Health	NHSL			
H2 – Clinical Research Facility	NHSL			
H3 – Clinical Education Suite	NHSL			
<b>SECTION I1: OFFICE / ADMIN SUPPORT SERVICES</b>				See Section 4.9 (Staff Facilities) of Dec 2008 Design Brief
I1 – Consultant, CNS & Secy Office Accommodation	NHSL			
I2 – Child & adolescent Mental Health Services Administration	NHSL			



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I3 – Community Paediatrics	NHSL			
I4 – Community Childrens Nursing	NHSL			
I5 – Health records Workspace	NHSL			
I6 – Health Records Store	NHSL			
<b>SECTION J1: FACILITIES INFRASTRUCTURE SUPORT SERVICES</b>				
J1 – Main Entrance – Public Spaces	NHSL			
J2 – Main Kitchen	NHSL			See Section 4.8 (Catering) of Dec 2008 Design Brief
J3 – Coffee Rooms	NHSL			See Section 4.8 (Catering) of Dec 2008 Design Brief
J4 – e-Health Infrastructure	NHSL			
J5 – Domestic Services	NHSL			
J6 – Materials Management	NHSL			
J7 – Central Staff Changing Accommodation	NHSL			
J8 – Estates	NHSL			
J9 – Bed Store	NHSL			
<b>SECTION K1: PATIENT FAMILY SUPPORT</b>				
K1 – Bereavement Suite	NHSL			See Section 4.8 (Family Support Facilities) of Dec 2008 Design Brief
K2 – Spiritual & Pastoral Care	NHSL			
K3 – On-call Suite	NHSL			
<b>SECTION L1: FAMILY HOTEL</b>				
L1 – Family Hotel Accommodation	NHSL			See Section 4.8 (parent and Family Accommodation) of Dec 2008 Design Brief
<b>SECTION M1: PLANT</b>				
M1 – Plant	NHSL			



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<b>SECTION N1: INPATIENT WARDS</b>				See Section 4.6 (Scheduled Inpatient Care) of Dec 2008 Design Brief
A – NARAU ( Neurosciences Acute Receiving and Assessment Unit (12 beds)	NHSL			
B – HDU – Level 1 (12 beds)	NHSL			
C – Neurology/ Neurosurgery (43 beds – 38 level 0&5 Level 1)	NHSL			
D – Critical care (12 Beds)	NHSL			
<b>SECTION O1: OPERATING THEATRES</b>				
A – Operating Theatres	NHSL			
B - Neuropathology	NHSL			
<b>SECTION P1: RADIOLOGY</b>				See Section 4.6 (Clinical Radiology) of Dec 2008 Design Brief
<b>SECTION Q1: OUTPATIENTS</b>				See Section 4.6 (Outpatients and Medical Day Care) of Dec 2008 Design Brief
A - Neuroradiology	NHSL			
B – Research Scanner	NHSL			
C – Equipment Library	NHSL			
D - Psychology	NHSL			
<b>SECTION R1: OFFICE / ADMIN SUPPORT SERVICES</b>				
A – Clinical / Management	NHSL			
B – Medical Records	NHSL			
C – Medical Records Offices	NHSL			
D – Academic Embedded Space	NHSL			



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E – Meeting / Seminar rooms	NHSL			
<b>SECTION S1: FACILITIES INFRASTRUCTURE SUPPORT SERVICES</b>				
A - Coffee Rooms	NHSL			See Section 4.8 (Catering) of Dec 2008 Design Brief
B – e-Health Infrastructure	NHSL			
C – Domestic Services	NHSL			
D – Staff Changing Accommodation	NHSL			
E - Estates	NHSL			
<b>SECTION T: COMBINED NEUROPHYSIOLOGY</b>				
A – Combined Neurophysiology	NHSL			
<b>SECTION U: COMBINED THEATRES</b>				
<b>SECTION V: COMBINED RADIOLOGY</b>				
A - Entrance	NHSL			
B – Imaging Suites	NHSL			
C – Support Space	NHSL			
D – staff Areas	NHSL			
E – Research Scanner	NHSL			

INSERT LOGO's as REQUIRED

<b>PART 5: OPERATIONAL POLICY</b>	Action	Status	Comp Y/N.	
<b>GENERAL INTRO</b>	<b>NHSL</b>			
Spaces	<b>NHSL</b>			
Departmental Adjacencies				
<b>SECTION A: A&amp;E ASSESSMENT WARD</b>				
A1 - Emergency Department	<b>NHSL</b>			
A2 – Medical Paediatric Acute Assessment and Admissions(27 Beds)	<b>NHSL</b>			
<b>SECTION B1: CRITICAL CARE / HDU / NEONATAL SURGERY</b>	<b>NHSL</b>			
B1 – PICU AND HDU'S – 24 Beds	<b>NHSL</b>			
<b>SECTION C1: INPATIENT PATHWAY / WARD CARE</b>				
C1 – Medical/Surgical/Neuroscience Inpatients (46 Beds)	<b>NHSL</b>			
C2 – Transitional Care	<b>NHSL</b>			
C3 – Haematology/ Oncology Ward (10 inpatients beds & 5 daycase beds)	<b>NHSL</b>			
C4 – Adolescent Inpatient Facility – 13 Beds	<b>NHSL</b>			
C4.1 Shared Support	<b>NHSL</b>			
C5 - Neurophysiology	<b>NHSL</b>			
C6 – Sleep Lab	<b>NHSL</b>			
C7 - School	<b>NHSL</b>			
<b>SECTION D1: OUTPATIENT DEPARTMENTS / MEDICAL DAYCARE</b>				



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<b>SECTION E1: THEATRES / ANAESTHETICS / DAY SURGERY</b>			
E1 – Operating Theatres/ Surgical Day Case Unit	NHSL		
E2 – Acute Surgical Admissions Area (10 beds)	NHSL		
<b>SECTION F1: CHILD AND ADOLESCENT MENTAL HEALTH (CAMHS)</b>			
F1 – Child and Adolescent mental Health Services (12 Inpatients beds)	NHSL		
<b>SECTION G1: CLINICAL SUPPORT</b>	NHSL		
G1 - Radiology	NHSL		
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I4 – Community Childrens Nursing	NHSL		
I5 – Health records Workspace	NHSL		
I6 – Health records Store	NHSL		
<b>SECTION J1: FACILITIES INFRASTRUCTURE SUPORT SERVICES</b>			





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J1 – Main Entrance – Public Spaces	NHSL			
J2 – Main Kitchen	NHSL			
J3 – Coffee Rooms	NHSL			
J4 – e-Health Infrastructure	NHSL			
J5 – Domestic Services	NHSL			
J6 – Materials Management	NHSL			
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<b>SECTION L1: FAMILY HOTEL</b>				
L1 – Family Hotel Accommodation	NHSL			
<b>SECTION M1: PLANT</b>				
M1 - Plant	NHSL			
<b>SECTION N1: INPATIENT WARDS</b>				
A – NARAU ( Neurosciences Acute Receiving and Assessment Unit (12 beds)	NHSL			
B – HDU – Level 1 (12 beds)	NHSL			
C – Neurology/ Neurosurgery (43 beds – 38 level 0&5 Level 1)	NHSL			
D – Critical care (12 Beds)	NHSL			



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A – Operating Theatres	NHSL			
B - Neuropathology	NHSL			
<b>SECTION P1: RADIOLOGY</b>				
<b>SECTION Q1: OUTPATIENTS</b>				
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<b>SECTION S1: FACILITIES INFRASTRUCTURE SUPPORT SERVICES</b>				
A - Coffee Rooms	NHSL			
B – e-Health Infrastructure	NHSL			
C – Domestic Services	NHSL			
D – Staff Changing Accommodation	NHSL			
E - Estates	NHSL			
<b>SECTION T: COMBINED NEUROPHYSIOLOGY</b>				

INSERT LOGO's as REQUIRED



A – Combined Neurophysiology	NHSL			
<b>SECTION U: COMBINED THEATRES</b>				
<b>SECTION V: COMBINED RADIOLOGY</b>				
A - Entrance	NHSL			
B – Imaging Suites	NHSL			
C – Support Space	NHSL			
D – staff Areas	NHSL			
E – Research Scanner	NHSL			

INSERT LOGO's as REQUIRED

<b>PART 6: STRUCTURE &amp; BUILDING FABRIC</b>	Action	Status	Comp Y/N.	
<b>SECTION ONE: PROJECT OBJECTIVES AND OUTLINE SCOPE</b>	<b>NHSL</b>			
<b>SECTION TWO: DESIGN CRITERIA</b>				
1.1 Design Standards	<b>NHSL</b>			
1.2 Statutory Requirements	<b>NHSL</b>			
1.3 Derogation Schedule	<b>NHSL</b>			
1.4 Life Expectancy	<b>NHSL</b>			
1.5 Surveys / Site Investigations	<b>NHSL</b>			
1.6 Controlled Samples and Mock ups	<b>NHSL</b>			
<b>SECTION THREE: SUSTAINABLE DESIGN</b>				
3.0 BREEAM	<b>NHSL</b>			
<b>SECTION FOUR: BUILDING SERVICES &amp; STRUCTURAL INTERFACE</b>				
4.1 Building Services Interface	<b>NHSL</b>			
4.2 Structural Interface	<b>NHSL</b>			
<b>SECTION FIVE: CIVIL /STRUCTURAL ENGINEERING REQUIREMENTS</b>				
5.1 General	<b>NHSL</b>			See Section 4.13 (Construction) of Dec 2008 Design Brief
5.2 Ground Remediation / Contamination	<b>NHSL</b>			
5.3 Drainage				See Section 4.10 (Water & Drainage Systems) of Dec 2008 Design Brief





INSERT LOGO's as REQUIRED

5.4	External Civil Engineering Works	NHSL			
5.5	Ground Conditions	NHSL			
5.6	Sub-structure	NHSL			
5.7	Design & Loadings	NHSL			
5.8	Structure	NHSL			
5.9	Floors	NHSL			
5.10	Demolition	NHSL			
5.11	Methodology	NHSL			
<b>SECTION SIX: BUILDING ENVELOP PERFORMANCE CRITERIA</b>					See Section 4.10 (External Materials) of Dec 2008 Design Brief
6.1	General	NHSL			See Section 4.13 (Construction) of Dec 2008 Design Brief
6.2	Walls	NHSL			
6.3	Roof	NHSL			
6.4	Windows	NHSL			
6.5	Doors	NHSL			
<b>SECTION SEVEN: ENTRANCES AND CIRCULATION</b>					See Section 4.4 (Movement & Flow within the Hospital) of Dec 2008 Design Brief
7.1	Main Entrance, Reception and Arrival	NHSL			
7.2	Service and Other Entrances	NHSL			
7.3	Corridors	NHSL			
7.4	Stairways	NHSL			
7.5	Ramps	NHSL			
7.6	Lifts	NHSL			



INSERT LOGO's as REQUIRED

7.7	Fire Evacuation	NHSL			See Section 4.4 (Emergency Evacuation Processes) of Dec 2008 Design Brief
7.8	Protection	NHSL			
7.9	Security	NHSL			See Section 4.2 of Dec 2008 Design Brief
7.10	Access	NHSL			See Section 4.3 (Access) of Dec 2008 Design Brief / Section 4.4 (Disabled People Special Needs)
<b>SECTION EIGHT: SIGNAGE &amp; WAY FINDING</b>					
<b>SECTION NINE: INTERIORS</b>					
					See Section 4.7 (Interior Design) of Dec 2008 Design Brief
9.1	Concept	NHSL			
9.2	Finishes	NHSL			
	- Walls	NHSL			
	- Floors	NHSL			
	- Ceilings	NHSL			
	- Doors	NHSL			
	- Internal Screens & Windows	NHSL			
<b>SECTION TEN: ACOUSTICS</b>					
					See Section 4.10 (Acoustics) of Dec 2008 Design Brief
<b>SECTION ELEVEN: FF&amp;E INTERFACE</b>					
11.1	Room Data Sheets & 1:50 Layouts	NHSL			
11.2	Furniture, Fittings & Equipment (FF&E) Groupings	NHSL			
11.3	Sanitary Accommodation	NHSL			



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<b>SECTION TWELVE: EXTERNAL CIRCULATION, CAR PARK / LANDSCAPE / PLANTING</b>				
12.1	General	NHSL		See Section 4.13 (Construction) of Dec 2008 Design Brief
12.2	Interface with Public Highways	NHSL		
12.3	Parking & Drop-off	NHSL		See Section 4.2 (Parking & drop-off) of Dec 2008 Design Brief
12.4	External Furniture	NHSL		
12.5	Fire Assembly Areas	NHSL		
12.6	Boundary Conditions	NHSL		
<b>SECTION THIRTEEN: EXPANSION</b>				
		NHSL		See Section 4.1 of Dec 2008 Design Brief
<b>SECTION THIRTEEN: DECANT / TRANSFER / RELOCATION</b>				
		NHSL		



INSERT LOGO's as REQUIRED

<b>PART 7: MECHANICAL &amp; ELECTRICAL REQUIREMENTS</b>	Action	Status	Comp Y/N.	
<b>SECTION ONE: DESIGN CRITERIA</b>				
1.1 Design Standards	NHSL			
1.2 Derogation Schedule	NHSL			
1.3 Installation Specification	NHSL			
1.4 Services Design Parameters	NHSL			
1.5 Component Life Expectancy	NHSL			
1.6 Engineering Services Interface with Building Fabric	NHSL			
<b>SECTION TWO: ENERGY EFFICIENCY GENERAL DESIGN PRINCIPLES</b>	NHSL			See Section 4.13 (Construction) of Dec 2008 Design Brief
<b>SECTION THREE: SUSTAINABLE DESIGN AND RENEWABLE ENERGY</b>	NHSL			
<b>SECTION FOUR: SITE UTILITIES</b>	NHSL			
<b>SECTION FOUR: ENERGY EFFICIENCY MEASURES</b>	NHSL			
<b>SECTION FIVE: ELECTRICAL SERVICES DESIGN</b>				
5.1 Electrical Source	NHSL			
5.2 LV Distribution	NHSL			
5.3 Standby Generation	NHSL			
5.4 Cabling & Containment	NHSL			

INSERT LOGO's as REQUIRED

5.5	Lighting Installation	NHSL			
5.6	Power	NHSL			See Section 4.10 (Electricity) of Dec 2008 Design Brief
5.7	Fire Alarm Installation	NHSL			
5.8	Nurse Call	NHSL			
5.9	Radio & Television Installation	NHSL			
5.10	Lightning Protection	NHSL			
5.11	Lifts	NHSL			
5.12	Earthing Principles	NHSL			
5.13	Staff Location System	NHSL			
5.14	Induction Loop System	NHSL			
<b>SECTION SIX: SECURITY INSTALLATION</b>					
6.1	General	NHSL			
6.2	CCTV	NHSL			
6.3	Intruder Detection	NHSL			
6.4	Access Control	NHSL			
<b>SECTION SEVEN: IT STRUCTURED CABLING</b>					
					See Section 4.7 (Informatics Strategy) of Dec 2008 Design Brief
<b>SECTION EIGHT: PUBLIC HEALTH SERVICES DESIGN</b>					
8.1	Above Ground Internal Drainage	NHSL			See Section 4.10 (Water & Drainage Systems) of Dec 2008 Design Brief
8.2	Water Services	NHSL			See Section 4.10 (Hot Water & Steam System / Water & Drainage Systems) of Dec 2008 Design Brief





INSERT LOGO's as REQUIRED

<b>SECTION NINE: MEDICAL GASES</b>	NHSL			
<b>SECTION TEN: MECHANICAL SERVICES DESIGN</b>				
10.1 Comfort Cooling Installations	NHSL			
10.2 Boilerplant/Heat Source	NHSL			
10.3 Mechanical Ventilation	NHSL			See Section 4.10 (ventilation & Thermal Comfort) of Dec 2008 Design Brief / (Heating, Ventilation & Air Conditioning Systems)
10.4 Automatic Control Philosophy	NHSL			
<b>SECTION ELEVEN: FIRE PROTECTION</b>	NHSL			
11.1 General	NHSL			
11.2 Hand Held Fire Extinguishers	NHSL			
11.3 Dry Risers	NHSL			
11.4 External Fire Hydrants	NHSL			
<b>SECTION TWELVE: SUSTAINABLE DESIGN AND RENEWABLE ENERGY</b>	NHSL			
<b>SECTION THIRTEEN: PNEUMATIC CONVEYANCING SYSTEM</b>	NHSL			
<b>SECTION FOURTEEN HEALTH, SAFETY AND MAINTENANCE ISSUES</b>	NHSL			
<b>SECTION FIFTEEN: MATERIALS RESOURCE EFFICIENCY</b>	NHSL			
<b>SECTION SIXTEEN: COMMISSIONING</b>	NHSL			

INSERT LOGO's as REQUIRED



<b>PART 8: FACILITIES MANAGEMENT BRIEFING FOR HARD FM</b>	NHSL			
<b>PART 7: DEROGATION SCHEDULES</b>	NHSL			

#### APPENDIX 4

**Consultant and Contractor Endorsement for the Prevention of HAI for NHSScotland**  
(HAI-SCRIBE and SHFN 30)



# Consultant and Contractor Endorsement for the Prevention of HAI for NHSScotland

## **(HAI-SCRIBE and SHFN 30)**



December 2007

## Contents

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	<i>page</i>
1. Introduction .....	2
2. HAI-SCRIBE .....	2
3. Information and responsibility .....	3
4. Endorsement Certification.....	4

## 1. Introduction

- 1.1 Healthcare Associated Infection (HAI) stands out as a priority issue for NHSScotland. The need to ensure Contractors are aware of and, where appropriate, implement measures to prevent and control the spread of infection during all construction phases is of paramount importance.
- 1.2 Through the use of Scottish Health Facilities Note (SHFN) 30, version 3: 'Infection Control in the Built Environment: Design and Planning', in conjunction with the Healthcare Associated Infection System for Controlling Risk In the Built Environment, version 2 (HAI-SCRIBE) and the HAI-SCRIBE Implementation Strategy, Health Facilities Scotland (HFS) has provided a process to assist in the prevention and control of infection, within the built healthcare environment.
- 1.3 The overall aim of this guidance is to ensure Consultants and Contractors utilise the proposed process.

