

**UHL Strategic Reconfiguration Business Cases**

**Name of Business Case:** **Hybrid Theatre FBC**

**Forum:** **July 30<sup>th</sup> 2015 Integrated Finance, Performance & Investment Committee**  
**August 7<sup>th</sup> 2015 Trust Board**

**Checklist Completed by:** **Nicky Topham**

**Project SRO:** **Kate Shields**

<p><b>Confirm Commissioner support:</b></p>	<p>NHS England, as part of their regional vascular review, has instructed ULHT to identify and partner with a specialist vascular centre (Level I) to support on-going local care. ULHT have undertaken a selection process and confirmed UHL as their preferred partner going forward. This arrangement secures new patient pathways to UHL for the more complex patients; the hybrid theatre development will make sure that UHL will be able to accept all tertiary referrals. UHL are having similar discussions with the team at NGH who have agreed to formalise referral pathways to UHL for their complex patients – this arrangement fits with the stated local and national commissioning direction and will be confirmed with commissioners once the detail has been agreed.</p>
<p><b>Confirm Stakeholder support:</b></p>	<p>The communications plan identifies the direct involvement of health partners in the project; and the future involvement &amp; engagement with external stakeholders including Healthwatch and the general public. Stakeholder engagement is identified in section 6.4 of the case.</p>

		<p><b>Business Case Section Reference</b></p>
<p><b>What is the purpose of this project?</b></p>	<p>A hybrid theatre combines an operating theatre with an interventional radiology suite, enabling it to function flexibly as either a conventional operating theatre, or as a radiology facility, but crucially allows intra- and post-operative on-table imaging and</p>	<p>Strategic Case 1.1</p>

		Business Case Section Reference
	<p>intervention.</p> <p>The provision of a hybrid theatre is a key development complementing the transfer of Vascular Services from the Leicester Royal Infirmary (LRI) to the Glenfield Hospital (GH). This will establish a dedicated vascular inpatient unit; an angiography suite and a hybrid theatre on one site. This will transform the scope and quality of vascular services for both patients and staff and support UHL’s ambition to be recognised as a Level One regional centre for complex endovascular services.</p> <p>Currently, patients requiring complex TEVAR (thoracic endo-vascular aortic replacement) are transferred to Birmingham or Manchester. This development positions us in the market to undertake this ourselves, and makes us more attractive to referring DGH centres.</p> <p>Whilst this is not a key enabler to the ICU project, as an essential need for vascular services, it is being expedited alongside the vascular ward and angiography suite to ensure we meet the requirements for a recognised regional centre.</p>	
<p><b>Why is it being carried out?</b></p>	<ol style="list-style-type: none"> <li>1. The provision of a hybrid theatre is an essential requirement for the future provision of vascular services at UHL.</li> <li>2. It ensures the long term sustainability of vascular, cardiac and cardiology services – no change in the current service provision would result in a major risk of loss of designation and the secondary effects of this on cardiovascular services as a whole.</li> <li>3. A key consideration for future designation as a thoracic aortic disease centre will be the requirement for an integrated endovascular, vascular and cardiac surgical team. The development of an integrated aortic disease service will form an increasingly important source of revenue for the Trust.</li> <li>4. Leicester has been a pioneering centre in the</li> </ol>	<p>Why are we doing it? section 1.2.1</p>

		Business Case Section Reference
	<p>use of stent grafts in the UK, to sustain and develop such techniques requires a match in the technology available through the provision of a hybrid theatre.</p> <p>5. Aligns with the Trust’s Five Year Integrated Business Plan, Clinical Strategy and Estate Development Strategy.</p>	
<b>What are the key assumptions in this business case?</b>	<p>Future designation of vascular services is dependent upon the co-location of Cardiology/Cardiothoracic services and the provision of a Hybrid Theatre. Therefore, the ‘Do Nothing’ option (i.e. not providing a hybrid theatre) jeopardises the future provision of vascular services at UHL.</p> <p>Additional workforce has been assumed of 3.04wte.</p> <p>Additional activity has been assumed.</p>	<p>OBC Options Appraisal section 3.2</p> <p>Income &amp; Expenditure section 5.3, table 21</p> <p>Income &amp; Expenditure section 5.3, table 22</p>

What are the Benefits?		How will it be measured?	Business Case Section Reference
<b>To the patient</b>	<ol style="list-style-type: none"> <li>1. Reduces average length of stay (including pre and post-op LOS)</li> <li>2. Enables a significant number of patients to be treated in a single session rather than separate radiological and surgical procedures as is current practice</li> <li>3. Increase in minimally invasive procedures reduces time spent in Critical Care beds</li> <li>4. Facilitates increasingly complex</li> </ol>	<ol style="list-style-type: none"> <li>1. Activity Data</li> <li>2. Activity Data</li> <li>3. Activity Data</li> <li>4. Activity Data / Consultant</li> </ol>	<p>What benefits will it bring? Section 1.2.2</p> <p>Investment Objectives, Key Deliverables &amp; Benefit</p>

What are the Benefits?	How will it be measured?	Business Case Section Reference
<p>procedures, yet offers flexibility to revert to open procedure if required</p> <p>5. Better patient experience through improved and optimised pathways including reductions in readmissions</p>	<p>Information</p> <p>5. Patient Satisfaction / Friends &amp; Family Test</p>	<p>Criteria Table 7 section 2.16</p>
<p><b>To UHL</b></p> <p>1. Positions UHL as pre-eminent total Cardiovascular Institute serving the region and beyond</p> <p>2. Ensures the long term sustainability of vascular services – this move is essential for the re-designation of vascular services, - attracting activity and associated income</p> <p>3. Takes UHL to the forefront of clinical research and practice</p> <p>4. Aligns with the UHL five year plan, clinical strategy and estates development plan</p>	<p>Re-designation as Level One service</p> <p>Commissioned vascular services</p>	
<p><b>To LLR</b></p> <p>1. Patients remain in LLR for all treatment – keep funding in the local health economy</p>	<p>Increase in activity</p>	

What is the solution?		Business Case Section Reference
<p><b>What options have been considered?</b></p>	<p>Whilst other options were considered, the only clinically functional solution is a new build.</p>	<p>OBC Options Appraisal Section 3.2</p>

		Business Case Section Reference	
<b>Are there any material deviations to recommended standards?</b>	Hybrid theatres have yet to have national recommended standards applied. The Trust has based design principles on current theatre and radiology standards.	Estates Annex Appendix 3	
<b>How will it be implemented?</b>	The project will be managed in accordance with the principles of PRINCE2 methodology. The project managers will have support from the capital projects team, and external consultants.	Project Plan Section 6.3	
<b>Are there any key dependencies?</b>	Internal: The purchase order for this project needs to be placed on Monday 10th August. Whilst discussions are on-going with the NTDA regarding accessing money as part of our capital plan, we need to be able to access capital immediately in order to commence works.		
	External: The long term access to capital will require the NTDA support of our ITFF application to access funds.		
<b>When will it be completed?</b>	<b>Milestone</b>	<b>Date</b>	Project Programme section 6.3.1
	Integrated Finance, Performance & Investment Committee support for FBC to be approved by Trust Board	July 30 <sup>th</sup> 2015	
	Trust Board Approval of FBC	August 6 <sup>th</sup> 2015	
	Purchase Order placed for Construction	August 10 <sup>th</sup> 2015	
	Contractor Mobilisation	24th August 2015	
	Construction start on site	6th October 2015	
	Construction Handover	7th November 2016	
	Trust Commissioning	1 month	
Clinical Handover	December 2016		
<b>How much will it cost?</b>	<p>The capital cost of the Hybrid Theatre is estimated to be £4.78 million outturn (including VAT).</p> <p>The position presented in the FBC shows increased costs of circa £240,000. These costs reflect the additional</p>	<p>Capital Costs section 5.2</p> <p>Income &amp; expenditure</p>	

		<b>Business Case Section Reference</b>
	angiography staff required at Glenfield Hospital, capital charges and equipment maintenance offset by additional income.	section 5.3
<b>Will it be affordable?</b>	<p>The development causes a net recurrent increase in revenue costs of c£240k per annum.</p> <p>The Trust Financial Strategy, approved by the Trust Board on 4th June 2015, assumes that the operating cost impact of site reconfiguration will be zero and the non-operating costs impact will be as per the capital programme.</p> <p>As the operating cost increase in this development is offset by additional income, this development is consistent with the Financial Strategy. In addition, the development ensures the Trust has the capacity and is in the right position to attract additional vascular activity in the future.</p>	Affordability section 5.5
<b>How will the project contribute to deficit reduction?</b>	This new development will enable the Trust to undertake quaternary activity which will increase market share, increase income and contribute towards deficit reduction.	
<b>How have patients been involved?</b>	During July/August 2013 a public engagement / consultation exercise was undertaken with both patients and members of staff to assess support for the Trust's plans for a single site take for Surgery. In addition there were specific questions relating to the vascular services transfer. Both paper and online surveys were undertaken.	Stakeholder Engagement section 2.15 & 6.5
<b>What external assurance has been obtained?</b>	<p>A Health check level 3 reviews was undertaken on the 6-8th July, formally known as a Gateway Level 3, on the vascular and ICU projects.</p> <p>The outcome of this was an AMBER rating reflecting that successful delivery appears feasible but issues require management attention. The issues appear resolvable at this stage of the programme/project if addressed promptly.</p> <p>With regards to the vascular projects, whilst the review</p>	External review section 6.11

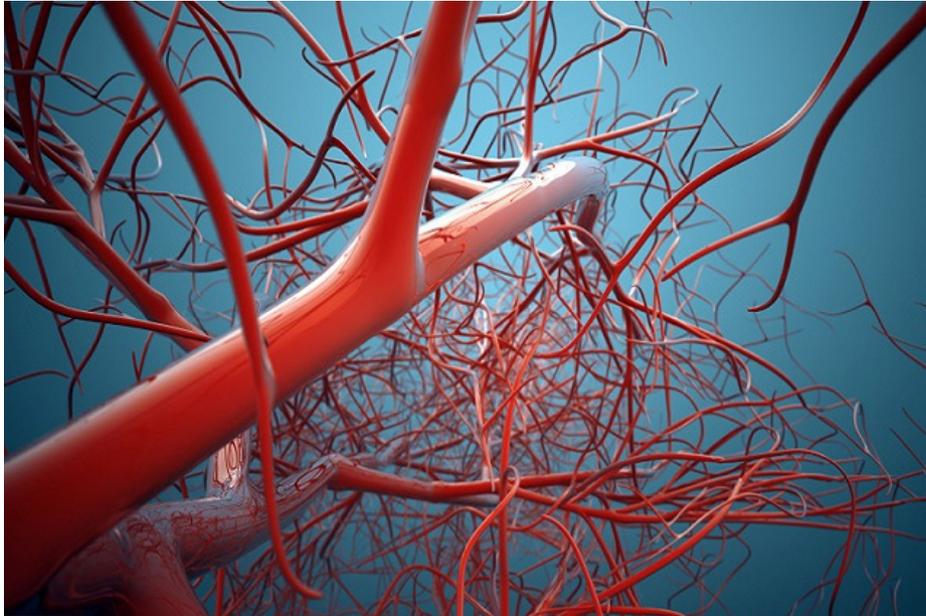
		Business Case Section Reference
	team supported the need to create a cutting edge and comprehensive centre for cardio-vascular medicine and research on a single site at Glenfield, they were concerned that the capital and workforce costs needed to be finalised prior to submission to IFPIC. These are now final as reflected in the FBC.	