## 2. SHFN 30, HAI-SCRIBE and their implementation

- 2.1 Prevalence of Healthcare Associated Infection (HAI) is seen as having a negative impact both economically and medically within the Scottish Healthcare sector. It has been established that approximately 1 in 10 people contract infection as a result of care and treatment within healthcare facilities.
- 2.2 A report by Walker (2001), estimated that the cost of HAI in Scotland alone was £186 million per annum, with an estimated loss of 380,000 bed days. It has been stated that 20% of said infections are deemed to be preventable.
- 2.3 In an attempt to prevent and control HAI in the built healthcare environment, Health Facilities Scotland developed three pieces of guidance namely, SHFN 30, HAI SCRIBE and the HAI-SCRIBE Implementation Strategy.
- 2.4 SHFN 30 aims to provide information on the prevention and control of infection and on the prevention of cross-infection and cross contamination in healthcare facilities to those responsible for the planning, design and maintenance of such facilities. It is intended as a first point of reference for those involved in the planning design and maintenance of healthcare facilities and should be used in conjunction with HAI-SCRIBE.
- 2.5 HAI-SCRIBE was developed to fully ascertain and manage the risks associated with infection. It is necessary to have a procedure that allows for the assessment and review of potential infection control risks throughout all operations within the built environment. HAI-SCRIBE aims to reduce infection hazards through the use of a

prevention and control of infection questionnaire using a number of scenarios within the built healthcare environment.

These scenarios are:

- the proposed site for development of a healthcare facility;
- the design and planning stage of the proposed healthcare facility;
- the construction and refurbishment stage of the healthcare facility;
- the ongoing maintenance of the healthcare facility.

2.6 The HAI-SCRIBE Implementation Strategy ensures that the implementation of HAI-SCRIBE should be the responsibility of a multi-disciplinary team who has the necessary skills in relation to the facility being designed, planned, constructed, refurbished or manufactured.

2.7 In order to fully incorporate SHFN 30, HAI-SCRIBE and the HAI-SCRIBE Implementation Strategy throughout NHSScotland, endorsement by all construction professionals is fundamental in allowing the procedure to work to its maximum potential.

### **3. Information and responsibility**

3.1 Development and maintenance of an environment which is conducive to the prevention and control of infection is important. Key to this is the communication of appropriate information and awareness raising, among those involved in the provision of building and facilities services to NHSScotland.

3.2 Those who provide building and facilities services to NHSScotland should be aware of the need to prevent and control the spread of infection within the built healthcare environment and that use of SHFN 30, HAI-SCRIBE and the HAI-SCRIBE Implementation Strategy can help achieve this.

3.3 To ensure full application of HAI-SCRIBE, SHFN 30 and the HAI-SCRIBE Implementation Strategy, these documents must be made readily available to those involved in NHSScotland design, planning, and construction, refurbishment and maintenance projects. However, in some instances it was found that the contractor/consultant awareness of these documents was not sufficient and in some cases a few were not aware that the actual documentation existed.

3.4 To help facilitate this, HFS has developed an Endorsement Certification proforma to ensure that Contractors/Consultants were aware of the issues surrounding the prevention and control of

infections and were in receipt of guidance which would help them do so.

- 3.5 With this certification all those involved in the provision of building and facilities services can be made aware of HAI and the role that HAI-SCRIBE, HAI-SCRIBE Implementation Strategy and SHFN 30 have in preventing and controlling the spread of infection within the built healthcare environment.
- 3.6 NHS Boards are asked to ensure that the text within the Endorsement Certification, contained within Section 4, is included within the contract documentation issued to contractors and consultants to ensure 'buy-in' and cooperation from contractors and consultants in complying with the requirements of HAI SCRIBE and SHFN 30.

## **4. Endorsement Certification**

### **Endorsement Certification**

(I) Statement of Intent:

*Healthcare Associated Infection (HAI) is a complex issue involving the many different elements of patient care and provision. Due to its multi-factorial nature, there is a need to develop a holistic approach in combating the spread of infection within the built environment.*

*NHS National Services Scotland Health Facilities Scotland (NSS HFS), in conjunction with other organisations, has endeavoured to comprehensively tackle this situation through the creation of documents such as the 'Healthcare Associated Infection System for Controlling Risk of Infection In the Built Environment': version 2 (HAI-SCRIBE) and the 'Scottish Health Facilities Note 30: version 3' (SHFN 30) and the HAI-SCRIBE Implementation Strategy.*

*Non-application of these documents is extremely detrimental in preventing the spread of infection and to the healthcare sector in general. In certifying this endorsement you verify that you will endeavour to do all within your power to aid in this process and reduce the risk of infection within the built environment.*

**Endorsement Certificate**

(II) Certification of the following documents;

***'Healthcare Associated Infection System for Controlling Risk In the Built Environment' (HAI-SCRIBE, version 2, 'HAI-SCRIBE Implementation Strategy' and 'Scottish Health Facilities Note 30': version 3.***

(III) Declaration;

We hereby certify that we agree to co-operate in the application of, on whole or where applicable to the aforementioned documentation and any amendment / revision forthwith enclosed or existing at the time of this declaration.

Name: .....

Signed: .....

Designation: .....

Company Name: .....

Witnessed by: .....

Signed: .....

Designation: .....

Company Name: .....

Appendix 5 – Health Board Cost Plan

**NEW BUILD - RIE SITE - COST SUMMARY - 9 November 2009****1.0 Introduction**

The following costs are provided to give an indication of the construction costs to provide the new Royal Hospital for Sick Children and Department of Clinical Neurosciences on the site of the RIE at Little France, Edinburgh.

Following the Outline Business Case submission, costs have been amended to reflect current market conditions and incorporate elements of the Development Strategy report.

Costs reflect a start on site February 2010, completion August 2012. Rates are current at 2Q 2009.

**2.0 Cost Summary**

<u>Ref</u>	<u>Department</u>	<u>Area</u> m <sup>2</sup>	<u>Rate</u> £	<u>Cost</u> £	<u>Comment</u>
1.00	Front Door / A&E / Assessment / Radiology	4,389	3,210	14,088,145	Costs assume a high level of fit out and services
2.00	Critical Care / HDU / Neonatal Surgery	2,016	3,210	6,471,938	Costs assume a high level of fit out and services
3.00	In Patient Pathway / Ward Care	7,989	2,140	17,096,032	Costs assume a high level of services provided
4.00	Out Patient Departments / Medical Day Care	6,204	2,354	14,604,216	Costs assume a high level of services provided
5.00	Theatres / Anesthetics / Day Surgery	4,455	3,210	14,301,160	Costs assume a high level of fit out and services
6.00	Child and Adolescent Mental Health	1,918	2,033	3,899,274	Costs assume a high level of services provided
7.00	Clinical Support	2,101	3,210	6,745,141	Costs assume a high level of fit out and services
8.00	Academic	1,298	1,873	2,430,655	Costs assume a medium level of services provided
9.00	Office / Admin Support Services	4,230	1,605	6,789,487	Rate based on current costs for office accommodation



## NEW BUILD - RIE SITE - COST SUMMARY - 15 APRIL 2009 (CONT'D)

2.0 Cost Summary (cont'd)

<u>Ref</u>	<u>Department</u>	<u>Area (m<sup>2</sup>)</u>	<u>Rate</u>	<u>Cost</u>	<u>Comment</u>
10.00	<u>Facilities / Infrastructure Support Services</u>				
10.01	Main Entrance / Public Spaces	269	2,140	574,932	Costs assume a high quality of finishes and services
10.02	Main Kitchen	601	2,675	1,608,103	Costs assume a high level of fit out and services
10.03	Coffee Lounge	434	1,605	695,896	Costs assume facilities for patients, families and staff
10.04	E Health	190	1,605	305,255	Rate based on current costs for office accommodation
10.05	Domestic	106	1,976	210,283	Rate based on current costs for office accommodation
10.16	Materials Management	94	1,605	150,501	Rate based on current costs for office accommodation
10.07	Staff Changing	422	1,605	677,759	Rate based on current costs for office accommodation
10.08	Estates	407	2,140	870,937	Rate based on current costs for office accommodation
10.09	Bed Store	95	1,605	151,673	Rate based on current costs for office accommodation
11.00	<u>Patient / Family Support</u>				
11.01	Bereavement and Family Support	57	1,605	91,357	Rate based on current costs for office accommodation
11.02	Spiritual and Pastoral Care	97	1,605	155,829	Rate based on current costs for office accommodation
11.03	On-call Suite	173	1,605	277,505	Rate based on current costs for office accommodation
	Total Departmental Area	37,545			
	Communication / Plant	5,724	2,140	12,249,537	
	Parents Accommodation	2,108	1,445	3,045,078	Rate based on current costs for budget style hotel; no catering facilities
	Total Area	45,377	C/F	107,490,692	Represents £2,369 / m <sup>2</sup>

## NEW BUILD - RIE SITE - COST SUMMARY - 15 APRIL 2009 (CONT'D)

2.0 Cost Summary (cont'd)

		B/F	107,490,692	
SAVING - area reduction resulting from joint RHSC / DCN build	( 406)	3,210	( 1,303,260)	
Total Area	44,971		106,187,432	
Allowance for service tunnels (excludes tunneling under existing building)			2,285,000	
Allowance for inter-linking with existing building			500,000	
Enhanced design to achieve BREEAM 'excellent' rating			1,451,357	
Premium for working on existing site			1,000,000	
Proximity car parking			250,000	
			111,673,789	
Allowance for Contingency			3,789,407	
Allowance for Inflation			5,536,719	
			120,999,915	
VAT (17½%)			-	N/A
PSCP Design Team Fees			8,280,383	PSCP (Contractor) fees included within build costs
Statutory Fees			500,000	
<b>OVERALL PROJECT BUDGET</b>			<b>£ 129,780,298</b>	represents £2,886 / m <sup>2</sup>

**NEW BUILD - RIE SITE - COST SUMMARY - 15 APRIL 2009 (CONT'D)****3.0 Assumptions**

- 1) Parent accommodation based on budget hotel standard
- 2) Costs are current at 2nd Quarter 2009 - inflation to mid point of construction identified separately
- 3) Start on site February 2010, Completion August 2012 (Duration 30 months)
- 4) Inflation has been adjusted from Outline Business Case stage to reflect current market conditions.
- 5) At this stage, costs assume a fully serviced site, prepared for development. All enabling works, services diversions, works to Niddrie Burn, upgrading of existing services etc will be undertaken by others.
- 6) The cost of service tunnels below the RHSC has been included. It is assumed the existing tunnels will be extended to boundaries by others.

**4.0 Exclusions**

- 1) Costs include Cat 1 equipment but exclude Cat 2 equipment (fit-only allowed for)
- 2) Cost of temporary accommodation, decant or relocation is excluded
- 3) Finance costs excluded
- 4) Loose furniture excluded
- 5) Service diversions and works to existing site
- 6) Costs exclude car parking and works to the existing building
- 7) Life cycle / whole life costs

Appendix 6 - Risk Register

RISK REGISTER

Project Title:	Royal Hospital for Sick Children Project	Risk Champion:	David Wray
Date Register First Created:	17/07/2009	Date Updated:	20/10/2009
Revision Number:	9	Updated by:	David Wray
Current Stage:	SOC		

Control Buttons: High Risks Medium Risks Low Risks Active Risks Closed Risks Overdue Risk Action Date Approaching Reset

Ref No:	Risk Description	Prior to Mitigation			Action Plan Completed?	Time / Cost Impact	Mitigation	Post Mitigation			Time / Cost Impact	Agreed PSCP Provision	Agreed Trust Provision	Agreed PSCP Time	Agreed Trust Time	Risk Owner	Risk Manager (if not Risk Owner)	Action Date	Days to Action Date	Closed Out	Comments
		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)											
1	MANAGEMENT OF EXPECTATIONS Planned facilities do not meet expectation of Local Council Clinicians, Staff and Public	4	4	16	N		Prepare communication plan including early stakeholder engagement regarding current	2	4	8	£0.00	£0.00	0	0	Project Director	Brian Currie	31/08/2009	-113	N		
2	COMMUNICATIONS Lack of awareness of project by general public and/or internal / external stakeholders	2	5	10	N		BC 09/10/2009- Communications Strategy + Plan to be developed and agreed with Director of Communications NHSL, Project Sponsor and EMT+	2	3	6	£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N		
4	MEDICAL TECHNOLOGY Unexpected changes in medical technology	1	4	4	N		IMcC 09/10/2009-Ensure project team & local clinicians are linked into information on developments. Use NHSL intelligence.	1	4	4	£0.00	£0.00	0	0	Clinical Director	Isabel McCallum/ James Steers		-40169	N		
5	INFECTION CONTROL Change in Infection Control requirements causes delays and add cost	3	4	12			IMcC 05/10/2009-Project to state the point at which further changes cannot reasonably be made - get CIG support for this.	2	4	8	£0.00	£0.00	0	0	Clinical Director	Isabel McCallum/ James Steers		-40169	N		
7	MHS Scotland - Funding DCN Partner Boards are unable to commit the required level of funding Capital Also Ref 111	3	5	15			Ongoing negotiations with partner boards and SIG CIG 19/10/2009- CEAT+DTG boards accept increase in revenue cos	3	5	15	£0.00	£0.00	0	0	Director of Finance	Susan Goldsmith		-40169	N		



Ref No:	Risk Description	Prior to Mitigation			Action Plan Completed?	Time / Cost Impact	Mitigation	Post Mitigation				Agreed PSCP Provision	Agreed Trust Provision	Agreed PSCP Time	Agreed Trust Time	Risk Owner	Risk Manager (if not Risk Owner)	Action Date	Days to Action Date	Closed Out	Comments
		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)	Time / Cost Impact										
8	<b>CHARITABLE FUNDING</b> The budgeted level of charitable funding from SKFF, Edinburgh University and other sources is overstated or there is delay in obtaining the budgeted level of funding	3	4	12			IMcC 09/10/2009- Agree contract where appropriate with each charity. Receive regular reports from each on fundraising progress. Alert NHSL DoP and DoF of any shortfall as soon as it is apparent	3	4	12		£0.00	£0.00	0	0	Clinical Director	Isabel McCallum/ James Steers		-40169	N	
9	<b>EQUIPMENT FIT-OUT TIME UNDERESTIMATED</b> The timetable for fit-out is not met due to the late delivery of equipment or protracted commissioning or other reasons	1	4	4			IMcC 09/10/2009- Equipment commissioning plan will identify the timescales required for delivery. Assurance will be sought from company's re accurate ordering timescales. Equipment will be ordered in the timescales required, taking account of possible delays.	1	4	4		£0.00	£0.00	0	0	Clinical Director	Isabel McCallum/ James Steers		-40169	N	
10	<b>EQUIPMENT FUNDING</b> Identified costs are mistated	2	4	8			IMcC 12/10/2009- Draw up & agree equipment sheets & obtain costing from Department	2	4	8		£0.00	£0.00	0	0	Director of Finance / Capital Project Manager	Kenneth Ngai/ Neil McLennan		-40169	N	
11	<b>DESIGN CHANGES</b> Changes in design as a result of either NHS Lothian changes to the brief and/or external influences, including legislative and	3	4	12			WMcC 14/10/2009- Plan changes ahead of construction needs to minimise cost and delay.	3	4	12		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken		-40169	N	
14	<b>SITE CONDITIONS</b> Building cost understated due to discovering previously unknown underground services or contaminated ground	2	4	8			WMcC 14/10/2009- Initiate site surveys as early as practicable to minimise risk of unforeseen services and contaminated land. Obtain	2	4	8		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken		-40169	N	
16	<b>HIGHWAYS WORKS</b> Previously unidentified highway alterations are required	4	2	8			WMcC 14/10/2009- Where feasible identify and agree two access routes to the site, one primary and one backup. Liaise closely with Consort and the Roads Dept on any future works.	4	2	8		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken		-40169	N	

Ref No:	Risk Description	Prior to Mitigation			Action Plan Completed?	Time / Cost Impact	Mitigation	Post Mitigation			Time / Cost Impact	Agreed PSCP Provision	Agreed Trust Provision	Agreed PSCP Time	Agreed Trust Time	Risk Owner	Risk Manager (if not Risk Owner)	Action Date	Days to Action Date	Closed Out	Comments
		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)											
17	<b>EXCESSIVE DISRUPTION</b> Excessive disruption due to need to maintain hospital operations / interface with Consort, Little France - leading to temporary stoppage, change to working method, logistics	3	3	9			WfMc 14/10/2009-Develop and agree detailed plan of works. Produce short term programmes. Liaise closely with NHSL and Consort on RHSC/DCN construction programmes and the project.	3	3	9		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken		-40169	N	
18	<b>SUPPLY CHAIN LIQUIDATION</b> A member of the Supply Chain goes into Liquidation	3	5	15			SC 14/10/2009-The following measures should be put in place : 1. Selection of Subcontractors who have sufficient resources and	3	5	15		£0.00	£0.00	0	0	Principal Supply Chain Partner / Cost Consultant	Wilson McCracken/ Stuart Gray		-40169	N	
19	<b>CONSULTANT LIQUIDATION</b> A member of the Consultant Team goes into Liquidation	2	5	10			KF 09/10/2009-Ensure that with the approval of HFS a replacement consultant from the approved list can be appointed as replacement within 1 week  EC 09/10/2009-NHSL Finance Dept and Thomson Gray/Davis Langdon to continuously monitor cash flow demands and credit	2	5	10		£0.00	£0.00	0	0	Project Manager / Project Director	Ken Fraser /Brian Currie		-40169	N	
20	<b>SITE AVAILABILITY</b> Failure of Board to make decision and for Consort to reprovide Car Parking - delay to site availability	4	5	20			Issue date to Board for when Car Parking decision needs to be made - emphasise impact on programme.  Alternative parking options available within timescales.	4	5	20		£0.00	£0.00	0	0	Project Sponsor	Jackie Sansbury	31/07/2009	-144	N	
21	<b>CHANGES TO EXISTING FACILITIES</b> Changes to existing facilities to support new RHSC & DCN and upgrades to critical care may be underestimated (plant room)	3	4	12			Ensure works are sub projects with full management control and accountability in place.	3	4	12		£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N	
22	<b>SALE OF EXISTING RHSC SITE</b> Site sale is later than anticipated or fails to realise anticipated value	5	4	20			Ensure site is included on the Disposal Programme (Jackson with Estates)	5	4	20		£0.00	£0.00	0	0	Head of Capital Planning	Iain Graham	30/12/2009	8	N	
23	<b>DOUBLE RUNNING</b> Double running costs underestimated	2	3	6			RB 09/10/2009-Double running costs will be refined and validated as part of the development of the Full Business Case	2	3	6		£0.00	£0.00	0	0	Service Project Manager / Finance	Sorrel Cosens/Rose Byrne/Kenneth Ngai		-40169	N	
27	<b>OUTSTANDING LEGAL ISSUES</b> Legal issues may be outstanding preventing the project from proceeding	4	3	12			Outstanding Legal Issues with Existing PFI provider.  Undertake full engagement and negotiation with Consort HealthCare to achieve satisfactory result for the project within	4	3	12		£0.00	£0.00	0	0	Project Director / Head of Capital Planning	Brian Currie / Iain Graham		-40169	N	
28	<b>PERSONAL INJURY</b> Injury to public / visitors / staff / patients - causes reputational damage	1	5	5			WfMc 14/10/2009-Apply BMM H&S Procedures and Policies. Induct all visitors. All visitors to be escorted on site.	1	5	5		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken		-40169	N	
29	<b>Full Business Case</b> Full Business Case is not completed in time for commencement of construction period	1	5	5			Funding made available for advanced works as per precedent (RVH)	1	5	5		£0.00	£0.00	0	0	Project Sponsor	Jackie Sansbury		-40169	N	

Ref No:	Risk Description	Prior to Mitigation			Action Plan Completed?	Time / Cost Impact	Mitigation	Post Mitigation			Time / Cost Impact	Agreed PSCP Provision	Agreed Trust Provision	Agreed PSCP Time	Agreed Trust Time	Risk Owner	Risk Manager (if not Risk Owner)	Action Date	Days to Action Date	Closed Out	Comments
		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)											
30	<b>SERVICE DEMAND PLANNING</b> Modelling assumptions may prove incorrect	2	5	10				2	5	10		£0.00	£0.00	0	0	Project Sponsor	Jackie Sansbury	-40169	N		
31	<b>WORKFORCE SUSTAINABILITY</b> Ability to sustain workforce within specialist services	3	4	12			Workforce planning.	3	4	12		£0.00	£0.00	0	0	Director of Operations	Fiona Mitchell	-40169	N		
34	<b>COMMISSIONING DEFECTS</b> Teething problems with new building	3	4	12			DS 69/10/2009- Prepare robust inspection, testing and commissioning regime as part of works information  W/McC 14/10/2009-Post handover activities	3	4	12		£0.00	£0.00	0	0	Principal Supply Chain Partner / Supervisor	Wilson McCracken / David Stillie	-40169	N		
35	<b>IT and TELECOMS</b> Inadequate capability leading to poor service quality	2	5	10			W/McC 14/10/2009- During tender specification identify capability need for enhancing specified system to increase capability if required	2	5	10		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson McCracken	-40169	N		
37	<b>Transport</b> Inadequate transport arrangements to support patients, staff & visitor access to redesigned services. In particular in relation to specific needs of Children & Young Peoples services	4	4	16			Transport strategy will be developed in collaboration with CEC to address the specific needs of the services moving onto the Little France site.	4	4	16		£0.00	£0.00	0	0	Project Director	Brian Currie	-40169	N		
38	<b>SPACE CONSTRAINTS</b> Lack of space on site for required facility	4	4	16			Ongoing negotiations by project team to reduce demands for ground floor accommodation	4	4	16		£0.00	£0.00	0	0	Project Director	Brian Currie	-40169	N		
39	<b>ROLES &amp; RESPONSIBILITIES UNCLEAR</b> Roles & responsibilities and management arrangements unclear	2	4	8			DIV 15/10/2009- Formation and adoption of a clear and comprehensive Project management Plan detailing clear roles and responsibilities.	2	4	8		£0.00	£0.00	0	0	Project Manager	David Wray	-40169	N		
40	<b>Recruitment &amp; Retention</b> High cost of living, workforce demographics and major change associated with redesign may impact on ability to recruit & retain staff.	2	4	8			Retention of specialist services. New build will support improved recruitment and retention. Car parking and transport	2	4	8		£0.00	£0.00	0	0	Chief Operating Officer	Jane McCaffery	-40169	N		
41	<b>Staff to Deliver Re-designed Services</b> Inability to retrain existing staff to undertake new roles required for new models of care.  Clinicians Work Plans	2	4	8			Training needs analysis and training plan.	2	4	8		£0.00	£0.00	0	0	Project Director	Brian Currie	-40169	N		
42	<b>Clinicians Work Plans</b> Review of clinicians work plans will not fully address delivering new models of care.	4	4	16			Robust management of job planning process and effective implementation of	4	4	16		£0.00	£0.00	0	0	Director of Operations	Fiona Mitchell	-40169	N	19/10/2009- Stakeholder engagement ongoing	



Ref No:	Risk Description	Prior to Mitigation			Action Plan Completed?	Time / Cost Impact	Mitigation	Post Mitigation				Agreed PSCP Provision	Agreed Trust Provision	Agreed PSCP Time	Agreed Trust Time	Risk Owner	Risk Manager (if not Risk Owner)	Action Date	Days to Action Date	Closed Out	Comments	
		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)	Time / Cost Impact											
43	SERVICE DELIVERY Sustaining 24/7 delivery of key services	3	4	12			Implementation of redesign of patient pathway e.g. PAAA, Effective Implementation of workforce plans	1	4	4		£0.00	£0.00	0	0	Director of Operations	Fiona Mitchell		-40169	N		
44	MAJOR CLINICAL INCIDENT Risk of major incident during switchover period	1	5	5			McC 6970/2009-ensure that transfer plan includes major incident consideration - maximizing the opportunities of working with RIE A&E dept	1	5	5		£0.00	£0.00	0	0	Project Sponsor / Clinical Director	Isabel McCallum/Jockie Sansbury		-40169	N		
46	CONFLICTING VIEWS Large number of stakeholders causing conflict of views	4	4	16			Prepare communication plan including early stakeholder engagement regarding current aspirations. Ensure appropriate representation within Clinical Design Task Groups.	3	4	12		£0.00	£0.00	0	0	Clinical Director	Isabel McCallum/ James Steers	31/08/2009	-113	N		
48	Financial Savings Duplication of savings from direct budgets assumed within business cases counted elsewhere e.g. within operational budgets	3	3	9			Secure agreement to approved budgets	3	3	9						Director of Finance & CMT					N	
49	CAPITAL AFFORDABILITY Failure to achieve capital affordability test - not achieve Value for Money	3	5	15			Commence cost checking at earliest opportunity	3	5	15		£0.00	£0.00	0	0	Cost Consultant	Stuart Gray	30/12/2009	8	N		
50	DELAYED RECEIPT OF EXISTING INFORMATION Delay in obtaining existing information - interface with consort	5	4	20			Implement Little France Master planning Group to obtain necessary information	5	4	20		£0.00	£0.00	0	0	Project Manager	Ken Fraser	24/07/2009	-151	N		

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		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)											
51	<b>WORKS INFORMATION</b> Delays in agreeing the works information - due to poor performance by the design team	1	3	3			DW 15/10/2009 - Monitor progress of design phase (stage 3) against programme on a monthly basis. Should slippage occur, establish mitigation.	1	3	3		£0.00	£0.00	0	0	Project Manager	David Wray	-40169	N		
52	<b>FLOOD RISK</b> Unresolved flood prevention / protection measures due to onerous adjacent development context	3	5	15			Progress discussions with Planners and Flood Prevention Officers, seeking agreement to proceed with development with understanding of risks involved and measures required.	3	5	15		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken	30/09/2009	-83	N	
53	<b>PROJECT BRIEF</b> Team is unable to reconcile Budget with SCA within the service model and so financial constraints reducing the	5	5	25			Issue report summarising area vs cost including recommendations for review by Project and	4	5	20		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken	27/07/2009	-148	N	
55	<b>NON AVAILABILITY OF USERS</b> User input not provided on time due to work commitments	3	4	12			Diary dates set and agreed well in advance	3	4	12		£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N	
57	<b>DELAYED RESPONSE TO INFORMATION REQUESTS</b> Client team may fail to respond to information requests (2 week turnaround)	2	4	8			All relevant procedures to be in place with full 'buy in' from all.	2	4	8		£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N	
58	<b>PLANNING PERMISSION</b> Failure to obtain planning permission on programme (inability to satisfy all Statutory Consultees)	3	5	15			Engage Planners and Consultees through a structured process of consultation	3	5	15		£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken	30/12/2009	8	N	
59	<b>ENVIRONMENTAL TARGETS</b> Technically unfeasible to achieve NEAT and BREEAM Targets due to site	5	2	10			Constant assessment of achievability and early reporting of difficulties.	5	2	10		£0.00	£0.00	0	0	Principal Supply Chain Partner / Project Director	Wilson Mc Cracken / Brian Currie		-40169	N	
60	<b>UNDERSTANDING APPROVALS</b> Lack of understanding of approvals process (what they expect) for Scottish Government	3	3	9			Initial and ongoing meetings/dialogue with Scot Gov S KIM and CIG	3	3	9		£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N	
61	<b>ROBUST TARGET PRICE</b> Failure to reach agreement on programme regarding allocation of risks and agreeing market testing prices	2	3	6			SG 14/10/2009-Detailed work package procurement schedule to be prepared and agreed. This should include sufficient time for systematic staggered review and appointment of all subcontractors for work packages. The schedule should be regularly monitored and reviewed so	2	3	6		£0.00	£0.00	0	0	Principal Supply Chain Partner / Cost Consultant	Wilson Mc Cracken / Stuart Gray		-40169	N	
62	<b>FINANCIAL CONTROL</b> Risk of inadequate financial control due to not having Scheme Contract in place	1	3	3			SG 14/10/2009- Scheme Contract to be agreed and signed well in advance of work commencing on site. Timetable of actions to be established and agreed	1	3	3		£0.00	£0.00	0	0	Cost Consultant	Stuart Gray		-40169	N	

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		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)											
63	BREEM COSTS Achieving BREEM puts pressure on budget and hence scope of services	5	5	25			Prepare a pre-assessment; review options available to achieve target as economically as possible and review ability to achieve target at all	5	5	25			0	0	Principal Supply Chain Partner	Wilson Mc Cracken	30/09/2009	-83	N		
64	LACK OF CAPITAL FUNDS FOR DCN Government Cuts - re-option appraisal - time delay	5	5	25			Engage with Scottish Government to explain funding availability, NHS Lothian to prioritise Capital Spend.	5	5	25	£0.00	£0.00	0	0	Project Sponsor	Jackie Sansbury	31/08/2009	-113	N		
65	LIAISON WITH CONSORT Difficulties in co-ordinating works with Consort	5	5	25			Implement Little France Master planning Group to obtain necessary information and settle legal/commercial terms with Consort Healthcare.	5	5	25	£0.00	£0.00	0	0	Project Manager	Ken Fraser	24/07/2009	-151	N		
66	HIERARCHY OF DELIVERABLES Size vs Quality equation unresolved	4	5	20			Clarification of project aspirations and brief with Project Sponsor and Concept Design Sign off.	4	5	20	£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N		
67	LACK OF DEFINED DECISION MAKING STRUCTURES Failure to accord to NEC Contract timescales	4	5	20			Implement Live Contract procedures and execute Scheme Contracts (linked to key project decisions)	4	5	20	£0.00	£0.00	0	0	Project Manager	David Wray	31/08/2009	-113	N		
68	LATE VALUE ENGINEERING Risk of late VE resulting in compromised product	5	5	25			Early decision making on what is achievable - robust cost planning and reviewing to avoid late savings exercises	5	5	25	£0.00	£0.00	0	0	Cost Consultant	Stuart Gray	30/09/2009	-83	N		
69	STRATEGIC DEVELOPMENTS Strategic developments not implemented on time	3	4	12			Options and Contingency Plans prepared	3	4	12	£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N		
70	HELI PAD Restrictions to RHSC and DCN Projects due to Heli pad considerations	2	4	8			Design and programme implications to be understood	2	4	8	£0.00	£0.00	0	0	Project Director/ Head of Capital Planning	Brian Currie / Iain Graham		-40169	N		
71	UTILITIES Provision of Utility services capacity	2	4	8			VIMC 14/10/2009 - Early discussions required with Consort/Utility providers.	2	4	8	£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Cracken		-40169	N		
72	REVENUE AFFORDABILITY Risk of failing to achieve Revenue Affordability test due to underestimate of e.g. Life Cycle Costs	3	4	12			BC 09/10/2009 - NHSL Director of Finance to propose accounting options for consideration.	3	4	12	£0.00	£0.00	0	0	Project Director	Kenneth Ngai / Brian Currie		-40169	N		



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73	Physical Implications Risk that the Tram - Section 75 - physical implications are more complicated and costly to resolve than planned	1	3	3			EC 09/10/2009- Tram will not have any material implications due to published timescale for its implementation. Early discussions with CEC Planning have confirmed this.	1	3	3			0	0	Project Director	Brian Currie		-40169	N		
74	H1N1 Risk that H1N1 - Client Response to Project Issues + lack of project team resource as certain times result in delays to	5	5	25			Project Continuity contingency plan to be established	4	4	16			0	0	Project Director / Project Manager	Brian Currie / David Wray		-40169	N		
75	Consort/ Enabling Works Risk that Delivery of Enabling Works and operational interface will be more complex than anticipated due to?	5	5	25			EC 10/10/2009- Early dialogue with Consort essential - first technical mtg scheduled for 14 Oct 2009. Task Groups and	5	5	25			0	0	Project Director	Brian Currie		-40169	N		
76	DCN/ CEC Planning Risk that the mass of the building may have been increased resulting in planning delays (Car park + Main Building)	4	5	20			Regular planned meetings with planning authority	2	2	4			0	0	Project Director	Brian Currie		-40169	N		
78	Proprietary Materials and Components Risk that if we use unproven proprietary materials + components they will fail or not meet our requirements and result in abortive work, delay and cost	3	4	12			DS 09/10/2009-During design stage carry out continuing review of BAM responses to Works Information in terms of materials specifications.	3	4	12			0	0	Principal Supply Chain Partner / Supervisor	David Stillie / Wilson Mc Cracken		-40169	N		
81	DCN RHSC Interdependency Risk that due to interdependency of RHSC on DCN (and visa versa) for development of either scheme is delayed/ disrupted	3	4	12			Risk to programme and cost fully communicated to NHS/ Senior Management.	4	3	12			0	0	Project Director	Brian Currie		-40169	N		
88	DCN -Unable to reconcile Schedule of DCN - Accommodation with the budget	2	4	8			NMcL 12/10/2009- Ensure that lessons learned from BAM review of accommodation schedules are reflected in the DCN accommodation schedules	2	2	4			0	0	Capital Project Manager	Neil McLennan		-40169	N		
92	Risk that team may not be able to co-locate due to ? Resulting in ?	4	4	16			1. Dedicated project meeting space 2. Video conferencing / teleconference facility 3. Comprehensive online PM programme Due to property availability, provision with consultant appointments and fee levels. Mitigation - programme (BMM Asite etc)	4	4	16			0	0	Project Director	Brian Currie		-40169	N		
94	Schedules of Accommodation ( Ref EVM001)- have not been issued to the design team due 01/09/2009	5	3	15			Tribal to assist in concluding bed models 1:500 concepts to be produced on programme. 18/09/2009- Redesign	2	1	2			0	0	Principal Supply Chain Partner	Wilson Mc Cracken		-40169	N		

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95	DCN Operational Policies (Ref EV002)- have not been issued to design team for the DCN due 01/09/2009	5	5	25			Design team to advise if any further information is required at this time.	3	3	9	£0.00	£0.00	0	0	Principal Supply Chain Partner	Wilson Mc Craeken		-40169	N		
96	Existing Site Information (Ref EV003)- has not been issued to the design team requested on 20/08/2009	5	5	25			consort to release Blyth +Blyth info by 07/10/2009  consort have issued Kepple info last week  Floor levels in RIE are confirmed. Grid lines of RIE and Advisors (ME) consider this not to be a major project therefore reducing the planning process period.	5	5	25	£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N		
97	Car Park Planning Application (Ref 004)- Proposal not submitted by 21/09/2009	5	5	25			Early option appraisal and decision at concept design stage.	3	5	15	£0.00	£0.00	0	0	Head of Capital Planning	Iain Graham		-40169	N		
98	Transportation - Failure to agree public transport strategy with all relevant agencies.	2	3	6			Consideration of building in flexibility into the design of some rooms to enable conversion to two bedded areas	2	3	6	£0.00	£0.00	0	0	Project Director	Brian Currie		-40169	N		
99	DCN Single Room Provision SG Statutory requirement for 100% single rooms is not acceptable to all patient groups.	2	3	6			Business case for the reprovision of Clinical Neuroscience is progressing for approval by the Scottish Government Capital Investment Group	1	4	4	£0.00	£0.00	0	0	Clinical Director	Isabel McCallum/ James Steers		-40169	N		
100	Paediatric Intensive Care (PICU) Paediatric Clinical Neuroscience is not reprovide on the Little France site leading to insufficient activity levels to maintain clinically safe levels of PICU	2	4	8			Review the available teaching/seminar room space will be undertaken during the design phase with view to identifying space within the current footprint for a lecture	1	3	3	£0.00	£0.00	0	0	Clinical Director	Isabel McCallum/ James Steers		-40169	N		
101	Lecture theatre provision Lecture theatre is not currently included in the proposed footprint of the new children & young peoples hospital	4	3	12			Continue to pursue alternatives for off site storage and early involvement in health	4	4	16	£0.00	£0.00	0	0	Medical Director	Charles Swanson		-40169	N		
102	Health records storage The proposed footprint for the 'active' health records department is based on the assumption that off site storage facilities	4	4	16			The approved and costed Laboratories Strategy for the Little France is progressing	3	5	15	£0.00	£0.00	0	0	Chief Operating Officer	Jim McCaffery		-40169	N		

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		Probability (1-5)	Impact (1-5)	Risk Rating (1-25)				Probability (1-5)	Impact (1-5)	Risk Rating (1-25)	Time / Cost Impact										
104	Pharmacy services Provision of redesigned pharmacy supply facility and aseptic suites will not be in place in time to support the new children and young peoples hospital.	3	5	15			Option appraisal and development of business case for both are progressing. Aseptic element is part of wider NHS Lothian strategy development.	3	5	15		£0.00	£0.00	0	0	Director of Pharmacy	Pat Murray		-40169	N	
105	Catering provision Catering services for staff, families and visitors will not be in place to support the new children and young peoples hospital	4	5	20			Progressing as part of overall review of catering services on Little France Site by Facilities Directorate.	3	5	15		£0.00	£0.00	0	0	Chief Operating Officer	Jim McCaffery		-40169	N	
106	Hard FM services Hard FM services may not be provided by NHS Lothian staff and therefore planning will not be influenced by those who will provide the service	3	5	15			Future requirements for Hard FM services under review by Facilities Directorate	3	5	15		£0.00	£0.00	0	0	Chief Operating Officer	Jim McCaffery		-40169	N	
107	RHSC Operational Policies (Ref EW005) Design Team have not received Operational Policies for the RHSC due to be issued 01/09/2009 for Access, Whole Hospital Policies, Car Parking, Cleaning Services, Laundry Services, Porter Services, Grounds and Garden, Works and Estates, Stores and Deliveries, Waste Management.	4	5	20			19/10/2009- Decision to be made on who will manage FM services in the future and how these will be serviced.	4	5	20		£0.00	£0.00	0	0	Chief Operating Officer	Jim McCaffery		-40169	N	
108	ADB Database (Ref EW006) Design Team not yet received the Activity Database information for the RHSC and DCN required 25/09/2009	5	3	15			19/10/2009- RHSC data base received. DCN data base not yet compiled Tribal to assist compile this.	5	3	15		£0.00	£0.00	0	0				-40169	N	
110	Flood Risk (Ref EW008) Conflicting requirements regarding 1:1000 flood risk for RHSC/DCN and 1:200 flood risk of RIE	5	5	25			19/10/2009- Issue statement of justification of requirement for RHSC to be sited at Little France. Test 1:1000 model and seek relaxation.	5	5	25		£0.00	£0.00	0	0	BAM / RHSL			-40169	N	
111	NHS Scotland - Funding DCN Partner Boards are unable to commit the required level of funding revenue Also ref 007	3	5	15			Ongoing negotiations with partner boards and SG CIG 19/10/2009- CEAT-DTG boards accept increase in revenue cost	3	5	15		£0.00	£0.00	0	0	Director of Finance	Susan Goldsmith		-40169	N	

Appendix 7 - Site Information

## Site Information



**NHS Lothian  
Royal Hospital for Sick Children Reprovision Project**

**CONTENTS**

- 1.0 Access to Site Information
- 2.0 List of Site Information available
- 3.0 Boundary Limits

NHS Lothian  
 ROYAL HOSPITAL FOR SICK CHILDREN REPROVISION PROJECT

### 1.0 Access to site information

- i) Site Information to be provided by the *Employer* will be dependant on:
  - Availability of records relating to existing facilities
  - Whether studies / research have been undertaken prior to appointment of the PSCP to the scheme
- ii) The PSCP provides Site Information for his design.
- iii) The PSCP obtains authorisation from the *Project Manager* prior to incurring any expenditure required to obtain Site Information.
- iv) The PSCP is responsible for obtaining all Site Information required for the design and construction of the *works*.
- v) The PSCP interprets, evaluates and acts on all Site Information obtained or provided for the design and the *works*.