Risks (scoring over 15) & Mitigations			RAG	Business Case Section Reference
<b>Financial</b>	<p>Inability to secure necessary funding / funding shortfall.</p> <p>Purchase order needs to be raised by 10<sup>th</sup> August alongside the purchase orders for the vascular ward and angiography suite, in order to achieve the benefits in combining the arrangements for preliminary works.</p>	<p>Discussion with the NTDA, the Executive Team, IFPIC and Trust Board to access funds from trust capital programme whilst the funding application process progresses to obtain external funds.</p> <p>This business case needs to be approved to obtain access to funding via ITFF application.</p>	15	
<b>Operational</b>	None scoring over 15			
<b>Workforce</b>	None scoring over 15			
<b>Estates</b>	None scoring over 15			
<b>Equipment &amp; Procurement</b>	None scoring over 15			
<b>Comms &amp; Engagement</b>	None scoring over 15			

Risks (scoring over 15) & Mitigations			RAG	Business Case Section Reference
<b>Stakeholder Ownership</b>	None scoring over 15			
<b>Project Delivery</b>	None scoring over 15			
<b>IM&amp;T</b>	None scoring over 15			
<b>Training</b>	None scoring over 15			

RAG Rating Key for Risks

		Impact				
		Very Low	Low	Medium	High	Very High
		1	2	3	4	5
Probability	Very Low	1	2	3	4	5
	Low	2	4	6	8	10
	Medium	3	6	9	12	15
	High	4	8	12	16	20
	Very High	5	10	15	20	25



# Full Business Case

## Hybrid Theatre

July 2015

Version **FINAL 2.1**  
Issue date **31<sup>st</sup> July 2015**

*Building Caring at its best*

# Document Quality Management

**Title** Hybrid Theatre (Vascular) Business Case

**Date** 31<sup>st</sup> July 2015

**Drafted by** Neal James, Project Manager, UHL

**Checked by** Anna Fawcett, Business Case Manager, UHL

**Authorised by** Nicky Topham, Head of Strategic Reconfiguration Business Cases, UHL

## Document History

Version	Date Issued	Brief Summary of Change	Author
1.0	21/05/15	Separation of Vascular OBC/FBC to component parts to accelerate delivery	NJ
1.1	26/5/15	New hybrid Narrative	NJ
1.2	9/6/15	Revision of narrative	NJ
1.3	12/6/15	Revision of narrative	NJ
1.4	19/6/15	Page turn review	NJ
1.5	24/6/15	Inclusion of Communication and engagement plan	RP/NJ
1.6	25/6/15	Finance work stream review	TP/NJ
1.7	3/7/15	Economic work stream review	TP/NJ
1.8	9/07/15	Appendices	NJ
1.9	21/07/15	Formatting update and content review	AF
2.0	22/01/15	Content update review	NT
2.1	31/07/15	Financial updates following IFPIC review	TP

# Glossary of Terms

Abbreviation	Full Heading
ALOS	Average length of stay
BCT	Better Care Together
BREEAM	Building Research Established Environment Assessment
CCG	Clinical Commissioning Group
CDM	Construction, Design Management
CMG	Clinical Management Group
DCP	Development Control Plan
DH	Department of Health
DQI	Design Quality Indicator
EVAR	Endo-vascular arterial repair.
FBC	Full Business Case
FOT	Fore-cast Out-turn
FM	Facilities Management
GEM	Generic Economic Model
GH	Glenfield Hospital
GMP	Guaranteed Maximum Price
H&S	Health & Safety
HBN	Hospital Building Notes
HTM	Hospital Technical Memorandum
I&E	Income & Expenditure
IBP	Integrated Business Plan

Abbreviation	Full Heading
IM&T	Information Management & Technology
IP	Infection Prevention
KPI	Key Performance Indicator
LCC	Leicester City Council
LLR	Leicester, Leicestershire & Rutland
LOS	Length of Stay
LPT	Leicester Partnership Trusts
LRI	Leicester Royal Infirmary
LTFM	Long-term Financial Model
MES	Managed Equipment Service
NSF	National Service Framework
NTDA	NHS Trust Development Authority
OBC	Outline Business Case
OJEU	Official Journal of the European Union
OSC	Overview Scrutiny Committee
PPE	Post Project Evaluation
PPI	Patient Public Involvement
PSCP	Principle Supply Chain Partner
SOC	Strategic Outline Case
TVAR	Thoracic Endovascular Aortic repair
UHL	University Hospitals Leicester
VFM	Value for Money
VSU	Vascular Studies Unit
YTD	Year to Date

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# 1 | Executive Summary

## 1.1 Introduction

This Full Business Case (FBC) is for the new development of a Hybrid Operating Theatre at Glenfield Hospital (GH). This project is a vital addition to vascular services. Other components of the vascular service comprise the vascular ward, vascular studies unit and angiography suite. These latter services will move from the LRI to GH as an enabler for the Intensive Care project to vacate space at the LRI and are separate business cases. This will create a cutting edge and comprehensive centre for cardio-vascular medicine and research on a single site at Glenfield.

The Trust's Vascular Surgery Unit is one of the UK's premier units providing high-quality care for patients with peripheral vascular diseases. It is staffed by a multidisciplinary team of nurses, occupational therapists, physiotherapists, radiologists, anaesthetists and surgeons working to achieve excellent patient outcomes. This is evidenced by both local patient survey data<sup>1</sup> and national audit outcome data<sup>2</sup>. Furthermore, the unit has a strong track-record of innovation and research, from the invention of sub-intimal angioplasty<sup>3</sup> to the early implementation and refinement of endovascular aneurysm repair<sup>4</sup>, and more recently leading worldwide collaborative research projects that have both informed clinical care pathways<sup>5</sup> and identified new paradigms for the basis of aneurysmal disease<sup>6</sup>.

A dedicated vascular inpatient unit; an angiography suite and a Hybrid theatre on one site will:

- ▶ Transform the scope and quality of vascular service for both patients and staff; and
- ▶ Support the University Hospitals of Leicester NHS Trust's (The Trust ) ambition to be recognised as a Level One regional centre for complex endovascular services.

A hybrid theatre combines an operating theatre with an interventional radiology suite. This means it can flexibly function as either a conventional operating theatre, or as a radiology facility, but crucially allows intra- and post-operative on-table imaging and intervention and ever more complex and demanding endovascular and minimally invasive procedures to be undertaken.

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<sup>1</sup>Ward 21 Friends and Family Test

<sup>2</sup>Vascular Society of Great Britain and Ireland. National Vascular Registry 2013 Report on Surgical Outcomes, Consultant-level Statistics. <http://www.vsgip.org.uk/surgeon-level-public-reporting/> [accessed 1 June 2014].

<sup>3</sup>Recanalisation of femoro-popliteal occlusions: improving success rate by subintimal recanalisation. Bolia A, Brennan J, Bell PR. Clin Radiol. 1989 May;40(3):325

<sup>4</sup>Endovascular stenting of abdominal aortic aneurysms. Sayers RD, Thompson MM, Bell PR. Eur J Vasc Surg. 1993 May;7(3):225-7.

<sup>5</sup>Surveillance intervals for small abdominal aortic aneurysms: a meta-analysis. RESCAN Collaborators: Bown MJ, Sweeting MJ, Brown LC, Powell JT, Thompson SG. JAMA. 2013 Feb 27;309(8):806-13

<sup>6</sup>Abdominal aortic aneurysm is associated with a variant in low-density lipoprotein receptor-related protein 1. Bown MJ et al. Am J Hum Genet. 2011 Nov 11;89(5):619-27

Despite this record of excellence there are significant challenges facing UHLs Vascular Unit. The provision of many aspects of vascular surgery now falls under the remit of specialised commissioning groups and there is a national move to locate tertiary services in fewer, larger units (level one centres). In order to ensure the long-term survival of the vascular unit and build upon the current success it is necessary to invest in the development of the service and thus place the unit at the forefront of both regional and national contenders to continue providing vascular services. In particular, it is necessary to provide the infrastructure (both material and human resources) to be able to build upon the current tertiary referral practice and develop a quaternary referral practice.

The principal barriers to moving the current service forward are;

- ▶ The lack of in-theatre high-quality radiological imaging facilities (a 'hybrid' theatre). Both the co-location of vascular surgical services with cardio-thoracic surgery and the provision of a hybrid theatre are pre-requisites for the commissioning of complex vascular surgery<sup>7</sup>.
- ▶ The current location of the service at the Leicester Royal Infirmary site, separate from cardiac and cardio-thoracic surgery, both of which are at the Glenfield Hospital,

## 1.2 Strategic Case

Our vision is to create a comprehensive centre for cardiovascular medicine and research. In moving the vascular surgery unit to the Glenfield Hospital site this brings together not only the clinical services, but also the strong academic components of these services. This will build upon the previous investments in the NIHR Leicester Cardiovascular Biomedical Research Unit and the BHF Cardiovascular Research Centre and strengthen the world-leading position of Leicester as a centre for cardiovascular research excellence.