### 2.0 List of Site Information Available

All as per Appendix 9 Scheme Brief Works

### 3.0 Boundary Limits

Physical conditions (ECC 60.1(12))

- i) Interpretation and evaluation of Site Information for the target total for the Prices for the *works*.
  - The *Project Manager* and PSCP may in evaluation of physical conditions to establish the target total for the Prices set 'boundary limits to define the risks carried by the *Employer* and the PSCP in the interpretation of Site Information e.g;
    - Soil characteristics
    - Levels of rock / soil interface
    - Etc.
    - To be developed during Stage 3
- ii) Conditions prevailing in contradiction to those assumed in Site Information by the *Project Manager* and *PSCP* and allowed for in the target total for the Prices after setting of boundary limits; are evaluated as compensation events in accordance with the contract.
- iii) Assumed conditions subsequently proving to be less onerous than those allowed for in Prices result in a reduction in the Prices.

Appendix 8 – Contract Clarification Letter

## CSR Options – Revenue Financed Investment

### 1. Introduction

As we know there is likely to be a significant cut in capital budgets in the coming Comprehensive Spending Review. We need to consider potential options for revenue financed investment to deliver “additionality” over these capital budgets.

I suggest that in the first instance, we work around a notional figure of around £2.5bn of investment financed through revenue in the coming spending review period.

All available options should be considered, and I would like to have a suite of short papers **by mid-day on Monday** to set out “on a page” options across a range of investments.

Initial thoughts are:

Project	Discussion	Lead
Schools	Potential to move schools from capital to revenue – Primary in hub and Secondary in NSDF or bundled / stand alone NPD. Paper developed on NSDF. Stand alone alternative being developed.	Stand alone – <b>PR</b> with JK and GG. Consult CP.  Feed in to SG paper (Julie)
Colleges	Glasgow Colleges - £200m(?). Stand alone NPD. PR and CP meeting project manager Friday. Short paper required thereafter	<b>CP</b>
Hub	Could some current capital projects in the pipeline be moved to revenue? What projects could be done DBFM if funding was available. £50m per annum across 5 territories suggested (exc primaries)	<b>CP</b> with NG
Health	Stand alone hospitals – possibly sick kids / DCN in Lothian. Any others?	<b>CP</b> – discussion with MB probably needed
Housing	Any opportunity to use structures to convert HAG payments to revenue, or revenue finance improvements? – Needs exploration with England on PFI structures	<b>PR</b> with DS

<b>Project</b>	<b>Discussion</b>	<b>Lead</b>
Waste to Energy	What centrally funded programme of collaborative LA waste to energy investment would we suggest if there was substantial (100%?) revenue support for the capital element from SG	<b>TR</b> with AY
Ports	Not necessarily revenue financed but certainly additional investment opportunity – using TIF for NRIP. Short paper on opportunity	<b>TR</b>
Ferries	In short what is the opportunity for off balance sheet ferries	<b>TR</b>
Roads	M8 and AWPR are potentials – TS say that significant capital is needed to unlock the NPD projects – possibly land, utilities, design. Are there opportunities to reduce that? Roll more in to NPD, use LAs to fund land as their contributions?	SG asking Ainslie. <b>TR</b> to liaise
Prisons	Could we do future prisons NPD – either as a bundle or separately? What about doing build and hard FM only if custodial is not possible through NPD?	<b>CP</b> with JK

It would be good to hear of any other options to add to this list.

Against each I think we need a short note setting out:

1. **Scope** – what investment could be done through revenue
2. **Time Scale** – high level “when”
3. **Structure** – how would this look as a revenue financed project
4. **Value** – capital value potentially procured through NPD
5. **Issues** – key issues / risks to taking it forward

**Scottish Futures Trust****Revenue Financing Opportunities for Infrastructure Investment****CONTENTS**

1. Introduction .....	2
2. Schools .....	3
3. hub.....	4
4. Colleges.....	5
5. Health - Acute .....	6
6. Housing.....	7
7. Waste.....	8
8. Ferries.....	10
9. Roads.....	12
10. Prisons.....	13
11. Ports.....	15

*Written for the free and frank exchange of views in developing policy options*

## 1. Introduction

This paper intends to identify elements of capital investment in infrastructure that could, free of other constraints, be financed over the life of the assets from revenue budgets.

The paper is the work of Scottish Futures Trust alone and presents our views. It gives a high level view of opportunities from our perspective and does not include assessment of deliverability from officials with portfolio responsibilities. Equally, we have not considered at this stage whether options may be acceptable from the perspective of COSLA or Local Authorities where potential investment encompass their areas of responsibility.

The following pages suggest potential revenue financed scope, structures, value and time scales across a range of sectors summarised below.

Sector	Value	Structure
Schools	£1bn	Primaries – hub Secondaries – NSDF or hub or stand alone NPD £700m of SG support – including Phase 2
Hub	£200m	DBFM option under hub Pipeline up to £50m per year excluding schools.
Colleges	£400m	Stand alone or bundled NPD
Health Acute	£550m	Stand Alone NPD
Housing	unknown	Revenue grant with guarantee to replace HAG, or PPP
Waste	£600m	Collaborative PPP across Local Authorities or consolidation into regional waste authorities £400m of SG support – could be more with food waste
Ferries	£250m	Public Interest Company – using Regulated Asset Base (RAB) Based on current investment projection
Roads	£600m	Stand Alone NPD – potential to reduce capital requirement Value of AWPR and M8 bundle Potentially more and could include PPP roads maintenance
Prisons	£250m	Stand Alone of grouped NPD – potentially excluding custodial services
Ports		TIF structure – no budget impact to SG budgets and up to £200m investment.
<b>OPPORTUNITY</b>	<b>3.8bn</b>	+ EGIP investment through network rail RAB

In addition to the above, the following opportunities could be considered:

- a) **Forth Replacement Crossing** – could be re-procured as an NPD project if the time scale has been relaxed at all by engineers. Delay would be under 2 years.
- b) **New South Glasgow Hospital** – The laboratory block is currently on site, but the remainder of the project (£480m) could be re-procured as NPD – Delay under 18 months.
- c) **Edinburgh to Glasgow Improvement Programme** – Currently revenue funded through RAB, but scope could be revisited to deliver substantial benefits at lower overall cost.



## 2. Schools

SFT has previously described revenue financed options for delivering schools:

### 2.1. Primary & SEN Schools

Around half of primary schools, planned to be funded on a 50:50 basis with Local Authorities could be revenue financed through the hub programme.

Current assumptions for Phase 1 are that around £35m of capital investment would be required for £70m of schools that could not be revenue financed, and £35m of capital investment could be swapped to revenue finance a further £70m of investment.

### 2.2. Secondary Schools

As part of the programme, 14 secondary schools are set to be delivered by 2016. Based on the current programme assumptions, these schools will be funded 67% by Scottish Government and 33% by Local Authorities. Of the 14 secondary schools announced, 2 have progressed too far through procurement to alter funding from capital to revenue. The current estimate of the capital funding required is £45m. Several other schools have made progress, or involve significant refurbishment which would make revenue financing less suitable. Capital requirement is estimated to be around £70 to £100m.

The remaining approximately £175m of capital support (to support £260m of capital investment) could be revenue financed. Given the average size of the remaining secondary schools there is scope to procure and finance these schools through:

- a) a National Schools Development Fund (NSDF) – as proposed separately by SFT;
- b) bundling 2-3 schools from different local authorities together and procuring using a single NPD contract;
- c) stand-alone NPD contracts for individual local authorities; and/or the hub programme.

### 2.3. Phase 2

The ability to revenue finance Phase 2 of the schools investment programme will be dependent on the nature of projects included. Larger projects and new build rather than refurbishment are better suited to revenue finance. If it is assumed that the whole of Phase 2 is revenue financed, then the total revenue financed investment would be approximately £1bn of the £1.25bn programme

### 2.4. Issues

- Management of any switch in funding route with COSLA / Local Authorities
- Finalising the structure to be used
- Relationship with future “phase 2” to maximise efficiency



### 3. hub

#### 3.1. Introduction & Background

The hub programme provides a pre-procured vehicle for undertaking revenue financed investment projects for community infrastructure projects. The country is split into 5 territories with the SE territory deal signed, and the last deal in the South West due to be signed in early 2012.

#### 3.2. Scope

The identified hub pipeline currently comprises a mixture of capital and revenue funded projects. Many of the projects currently identified for capital funding could be switched to the revenue funded DBFM model.

South East:	Potential for 6 projects (inc 2 schools)	£70m capital value
North	Potential for 20 projects (inc 8 schools)	£165m capital value
East Central:	Potential for 12 projects (inc 3 schools)	£125m capital value
West*:	Potential for 7 projects (inc 6 schools)	£ 85m capital value
South West*:	Potential for 4 projects (inc 0 schools)	£250m capital value

\* pipelines at an early stage of development

Schools projects are mostly primaries where only 50% of capital value is Government funded. For other projects, it has not been possible to separate LA projects from Health Board funded ones.

#### 3.3. Structure

The DBFM structure is a standard route in the hub procurement. For smaller revenue financed projects, batching of individual projects to gain a critical mass for financing would be required.

#### 3.4. Time Scale

Hub project are currently under development and the first DBFM in the North Territory is due on site in early 2011. The development of other projects can be undertaken quickly once the hub territories have procured their private sector development partner .

#### 3.5. Value

As above the value of projects could be substantial. The programme estimates that excluding schools projects around £50m or more of projects across the 5 territories could be delivered under revenue financed structures each year.

#### 3.6. Issues

- a) Switching to revenue finance could cause delays in early projects compared to their currently published timescales;
- b) Smaller projects would have to be batched to deliver VfM under a revenue financed model.
- c) Final territory procurement not due to be completed until 2012.

## 4. Colleges

### 4.1. Introduction & Background

Scotland has a history in the delivery of PPP Colleges, through the delivery of; Stirling Further Education Centre (1998), North Ayrshire College (2000), and West Lothian College (1997). These projects were structured as design, build, finance and maintenance. West Lothian College has however since been terminated through voluntary termination.

### 4.2. Scope

SFT understands the current FE college capital plan to be approximately £405m as follows:

- Glasgow College Campus (FE) - proposed new campus on two sites for the recently merged college, which operates currently from 11 buildings over 9 sites. Capital value c. £240m, projected start date 2012;
- Glasgow School of Art (HE) - Replacement and redevelopment of 3 buildings at its main campus, Garnethill. Capital value c. £50m, projected start date 2011;
- Inverness College (FE) - proposed replacement college at Inverness campus. Capital value c. £75m, projected start date 2012;
- Kilmarnock College (FE) – proposed replacement college. Capital value c£40m, projected start date 2012.

### 4.3. Structure

These could be procured on a revenue funded basis through the NPD model. If timings permit, some batching could be possible, which would significantly increase savings in design, procurement and financing costs.

### 4.4. Time Scale

Some design work has already been undertaken for each of these projects and could be utilised in a PPP procurement. Some modification may be required. The procurement period could be between 15-18 months from issue of OJEU Notice.

### 4.5. Value

The capital value in the pipeline for colleges is in the order of £405m.

### 4.6. Issues

Glasgow School of Art project is essentially an annex to the Garnethill building. If it was to be procured through a PPP structure this would mean having two juxtaposed locations being managed on different basis, which is possible but not ideal.

## 5. Health - Acute

### 5.1. Introduction & Background

Scotland has a long and successful history in the delivery of PPP Healthcare projects, including; acute hospitals, community hospitals, mental health and ACADs - 31 in total. The pioneering New Stobhill Hospital in Glasgow (a new ACAD) has won this year's *Prime Minister's Better Public Building Award*.

Most of the health projects delivered through PPP structures included design, build, finance and maintenance, and soft services (e.g. cleaning, catering, portering and security). Some more recent projects (4 of the 31) exclude soft facilities management services.

There are some health PPP projects currently being constructed. Of these, the Tayside mental health project is the first and only NPD health project.

### 5.2. Scope

SFT understands the following projects in the current health capital plan to be potentially suitable for revenue funding. The total value is approximately £545m.

- Ayrshire & Arran Mental Health - new mental health facility. Capital value c. £53m, projected start date 2013;
- Royal Edinburgh Mental Health - replacement mental health hospital. Capital value c. £135m, projected start date unknown;
- Royal Hospital for Sick Children, Edinburgh - Replacement Children's hospital at ERI site. Capital value c. £147m, projected start date unknown;
- Department of Clinical Neurosciences, Edinburgh- replacement DCN at ERI site. Capital value c£70m, projected start date unknown;

This list excludes the primary, community and mental health projects in the current pipeline that would be deliverable as revenue projects through the hub programme.

### 5.3. Structure

The two proposed mental health projects would be suitable for individual NPD procurements.

It would seem appropriate to combine the RHSC and DCN projects at the ERI site and to procure this as an individual NPD project. This could be done as a standalone project from the existing ERI PPP project with Consort, although there would be some readily manageable interfaces.

### 5.4. Time Scale

There is an active and mature market for PPP healthcare and the NPD structure has been market tested. The procurement period could be between 15-18 months from issue of OJEU Notice.

### 5.5. Value

Value for Money has previously been demonstrated for PPP healthcare projects. It would be worth reviewing the value for money benefits of including soft services.

### 5.6. Issues

Some design work has already been undertaken for the Sick Kids project and may be abortive.

## 6. Housing

### 6.1. Introduction

The Housing Association Grant (HAG) mechanism involves a capital grant (being a proportion currently around 60%) of the capital cost of new build housing given to the Housing Association which is registered social landlord (RSL) which then borrows the balance of the costs from a bank (to the extent not funded from its own resources).

There are two potential alternatives to the upfront capital grant : a grant arrangement providing an ongoing payment stream and an NPD PPP structure.

**SFT has not considered these in any detail at all at this stage, but sees a potential opportunity that could be developed rapidly**

### 6.2. Revenue Grant / Guarantee Structure

The RSL would be provided with a grant by way of an ongoing payment stream over a specified number of years (depending on the level and profiling of funding available). The RSL would then borrow the full cost of the new housing from a bank (or other lender) using the ongoing rental income and the revenue stream to fund repayments of the debt and interest.

The borrowing costs of the RSL could be reduced if the Scottish Government granted a (limited) guarantee of the borrowings. This would be analogous to the loan guarantee scheme adopted by the Funding Council for FE Colleges, which we understand to count as revenue in Scottish Government budgets.

### 6.3. NPD PPP Structure

Under this structure, a local authority would procure the new build housing through a competitive PPP process on the basis that the housing would be built, owned and maintained by the provider. The local authority has the right to nominate individuals to be tenants in the new properties throughout the period of the project, which would typically be around 25 years. This structure is primarily designed for Councils with existing social housing, and has in the past been associated with stock transfer and refurbishment.

The projects could be structured on an NPD basis just to include new housing, not transfer of any additional stock, but would have to be of a substantial size to deliver value in this structure. The market in England is mature for PPP social housing projects, so it should be reasonably quick to adopt in Scotland.



## 7. Waste

### 7.1. Introduction

There is at present insufficient food and residual waste capacity available in Scotland to comply with future regulatory demands and Scotland's Zero Waste Plan. In addition, local authorities are faced with increasing landfill gate fees and increases in landfill tax. All of these issues will increase the cost to local authorities of providing waste services. Depending on the approach taken by local authorities, the cost of waste services is forecast to increase by 50% to 80% within the next few years.

To meet policy, legislative as well as financial drivers with regards to waste, local authorities need to implement new collection services and secure access to around 400,000 tonnes of organic waste treatment capacity from 2015 to treat food and garden waste and around 1,000,000 tonnes of residual waste treatment capacity from 2017 to treat the waste left over after recycling.

Ideally Scotland requires 8 to 10 new organic waste treatment facilities of around 30 to 40,000 tonnes capacity operational from 2015 (each with a capital value of around £15m) and 4 to 5 new residual waste treatment facilities with around 200,000 to 250,000 tonnes capacity operational from 2017 (each with a capital value of around £150m).

Some local authorities have started procurement for both organic and residual waste treatment facilities. All are likely to proceed on a revenue finance structure, funded by the relevant local authorities but financed by the private sector. The affordability of these projects in procurement remains untested in the future budgetary climate.

In respect of organic and residual waste treatment projects which have yet to commence procurement, it would be possible to increase procurement efficiency, drive collaboration in delivery and promote Scotland's Zero Waste Plan, Renewable Energy Targets and Climate Change Commitment agendas, as well as relieve short and long term affordability pressures at local authority level, through a centrally coordinated and financially supported programme of revenue financed organic and residual waste treatment facilities.

### 7.2. Structure

Waste treatment plants have a higher operational, compared to capital cost than other revenue financed investments, and also much more varied ratios of capital : operating cost than other sectors depending on the technology proposed. Scottish Government revenue funding of between 25 and 50% to the resultant "gate fee" for both organic and residual waste treatment services could fund capital investment and provide a significant affordability benefit to local authorities and a lever with which to drive value for money through collaboration and appropriate standardisation.