### 1.2.1 Why are we doing it?

- ▶ The ongoing National Specialised Services re-designation creates a need for the Trust to attain Level One to maintain its activity/reputation. Provision of a Hybrid Theatre to provide state-of-the-art imaging facilities is a key requirement
- ▶ Closer working relationships with Cardiothoracic Services
- ▶ It ensures the long term sustainability of vascular, cardiac and cardiology services – no change in the current service provision would result in a major risk of loss of designation and the secondary effects of this on cardiovascular services as a whole.
- ▶ Leicester has been a pioneering centre in the use of stent grafts in the UK, to sustain and develop such techniques requires a match in the technology available

<sup>7</sup>NHS England. 2013/14 NHS Standard Contract for Specialised Vascular Services (Adults) <http://www.england.nhs.uk/wp-content/uploads/2013/06/a04-spec-vascu-adult.pdf> [accessed 1 June 2014].

through the provision of a hybrid theatre. The provision of a hybrid theatre is key to enabling highly specialised activity to continue to be undertaken in Leicester.

### 1.2.2 What benefits will it bring?

- ▶ Improved services for patients including 21st Century imaging solutions through the provision of the Hybrid Theatre – this will be dual use between vascular, cardiology/cardiothoracic surgery with a joint approach being taken to its development
- ▶ A comprehensive programme to clinically manage and surgically treat patients with aortic pathology, which is a primary aim of the cardiac, thoracic and vascular surgeons and reflected in the Five Year IBP to be realised in the next two years.
- ▶ A hybrid theatre will offer the potential to expand the vascular and cardiac surgery portfolio of services, including complex thoracic-abdominal aneurysms which offer patient benefits and increases income potential for the Trust
- ▶ Cost Efficiencies through streamlined patient processes
- ▶ Future-proofed, updated facilities
- ▶ Better quality and safety of care provided
- ▶ Reduction in ICU driven cancellations
- ▶ It will enhance staff recruitment, development and retention
- ▶ The alignment of clinical and research facilities on the GH site. Cardiovascular research has been a major strength of the Leicester Medical School, University of Leicester (UoL) since its inception. This was recognised through the award of a National Institute of Health Research (NIHR) Biomedical Research Unit (BRU) in cardiovascular disease to a partnership between UHL and UoL. The BRU has state of the art facilities for clinical research on the GH site. The opening of the £12.5m Cardiovascular Research Centre (CRC) at GH further re-enforces the centralisation of services on the GH site.
- ▶ Improved recruitment & retention:
  - With the likely retirement of 2-3 vascular surgeons over the coming 5-10 years; The Trust will need to attract individuals of a similar calibre and maintain the endovascular trained surgeons already present. The department needs to ensure endovascular opportunities are made available including the complex major FEVAR/BEVAR etc and a hybrid theatre will give greater opportunities for this.
  - Trainees will not choose to come to a unit that does not offer the full spectrum of open and endovascular training in line with the new vascular curriculum. The East Midlands regional vascular surgical training programme is based upon trainee's choosing their training centres and any failure to attract trainees would negatively impact upon the service and revenue streams.

### 1.2.3 Can we afford it?

- ▶ The capital costs are £4.78m. This is accounted for in the Trust's approved Capital plan for reconfiguration over the next two financial years.
- ▶ The revenue costs assume a prudent approach to potential additional income.

## 1.3 Economic Case

The options appraisal process at OBC stage was combined across all components of the vascular service move. This FBC sets out the details for the preferred option for the Hybrid Theatre, which comprised:

- ▶ Option A - a new build extension to incorporate the Hybrid Theatre.

Since the OBC, capital costs have increased by 7% (outturn) and reduced by 7% (approval sum) but the impact on the scheme has a marginal impact on revenue. Examined in the context of the overall Vascular capital costs, there is no circumstance where the other options in the OBC options appraisal would now be preferred to the current option, as a result the options appraisal has not been revisited.

The 'Do Nothing approach' is not a viable solution for this project. Future designation of vascular services is dependent upon the co-location of Cardiology/Cardiothoracic services and the provision of a Hybrid Theatre. The 'Do Nothing' option (i.e. not transferring the service) not only jeopardises the future provision of vascular services at UHL but also impacts upon UHL's site wide reconfiguration programme of which this project is seen as the first key enabler.

The creation of a facility delivers the following service efficiencies:

*Table 1 Service Efficiencies*

Efficiencies	Measured
Reduced average length of stay (including pre and post-op LOS)	Activity Data
The Hybrid theatre will enable a significant number of patients to be treated in a single session rather than separate radiological and surgical procedures as is current practice.	Activity Data
Increase in minimally invasive procedures reduces time spent in Critical Care beds	Activity Data
Co-location with cardiology/cardiothoracic services will reduce journeys for cardiac patients who currently travel from GH to LRI for scans	Patient Satisfaction / Activity Data
Hybrid Theatre facilitates increasingly complex procedures, yet offers flexibility to revert to open procedure if required	Activity Data / Consultant Information
Better patient experience through improved and optimised pathways including reductions in readmissions	Patient Satisfaction / Friends & Family Test
Positioned as pre-eminent total Cardiovascular Institute serving the region and beyond	Re-designation as Level One service

## 1.4 Commercial Case

The project required the provision of, and procurement of two key services:

- ▶ Construction services
- ▶ Hybrid theatre equipment

As part of the FBC development, the Trust decided the scheme would be procured through UHL's framework partnership with Interserve Facilities Management (IFM) and

assigned to Interserve Construction Limited. UHL followed procurement regulations and law to establish the framework which is headed in contract between the Trust and IFM. Interserve were appointed following an OJEU process with reference: OJ/S S139, 22/07/2011, 231138-2011-EN.

Under the bespoke framework, Interserve Construction Ltd is appointed as principal contractor for the delivery of projects; commercial arrangements and contracts are pre-agreed to cover commissioning of the business case through to final delivery of the asset using an NEC3 Option C Form of Contract (Target Contract with Activity Schedule). Cost savings are split between the Trust and the Client based on previously agreed percentages, which will engender a spirit of partnering and collaboration within the Project Team. The risk of cost overrun is transferred to Interserve once the GMP has been agreed and construction stage commenced.

Project risk is dealt with openly from the outset of the project and the client; Interserve Construction Ltd and the Design Team took an active role in identifying, mitigating and apportioning risk to the party best suited to deal with it. This will be a proactive process throughout the delivery of the project.

Under the framework, Interserve has:

- ▶ Taken single point responsibility to manage the design and construction process from completion of FBC through to project completion
- ▶ Assembled a dedicated team from its supply chain of experienced health planners, designers and specialists, to successfully deliver facilities that will benefit patients and staff alike
- ▶ Provided benefits of experience of long term partnering arrangements that will continue throughout the life of the project
- ▶ Committed to identifying construction solutions that will assist in the implementation of improved service delivery, best practice and delivering best value

Interserve and UHL have worked together through the full business case (FBC) stage to develop and agree a guaranteed maximum price for delivery of the scheme. This reflects:

- ▶ Fees for professional advice such as design and cost management
- ▶ Market tested packages for construction works on an open book basis

The GMP will be assessed for overall value for money and affordability by cost consultants acting for UHL (Rider Levett Bucknall - RLB). This will take into account elements such as:

- ▶ Prevailing rates for similar works nationally and locally
- ▶ Published cost indices
- ▶ Knowledge of the cost of work in the hospital from other recent schemes
- ▶ Prime contractor and client retained risks as identified in the joint risk register

It was agreed that the development of the GMP would be run in parallel with the development of the Works Information and this would be undertaken in a fully open book / collaborative environment, such that a minimum of three quotations would be obtained for all Works Packages making up at least 80% of the GMP.

Package responses were assessed by Interserve Construction Ltd in conjunction with the Trust's advisors RLB to ensure the 'Best Value' tender was included in the GMP. The assessment was not only to be based on price but also programme, design/technical proposals and likely risk. Interserve and RLB agreed a formal assessment proposal for each package. Tenders were benchmarked appropriately.

### 1.4.1 Equipment Procurement Strategy

The specialist equipment required for the vascular hybrid theatre will be procured through the NHS Supply Chain Frameworks. The evaluation panel have assessed the offers against agreed weighted benefit criteria, with the outcome of the Siemens ranked first on a value for money assessment.

The procurement route is still being evaluated: the options are purchasing the equipment or procurement through the Trust's Managed Equipment Service (MES). Assumptions in the cost plan cover procurement through either route.

## 1.5 Financial Case

The financial position of the vascular hybrid business case shows an additional cost of £240,000 per annum. This is shown in the following table:

Table 2 Financial Position

Baseline Costs	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<u>Income</u>						
Vascular Tariff	7,493	7,581	7,581	7,581	7,581	7,581
<b>Total Income</b>	<b>7,493</b>	<b>7,581</b>	<b>7,581</b>	<b>7,581</b>	<b>7,581</b>	<b>7,581</b>
<u>Expenditure</u>						
Current Staff	3,699	3,819	3,819	3,819	3,819	3,819
Current Non pay	1,539	1,560	1,567	1,567	1,567	1,567
Current FM costs	102	102	102	102	102	102
Current Support costs	2,757	4,154	4,034	4,034	2,779	2,779
<b>Total Expenditure</b>	<b>8,097</b>	<b>9,635</b>	<b>9,522</b>	<b>9,522</b>	<b>8,267</b>	<b>8,267</b>
<b>Overheads</b>	<b>2,238</b>	<b>2,404</b>	<b>2,406</b>	<b>2,398</b>	<b>2,390</b>	<b>2,382</b>

Total Current Costs	(2,842)	(4,458)	(4,357)	(4,339)	(3,076)	(3,068)
Hybrid Income and Costs	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<b>Additional Income</b>		(100)	(399)	(399)	(399)	(399)
<b>Recurrent Costs</b>						
Vascular and Support Staffing		25	101	101	101	101
Additional Non Pay		10	40	40	40	40
New FM Costs			38	150	150	150
Vacated FM Costs			(26)	(102)	(102)	(102)
Equipment Maintenance			34	136	136	136
<b>Total Recurrent Costs</b>		<b>35</b>	<b>187</b>	<b>325</b>	<b>325</b>	<b>325</b>
<b>Depreciation &amp; Capital Charges</b>						
Change in Depreciation		52	208	208	208	208
Interest Payable	26	83	112	107	102	97
<b>Total Depreciation &amp; Capital Charges</b>	<b>26</b>	<b>135</b>	<b>320</b>	<b>315</b>	<b>310</b>	<b>305</b>
<b>Total Additional Cost</b>	<b>26</b>	<b>71</b>	<b>108</b>	<b>241</b>	<b>236</b>	<b>231</b>

The Trust Financial Strategy, approved by the Trust Board on 4<sup>th</sup> June 2015, assumes that the operating cost impact of site reconfiguration will be zero and the non-operating costs impact will be as per the capital programme.

As the operating cost increase in this development is offset by additional income this development is consistent with the Financial Strategy. In addition, the development ensures the Trust has the capacity and is in the right position to attract additional vascular activity in the future. This shows a deficit of circa £240,000 per annum by 2018/19. It is expected that further activity can be generated to offset this.

### 1.5.1 Capital Costs

The capital costs of the hybrid theatre total £4.8M including forecast out-turn inflation. Below is an analysis of the total costs.

Table 3 Capital Cost Summary

Capital Costs	£
Construction	2,053,281
Fees	414,982
Non Works Cost	0
Equipment	1,122,394
Planning Contingency	145,786

<b>Capital Costs</b>	<b>£</b>
Optimism bias	140,516
Sub Total	3,876,959
Inflation	951,537
<b>Total</b>	<b>4,828,496</b>

The creation of a hybrid theatre facility is a key enabler to continue to develop Vascular services at UHL, and as such it should be borne in mind that the cost basis of this move has a 'bigger picture' impact for the Trust.

## 1.5.2 Workforce Plan

Key to delivery is the development of an appropriate workforce to support activity levels within the hybrid theatre. The workforce plan has been developed in line with assumptions made in the OBC.

Overall the aim of the workforce plan is to:

- ▶ Ensure the appropriate supply and skill mix to staff the theatre
- ▶ Ensure the right staffing levels are available to achieve the identified standards and manage surges in activity

## 1.6 Management Case

The programme anticipating completion is set out below:

*Table 4 Project Programme*

Milestone	Date
Integrated Finance, Performance & Investment Committee support for FBC to be approved by Trust Board	July 30 <sup>th</sup> 2015
Trust Board Approval of FBC	August 6 <sup>th</sup> 2015
Purchase Order placed for Construction	August 10 <sup>th</sup> 2015
Construction Commences	October 2015
Handover	December 2016

The project will be managed using PRINCE 2 compliant methodology and project management tools such as Gantt charting and critical path analysis. Project direction and management will be determined by the Project Board. It is critical that a project lead is identified on both the Estates and Clinical sides, and that personnel are given the appropriate resources, particularly time, to fulfil their roles.

## 1.7 Conclusion

This business case is a key part of the vascular services strategy and is central to the realisation of the vision of co- located specialist and tertiary services on the Glenfield site. Each of these objectives link to the long-term strategy of the service and the wider Trust:

- ▶ A comprehensive integrated vascular, cardiology and cardiac surgery service to provide the best possible care to our patients with cardiovascular disease.
- ▶ Vascular service re-designation; Aortic Service designation
- ▶ Increasingly complex activity undertaken generating additional income for the Trust
- ▶ Redevelopment and increased capacity providing opportunities for the Trust to fulfil its overall strategic transformation programme

The costs associated with this service move are:

- ▶ Capital Costs: £4.8m (accounted for in approved Capital Plan 15/16)
- ▶ Revenue Costs: £231,000
- ▶ Loss of Status without re-designation: not financially quantifiable

The key actions and decisions required to realise this vision are:

- ▶ Support for the capital investment
- ▶ Support for the additional revenue costs recognising that a significant amount are time-limited

## 1.8 Recommendation

The Trust Board is recommended to approve this business case

Signed: .....

Senior Responsible Owner

Date:.....

Senior Responsible Owner  
Project Team

## 2 | The Strategic Case

### 2.1 Introduction

This section sets the strategic case for change, i.e. why the project investment is required, with reference to:

- ▶ How it fits with national, local and Trust policies;
- ▶ The problems that will be addressed;
- ▶ How it will meet Trust needs and objectives;
- ▶ How it will realise the outcomes and benefits, as well as the associated risks.

2

2.1

#### 2.1.1 Clinical objectives of the project

- ▶ The increasing demand for vascular services is greater than the current capacity can provide. Historic trends in growth suggest a 5% annual growth in vascular services
- ▶ Continue to safely provide the best care for the most critically ill.
- ▶ Requirement for single site vascular and cardio-thoracic departments that incorporates key adjacencies and presence of diagnostics and medical assessment services. This enables implementation of the developed model of care for both adults and children accessing these services
- ▶ Changes in the local and national demographics combined with the Trust's plan to develop a level 1 Vascular Centre for Leicester is impacting on increased demand
- ▶ The Trust requires additional capacity to reflect NHS national guidance. The Hybrid theatre (in-part) reduces the risk of compromising compliance of other standards of care such as quality, infection control, emergency and urgent care standards and commissioning standards

### 2.2 Structure & Content of the Document

This business case has been prepared using the agreed standards and format for business cases, as set out in DH guidance and HM Treasury Green Book. The case comprises the following key components:

- ▶ **The Strategic Case** | This sets out the strategic context and the case for change, together with the supporting investment objectives for the scheme

- ▶ **The Economic Case** | This demonstrates that the organisation has selected the choice for investment which best meets the existing and future needs of the service and optimises value for money (VFM)
- ▶ **The Commercial Case** | This outlines the content and structure of the proposed deal
- ▶ **The Financial Case** | This confirms funding arrangements and affordability and explains any impact on the balance sheet of the organisation
- ▶ **The Management Case** | This demonstrates that the scheme is achievable and can be delivered successfully to cost, time and quality

# Part A: The Strategic Context

## 2.3 Introduction

This section provides an overview of the context in which the Trust provides its services and the strategic guiding principles, directives and policies that ensure clinical quality standards are met. The intention is to provide an overview of the Trust and its strategic objectives, and set the context for this business case. It also provides an overview of the driving policies and guidance documents at National, Regional and Local level.

## 2.4 Organisational Overview & Background

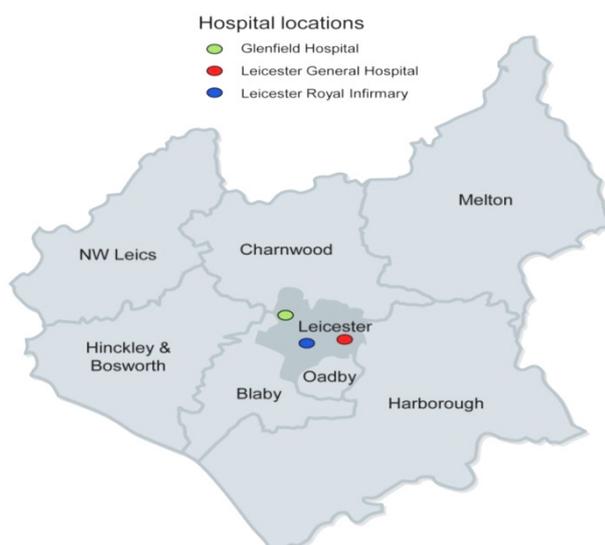
### 2.4.1 University Hospital Leicester NHS Trust

UHL is one of the largest teaching hospitals in the country and operates across three main sites; the Leicester Royal Infirmary, Leicester General Hospital, and the Glenfield Hospital. It is the only acute Trust serving the diverse local population of Leicester, Leicestershire and Rutland (LLR); equating to approximately 1 million residents.

#### Local Population Context

UHL is the primary acute Trust serving the diverse local population of Leicester, Leicestershire and Rutland (LLR); equating to approximately 1.04 million residents, distributed as follows:

Figure 1 Leicester Region



- ▶ Leicester City – population 337,653
- ▶ Leicestershire County – population 667,905
- ▶ Rutland – population 38,022

The City of Leicester is much more ethnically diverse than the county areas.

The overall population is forecast to grow by around 32,000 (3%) by 2019 - a rate of growth slightly lower than that for England as a whole.

The City of Leicester has a relatively younger population, than the County areas and this difference will continue to 2019.

Residents of the City die comparatively earlier, particularly from circulatory diseases, cancers and respiratory disease. Poor health is driven by deprivation and exacerbated by lifestyle factors. Leicester is ranked 25th worst out of 326 local authority areas in England on the national Index of Deprivation (2010). Health inequalities within Leicester and compared to England as a whole have proved enduring. There are also areas of deprivation outside the city – notably certain wards of North West Leicestershire.

In general, the next 20 years is forecast to see an increasingly ageing population, particularly in the county areas. Of the total population growth of 32,000 to 2019, 22,000 will be in the over-65 group. This is largely a challenge in the county areas. By contrast, the key challenge in Leicester City will continue to be premature preventable death and disability.

As people grow older, there is a higher preponderance of long-term illness and disability. The number of people living with long-term conditions will grow as a population ages. Furthermore, many people will have multiple conditions, meaning their care needs are more complex. From a health need perspective there is a marked variation in life expectancy across LLR with the main factors contributing to mortality being cardio-vascular disease (CVD) and respiratory. Any plans for service improvement must respond to these challenges and make a significant contribution towards better outcomes.

## 2.4.2 Clinical Management in UHL

The Clinical Management is structured into seven management groups, with each group led by a Senior Consultant in the role of Director. The seven Clinical Management Groups (CMGs) are as follows:

- ▶ **CHUGS** Cancer, Haematology, GI Medicine and Surgery
- ▶ **ESM** Emergency and Specialist Medicine
- ▶ **CSI** Clinical Supporting & Imaging
- ▶ **ITAPS** Critical Care, Theatres, Anaesthesia, Pain and Sleep
- ▶ **MSK** Musculoskeletal and Specialist Surgery
- ▶ **RRCV** Renal, Respiratory, Cardiac & Vascular
- ▶ **W&C** Women's and Children's

## 2.4.3 Activity & Finance

The Trust was formed in April 2000 and achieved its financial targets for the first 12 years. Financial results for 2011/12 and 2012/13 show that the Trust made a surplus of £88k and £91k respectively. However 2013/14 was a challenging year both operationally and financially and the Trust reported a deficit for the first time since the organisation was formed. In 2014/15 there was a £40.6 million deficit against a plan of £40.7 million.

UHL provides hospital and community based healthcare services to patients across Leicester, Leicestershire and Rutland and specialist services to patients throughout the UK. As such, the main sources of income are derived from Clinical Commissioning Groups, NHS England, and education and training levies. The Trust is actively engaged with key stakeholders to implement NHS policy to improve health services in the local area through a range of formal and informal partnerships.