Alternatively, if the current 32 waste collection/ disposal authorities were reduced to a handful of new joint waste authorities (e.g. the Clyde Valley), significant savings could be made in both collection services and treatment services. Intervention by the Scottish Government would be required to effect such a change and the transition process would likely take 18 to 24 months.

### 7.3. Timescale

The requirement to fund the procurement of new waste infrastructure is over the next three years.

Service commencement of the treatment facilities outlined above and the "gate fee" payment from the relevant local authority, will begin between 2014 and 2016 for organic waste treatment facilities, with

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residual waste facilities commencing between 2015 (for the current projects in procurement) and 2017 for projects yet to commence procurement.

#### 7.4. Value

Typical gate fees for organic waste treatment facilities is currently around £40 to 50/t and if structured efficiently a 200 to 250,000 tonne residual waste treatment facility could be secured for around £120 to 140/t. The cost of the proposed revenue support to waste infrastructure could be in the order of £40 to £80m per annum from say 2017, supporting in the region of £600m-£900m capital investment, but with a phase implementation as projects come on stream.

There is clearly an interaction with funding already provided to Local Authorities. It may be reasonable to suggest continued LA funding of food waste treatment through a programme of anaerobic digestion facilities, with any central revenue support focussing up to £600m investment in the larger scale residual waste treatment facilities

#### 7.5. Issues

- a) **Local Authority Control:** The Concordat does not allow for centralised procurement, so this would require careful consideration. It is possible that with the assistance of COSLA a case could be made for Councils to make use of a central body of expertise (based on, for example, the anaerobic digestion procurement support package which SFT is currently working on with COSLA, the Scottish Government and Zero Waste Scotland).
- b) **Planning:** There can be lengthy delays in obtaining planning permission for residual waste facilities.

## 8. Ferries

### 8.1. Introduction

Caledonian Maritime Assets Limited (CMAL) owns the majority of the ferries and many of the ports and harbours that are used to provide lifeline ferry services in the Clyde and Hebrides. As asset owner CMAL is responsible for 31 vessels, 26 ports and harbours and 3 pension schemes. CMAL is also the Statutory Harbour Authority (SHA) at 13 Harbours. CMAL is a company limited by shares with Scottish Ministers as the sole shareholder.

Current capital investment in the form of SG voted loans and grants amounts to on average approximately £10m-15m pa. This equates to £60m-£75m over 6 years and £300m-£450m over 30 years.

The CMAL fleet is an ageing one with an average age of 20 years, nearly double that at 1980. A significant number of vessels are now at or beyond their expected useful economic life of 25 to 30 years. CMAL have recently developed a long term investment plan for vessels and harbours that would enable the existing levels of service to be maintained.

### 8.2. Scope

The investment programme developed by CMAL would require SG funding of some £813m in real terms over a 30year period to cover both harbours and vessels. Over the next 6 years the investments requirement is projected at approximately £215-300m.

### 8.3. Structure

A number of revenue finance options have been explored by CMAL, and their preferred approach is to convert CMAL into a Public Interest Company (PIC). In summary, the PIC would be a non-profit distributing company limited by guarantee, governed by its Members and would borrow from third party funders to deliver and finance the ongoing vessel replacement programme on corporate basis against a revenue stream generated from harbour and vessel charter fees.

The PIC structure would see CMAL funded on a Regulated Asset Base (RAB) basis similar to Network Rail and would be likely to require strong economic regulation.

### 8.4. Timescale

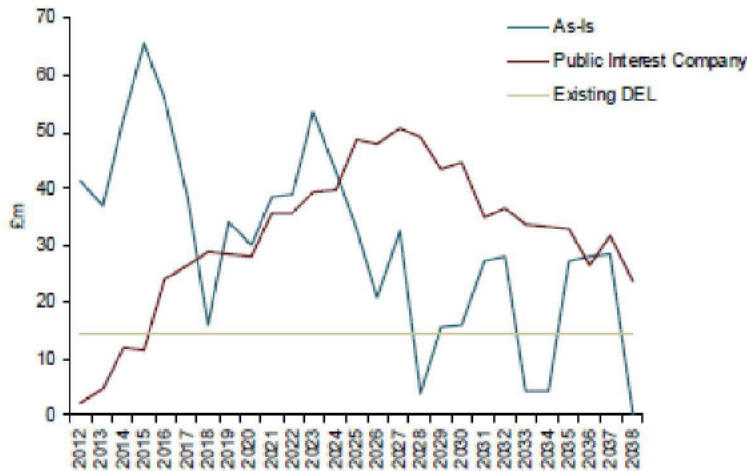
CMAL anticipate that it would take 9-12 months to establish a Public Interest Company, appointing Members and to secure necessary funding. According to CMAL the procurement and construction of the initial tranche of vessels would take between 12-24 months depending on the type of vessels.

### 8.5. Value

The level of capital investment projected by CMAL to maintain the existing level of service is £813m in real terms over a 30year period (average of c£27m pa). Over the next 6 years the investments requirement is projected at approximately £215m (average c£36m pa). The relative cost over the 30 year period is shown in the graph below.

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Figure 3: Prudent investment scenarios (real 2009 prices)



## 8.6. Issues

- a) To generate the R-DEL benefits, this structure would need to be classified by the ONS as a private company
- b) A number of issues regarding the structure still need to be developed further including securing the necessary classification, the nature and form of regulation and the potential requirement for and impact of financial guarantees from SG.
- c) The scope and scale of investment proposed have been identified to provide the existing levels of service to be maintained, and does not consider other options such as changes to service levels or alternative sources of revenue funding such as adjustments to fare levels.
- d) The summary provided does not consider any operational cost impacts of the investment proposals.



## 9. Roads

### 9.1. New Build

There are two large roads schemes currently planned as NPD projects, the M8 bundle and AWPR.

We understand that both of these have significant capital requirements in addition to the NPD elements which will challenge affordability in the short term. These issues could potentially be managed by:

- a) For AWPR, asking the Local Authorities that are part funding the project to direct their funding to repay borrowing that they could raise to finance early capital works. It may be possible to reduce the SG capital requirement and also lower the financing costs of the Local Authorities
- b) For M8 bundle – increase the utilities diversions that are procured through the NPD contract rather than as separate capital procurements. Though we understand this may have VFM and timing disadvantages .
- c) For M8 bundle – seek to enter an arrangement with a Local Authority or consortium of Local Authorities for a structure similar to a) above.

Subject to Transport Scotland investment prioritisation, it may also be possible to bring forward additional NPD roads projects if funding was available.

### 9.2. Maintenance

It is possible to contract under a PPP (or potentially NPD) basis for roads maintenance and switch the capital element of the maintenance budget (which is directed to upgrades / rebuilds) to revenue budgets over a longer period of time. The VFM case is that by investing in more costly re-builds early in a PPP programme, the trickle of revenue maintenance for that network / road over the future years would be reduced or substantially eliminated.

This structure would be possible for either Local Authority networks, or the Transport Scotland trunk and motorway network.

The capitalised element of roads maintenance is not huge across the network so the switch to revenue would not be great globally, and in overall cash paid terms there are unlikely to be savings. However, there would be likely to be an increase in short-term road replacement activity and a general condition improvement.

Issues would be dealing with Local Authorities, and a requirement to terminate existing maintenance contracts, or wait for them to expire before re-letting under a PPP / NPD structure.

## 10. Prisons

### 10.1. Introduction & Background

Scotland has a history in the delivery of PPP Prisons, through the delivery of HMP Kilmarnock in 1999 and HMP Addiewell in 2007. Both of these projects included custodial services along with design, build, finance and maintenance. HMP Low Moss PPP project was cancelled as a PPP and since procured and built through a Design and Build contract.

### 10.2. Scope

SFT understands the current prison capital plan to be approximately £250m as follows:

- HMP Grampian – New 500 place prison at Peterhead, capital value c. £110m, projected start date 2012;
- HMP Inverclyde – New 300 place prison at Greenock, capital value c. £76m, projected start date unknown; and
- HMP Highland – New 200 place prison at Inverness, capital value c. £61m, projected start date unknown.

These could be procured on a revenue funded basis through the NPD model. If timings permit, batching the three together would significantly increase savings in design, procurement and financing costs.

### 10.3. Structure

Previously in Scotland, custodial services have been included in the PPP scope and there is some strong evidence from business cases that this delivered value for money. In other jurisdictions (e.g. France, Germany), the custodial and soft facilities management (e.g. cleaning and catering) services are retained by the public sector, with the PPP being limited to the detailed design, construction and building maintenance.

In Scotland in the future it would be possible to procure prisons through an NPD structure with the project scope including construction and building maintenance, but *excluding* custodial services.

### 10.4. Time Scale

There is an active and mature market for PPP prisons, and a considerable amount of standard documentation. Some design work has already been undertaken on HMP Grampian and could be utilised in a PPP procurement. Some modification would be required if custodial services were to be excluded, and planning issues can cause delays for prisons. However, the ability to use a standardised approach to design and modify existing documentation would potentially shorten the procurement timing to between 15-18 months from issue of OJEU Notice.

### 10.5. Value

The capital value in the pipeline for new prisons is in the order of £250m. Value for Money has previously been demonstrated for PPP including custodial services. This would have to be re-tested if such services were excluded.

### 10.6. Issues

- a) Recent policy position on PPP/NPD in the prisons sector – could be different if scope of services was decreased;

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- b) Restoration of market faith in Scottish DCMF prison procurement –The market is relatively small, and there was no compensation to bidders in respect of their bid costs following the Low Moss cancellation. Restoration of trust in the Scottish market will therefore be a key issue, but could again be different with a different bidding market if custodial services were excluded;
- c) Any change in the interface point between public and private sectors as discussed would require careful reconsideration of the risk allocation and prisoner / staff safety, as well as a refresh of value for money considerations;
- d) Planning risks can cause delays whatever the procurement route;
- e) The availability of sites needs to be confirmed.

## 11. Ports

### 11.1. Introduction

Offshore renewables is a significant business opportunity for a range of organisations including project developers, utilities, supply chain firms and port and harbour asset owners. SE and HIE are already taking a pro-active approach to working with the private sector to make things happen and accelerate progress, and this is being channelled through the National Renewables Infrastructure Plan (N-RIP), the purpose of which is to support the development of a globally competitive offshore Renewables industry based in Scotland.

### 11.2. Scope

At the end of Stage 2 in the summer of 2010, the main conclusions reached by the NRIP Delivery Group on offshore wind were that as this industry develops there is a stock of port based sites in Scotland that could potentially meet industry needs for a broad range of uses including manufacture, fabrication and maintenance. The N-RIP Stage 2 report has identified eleven “Phase 1” and nine “Phase 2” priority sites. Whilst decisions to invest will be led by Port owners, the sites where the market interest is strongest should be the focus for initial public sector investment. Most interest is being shown in sites in the Forth/Tay and Moray Firth areas at present.

### 11.3. Structure

A traditional revenue financed PPP/NPOD structure is not currently proposed for port infrastructure. It could however work well for TIF funding as the whole purpose of investing in the infrastructure would be to enable economic growth in that specific area. The level of displacement should be low as the industry is largely new to Scotland.

### 11.4. Timescale

The timing of the various sites does vary; however key to Government decision making on any support to port owners is recognition that to secure industry use sites will need to be ready by 2013/14 and earlier for some users. 2014/15 is currently seen to be the key year in which installation will begin for Round 3 and Scottish Territorial Waters (STW) sites. Funding decisions by Government triggered by site owners’ business cases will need to recognise the importance of ensuring investment is made early enough to secure users.

### 11.5. Value

According to the NRIP Stage 2 report, total investment for all sites of £223m would create a set of clustered port sites which could support an offshore wind sector manufacturing 750 complete offshore wind units a year. For Scotland’s economy the direct economic impact of this manufacturing site potential alone would support in the region of 5,180 jobs and create an annual economic impact of £294.5m year on year.

It is not anticipated that a TIF solution would be appropriate for all 11 sites, however it is possible that it could unlock the investment requirements for some of the identified sites; further work is required to identify which if any of the sites would benefit from and be appropriate for TIF

### 11.6. Issues

Key issues to be considered include:

- a) The risk that sites do not generate sufficient revenue to service the local authority PWLB debt
- b) Legislation for TIF yet to be passed by Parliament – but anticipated soon.



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- c) Delivery complexity in relation to the potential diverse sources of finance, site ownership and operation
- d) Given the current ownership of many of the sites the implications of State Aid will need to be better understood and resolved
- e) Given the range of activity proposed at some sites, not all assets at a given site might be suitable for TIF
- f) There are defined timescales for site development within which to deliver the TIF solution

TIF may not be appropriate for sites where market interest is generated.

## Schedule \* : Funding Conditions

These are the conditions of conditional revenue funding referred to in the foregoing letter of approval of the Outline Business Case for the [ ]<sup>1</sup> project

The Outline Business Case (“OBC”) submitted by [ ]<sup>2</sup> Health Board (the “Board”) for the [ ]<sup>3</sup> project (the “Project”) has been approved by the Scottish Ministers on the basis set out in the foregoing letter and [the schedules attached to it including] this Schedule [\*] and have agreed that the Project should progress through the publication of a contract notice in the Official Journal of the European Union (“OJEU notice”) subject to the conditions listed in paragraph 9 below being satisfied. A firm offer of revenue funding support will be made at the end of the procurement process, subject to the Scottish Ministers’ overall and final approval of the Project after consideration of a Full Business Case (“FBC”) prior to contract signature/financial close. The scope and the conditions of this approval are set out in [\*]<sup>4</sup> detailed below.

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As the procurement process for the Project progresses, Scottish Futures Trust (“SFT”) will apply scrutiny of the Key Stage Review (“KSR”) process and the approval of the Scottish Government’s Health and Social Care Directorates (“SGHSCD”) will be needed for the Project to proceed at each stage; and the approval of the Scottish Ministers for this Project will be required at FBC stage and will be dependent, inter alia, on the Board demonstrating that the Project offers value for money (see paragraph 4 below) and is affordable.

### 1. Project Costs

The revenue funding support will cover the following costs, which will be incurred by the private sector partner and included within its financial model for the Project and re-charged to the Board through an annual unitary charge, associated with the Project:

#### 1.1 Construction costs

1.1.1 The construction costs<sup>5</sup> eligible for revenue funding support are capped at £[ ]m<sup>6</sup> (exclusive of VAT) (the “Construction Cost Cap”).

1.1.2 The Construction Cost Cap assumes a pricing base date of [ ]<sup>7</sup> and a construction mid-point of [ ]<sup>8</sup>, as specified in the OBC.

<sup>1</sup> Insert the project name

<sup>2</sup> Insert name of the relevant health board

<sup>3</sup> Insert the project name

<sup>4</sup> Refer to any conditions elsewhere in the letter or its schedules

<sup>5</sup> These include the cost of the building, IT infrastructure, Group 1[&2] equipment and private sector design fees post financial close.

<sup>6</sup> Figure to be inserted: SFT to recommend to CIG on the basis of the Project Review carried out pre OBC and to be rounded to the nearest £100k.

<sup>7</sup> Insert date

1.1.3 The BCIS all-in TPI<sup>9</sup> published on [ ]<sup>10</sup> is [ ]<sup>11</sup> (forecast) for Q[ ] 20[ ]<sup>12</sup> (i.e. the pricing base date). Extrapolating the forecast inflation from this point and beyond Q[ ] 20[ ]<sup>13</sup> (the last forecast published) gives at Q [ ]<sup>14</sup> (i.e. the construction mid-point). This implies an inflation rate of [ ]<sup>15</sup>%. Any difference (positive or negative) between (a) the cost inflation from the pricing base date that is implied by this forecast and (b) the cost inflation from the pricing base date implied by the forecast (or reasonable extrapolation) of the same index at the time of financial close (assuming financial close is not delayed beyond [ ]<sup>16</sup>) will be reflected in a commensurate increase or decrease (as the case may be) in the revenue funding support for the Project's construction costs, as determined by the Scottish Ministers.

1.1.4 The Construction Cost Cap assumes that the Project will deliver the project scope as detailed in the OBC (i.e.[ ]<sup>17</sup>). Should the Board choose to expand the scope of the Project beyond what is detailed in the OBC, or if (subject to paragraph 1.1.3 above) the Project is not deliverable within the Construction Cost Cap, the Board will be required to fully fund any resultant increase in unitary charge, including any inflationary impact, over the term of the contract. Should the Board choose to decrease the scope of the Project below that agreed, the level of Scottish Government's revenue funding support will reduce commensurately, as determined by the Scottish Ministers.

1.1.5 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

**Commented [u1]:** Donna – what happens where Authority causes delay (not related to a change in scope which is covered at 1.1.4)and therefore there is an inflationary hit?

**Commented [u2]:** Content with explanation

**Commented [DLS3]:** Mike- This will be covered by the insertion at footncte 16 which will state the anticipated date of financial close.

**Deleted:** Scottish Government

<sup>8</sup> Insert date

<sup>9</sup> Building Cost Information Service all-in tender price index

<sup>10</sup> Insert date nearest base date

<sup>11</sup> specify

<sup>12</sup> specify

<sup>13</sup> Specify date

<sup>14</sup> Specify date

<sup>15</sup> specify

<sup>16</sup> Insert assumed date of financial close

<sup>17</sup> Specify short description of project scope

procurement (i.e. pre-dialogue, pre-final tender, pre-preferred bidder and pre-financial close) through the KSR process (see paragraph 11 below).

1.1.6 Indexation will not be applied to the construction cost element of the annual unitary charge.

## 1.2 Financing interest and financing fees

1.2.1 The Board must seek to secure a competitive and deliverable financing package for the Project.

1.2.2 The terms of the financing package (including, for example, interest rates, margins and fees) offered by the preferred bidder will be scrutinised by SFT through the KSR process and will form part of the Scottish Government's overall and final assessment of the Project (and its affordability) at FBC stage.

1.2.3 The Scottish Government reserves the right to call for a funding competition after the appointment of a preferred bidder and the Board must ensure that this right is expressly referred to in the tender documentation issued to bidders.

1.2.4 The Scottish Government will take the risk of movements in interest rates up to the point of financial close.

1.2.5 The Scottish Government and/or SFT will approve the interest rate proposed at financial close (or will provide instructions in relation to the interest rate swap process with which the Board will be required to comply).

1.2.6 The Board must promptly provide the Scottish Government and SFT with such information as they may request in connection with the bidders' financing proposals for the Project.

1.2.7 The Board must comply with any guidance and requests that the Scottish Government, or SFT on behalf of the Scottish Government, may issue in connection with the financing of the Project and securing value for money financing proposals.

1.2.8 Indexation will not be applied to the financing costs and financing fees elements of the annual unitary charge.

## 1.3 Private sector development costs

1.3.1 Private sector development costs are eligible for revenue funding support. SFT currently estimates that on this project these costs will be in the region of £[ ]<sup>18</sup> m (not indexed). This figure has been determined by SFT to provide an indicative annual unitary charge for the purposes of Scottish Government budgeting at this stage but will be reviewed throughout the procurement process. This estimate is

**Commented [u4]:** Should we refer to the Standard Contract docs taking this approach – i.e. it is not up for negotiation.

**Commented [u5]:** Content with explanation

**Commented [DLS6]:** Mike I think this statement is clear and we have also provide guidance to authorities that indexation must follow the natural hedge for underlying costs.

<sup>18</sup> Insert current estimate, taking account of appropriate benchmarks.



assumed to include all costs incurred by the SPV during the bidding and construction periods including staffing, administration, office and equipment costs; employers agent, audit, and other SPV and lender external advisory (e.g. legal, technical and insurance) fees; and all SPV success fee costs (other than design success fees).

1.3.2 The Board must seek to secure competitive proposals from bidders. SFT will scrutinise the bidders' proposed development costs, and the manner in which the Board has factored these into the bid evaluation process, as part of the KSR process. SFT will comment on whether the bidders' proposals are reasonable in the context of their overall submissions and having regard to relevant external benchmarks. These costs will be included in the Scottish Government's overall and final assessment of the Project (and its affordability) at FBC stage.

1.3.3 The Board must promptly provide the Scottish Government and SFT with such information as they may request in connection with the bidders' proposals for recovery of development costs.

1.3.4 The Board must comply with any guidance and requests that the Scottish Government, or SFT on behalf of the Scottish Government, may issue in connection with private sector development costs and securing value for money in relation to these.

1.3.5 Indexation will not be applied to the private sector development cost element of the annual unitary charge.

#### 1.4 SPV operating costs (operational phases)

1.4.1 The [Treasury financial model prepared by SFT/shadow bid model]<sup>19</sup> for this stage of the project makes an assumption of £[ ]<sup>20</sup>k per annum (at 20[ ]<sup>21</sup> prices) for SPV operating costs. This figure excludes operational period insurance costs (which will be a direct pass through cost to be covered by revenue funding support). Whilst this is considered a reasonable assumption for the purposes of Scottish Government budgeting at this stage, it is recognised that different approaches are taken by different bidders in relation to structuring and recovering SPV operating costs.

1.4.2 Rather than specify a cap or a budget for these costs, Scottish Government requires that the Board seek to secure competitive, value for money proposals from bidders. SFT will scrutinise the bidders' proposed SPV operating costs, and the manner in which the Board has factored these into the bid evaluation

<sup>19</sup> Delete as appropriate

<sup>20</sup> Insert figure to be previously agreed by SFT as reasonable where a shadow bid model is being used

<sup>21</sup> Insert date

process, as part of the KSR process. SFT will comment on whether the bidders' proposals are reasonable in the context of their overall submissions and having regard to relevant external benchmarks which will include recent projects and prevailing market conditions. These costs will form part of the Scottish Government's overall and final assessment of the Project (and its affordability) at FBC stage.

1.4.3 The Board should note that under the standard form NPD contract operational insurance premiums are recovered by the SPV as a pass-through cost rather than through the annual unitary charge. These should therefore not be included within bidders' proposed SPV operating costs.

1.4.4 The Board must promptly provide the Scottish Government and SFT with such information as they may request in connection with the bidders' proposals in relation to SPV operating costs.

1.4.5 The Board must comply with any guidance and requests that the Scottish Government, or SFT on behalf of the Scottish Government, may issue in connection with SPV operating costs and securing value for money in relation to these.

1.4.6 Indexation will be applied to the SPV operating costs (during the operational phase only) element of the annual unitary charge.

**1.5 Lifecycle maintenance costs**

1.5.1 Revenue funding support will cover 50% of the lifecycle maintenance costs for the scope of the Project that is eligible for NPD funding. For the avoidance of doubt the Board will be responsible for the remaining 50% of these lifecycle maintenance costs as well as 100% of the lifecycle maintenance costs for any additional space should it choose to expand the scope of the Project beyond that detailed in the GBD.

1.5.2 As referred to in the Scottish Government's letter of 22 March 2011 the Board will be required to satisfy both the Scottish Government and SFT that it has sought to minimise capital and operating costs within the agreed project scope and undertaken a whole of life cost analysis. Lifecycle maintenance costs will form part of the Scottish Government's overall and final assessment of the Project (and its affordability) at FBC stage.

1.5.3 The Board must seek to secure competitive, value for money proposals from bidders in relation to their lifecycle maintenance proposals and costs. SFT will scrutinise the bidders' proposed lifecycle maintenance proposals and costs, and the manner in which the Board has factored these into the bid evaluation process, as part of the KSR process. SFT will comment on whether the bidders' proposals are reasonable in the context of their overall submissions and having

**Commented [u7]:** Do we need to specify what these benchmarks are?

**Commented [u8]:** I still feel that this needs to be stronger. It has been a common problem in previous contractual benchmarking exercises on hard and soft FM.

**Commented [DLS9]:** Mike : I think that the reference is sufficient; account will be taken of past deals as well as the market as it develops with the current deal flow and where appropriate from elsewhere.

**Deleted:**

**Commented [u10]:** AS a pass through cost how will we monitor increases/ reductions and adjust the level of funding support for this element? WE need to be clear that any upside relating to premium sharing/ reduction reverts to SGHSCD

**Commented [DLS11]:** Mike: the practicalities of the specific calculation and timing of the revenue support for the unitary charge including pass through costs are still to be worked through. On the second point a sharing mechanism is no longer required as the costs are passed through (subject to provisions dealing with contractor's claims etc.)

**Commented [DLS13]:** agreed

**Deleted:** FBC

**Deleted:** .

regard to relevant external benchmarks. The Board's current estimate of £[ ]<sup>22</sup> per m<sup>2</sup> (including VAT) for lifecycle maintenance costs is considered to be at the [ ]<sup>23</sup> end of the range it would be reasonable to expect on a project of this nature and scope. In comparing bidders' proposals against benchmarks the Board must take account of the scope of the SPV's obligations under the standard NPD contract (in particular the internal decoration responsibilities that are retained by the Board).

1.5.4 The Board must promptly provide the Scottish Government and SFT with such information as they may request in connection with the bidders' lifecycle maintenance proposals and costs.

1.5.5 The Board must comply with any guidance and requests that the Scottish Government, or SFT on behalf of the Scottish Government, may issue in connection with lifecycle maintenance costs and securing value for money in relation to these.

1.5.6 Indexation will be applied to the lifecycle maintenance costs element of the annual unitary charge.

**1.6 Other costs**

Other costs that are included within the unitary charge (i.e. hard facilities management and remaining lifecycle maintenance costs) will require to be funded by the Board, as will other project costs outwith the unitary charge (such as soft facilities management, utilities and rates).

**2. Standard form contract**

2.1 This approval and any offer of revenue funding support is and will be conditional on the Board using the standard form NPD contract documentation developed by SFT (available at [www.scottishfuturetrust.org.uk](http://www.scottishfuturetrust.org.uk)).

2.2 All changes to the standard form contract documentation will require SFT's approval. Further information on the approval process is available in SFT's Standard Project Agreements User's Guide<sup>24</sup>.

2.3 The Board should note that it will be a condition of revenue funding support that any Surpluses and Refinancing Gains paid to the Board in terms of the NPD contract must be paid by the Board to SGHSCD. ~~The Board will not agree a refinancing proposal under the Project Agreement for the Project without the prior approval of SGHSCD.~~

**Commented [u14]:** Insert the link to this  
**Commented [DLS15]:** added

**Commented [u16]:** WE should include the requirement that any refinancing proposal requires SGHSCD approval.  
**Commented [DLS17]:** see comment in covering email.

<sup>22</sup> Insert figure

<sup>23</sup> Insert comment re reasonableness of current estimate

<sup>24</sup> [http://www.scottishfuturetrust.org.uk/publication/standard\\_project\\_agreements\\_user\\_guide](http://www.scottishfuturetrust.org.uk/publication/standard_project_agreements_user_guide)

**Formatted:** English (United Kingdom)

3. Staffing Protocol

The Board must comply with the terms of “Public Private Partnerships in Scotland – Protocol and Guidance Concerning Employment Issues” (available at <http://www.scotland.gov.uk/Topics/Government/Finance/18232/12271>).

4. Tender Evaluation

4.1 The Board must develop and adopt an evaluation methodology that strikes an appropriate balance between assessments of price and quality and that in assessing price takes account of the net present value of the overall unitary charge (and not just those elements that are funded by the Board). The Board will be required to demonstrate this through the KSR process.

4.2 ~~The Board will co-operate and liaise with SFT in relation to the tender evaluation methodology and process must comply with any relevant guidance issued by Scottish Government and/or SFT.~~

5. Value for Money

The Authority must comply with relevant value for money guidance (available at [http://www.scottishfuturetrust.org.uk/publications/funding\\_and\\_finance](http://www.scottishfuturetrust.org.uk/publications/funding_and_finance)). This will be scrutinised through the KSR process.

6. Accounting treatment

It will be a condition of revenue funding support that the Project is assessed as being a service concession under IFRIC12 and as being classified as a non-government asset for national accounts purposes under relevant Eurostat (ESA95) guidance.

7. Resourcing and governance

It is a condition of this approval and will be a condition of revenue funding support that the Board has and maintains in place a dedicated, qualified and sufficiently resourced project team to lead the delivery of the Project which must include recognised expertise in project management and delivering revenue financed projects. Further, the Board must have in place a governance structure, clearly linked to its own organisational governance arrangements, which will ensure effective oversight and scrutiny (at a senior level) of the work of the project team and the development of the Project. The Board’s continuing compliance with these conditions will be monitored through the KSR process.

8. Information

8.1 SFT will continue to provide support to the Board throughout the procurement process and the Board must continue to co-operate with SFT in this regard and keep SFT informed as to progress and developments on the Project. Scottish Government expects that SFT will be invited to attend Project Board meetings.

**Deleted:** must  
**Deleted:** s  
**Deleted:** must co-operate and liaise with SFT in relation to the  
**Deleted:** and  
**Commented [u18]:** But it is the Board’s evaluation process.  
**Commented [DLS19]:** We have found in the NPD deals already in procurement that prior discussion is helpful rather than waiting to confirm the position at the KSR so I propose we retain this wording

**Commented [u20]:** How does this requirement differ from being a member of the Project Board when you would be sighted on relevant and key information. What about separation of roles between KSR, supporting projects and Project Board membership  
**Commented [DLS21]:** Mike: in practice this information is likely to come through the channels which you mention and this wording simply references SFT’s ongoing role; See covering email re KSR process  
**Commented [u22]:** As an observer?  
**Commented [u23]:** How then can you be part of the formal governance and decision making process, provide advice separately and then review independently?  
**Commented [DLS24]:** We do not draw that distinction

- 8.2 The Board must, promptly on request, provide the Scottish Government ~~and/or SFT~~ with any information that they may reasonably require to satisfy themselves as to the progress of the Project and compliance with the conditions set out in this schedule.
- 8.3 The Scottish Ministers may, at FBC stage, specify additional information and reporting requirements for the construction and operational phases of the Project.

**Deleted:** and/or SFT

**Commented [DLS26]:** As this is an information only clause I think that it is helpful that SFT can ask for information directly

**Deleted:** offer

9. Additional project-specific conditions

This approval is subject to the following additional conditions:

- 9.1 The Board must work with SGHSCD and SFT, in advance of OJEU, to agree a robust and deliverable procurement strategy and timetable. In particular, the timing of publication of the OJEU notice must be agreed with SFT who will be mindful of issues such as anticipated market response given activity across the wider NPD pipeline.
- 9.2 [The Board must satisfy SGHSCD and SFT, in advance of OJEU, that it has a robust and comprehensive project management plan and a robust and comprehensive resource strategy in place to support the procurement strategy and timetable referred to at paragraph 9.1 above.]<sup>25</sup>
- 9.3 The Board must satisfy SGHSCD and SFT, in advance of OJEU, that its draft OJEU notice, Information Memorandum and Pre-qualification Questionnaire are in final form and reflect guidance and recommendations made by SGHSCD and SFT.<sup>26</sup>
- 9.4 The Board will implement to the recommendations of the report by SFT following its Project Review of the Project dated [ ]<sup>27</sup> to the extent not yet implemented.

**Deleted:** FC

**Commented [u27]:** Is this not the point of the pre OJEU KSR?

**Commented [DLS28]:** Mike : yes the intention is that this list will include matters to be dealt with pre OJEU and hence tested at the pre OJEU KSR

**Deleted:** FC

**Commented [u29]:** Will this not be tested through Pre OJEU KSR?

**Commented [DLS30]:** See preceding comment

**Deleted:** FC

**Deleted:** FC

<sup>28</sup>  
10. Funding for non-NPD costs

<sup>29</sup>

11. Further assurance and approvals processes

<sup>25</sup> Delete if already in place

<sup>26</sup> Delete if already in final form

Insert other project specific conditions eg as to project team,

<sup>27</sup> specify

<sup>28</sup> Insert other project specific conditions eg as to project team, third party issues to be resolved pre OJEU etc

<sup>29</sup> Insert agreed arrangements for capital budget to support the Project and cross refer to other documents as appropriate

Approval of the FBC will fix the level of Scottish Government’s revenue funding support based on the out-turn construction costs, private sector development costs, SPV operating costs, lifecycle maintenance costs and anticipated financing terms. As stated at paragraph 1.2.4 above, the Scottish Government is taking the risk of movements in interest rates up to the date of financial close. As stated at paragraph 1.2.5 above, the interest rate proposed at financial close will be subject to the approval of SFT (on behalf of the Scottish Government) and the process for SFT approval will be confirmed to the Board in due course.

12. Timing/payment of revenue funding support

12.1 Subject to approval of the Project by Scottish Ministers at FBC stage, revenue funding support will become payable once the unitary charge becomes due and payable under the NPD contract.<sup>30</sup>

12.2 Further detail on the timing and mechanics of payment of revenue funding support will be given in due course.

13. Withdrawal of provisional offer of revenue funding support<sup>31</sup>

The Scottish Ministers reserve the right to withdraw this approval if the Board fails to comply with any of its conditions or if the Project fails to reach financial close by [ ]<sup>32</sup>.

DRAFT

<sup>30</sup> Note; do we need any provisions re VAT or is this funding deemed to be outside VAT and the Board assumed to recover under the Treasury Direction?

<sup>31</sup> Are there any circumstances in which the provisional offer can be withdrawn? Any time limit? links to comment at footnote 2 on the basis of the issue. Also, it may be useful to refer to forms of letters used at FBC approval stage on previous FBC projects.

<sup>32</sup> [ ]

**From:** [Halcrow, Fiona](#)  
**To:** [McQuarrie, Fraser](#); [Sansbury, Jackie](#); [Lloyd, Susan](#); [Mitchell, Fiona \(Director of Operations\)](#); [Stirton, Jenifer](#); [Mitchell, John](#); [RHSC Admin](#); [mike.baxter@scot.gsi.gov.uk](mailto:mike.baxter@scot.gsi.gov.uk); [Kinneir N \(Norman\)](#); [Graham, Iain](#); [Steers, James](#)  
**Cc:** [McBain, Eileen](#); [Walker, Anna](#); [Murray, Fiona](#); [Johnston, Paula](#); [Palfreyman, Margaret](#); [Cousins, Andrea](#); [McLennan, Neil](#); [Cosens, Sorrel](#); [Stofankova, Zuzana](#)  
**Subject:** FW: Steering Group Dashboard 12.11.10 V1.0  
**Date:** 15 November 2010 18:25:51  
**Attachments:** [2010 11 12 Steering Group Dashboard Report v1.1.pdf](#)

---

Dear All,

Find attached updated Dashboard Report

BW

Fiona

Fiona Halcrow  
RHSC Re-Provision Project Manager  
Royal Hospital for Sick Children  
Sciennes Road  
Edinburgh  
EH9 1LF

Telephone: [REDACTED]

Fax: [REDACTED]

---

**From:** Lillie, Naomi [REDACTED]  
**Sent:** 15 November 2010 16:21  
**To:** Stofankova, Zuzana; Halcrow, Fiona  
**Cc:** Cousins, Andrea; Currie, Brian; McQuarrie, Fraser  
**Subject:** RE: Steering Group Dashboard 12.11.10 V1.0

Dear all,

Please find attached the Dashboard report for circulation, corrected as advised.

Many thanks,  
Naomi

---

**From:** Cousins, Andrea  
**Sent:** 11 November 2010 15:03  
**To:** Zuzana.Stofankova [REDACTED] Halcrow, Fiona  
**Cc:** Lillie, Naomi; Currie, Brian; McQuarrie, Fraser  
**Subject:** Steering Group Dashboard 12.11.10 V1.0

Hi Zuzana,

As discussed, it would be appreciated if you could circulate the attached report to the Steering Group

Meeting.

Many Thanks,  
Andrea

**Andrea Cousins**

Project Coordinator  
Royal Hospital for Sick Children Project  
D [REDACTED] M [REDACTED]  
[andrea.boylar@\[REDACTED\]](mailto:andrea.boylar@[REDACTED])

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## View to Emergency Department



## Executive Summary

### Time

- Planning Submission 15 November 2010 – likely Committee Date 9 March 2011 (SCIG date is 8 March 2011).
- FBC to NHSL EMT and F+PR week commencing 12 January 2011 (Main Board remains at 26 January 2011).
- Enabling Works remains critically dependent on NHSL and Consort Healthcare agreement on Risk Transfer, Cost and Technical Spec. and Supplemental Agreement to existing Project Agreement. Although discussions are underway to resolve these issues to all parties satisfaction, it remains one of the biggest risks to maintaining programme momentum and the delivery of an operational RHSC at Little France in the first half of 2014.

### Cost

- Current predicted Target Price is £97m; however, this does not include significant upward cost pressure from the introduction of a 1st Floor Theatre Link, Structural Works to Existing Flood Defences and External Works beyond 1m distance from building envelope to Consort boundary (original cost plan only allowed external works up to 1m from façade) and the BREEAM shopping list.

### Quality

- BAM have responded positively to request from NHSL for a much higher profile design management and planning resource.
- Brief is essentially complete but awaits detail confirmation of FM operational policy from NHSL and interface requirements with Consort. This is not preventing design progress.
- A+DS input has been overall beneficial and is now very practical and encouraging, albeit initial criticism was less positive, and continues to raise the architectural quality of the project. Gateway 3 Review arranged for January 2011. Numerous other NHSL Audits are planned to follow.
- A large number of presentations to all relevant stakeholders are being planned in the coming weeks following the planning application.
- On installation of data lines, it is hoped that BAM and a large part of the NHSL Project Team along with the PSC's will move to an Interim Project Office within the RIE.