### Financial review for the year ended 31 March 2015

UHL did not meet all of its financial and performance duties for 2014/15; as it failed to breakeven. This was, however, in line with our deficit reduction plan. In respect of our duties:

- ▶ **Balancing the books** - delivery of an income and expenditure deficit of £40.6m
- ▶ **Managing cash** - we delivered both the External Financing Limit (EFL) and Capital Resource Limit (CRL)
- ▶ **Investment in buildings, equipment and technology** - invested £46.2 million in capital developments.

## 2.5 The Glenfield Site

Glenfield Hospital (GH) provides a range of medical and surgical services and forms part of the UHL Trust. It is located on the north-western edge of the city centre and is located close to the M1 and next to the A50, which is one of the main routes into Leicester providing easy access to main bus routes that serve the wider city. A hopper bus service connects this site to the LRI, LGH the Park and Ride; and runs at regular intervals.

## 2.6 Site Specific Constraints

The proposed Hybrid Theatre will be a 'new build' development within a grassed area to the north of the Glenfield site. A large tree sits within the development area. The local planning officer has been engaged with the 'felling' of the tree and is supportive. This consent was granted as one of the conditions of part of the larger planning consent for the hybrid theatre building proposal. LCC was received on the 15<sup>th</sup> June 2015.

## 2.7 Background to the Hybrid Theatre Requirement

The hybrid theatre solution is required to continue to develop specialist services at Glenfield:

- ▶ This facility is essential to Leicester being re-designated as a regional centre for treating complex aneurismal disease. The evolutionary trend in vascular surgery

is towards minimally invasive treatments for all patients with vascular disease and a hybrid facility is a vital component of any vascular centre in the future.

- ▶ A new Hybrid theatre will increase overall theatre capacity on the GH site increasing flexibility in theatre provision across UHL. This additional capacity will assist in the provision for essential maintenance requirements within Theatres (particularly at LRI) and provide capacity for future service transfers.
- ▶ The provision of a hybrid theatre will permit some procedures currently performed as two-stage procedures to be performed as a single procedure. For example, some thoracic aneurysms are currently repaired by performing an aortic arch de-branching at GH then placing an endovascular stent at a later date at the LRI. This is due to the separation of cardiac and vascular surgery. Many patients require combined radiological/surgical procedures for lower limb revascularization. These can be performed at the LRI but due to the requirement to use mobile imaging, image quality is suboptimal and this therefore represents a compromise in best practice. A hybrid theatre will improve care for these patients.
- ▶ The existing theatre suites do not allow for this type of installation due to space and structural issues. To continue to develop a number of services, additional theatre capacity is required. The co-location and adjacencies of a new build to the main theatres was considered to be the ideal solution.
- ▶ In addition, a small number of patients require a second procedure to be performed after surgery in the current angiography suites where imaging is better. This number cannot be quantified but an estimate is 10 patients per year, with a reduction in stay of approximately 4 days per patient. The hybrid theatre will contribute to better outcomes, greater patient satisfaction and reduced hospital stay. The move to GH and provision of a hybrid theatre will enable these procedures to occur concurrently and reduce patient stay by around 7 days. There are a very limited number of these procedures at present but would expect this number to increase.
- ▶ A hybrid theatre facility will also reduce the procedure times and improve theatre utilisation due to better imaging capability, compared to the current mobile imaging facility. Without a Hybrid theatre the Trust increases the risk of vascular services not being re-designated as a Level One centre, bringing with it a potential loss of activity and income to the organisation

## 2.8 Existing Arrangements

UHL currently does not have such a Hybrid Theatre – surgery is undertaken within existing theatres, radiology review is either undertaken with the aid of image intensifier equipment or, at a later point, via angiography. Both options are sub-optimal.

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The hybrid theatre concept is new to UHL. All surgery is currently undertaken in a number of theatre facilities at all three UHL sites. The space, adjacencies and quality of the existing accommodation provided for theatre and radiology procedures does not deliver to the level of expectations of recent clinical developments requiring either transfer of patients or equipment to undertake both elements. There is currently no dedicated combined theatre and imaging suite; patients are required to attend the main imaging department reducing efficiencies and patient experience and safety.

## 2.9 Strategy

This business case, and the associated corporate and project objectives, are supported by a number of significant strategic documents and programmes. This section provides an overview of the driving policies and guidance documents at National, Regional and Local level that can provide context and support the case for change in relation to increasing capacity and providing modern, accessible emergency services. These range from national and local strategies and programmes, to national and local standards and guidance.

### 2.9.1 National Strategies, Programmes and Guidance

Key national strategies, programmes and policies relevant to this project are summarised in the table below.

*Table 5 Strategic Guidance*

National	
Health and Social Care Act 2012	The government's Health and Social Care Bill outlines the future commissioning arrangements across the NHS

National											
NHS Operating Framework	<p>The Operating Framework for the NHS in England 2012/13 sets out the business and planning arrangements for the NHS. It sets out five high level outcome domains that the NHS should be aiming to improve (below). This business case delivers improvements against each domain:</p> <table border="1"> <tr> <td>Domain 1</td> <td>Preventing people from dying prematurely;</td> </tr> <tr> <td>Domain 2</td> <td>Enhancing quality of life for people with long-term conditions;</td> </tr> <tr> <td>Domain 3</td> <td>Helping people to recover from episodes of ill health or following injury;</td> </tr> <tr> <td>Domain 4</td> <td>Ensuring that people have a positive experience of care; and</td> </tr> <tr> <td>Domain 5</td> <td>Treating and caring for people in a safe environment; and protecting them from avoidable harm</td> </tr> </table>	Domain 1	Preventing people from dying prematurely;	Domain 2	Enhancing quality of life for people with long-term conditions;	Domain 3	Helping people to recover from episodes of ill health or following injury;	Domain 4	Ensuring that people have a positive experience of care; and	Domain 5	Treating and caring for people in a safe environment; and protecting them from avoidable harm
Domain 1	Preventing people from dying prematurely;										
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Domain 4	Ensuring that people have a positive experience of care; and										
Domain 5	Treating and caring for people in a safe environment; and protecting them from avoidable harm										
Quality, Innovation, Productivity and Prevention (QIPP)	<p>Within the national context of no significant growth in the NHS forecast, and a requirement to save £20bn by 2015, the Quality, Innovation, Productivity and Prevention (QIPP) is a national initiative looking to provide an integrated, systematic approach to large-scale change. Within this all NHS organisations are encouraged to make better use of existing resources and teams to deliver service improvements. The funding of a new hybrid theatre could secure the future of cardiac services in Leicester, Leicestershire and Rutland in accordance with these principles.</p>										
National Programmes of Care & Clinical Reference Groups	<p><a href="http://www.england.nhs.uk/ourwork/commissioning/spec-services/npc-crg/group-a/a04/">http://www.england.nhs.uk/ourwork/commissioning/spec-services/npc-crg/group-a/a04/</a></p> <p>NHS England is working with a range of stakeholders at a national level to determine the outcomes expected for specialised services. This will be achieved through the development of clinical strategies set out within five national Programmes of Care (PoC) which group together the prescribed (nationally agreed range of) specialised services. These strategies will enable the commissioning of services to be based on clear evidence and ensure that they are cost effective and patient focused. Vascular Services sits within the Internal Medicine PoC.</p>										
2013/14 NHS Standard Contract for Specialised Vascular Services (Adults)	<p>This document sets out the required service standards for vascular services. The most significant are:-</p> <ul style="list-style-type: none"> <li>▶ NHS Abdominal Aortic Aneurysm Screening Programme Guidance for Public Health &amp; Commissioners, July 2009.</li> <li>▶ Royal College of Radiologists – Setting the Standards of Providing a 24 hour Interventional Radiology service, September 2008.</li> <li>▶ Royal College of Radiologists – Standards in Vascular Radiology, 2011</li> <li>▶ NCEPOD Report 2005 – Abdominal Aortic Aneurysm – A service in need of surgery.</li> <li>▶ VSGBI &amp; Royal College of Surgeons – Training in Vascular Surgery &amp; Standards for Vascular Training, 2011</li> <li>▶ Medicines &amp; Health Products Regulatory Agency (MHRA) Joint Working Group to produce guidance on delivering the Endovascular Aneurysm Repair (EVAR) Service (RCR, BSIR, VSGBI, Vascular Anaesthesia Society of Great Britain and Ireland (VASGBI), MHRA Committee on the Safety of</li> </ul>										

National	
	Devices), December 2010
VSGBI: The Provision of Services for Patients with Vascular Disease, 2012.	The 'Provision of Services for Patients with Vascular Disease (2012)' states that almost 50% of patients with vascular disease present as an emergency and that they should expect to access a specialist vascular team incorporating: surgeons; radiologists; anaesthetists; clinical vascular scientists; specialist nurses and therapy staff. This document sets out the requirement for patients to have 24/7 access to specialist vascular care 'locally', recognising that patients may need to travel beyond their local hospital to receive this care.
Interventional Radiology: Guidance for Service Delivery (2010):	This guidance recognises that all acute hospitals should have access to IR services 24 hours a day, every day because an "...effective, well resourced IR service can contribute to significant efficiencies (financial and non-financial) in care pathways in both planned and emergency care."
HBN/HTM Guidance:	Health Building Notes (HBN) and Health Technical Memoranda (HTM) provide best practice guidance from the Department of Health. Each area of this project refers to the relevant guidance to inform patient flow and outline design concepts, including (but not limited to): HBN 04-01 Adult Inpatient Accommodation HBN 06 Radiology HBN 26 Theatres

## 2.9.2 Regional Strategy/Guidance

### Joint Strategic Needs Assessment (JSNA)

A Joint Strategic Needs Assessment (JSNA) is a statutory requirement (Health & Social Care Act 2012) placed upon the Directors of Public Health, Adult and Children's Services in all local authorities to guide the commissioning of local health, well-being and social care services. The JSNA provides a systematic method for reviewing the short and long term health and well-being needs of a local population.

The JSNA for Leicester (2012) states that:

"People in the city die early, particularly from circulatory diseases, cancers and respiratory disease. Poor health is largely driven by deprivation and exacerbated by lifestyle factors embedded within communities. The inequalities gap in health between Leicester and England is not narrowing and the gap between the more deprived and the more affluent communities within Leicester has remained a stubborn inequality. We want to improve the health and wellbeing of the poorest fastest."

Leicester is ranked 25th worst out of 326 local authority areas in England on the national Index of Deprivation (2010). There are also areas of deprivation outside the city – notably certain wards of North West Leicestershire.