## PSCP Commentary - Critical Design & Build Issues

- Programme - The currently accepted programme shows some slippage on 1:50 detailed design and market testing; however, we will still achieve a 'Target Cost' by 31 January 2011. There is also slippage showing in the finalisation of the brief, FBC preparation and the PFI interface strategy. The revised programme for acceptance HSC 0296/1/4 issued on 8 November 2010 addresses these issues.
- Cost / Affordability - Market testing continues apace with monitoring of pre-tender estimates and initial tender returns showing, subject to cleansing, a generally favourable trend in comparison with the 1:200 Cost Plan dated 17 August 2010. Our costs include an allowance for inflation but do not factor in extended delay to commencement. Recent refinements to the design are still to be billed and market tested.
- Client Instructions - Client instructions have been received to add the first floor link, omit Community Child Health and to develop a second floor FM link for the Planning Submission. These are still to be designed and are not included in the current market testing. Clarification instructions are also required with regards to the remaining outstanding elements of the brief.
- CEC Planning / A&DS - Following our presentation to A&DS on 4 November 2010 we have been working to refine the design proposals in respect of their residual concerns over the Hospital Square and external landscaping and wayfinding. In the short time available it has not been possible to include all stakeholders in the process ahead of the Planning Submission date on 15 November 10. In particular, the revised 'Hospital Square' proposals will require to be reviewed by both Consort and Edinburgh University.
- 1:1000 Flood Risk - This issue remains unresolved although we have prepared an outline design of the measures required to upgrade the existing berm to a 1:1000 flood risk capacity. These works would be significant and resolution of the 'Flood Strategy' remains a key risk to the Planning Approval process.
- BREEAM - The current BREEAM score is 57.39% (BREEAM - Very Good). A further 2.82% should be available at no cost giving a score of 60.21%. With additional cost (est. £555,000) and extra effort an extra 11.28% should be available giving a score of 71.49% (notionally BREEAM – Excellent). There is also the possibility of a further 4.73% being available; however, this is dependent on design and further investigation and there is a risk that the points cannot be guaranteed.
- Construction Start Date - Our authorised Stage 3 activities are geared towards progressing scheme proposals / Target Cost to a sufficient level to allow submission of the FBC early in 2011. A programme of activities is being prepared to illustrate the follow on design development and procurement activities that lead up to the construction start. A firm date for this is dependent upon conclusion of enabling works arrangements with Consort and others.

## Stakeholder Management and Communication / Strategic and Workforce Planning

- Stakeholder engagement and interface with key NHS Lothian departments and the PFI provider continues.
- The PFPI through the Family Council and Young People Advisory Board continues to be active in the RHSC Design Programme and Artist Residency work.
- Workforce redesign and modernisation continues to be progressed.

## Clinical Update

- Additional meetings have been held with key department areas that have been significantly impacted with the revised fire strategy requirements. Majority of areas have accepted the changes that have been made to their departments.
- 2nd round of 1:50 detailed design was concluded week ending the 22 October 2010 (130 hrs). The 3rd round commenced 8 November 2010.
- 2nd Theatre workshop has been held with the users, BAM and DL to determine the specialty requirements within the 6 Theatres. Specification output is progressing in this area.
- Kitchen design specialists have now met with key staff in progressing the detailed kitchen design layout.
- Work is progressing with the clinical office accommodation on the 3rd floor.
- Affordability review has been concluded and a decision has been made to re-locate the Community Child Health Service outwith the RHSC building. The CMT have communicated outcome to the relevant staff.
- Agreement has been made for the inclusion of the 'First Floor Theatre Link corridor'.
- Work continues with the Adult and Paediatric A&E Department joint co-located department (resuscitation rooms).
- Radiology 1:200 design signed off by CMT. The 1:50 process may require further revision to layout.
- CAMHS 1:200 design sign off programmed to occur with CMT 11 November 2010.





Programme Summary

Received Monthly Contract Programme from BAM for Acceptance: ● Yes ● No  
 Contract Programme Accepted:

● Yes  
● No

NOTE: Last Accepted Programme 21st October 2010

Milestone	Planned	Forecast	Actual	Status	Comment
Concept Design - 1:500 sign off	19/02/2010	08/03/2010	04/06/2010	Completed	1:500 Concept Design Report has been accepted.
Scheme Design - 1:200 sign off	14/05/2010	30/07/2010		Delay	Client changes to CAHMS and Radiology has delayed 1:200 sign off.
Detailed Design - 1:50 sign off	03/09/2010	19/11/2010		Delay	Delay due to additional clinical meetings being required as per EW032
Cost Plan sign off	29/10/2010	28/01/2011			
Planning Submission	21/06/2010	08/11/2010		Delay	Planning delayed to 15th Nov as per Client instruction.
Submit FBC to NHSL	05/11/2010	07/02/2011			
FBC Approval by NHSL	12/11/2010	07/02/2011			
Submit to CIG	15/11/2010	08/03/2011			
CIG Approval	14/12/2010	14/03/2011			
Site Start	10/01/2011	14/03/2011			
Site Completion	05/07/2013	09/09/2013			
Hospital Going Live	11/10/2013	29/11/2013			

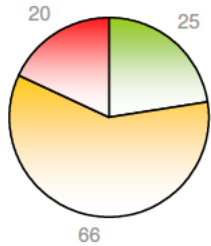
Procurement

	BAM	DL	T&T	TG	MOTT
Stage 3					
Activity Schedule	●	●	●	●	●
Contracts	●	●	●	●	●
NHSL Signed	●	●	●	●	●
Stage 4					
Activity Schedule	N/A	●	●	●	●
Contracts	●	●	●	●	●
NHSL Signed	●	●	●	●	●

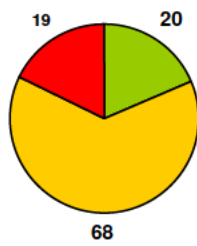
- NHSL have signed all Stage 3 Contracts.
- DL and T&G have gone through the stage 4 activity schedules and have now issued these to NHSL with comments.
- T&G have issued NHSL Finance with a stage 4 cash flow.

NEC Administration

No. of Risks Last Month

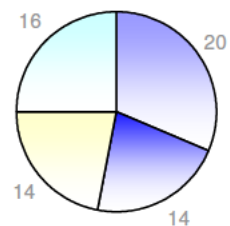


No. of Risks This Month

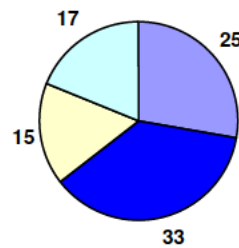


Total Risk £ 16,116  
 NHSL Risk -  
 PSCP Risk -

Active Items Last Month

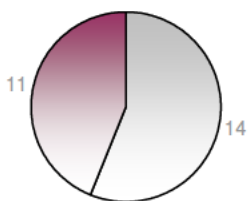


Active Items This Month

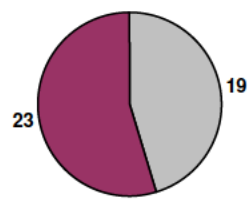


■ Compensation Event  
 ■ Project Manager Communication  
 ■ Project Manager Instruction  
 ■ Payment Certificate

Early Warning Notifications Last Month



Early Warning Notifications This Month



■ EWN Open ■ EWN Closed

Health & Safety Issues

Anticipated actions over next period:

- Development of the Pre-construction Information Pack to reference supporting information.
- Meeting with Consort to identify interface information required for the Preconstruction Information Pack.
- Review of Work Packages for inclusion of CDM information.

Key issues:

- Identification of interface information with Consort regarding procedural issues and constraints.
- NHS Lothian requirements for Health & Safety File and Building Manual information.

Key Activities - Next 4 weeks

- Further Meetings with the Planning Department, Building Control and Fire Officer.
- Further meeting with A&DS to provide update on their issues.
- Resolve outstanding 1:200 departmental issues and update layouts plans.
- Develop 1:50 non-standard rooms and Schedules for Equipment, Finishes and Environmental conditions.
- Finalise information for Planning Application.
- Develop Executive Fire Strategy report for Fire Officer/Building Control.
- Develop transportation information for design and planning.
- Develop technical design, drawings and specifications for work package information.
- Meeting to be arranged with CEC Flood Officer.
- Environmental information
- BREEAM update

Statutory Authorities

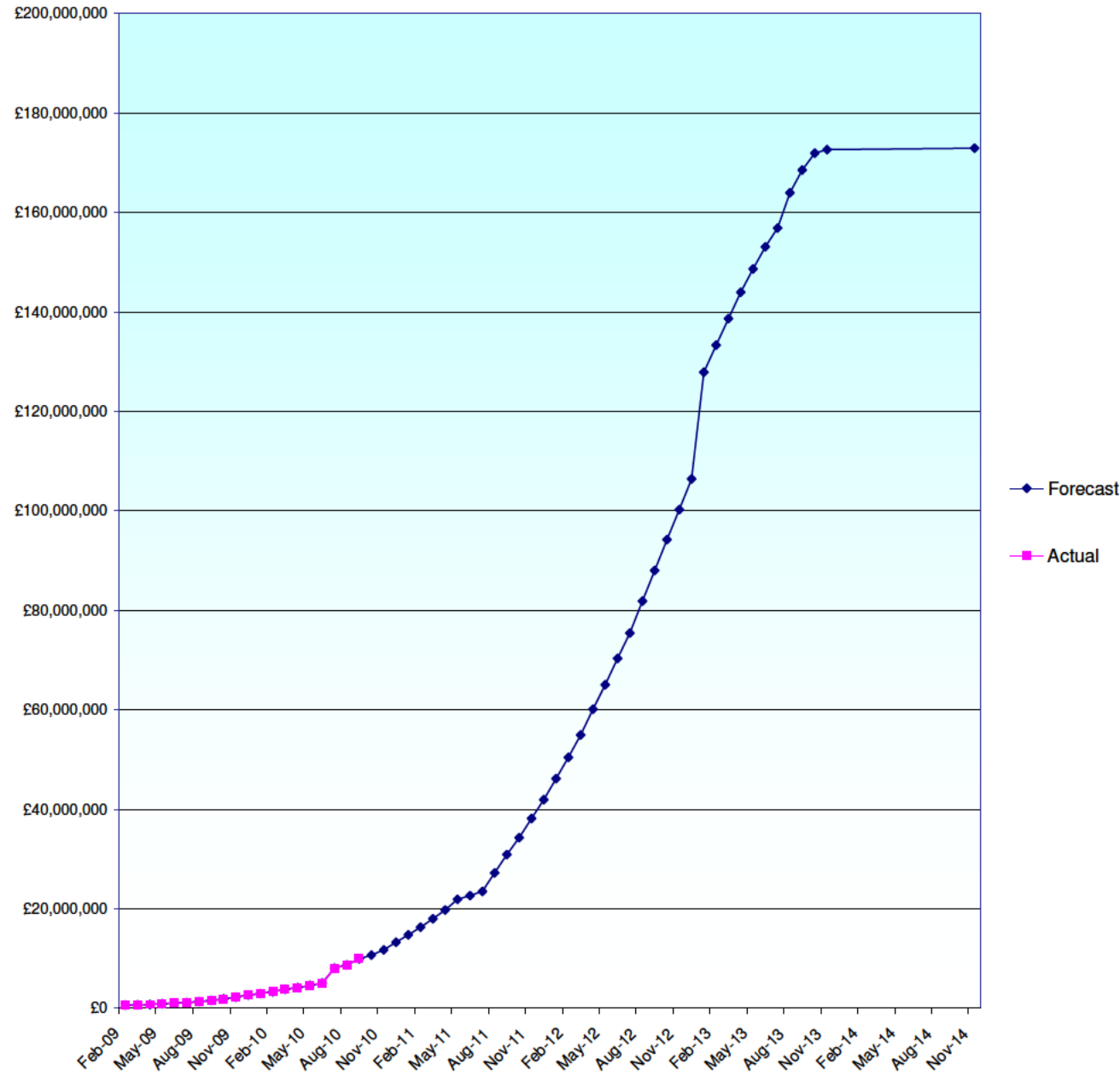
- CEC meeting arranged for 2 November 2010 to review forthcoming application. Keppie Architects/Consort will also be present to discuss the new Energy Centre and VIE plant. Information requirement dates have been provided for release of NHSL/Consort/Keppie information to meet Planning dates.
- Planning Submission delayed by a further week until 15 November 2010.
- A&DS meeting arranged for 4 November 2010 to provide update on the design and to demonstrate how concerns have been addressed regarding the façade, the 'Square', pedestrian movement, visibility from Dalkeith Road and landscaping.
- Stage 1 Building Warrant application lodged on 28 September 2010. CEC letter received confirming that Building Warrant Ref. No. 10/04422.

Enabling Works

- Procurement of car park F is now complete. Balfour Beattie are the proffered contractor and are currently negotiating their contract with NHSL to allow them to proceed. A completion date of 31 March 2011 is only achievable if BBCL can start on-site early November 2010.
- FM workshops with Consort and Estates continue and have now stepped up to weekly. CD's of all drawings and specifications mentioned within the workshops are issued to both Consort and NHSL Estates.
- 1:1000 flood works continue to be problematic. ARUP have undertaken design work to enhance the existing berm to a 1:1000 standard to protect RHSC only and will be costed by T&G. Communication with Alvin Barbour has re-commenced however it is likely that enhancements to the flood berm will be made a condition of Planning consent.
- DL have started the interface dialog with Consort and NHSL Estates. This is an important part of the works information. A series of meetings will need to be scheduled before the Christmas break.
- BAM are working on an extended programme to show all works including Car Park F, Consort Enabling Works and RHSC site construction. Information is required from BBCL and Consort.



### Project Cashflow

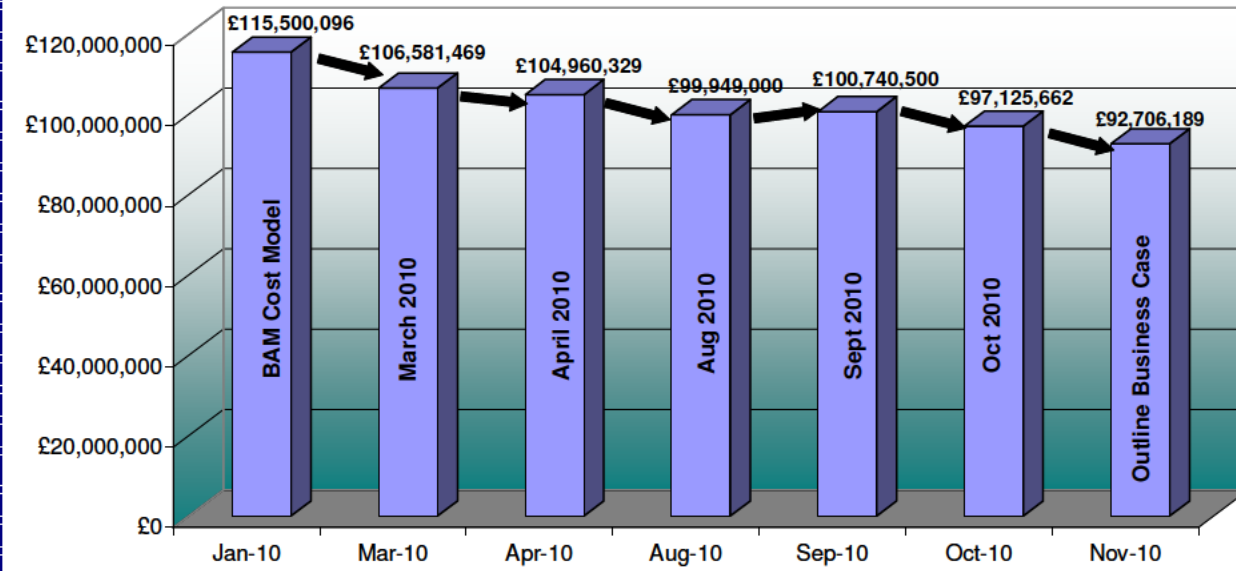


#### Cashflow Commentary

The graph indicates cumulative actual and anticipated expenditure for the following:

- BAM costs including construction, PSCP fees and statutory fees
- Board Advisors fees (PSC design team)
- Consort Works including Clinical & External Enabling Works
- Equipment Costs
- VAT (except on statutory fees and board advisors fees)
- Potential Town Planning Requirements

### BAM Cost Model v OBC



#### Potential Saving Opportunities

- Targeted value engineering items based upon actual work package tender returns
- M&E cost allowance reviews
- Review of inflation allowances
- Specification Reviews
- Review of common user services requirements
- Alternative design solutions e.g. toilet pods or 'site built' toilets

### Design Images - Hospital Square



**From:** [Peter Reekie](#)  
**To:** [Baxter M \(Mike\) \(Health\)](#)  
**Subject:** RE: Discussion on Sick Kids  
**Date:** 23 November 2010 13:59:55  
**Attachments:** [~WRD000.jpg](#)  
[image001.jpg](#)  
[Sick Kids NPD.doc](#)  
[ATT141573.txt](#)

---

In confidence for our discussion

Peter

Peter Reekie  
Director of Finance & Structures  
Scottish Futures Trust

Mobile [REDACTED]

Email [peter.reekie](mailto:peter.reekie) [REDACTED]

Address 11-15 Thistle Street, Edinburgh, EH2 1DF. Main [REDACTED] Fax [REDACTED]  
[www.scottishfuturestrust.org.uk](http://www.scottishfuturestrust.org.uk)

SFT Logo



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---

**From:** Mike.Baxter [REDACTED]  
**Sent:** 22 November 2010 15:35  
**To:** Peter Reekie  
**Subject:** RE: Discussion on Sick Kids

Pete

Do you have the proposal we discussed last week. Following on from my meeting with Barry this afternoon I want to be clear prior to tomorrow's meeting on the basis of your engagement with them and what we expect of Lothian over the next 4-6 weeks.

Mike Baxter  
Deputy Director (Capital Planning and Asset Management)  
Scottish Government Health Directorates  
Tel [REDACTED]  
Mob [REDACTED]

---

**From:** Peter Reekie [REDACTED]  
**Sent:** 19 November 2010 17:34  
**To:** Baxter M (Mike) (Health)  
**Subject:** RE: Discussion on Sick Kids



I can make it to this meeting

Peter

Peter Reekie  
Director of Finance & Structures  
Scottish Futures Trust

Mobile [REDACTED]

Email [peter.reekie@scottishfuturestrust.org.uk](mailto:peter.reekie@scottishfuturestrust.org.uk)

Address 11-15 Thistle Street, Edinburgh, EH2 1DF. Main [REDACTED] Fax [REDACTED]  
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-----Original Appointment-----

**From:** Mariane.McGowan@[REDACTED] **On**

**Behalf Of** Baxter M (Mike) (Health)

**Sent:** 19 November 2010 08:43

**To:** Vicky Shorrocks

**Subject:** Discussion on Sick Kidds

**When:** 23 November 2010 15:00-16:30 (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London.

**Where:** BR.07, SAH

**Importance:** High

\*\*\*\*\*

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## Royal Hospital for Sick Children & Department for Clinical Neurosciences - NPD Way Forward

### 1. Introduction

Following the announcement that the Sick Kids and DCN are to be delivered as revenue financed projects under the NPD structure, this note sets out *for discussion* thoughts on the potential way forward. It is based on SFT's current understanding of the project scope and status.