In general, the next 20 years is forecast to see an increasingly ageing population, particularly in the county areas. Of the total population growth of 32,000 to 2019, 22,000 will be in the over-65 group. This is largely a challenge in the county areas. By contrast, the key challenge in Leicester City will continue to be premature preventable death and disability.

As people grow older, there is a higher preponderance of long term illness and disability. The number of people living with long term conditions will grow as a population ages. Furthermore, many people will have multiple conditions, meaning their care needs are more complex. From a health need perspective there is a marked variation in life expectancy across LLR with the main factors contributing to mortality being cardio-vascular disease (CVD) and respiratory. Any plans for service improvement must respond to these challenges and make a significant contribution towards better outcomes.

This re-emphasises the importance of the JSNA as the starting point for strategy development and commissioning decisions.

### National /Regional Cardiovascular Service Designation Review

The UHL Leicester Vascular Unit is currently designated as a Level 1 Centre (a major vascular service offering all arterial procedures including complex cases). This was as a consequence of the last East Midlands Cardiovascular Network safety, sustainability and accessibility review,

As part of the new specialised commissioning structures these designations are being reviewed. The process for national re-designation of vascular services began in April 2013. It is anticipated that the review will only designate and commission one centre in the East Midlands to provide complex vascular services. UHL aims to be re-designated as the level 1 centre for the East Midlands.

NHS England's standard contract for Specialist Vascular Services sets the following rationale and national strategic direction for vascular services *"to have specialised services for vascular disease concentrated in relatively few specialist centres in order to maximise the use of scarce and expert staff available on a 24 hour a day basis"*<sup>8</sup>. These specialist centres require co-located services including Intensive Care and Interventional Vascular Radiology. In addition it advocates co-location of a number of interdependent services including Interventional Cardiology, Cardiac surgery and Thoracic Surgery.

Meeting all of these requirements provides a key driver for future development of UHLs Vascular service and underpins the project subject of this business case.

## 2.9.3 A Blueprint for Health & Social Care in LLR: Better Care Together 2014 - 2019

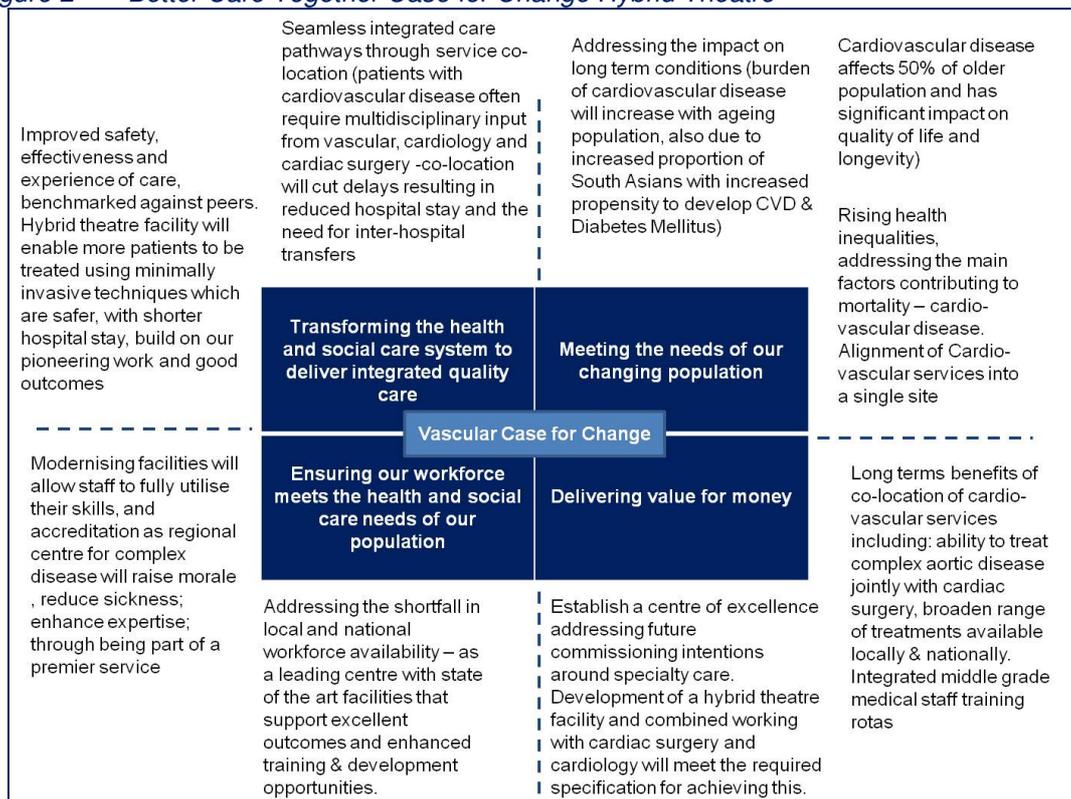
UHL is a key partner in developing the Better Care Together (BCT) programme. BCT represents a partnership of NHS organisations and local authorities across LLR, working together to transform the current and future delivery of services and ensure

<sup>8</sup> SSNDS Definition No.30 Specialised Services for Vascular Disease (adult) (3rd edition)

they are of the highest quality and capable of meeting the future needs of local communities.

Based upon the BCT schematic case for change, the Hybrid Theatre is summarised in the diagram below:

Figure 2 Better Care Together Case for Change Hybrid Theatre



## 2.9.4 Trust Vision

In the next five years, UHL will become a Trust that is internationally renowned for placing quality, safety and innovation at the centre of service provision. The Trust will build on its strengths in specialised services, research and teaching; offer faster access to high quality care, develop our staff and improve patient experience. The Trust calls this ‘Caring at its Best’.

The Trust recognises the challenges facing the organisation and the LLR health and social care system which are the consequence of significant internal and external challenges which include:

- ▶ The financial pressures facing public sector organisations
- ▶ Rigorous regulation of healthcare providers
- ▶ Changes in the wider health and political landscape
- ▶ Focus on choice and greater patient and community involvement
- ▶ Inherent inefficiency of current configuration
- ▶ Fiscal drag of aging estate reflecting incremental development

## 2.9.5 Strategic Objectives

Underpinning the vision and purpose are the strategic objectives of the Trust, these are to provide:

- ▶ Safe, high quality, patient centred healthcare
- ▶ An effective and integrated emergency care system
- ▶ Services which consistently meet national access standards
- ▶ Integrated care in partnership with others (local and specialised)
- ▶ Enhanced delivery in research, innovation and clinical education
- ▶ A caring, professional and engaged workforce
- ▶ A clinically sustainable configuration of services, operating from excellent facilities
- ▶ A financially sustainable NHS organisation
- ▶ Enabled by excellent IM&T

Figure 3 Trust Strategic Objectives

To continue our journey towards delivering Caring at its Best by:

- Reducing avoidable patient deaths and harm and improving patient experience, through the next phase of our Quality Commitment
- Raising levels of staff engagement by accelerating the spread of Listening into Action and improved leadership at all levels
- Starting our £320m investment programme (with the Emergency Floor) and introducing new models of care under Better Care Together
- Making further improvements to our emergency care system and hitting key patient access standards



By delivering the strategic vision the Trust will fulfil the purpose of providing 'Caring at its Best'.

## 2.9.6 Caring at its Best

The UHL team is made up of more than 10,000 staff providing a range of services primarily for the one million residents of Leicester, Leicestershire and Rutland. The nationally and internationally-renowned specialist treatment and services in cardio-respiratory diseases, cancer and renal disorders reach a further two to three million patients from the rest of the country.

UHL work with partners at the University of Leicester and De Montfort University providing world-class teaching to nurture and develop the next generation of doctors, nurses and other healthcare professionals, many of whom go on to spend their working lives with the Trust.

The Trust focuses on being at the forefront of many research programmes and new surgical procedures, in areas such as diabetes, genetics, cancer and cardio-respiratory diseases. UHL is now the home of three National Institute of Health Research (NIHR) Biomedical Research Units and during the year carried out over 800 clinical trials, bringing further benefits to thousands of patients.

The heart centre at the Glenfield Hospital continues to lead the way in developing new and innovative research and techniques, TAVI (Trans-Catheter Aortic Valve Insertion) and the use of the suture-less valves in heart surgery. UHL also have one of the best vascular services nationally, with more patients surviving longer after following an aneurysm repair (to fix a life threatening bulge in a blood vessel).

The Trust is proud to have some of the lowest rates of hospital-acquired infections, such as C. Difficile and MRSA, in the country; the hospital standardised mortality rates are very good, demonstrating a high clinical quality; with the provision of food also been rated as 'excellent' by an independent panel.

UHL's purpose is to provide 'Caring at its Best' and staff have helped to create a set of values, which are:

Figure 4 *Caring at its Best*



UHL patients are at the heart of all that is done at the Trust. 'Caring at its Best' is not just about the treatments and services provided but about giving patients the best possible experience.

Each element of the objectives and supporting strategy are performance managed through the Trust Board scorecard, regularly reported to Board through the Integrated Performance Report (IPR).

## 2.9.7 Clinical Strategy

The Trust's clinical strategy is focused on delivering high-quality, patient centred services in the most appropriate setting with excellent clinical outcomes. There will be a process of continual quality improvement for clinical outcomes, morbidity and mortality rates and other clinical indicators to ensure that the Trust remain the provider of choice for patients.

### ► Developing a more flexible and integrated workforce

The model of clinical practice will be to provide consultant delivered, rather than consultant led, patient care. It will create a sustainable workforce for the delivery of responsive multi-disciplinary clinical services 7 days a week which meets the needs of patients and clinicians. It will seek and exploit opportunities for service integration across health and social care by removing the historical barriers to change. Training and education will play an integral part in ensuring staff have the right skills now and for the future. Training opportunities to support self-care in long-term condition management and carers will be explored.

The strategy reflects the changes in population demographics, placing the patient at the centre of service planning and design ensuring that holistic patient centred care remains at the heart of everything we do. For example services will be tailored to meet the challenges of a rising elderly population; ensuring integrated care is provided across primary, community and social care. The Trust will work with partners to develop the infrastructure and networks to offer expertise across the health community to ensure that care for the older person is as seamless as possible.

### ► Consolidating and making better use of finite resource

People are living longer, and the NHS' ability to treat and help to manage conditions that were previously life-threatening continues to improve. Alongside this, the NHS faces a potential funding gap of around £30 billion by 2020/21 meaning that the NHS will need to radically transform the way it has traditionally provided care to new and innovative models necessitating a significant shift in activity and resource from the hospital sector to the community.

UHL will meet this funding gap by working collaboratively with its LLR Health & Social Care partners to re-design patient care pathways to ensure that they continue to provide high quality care, outcomes and patient experience whilst delivering value for money. The Trust has an on-going operating deficit in part related to the current configuration of its clinical services which do not optimise clinical adjacencies and patient pathways. In order to deliver financially sustainable, high quality services in the future, UHL's hospitals will need to become smaller and more specialised whilst supporting delivery of care in the community. As a consequence UHL has developed a clinical and estates strategy that optimises where and on which site its services are located as care pathways are changed to meet the financial challenge. The methodology about future location of services is clinically driven, evidence based, inclusive, open and

transparent, and involve patients and the public in a meaningful way however will necessitate tough decisions for the health community if it is to meet the 'value for money' test.

The Trust are proactively responding to the national drive towards fewer regional centres of excellence for specialised services by ensuring its services deliver innovative, high quality patient care through robust Research & Development programmes which enable patients to benefit from leading edge developments in the care of specific conditions.

The Trust will specifically seek to ensure it remains as a national centre of excellence for its work in Cardiac, Respiratory, Vascular, Renal, Cancer and Diabetes and significantly strengthen its portfolio of other key services to ensure they are sustainable in the future.

## 2.9.8 Trust Five Year Integrated Business Plan 2014 – 2019

The five year strategy was developed through four key phases: evidence gathering; analysis, synthesis and planning. In developing the strategy the Trust identified that it operated predominantly in two core markets:

- ▶ Local services for LLR where it is the major provider of local secondary care services
- ▶ The wider Midlands and East regional economy where the Trust is a key provider of specialised adult and children's services

## 2.9.9 Trust's Five Year Estate Strategy June 2014

The Trust has undertaken an exercise to review the strategic future of its estate, with a view to creating a development control plan that looks twenty years ahead. "The quality and fitness for purpose of the NHS Estate and the services that maintain it are integral to delivering high quality, safe and efficient care"<sup>9</sup>. It is also an area of significant spend; the budget for Estates and FM Services across the Trust in 2013/14 was £31m.

The Trust's estate strategy identifies the need for flexibility to move property from being a constraint to an enabler for change. UHL has developed a Hospitals Estate Transformation Plan which is based on a strategy that consolidates the estate, develops new facilities, disposes of surplus land and buildings and encourages third party partnerships that will raise income for the Trust. This will be a cornerstone of service reconfiguration and improved utilisation of the Trust's estate. This must be balanced by organisational and public expectations about the provision of highly specialised services alongside local access to primary and secondary care, in the context of high levels of public support for the associated hospitals. It is in this context that the opportunity for significant and far reaching estate transformation will be determined.

The Transformation Plan will;

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<sup>9</sup>Treasury Value for Money Update, 2009

- ▶ Underpin the strategic direction
- ▶ Support the clinical strategy to improve patient pathways and improve quality of care
- ▶ Support the strategic outline case for the whole site reconfiguration
- ▶ Show a clear implementation programme over five years for transformation with tangible benefits
- ▶ Improve the patient and staff built environment, investing in improved facilities and infrastructure; greatly aiding recruitment and retention
- ▶ Identify capital development to unlock the embedded value of Trust assets and support its ability to deliver clinical transformation and achieve QIPP efficiency savings

Efficient estate solutions will improve frontline service provision as well as achieving improved utilisation of the estate and unlocking its embedded value. This is possible by delivering a high quality clinical and working environment for patients and staff, resulting in better levels of productivity, flexibility and patient satisfaction. This will also support cross-CMG strategies that maximise optimisation of the estate resources across UHL. This strategy is relevant to this business case; the Estates Transformation Plan will set out detailed strategies for its three main hospital sites.

The Estates Strategy will be updated during 2015/16.

## 2.10 Summary

The development of a Hybrid Theatre as part of the creation of a vascular centre of excellence at GH is fully aligned with the national, regional and corporate strategies and policies. The co-location with other specialised services at Glenfield Hospital will ensure that safe, high quality patient-centred healthcare can be delivered to the population of Leicester, Leicestershire and Rutland.

In addition the creation of a hybrid theatre supports the following Trust aims and objectives:

- ▶ Safe, high quality, patient centred healthcare
- ▶ Services which consistently meet national access standards
- ▶ Integrated care in partnership with others (local and specialised)
- ▶ Enhanced delivery in research, innovation and clinical education
- ▶ A caring, professional and engaged workforce
- ▶ A clinically sustainable configuration of services, operating from excellent facilities
- ▶ A financially sustainable NHS organisation
- ▶ Enabled by excellent IM&T

A corporate decision has been taken that this project will progress at pace alongside the other vascular moves which have been expedited as enabling moves for the ICU project. Independently it still sits within the reconfiguration programme.

The Hybrid Theatre is key in supporting the Trust's Five year plan and service strategies for the future, by increasing specialist services on the GH site and by releasing theatre capacity at the LRI. In the context of national, regional and Trust strategies, it is recognised that investment is required to achieve the project objectives. The proposals detailed in this FBC provide a flexible solution that will enable the Trust to achieve these aims.

## Part B: The Case for Change

### 2.11 Introduction

The purpose of this section of the business case is to outline the strategic case for change.

### 2.12 Clinical Drivers for Change

- ▶ To enable the trust to undertake complex vascular surgery on patients who otherwise need to travel out of the county for care
- ▶ The increasing demand for vascular services is greater than the current capacity can provide. Historic trends in growth suggest a 5% annual growth in vascular services
- ▶ Requirement for single site vascular and cardio-thoracic departments that incorporates key adjacencies and presence of diagnostics and medical assessment services. This enables implementation of the developed model of care for both adults and children accessing these services
- ▶ Changes in the local and national demographics combined with the Trust's plan to develop a level 1 Vascular Centre for Leicester is impacting on increased demand
- ▶ The Trust requires additional capacity to reflect NHS national guidance. The Hybrid theatre (in-part) reduces the risk of compromising compliance of other standards of care such as quality, infection control, emergency and urgent care standards and commissioning standards
- ▶ Redevelopment and increased capacity will provide opportunities for the Trust to fulfil its strategic redevelopment programme

2.9

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2.12

## 2.13 Current Activity & Demand

### 2.13

#### 2.13.1 Increase in Demand

The creation of a Hybrid theatre facility offers the potential for growth in activity levels across a number of specialties, notably the repatriation of complex cardiac and vascular surgery currently sent to Birmingham, Liverpool and London.

It is possible that as a result of regional reconfiguration a larger proportion of vascular surgical patients from across the East Midlands may be directed to UHL, and the provision of a Hybrid Theatre will be influential in this. It is anticipated that the regional reconfiguration will result in a two-centre model for the region (currently 5 units); generating an additional increase in complex endovascular workload of c.15 to 30 cases per annum at a minimum tariff payment of £6021 per case (PBR tariff £6021 for standard EVAR and fenestrated EVAR, £7582 for thoracic EVAR). This would generate a potential additional income of £90,315 to £180,630 per annum.

Currently the East Midlands Clinical Senate and East Midlands commissioners are examining the pathways to deliver effective vascular surgical services across the region. This is in part due to the inability of the Lincolnshire to currently provide/sustain a viable service. It is acknowledged that it is not yet possible to quantify this potential additional activity, however Professor Rowbotham (East Midlands Senate clinical lead) has met with the UHL Vascular Surgeons to determine how the unit can help with this problem and the service therefore expects that a proportion of the 'standard' elective workload from Lincolnshire will be performed in UHL as outreach services from UHL in the future. A 50% share of the current workload from Lincolnshire would represent 25 Aortic Aneurysm repairs and 11 Carotid Aortic Aneurysms per year. These discussions are now being extended to Northampton. It is important to realise that this work would also include all aspects of vascular surgery and if a decision is made for UHL to take on this additional work then additional capacity (over that planned in the OBC) will be required.

## 2.14 Constraints and Dependencies

The constraints and dependencies relevant to the project are:

- ▶ **Budget** - the Trust has made provision to fund this scheme from its capital programme over two financial years (2014/15 + 2015/16)
- ▶ **Physical** – the works will be taking place adjacent to a live clinical environment with limited access internally. The construction access to the proposed Hybrid Theatre locations is constrained due to the adjacency of access roads to the larger site and mature trees.
- ▶ **Timescales** – to continue to develop and support Vascular and cardiac services, the expectation is that the Hybrid theatre will be delivered and operation by December 2016.
- ▶ **Infrastructure** – any development of GH site is contingent upon the required estate infrastructure to support developments. A site-wide infrastructure review

has been commissioned by the Trust and Glenfield Hospital has been the first site surveyed.

- **Trust Transformation Programme** - Trust wide schemes for redevelopment of the Trust sites are all interdependent. It is essential that phasing and enabling works are scoped accurately to minimise any disruption.

## 2.15 Stakeholder Engagement

During July/August 2013 a public engagement / consultation exercise was undertaken with both patients and members of staff to assess support for the Trust's plans for a single site take for Surgery. In addition there were specific questions relating to the vascular services transfer. Both paper and online surveys were undertaken. The results are indicated below, with further detail in Appendix 1.

Table 6 Patient Survey Response

	Question	Total	Yes	No	Blanks	Yes%	No%
Paper	Do you support our plans to develop Vascular Services with a new Hybrid Operating Theatre inpatient ward and Angiography suite	49	43	3	3	93%	7%
Paper	Do you support the plans to bring together our Vascular, Cardiac and Thoracic teams to improve the outcomes of our patients?	49	44	3	2	94%	6%
Paper	If the Vascular Service was moved to the Glenfield Hospital to provide better outcomes for our patients would it provide you as a patient with any problems	49	9	26	14	26%	74%

Further stakeholder engagement has been undertaken as part of the development of the Full Business Case supported by the Communications Department.

## 2.14

### 2.14.1 UHL Quality Commitment

UHL are committed to improving the quality and safety of care for patients. The quality commitment articulates 3 key aims:

- **Provide Effective Care – Improve Patient Outcomes.** “To deliver evidence based care/best practice and effective pathways and to improve clinician and patient reported outcomes”

- ▶ Improve Safety – Reduce Harm. “To reduce avoidable death and injury , to improve patient safety culture and leadership and to reduce the risk of error and adverse incidents”
- ▶ Care and Compassion – Improve Patient Experience. “To listen and learn from patient feedback and to improve patient experience of care”

Figure 5 UHL's Quality Commitment



This case has been developed with a view to enhancing delivery of the quality of care by:

- ▶ Improving patient pathway management reducing the clinical risk and discomfort through the emergency care pathway
- ▶ Improving the patient experience
- ▶ Enhancing Patient safety and reducing clinical risk

As a consequence a Due Regard/Quality Impact Assessment has been undertaken to ensure that these commitments are recognised as part of the development, which can be found at Appendix 2.