### 2. Scope

The project scope as an NPD and affordability need to be considered together. 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 75,000m<sup>2</sup> facility and an NPD contract for hard FM only.

NHS Lothian will have to consider with its advisors the optimum configuration of sick kids, maternity, DCN and existing services on the ERI site.

- a) The principles of this will clearly be guided by clinical need, but should include the principle of minimising interface / alteration of the existing ERI envelope.
- b) At this stage will it be taken for granted that the ERI site, within the existing PFI contract "red line" is the best site for the new project
- c) Affordability is a matter between NHSL and SGHD
- d) SFT can review the proposed scope from an NPD project perspective and give views on deliverability.

### 3. Interface with Existing PFI Contract

The interface with the existing contract will have to be considered in parallel with scoping. There will be a need to negotiate a change to the existing PFI contract with Consort if the new project is within the existing red line.

- a) Is there an intention to extend the Consort contract if there will be no (or minimal) new financing through it?
- b) Is there an intention to take services out of the Consort contract as part of a negotiated variation?
- c) There should be a heads of agreement to vary the existing PFI before launching the procurement of the new NPD
- d) SFT can assist with development of a strategy to approach Consort over the variation but the approach and negotiation will be for NHSL



#### 4. Interface with existing Sick Kids procurement

There will need to be rapid consideration by NHSL and its advisors of the exit from the current NHS framework contract. It may be beneficial to transfer elements of design work undertaken to the new procurement. SFT is not involved in the Framework and cannot really advise in this area.

#### 5. Preparing for Procurement

- a) 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.
- b) The NPD project documentation has been used in the health sector at Tayside. There should be consideration of any lessons learned from this use, and updates that could be made. SFT will support NHS Lothian in considering any changes in risk transfer that could be made to optimise the VfM of the project under current accounting rules;
- c) There should be consideration of the financing structure and potential for Government guarantees and other techniques to improve NPD financing VfM. SFT can support NHSL and its financial advisors in developing the optimal structure;
- d) There may need to be a resubmission of 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. NPD has been selected as the procurement route so a VfM assessment of this against traditional capital procurement would not add value.
- e) The scope of services to be included will need consideration. It is likely to be the case that a minimum level of hard FM and life cycle maintenance services would optimise value for money and deliverability.
- f) The treatment of surplus land / facilities whether inside, or outside the scope of the project will have to be considered;
- g) Energy and utilities will need careful consideration in the NPD contract, and the interface with the existing PFI. It is likely in any event that utilities provision will fall outwith the NPD project and payment mechanism;
- h) 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 the PFI contract. Once a resolution of these points is seen (but not necessarily delivered) a round of soft market testing would be advisable.

## 6. Programme & Resourcing

- a) A dedicated project team will be needed in NHS Lothian;
- b) NHS Lothian will need appropriate advisory support – financial, technical and legal to bring forward a complex NPD procurement;
- c) The programme to procurement will be highly dependent on the speed with which NHS Lothian can deploy resources and whether a fresh procurement is needed for advisory support. Assuming that it is not:

Nov 10	Mobilise resources
Dec 10	Rework Scope, siting & high level affordability as NPD. Agree requirements for Business Case Re-visit NPD / financing
Jan 11	Agree master scope and siting Commence discussions with Consort Refine costings and affordability Refinement of NPD / Financing
Feb 11	Re-launch project scope as NPD Develop Business Case documentation Continue design refinement Develop specifications and documentation for procurement
Mar 11	Business Case consideration Target heads of terms with Consort Continue design refinement
Apr 11	Soft market testing Refine project documentation
May 11	Target launch procurement – OJEU

**ANNEX 1 - Affordability Example**

Facility size:		75,000	m <sup>2</sup>
Capital cost:		£3,350	per m <sup>2</sup>
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 <sup>2</sup> p.a.	1,875,000
Life Cycle	£15	per m <sup>2</sup> p.a.	1,125,000
Insurance	£5	per m <sup>2</sup> p.a.	375,000
Utilities	£6	per m <sup>2</sup> p.a.	Exc
SPV Costs	£50,000	sum	50,000 sum
Unitary Charge			£25,122,000
percent of capex per year:			10.0%

**From:** [Kinneer N \(Norman\)](#)  
**To:** [Baxter M \(Mike\) \(Health\)](#)  
**Subject:** FW: RHSC - BAM Construction  
**Date:** 23 November 2010 11:03:00  
**Attachments:** [FMQ briefing - Sick Kids - 16 November 2010.doc](#)

---

Mike, On the back of this I have had an exchange with Bill martin and Peter Haggarty and have generated draft general lines that might be useful but would appreciate your views.

"Frameworks Scotland has an initial 3 stages at the end of which point NHS Boards can terminate without commitment to proceed to the next phase. Principal Supply Chain Partners (PSCPs) are paid for services provided to that point all as agreed in advance for that phase with the NHS Board. However the contract allows for termination at any time if the Board requires to.

The Board will reimburse the PSCP any costs associated with handover of design information etc.

NHS Boards can choose to abort or choose an alternative procurement route after each of those stages. (NB Full Business Case would need to be revised to show a new preferred option and VfM on the new proposal)

PSCPs who commit resources out with the scope as contractually agreed with the NHS Board, or in advance of each of the phases, do so at their own risk.

Stage 4 is construction phase on site so when that starts you should have a construction contract with Target Price, Programme etc.

If the client chooses a new procurement route out with that of Frameworks Scotland the EU Procurement Regulations will apply to that new project."

I also had a useful general chat about the contacts they have had from PSCP folk which we will pick up on Thursday off course. I can talk through these a little as they are possibly relevant to our RHSC meeting later. I'd also like to firm up how I handle the Framework Meeting tomorrow which we briefly touched on.

Norman

-----Original Message-----

From: Kinneer N (Norman)  
Sent: 19 November 2010 09:42  
To: McGhee P (Paul)  
Cc: Baker K (Kirstin); Neill S (Sean); Baxter M (Mike) (Health); Waugh I (Ian)  
Subject: RHSC - BAM Construction

Paul,

Further to our exchange last night I have pulled out an FMQ briefing that was done on RHSC but it may be that you did not receive it so I thought it might be useful to send you. I think however there is still a need for a line to cover the impact upon the Contractors - in this case BAM and others. I would welcome your (and Ian/Mike) thoughts on this suggestion:

Argument- The shift of funding from capital to revenue will result in the existing Contractor being put at risk and cutting jobs.

Those who have developed the project with the health Board have done an excellent job through the NHS Scotland Framework - "Frameworks Scotland".

The work done through Frameworks Scotland will continue to support the next stage of development A new

procurement strategy for the next phase will be developed as soon as possible

Norman

-----Original Message-----

From: McGowan M (Mariane) On Behalf Of Baxter M (Mike) (Health)  
Sent: 19 November 2010 09:08  
To: Kinnear N (Norman)  
Subject: FW: FMQs Briefing: DEADLINE - 1:30pm Tuesday 16th November

Mariane McGowan/Personal Secretary to Mike Baxter Capital Planning and Asset Management Area BR St  
Andrew's House Edinburgh  
EH1 3DG

\* tel: [REDACTED]

\* email: Mariane mcgowan [REDACTED]

-----Original Message-----

From: Baxter M (Mike) (Health)  
Sent: 16 November 2010 13:29  
To: DG Health  
Cc: Matheson J (John); Connaghan J (John); Clayden IJ (Ingrid); Welsh J (Joe); McLaughlin C (Christine);  
Summers Y (Yvonne); Brown J (Jim) (Perf. Management); Kinnear N (Norman); Waugh I (Ian)  
Subject: RE: FMQs Briefing: DEADLINE - 1:30pm Tuesday 16th November

Roy

Please find attached requested FMQ Briefing on Sick Kids cleared by John Matheson

Mike Baxter

Deputy Director (Capital Planning and Asset Management) Scottish Government Health Directorates Tel [REDACTED]

>

>From: DG Health  
>Sent: 15 November 2010 11:35  
>To: Welsh J (Joe); McLaughlin C (Christine); Brown J (Jim) (Perf. Management); Summers Y (Yvonne);  
Dimelow R (Richard); Brown CL (Colin); Baxter M (Mike) (Health); Kinnear N (Norman); Hicks C (Clare);  
Burnett B (Brenda); Neill S (Sandra)  
>Cc: Matheson J (John); Connaghan J (John); Clayden IJ (Ingrid)  
>Subject: FW: FMQs Briefing: DEADLINE - 1:30pm Tuesday 16th November  
>Importance: High

>

>Colleagues

>

>Ms Sturgeon has asked that FMQ briefing is prepared on the following issues:

>

> (1) Budget, including housing and the new Edinburgh Sick Kids

>Hospital;

>

> (2) Fife A&E situation (paper for discussion at NHS Fife's Operational

>Division's Committee meeting on Wednesday 17 November in relation to

>increasing risks in maintaining rotas at Victoria Hospital and Queen  
>Margaret Hospital - Jim Brown's email of 11/11 at 17.13);  
>  
> (3) Yorkhill Healthcare Environment Inspectorate report (published  
>today);  
>  
> (4) new Edinburgh Sick Kids Hospital (likely delay to this project as  
>a result of Wednesday's budget announcement);  
>  
> (5) Distinction awards (News Release likely to issue tomorrow about Ms Sturgeon's decision to freeze  
Distinction Awards Scheme for 2011/12).  
>  
>I would be grateful if briefing (template etc attached) could be returned to the DG Health mailbox no later than  
1.30pm on Tuesday 16 November 2010.

>Many thanks

><< File: FMQ briefing template - August 2010.doc >>

> In preparing your briefing, can you please ensure you take account of the following points:

- >\* There needs to be a positive emphasis on the action that the SG has taken to address the issue;
- >\* These briefs should contain primarily facts and figures to rebut criticism of, and to promote, Government policies and actions;
- >\* The 'Top Line' should be cleared with the relevant Communications team
- >\* Relevant supportive quotes are useful and should be included;
- >\* Lines to take are not usually useful, and paragraphs or bullets copied over from a press release or a speech are not normally suitable for FM;
- >\* Information provided must be as up to date as possible;
- >\* The briefing must be, if at all possible, no longer than one page (at the very most, it can spill over onto 2 sides), e.g. there is no need to re-iterate historical information that Ministers will know already;
- >\* Please refer to any visits that the FM or Ministers have made to the area that refers to the issue;
- >\* Full telephone contact numbers including a mobile number must be provided.

>Roy Sturrock

>DG Health Co-ordination Unit

>The Scottish Government

>Room 1E.08

>St Andrews House

>Edinburgh EH1 3DG

>Tel: [REDACTED]

>Email: roy.sturrock [REDACTED]

>-----Original Message-----

>From: Elliot E (Beth) On Behalf Of Cabinet Secretary for Health and

>Wellbeing

>Sent: 15 November 2010 11:17

>To: First Minister; Cabinet Secretary for Justice; Cabinet Secretary

>for Finance and Sustainable Growth; Cabinet Secretary for Education and

>Lifelong Learning; Cabinet Secretary for Rural Affairs and the

>Environment; Minister for Parliamentary Business; Minister for Culture

>and External Affairs

>Cc: DG Health; DG Economy; DG Education; DG Rural Affairs Environment

>and Services; DG Justice and Communities; PS/COPFS; Permanent  
>Secretary; Lord Advocate; Minister for Parliamentary Business; Cabinet  
>Secretariat inbox; Communications First Minister; DL SPADS; Johnston P  
>(Paul); DG Finance  
>Subject: RE: FMQs: Topical 3 for 18th November 2010: DEADLINE - 9:30  
>Tuesday 16th November

>

>Sarah

>

>Ms Sturgeon's topical picks this week are -

>

>(1) Budget, including housing and the new Edinburgh Sick Kids Hospital;

>

>(2) Fife A&E situation (paper for discussion at NHS Fife's Operational  
>Division's Committee meeting on Wednesday 17 November in relation to  
>increasing risks in maintaining rotas at Victoria Hospital and Queen  
>Margaret Hospital - Jim Brown's email of 11/11 at 17.13);

>

>(3) Yorkhill Healthcare Environment Inspectorate report (published  
>today);

>

>(4) new Edinburgh Sick Kids Hospital (likely delay to this project as a  
>result of Wednesday's budget announcement);

>

>(5) Distinction awards (News Release likely to issue tomorrow about Ms Sturgeon's decision to freeze  
Distinction Awards Scheme for 2011/12).

>

>Thanks

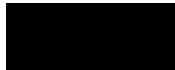
>Beth

>

>Beth Elliot

>PS/Deputy First Minister & Cabinet Secretary for Health and Wellbeing

>



>

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attachments. Thank you.

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>

>-----Original Message-----

>From: Govan S (Sarah) On Behalf Of First Minister

>Sent: 12 November 2010 14:05

>To: First Minister; Cabinet Secretary for Health and Wellbeing; Cabinet

>Secretary for Justice; Cabinet Secretary for Finance and Sustainable

>Growth; Cabinet Secretary for Education and Lifelong Learning; Cabinet

>Secretary for Rural Affairs and the Environment; Minister for

>Parliamentary Business; Minister for Culture and External Affairs

>Cc: DG Health; DG Economy; DG Education; DG Rural Affairs Environment

>and Services; DG Justice and Communities; PS/COPFS; Permanent

>Secretary; Lord Advocate; Minister for Parliamentary Business; Cabinet

>Secretariat inbox; Communications First Minister; DL SPADS; Johnston P

>(Paul); DG Finance

>Subject: FMQs: Topical 3 for 18th November 2010: DEADLINE - 9:30

>Tuesday 16th November

>

>Hi

>

>

>The next FMQs of this Parliamentary Session will take place on Thursday 18th November 2010 and we would be grateful for Cabinet Secretaries' topical picks by 9:30 am on Tuesday 16th November 2010.

>

>Please could you also include a sentence for each topic to explain why it is particularly topical and likely to come up this week.

>

>Thank you

>

>Sarah

>

>

>Copy policy

>

>

>

>Sarah Govan

>Deputy Private Secretary

>Office of the First Minister

>

>Ext. [REDACTED]

>

>The First Minister's preferences can be found at:

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>Intro<http://intranet/InExec/AboutUs/MinisterialPrivateOffices/FM/FirstM>

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>

>[copy FMQs]

>



<b>ROYAL HOSPITAL FOR SICK CHILDREN – DELAY AND DELIVERY THROUGH REVENUE FINANCE</b>
--

**TOP LINE: Scottish Government is fully committed to the delivery of the Royal Hospital for Sick Children in Edinburgh as soon as is possible**

**KEY POINTS:**

**1. Argument 1 – The use of revenue finance will delay the delivery of the Royal Hospital for Sick Children**

- UK Government has applied 36.5% cut in real terms over the CSR period, meaning difficult choices not only as part of this budget, but also for future budgets. The UK Government has cut Scotland's capital budget by more than a quarter in real terms next year. This is cutting too far, too fast.
- We are using every lever to maintain capital investment – through the NPD model, tax incremental financing and the National Housing Trust. These investments will protect jobs and services next year and in future years.
- We will minimise any delay on the delivery of the Sick Kids preparing for procurement as quickly as possible and by providing support to NHS Lothian through the Scottish Futures Trust

**2. Argument 2 – Public Capital Funding secured for New South Glasgow Hospitals Project but not for Royal Hospital for Sick Children in Edinburgh**

- The business case for the New South Glasgow Hospitals Project demonstrates that public capital represented better value for money than PFI and NPD (by £118.86m and £105.47m respectively).
- We wish to progress the Sick Kids in Edinburgh as quickly as possible and can do this most effectively through NPD.

**3. Argument 3 – The Scottish Government are dependant on the use of revenue finance to support their investment programme**

- 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.

**4. Argument 4 The Scottish Government have not protected health spending**

- 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.

## **SUMMARY OF ISSUE**

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 £200m 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.

## **BACKGROUND**

The need to build a replacement for the Sick Kids in Edinburgh was recommended by the expert Ministerial Advisory Group on child health, the Children and Young People's Health Support Group. The project will ensure that all acute inpatient children's services in Scotland will meet the gold standard of triple co-location of children, maternity and adult services. This complements the existing children's hospital in Dundee, the new children's hospital in Aberdeen and the new children's hospital development in Glasgow.

The Capital Investment Group approved the Outline Business Case on 15 August 2008 which allowed NHS Lothian to proceed with its preferred option to develop the new hospital on the Little France site using public capital, supported by university and endowment funding. A preferred bidder, BAM construction was appointed from the NHSScotland National Framework, Frameworks Scotland on 30 April 2009.

A full business case is being prepared by the NHS Board and was scheduled to be considered by the Capital Investment Group in January 2011 following completion of design and costing work with the construction partner. Even with a change in funding route it would be sensible to conclude detailed design work, sign off for which is expected by end of November 2010.

There have been a series of complex issues to resolve throughout the projects' development including revised car parking arrangements, land transactions and planning issues. NHS Lothian have been pressing hard to move the project forward and resolve these issues. A revised submission date of March 2011 has been confirmed for the Full Business Case within the last few days, subject to planning approval.

NHS Lothian advise that the capital cost of the project is £169.4m including enabling work and equipment. The scheduled start on site was expected to be March 2011 and practical completion by end of September 2013. Following commissioning a fully operational date of first half 2014 has been reported to the Projects' Steering Group on 12 November 2011. These timescales are also dependent upon successful negotiations with Consort, operators of the existing PFI contract regarding undertaking of enabling works.

This timetable would have been challenging at best given the revised submission date for the full business case and the requirement for other NHS Boards to sign up to the revenue consequences of the project. It is unlikely that construction could have commenced before April 2011 at earliest.

In moving to a NPD finance route the current procurement will require to be halted and a new procurement commenced as soon as possible. The Scottish Futures Trust have been requested to prepare a proposal, due within the next two days, on how it could support NHS Lothian to develop a NPD procurement strategy as soon as possible. SFT have been given a clear brief to develop a proposal and strategy that minimises any delay in the delivery of the project. It is expected that, with appropriate input from both SFT and NHS Lothian that a new procurement strategy could be ready within 4-6 weeks. An assessment of revised timescales would be possible at that point.

## **Contact Details**

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SCOTTISH HOSPITALS INQUIRY  
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Bundle 3 - Governance  
Volume 1 (of 3)