## 2.16 Investment Objectives, Key Deliverables & Benefits Criteria

In the context of the above and the Trust's Corporate objectives outlined in Section 2.9, the 'SMART' investment objectives for this project are detailed below as part of the wider Benefit's Realisation Plan, clearly outlining what the scheme is set to achieve and how.

It is important to note that agreement of the following from the Project Board, Steering Group and wider stakeholder group, informed the Qualitative Benefits Appraisal detailed in the Economic Case.

Table 7 Investment Objectives & Wider Benefits Realisation Plan

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
A. Business Need	1. To develop a centre of excellence, enhancing the Trust's reputation for training, service delivery and treatment, through the provision of a centralised service in modern accommodation.	Support and consolidate the provision of cardio-vascular services on one site	<ul style="list-style-type: none"> <li>Robust Design process</li> <li>Engagement of stakeholders</li> <li>Key internal agencies compliant with Strategic guidance</li> </ul>	<ul style="list-style-type: none"> <li>Reconfiguration will allow vascular &amp; cardio-vascular services to be co-located providing a new pathway for treatment</li> <li>Clinically appropriate treatment</li> <li>In centre of excellence (critical mass and centralisation of service)</li> </ul>	<ul style="list-style-type: none"> <li>Vascular &amp; Cardio-vascular Departments is on one single site</li> <li>Stakeholders agree and sign off on design</li> <li>Surgery and radiological follow-up are implemented as key agencies</li> </ul>	Completed in December 2016 as final part of vascular relocation	Project Board
	2. To increase the productivity of surgical vascular & cardio-thoracic care at Glenfield	Improve patient pathway management reducing the clinical risk and discomfort through the surgical care pathway	<ul style="list-style-type: none"> <li>Patient information</li> <li>Improved patient pathway</li> <li>Trust KPI targets</li> </ul>	<ul style="list-style-type: none"> <li>Clinically appropriate transfer of patients</li> <li>Reduced LOS as a result of 'one stop' procedures</li> <li>KPI targets meet</li> </ul>	<ul style="list-style-type: none"> <li>PLACE surveys and complaints register</li> <li>Trust risk register</li> </ul>	December 2016	CMG
B. Strategic Fit	3. To ensure that the changing needs and expectations of a growing population are met in line with Trust clinical strategy and national guidance standards	Ensures that the service model of care is delivered in line with National, Trust and local health economy KPIs	<ul style="list-style-type: none"> <li>Compliance to best practice standards and national and local KPIs</li> </ul>	<ul style="list-style-type: none"> <li>Improved patient experience</li> <li>Increased percentage of patients seen within the 4 hour target</li> </ul>	<ul style="list-style-type: none"> <li>Patient survey (PLACE)</li> <li>Current quarterly performance reports</li> </ul>	Patient survey has to be carried out prior to implementation of new service	CMG
C. Quality	4. To improve the clinical effectiveness and safety of vascular & cardio-vascular service across Leicester	Quality of care is enhanced, in terms of the model of care, and seamless pathways of care and patient flows.	<ul style="list-style-type: none"> <li>Model of care and design enhance efficiencies in reducing number of separate procedures and LOS</li> </ul>	<ul style="list-style-type: none"> <li>Acute and elective pathways reflecting best practice</li> <li>Reduced LOS</li> </ul>	<ul style="list-style-type: none"> <li>Current data</li> <li>Quality indicators report</li> <li>Quarterly performance reports</li> </ul>	December 2016	CMG
		The built environment enhances clinical practice that support clinical effectiveness, improved patient outcomes and patient safety	<ul style="list-style-type: none"> <li>Robust Design process</li> <li>Engagement of stakeholders</li> <li>Key internal agencies compliant with Strategic guidance</li> </ul>	<ul style="list-style-type: none"> <li>KPI figures reflect current benchmark relating to patient safety, referral, diagnosis and treatment time</li> </ul>	<ul style="list-style-type: none"> <li>PLACE surveys and complaints register</li> <li>Staff surveys</li> <li>2012/13 Quality indicators</li> <li>2012/14 performance reports</li> <li>Staff surveys</li> </ul>	December 2016	Project Board
	5. To improve the clinical agencies of services to optimise clinical safety and reduce clinical risk.	Provides enhanced departmental relationships and clinical agencies that support clinical effectiveness and improved patient outcomes	<ul style="list-style-type: none"> <li>Key internal agencies compliant with Strategic guidance</li> </ul>	<ul style="list-style-type: none"> <li>Centralisation of vascular &amp; cardio-vascular surgery ensuring:</li> <li>Patient focused pathways with more rapid and increased access to specialist care</li> </ul>	<ul style="list-style-type: none"> <li>2012/13 Quality indicators</li> <li>2012/14 performance reports</li> <li>Staff surveys</li> </ul>	December 2016	Project Board
D. Sustainability, Service Modernisation, Value for Money	6. To equip the Hybrid Theatre to respond effectively to existing and known commissioning requirements, as well as to respond flexibly to future changes in service direction and demand.	Improved patient flow for 'one stop' procedures. Flexible use of theatre space	<ul style="list-style-type: none"> <li>Design provides seamless surgical facility to cardio-thoracic procedures</li> </ul>	<ul style="list-style-type: none"> <li>PLACE scores/audits will reflect positive patient feedback</li> </ul>	PLACE surveys	December 2016	CMG

Investment Objective	Project Objective	Benefit	Enablers	Outcome	Baseline Measure	Target date	Owner
	7. To create a design which is fit for purpose	Improved Privacy and dignity provisions for all patients	<ul style="list-style-type: none"> <li>• Design provides an appropriate caring environment to facilitate the best care for patients</li> </ul>	<ul style="list-style-type: none"> <li>• PLACE scores/audits will reflect positive patient feedback</li> </ul>	PLACE surveys	Summer 2017	CMG
		Consolidates existing services & provides clinical expertise whilst realising the Hybrid theatre concept	<ul style="list-style-type: none"> <li>• Specialist theatre and radiology staff (existing and new) to be recruited to staff facility</li> </ul>	<ul style="list-style-type: none"> <li>• Reconfiguration will allow cardio-thoracic/vascular to be co-located providing an enhanced pathways for assessment and treatment</li> </ul>	<ul style="list-style-type: none"> <li>• PLACE surveys and complaints register</li> <li>• Trust risk register</li> <li>• 2012/13 risk register</li> <li>• Staff surveys</li> <li>• 2012/13 Quality indicators</li> <li>• 2012/14 performance reports</li> <li>• Staff surveys</li> </ul>	Summer 2017	Project Board
E: Meeting Commissioners' intentions for healthcare services	8. The development will be delivered on time with minimal disruption to current service delivery	The enabling moves will facilitate the vascular service whilst minimising delay to delivery	<ul style="list-style-type: none"> <li>• OBC and FBC approval</li> <li>• Planning approval</li> <li>• Efficient programme management</li> <li>• Robust Design process</li> <li>• Engagement of stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Post Project Evaluation highlights project is completed on time and Vascular services provided with minimal disruption</li> </ul>	Programme plan	Summer 2017	Project Board
		Reduces complexity and sequence dependency of enabling moves	<ul style="list-style-type: none"> <li>• OBC and FBC approval</li> <li>• Planning approval</li> <li>• Efficient programme management</li> <li>• Robust Design process</li> <li>• Engagement of stakeholders</li> </ul>	Design process and programme plan implemented that utilised a solution with minimal complexity and dependency on enabling works/moves	Programme plan	Summer 2017	Project Board

## 2.17 Benefits Realisation

Work has been undertaken by the Trust to identify and quantify the clinical benefits resulting from this project. These include:

- ▶ **Strategic Fit:** in keeping with the longer term site reconfiguration proposals, acting as an enabler to other service moves and relocation. Enables the co-location of services that supports evidence based practice, innovation in developing new models of care and provides a seamless service to adults.
- ▶ **Clinical Quality and Patient Safety:** access to senior decision makers, immediate diagnostic support on one site
- ▶ **Patient Outcomes:** reduced harm, improved morbidity and mortality and opportunities for improved clinical outcome.
- ▶ **Patient Experience:** no delays system in a dedicated bespoke environment
- ▶ **Clinical Staff & Resources:** improved patient flow, proximity of services and an environment tailored to meet demand will increase staff satisfaction, improve morale and mitigate stress

## 2.18 Potential Business Scope & Key Service Requirements

The Trust is seeking to improve its vascular facilities through the development of a purpose-built hybrid theatre for the provision of surgical care.

The main components of the required scope for the new Hybrid Theatre are:

- ▶ Hybrid Theatre
- ▶ Anaesthetic Room
- ▶ Theatre Store
- ▶ Mechanical and Electrical Plant Room
- ▶ Diagnostic Imaging
- ▶ Theatre Preparation Room
- ▶ Connecting orridor to existing Theatre complex
- ▶ Dirty Utility

## 2.19 Summary

The creation of a hybrid theatre will help further develop vascular services with cardiology / cardiothoracic services at Glenfield and will reinforce the vascular services re-designation as a Level One centre, giving them the ability to continue to attract the complex cases from both around the region and nationally. This combined with the vascular surgeon's outstanding clinical portfolio and results will keep Leicester as one of the country's top centres for this type of surgery. This will bring research and academic recognition and ensure that the reputation of UHL as a centre of excellence is sustained such that UHL continues to retain and attract the best surgeons in the country.

The development of a new Hybrid theatre is an investment that will provide opportunities to safeguard a number of services (as national commissioning continues in earnest) and further develop the range of procedures it can deliver. It will benefit Cardiology, Cardiothoracic Services through access to these facilities, again further developing the range of procedures they can offer and developing closer working practices between the services.

In the context of the national, regional and Trust strategies, it is recognised that investment is required to achieve the project objectives. The proposals outlined in this FBC provide a flexible solution that will enable the Trust to achieve these aims.

## 3 | The Economic Case

### 3.1 Introduction

In accordance with the Capital Investment Manual and requirements of HM Treasury's Green Book (A Guide to Investment Appraisal in the Public Sector), this section of the FBC reaffirms the preferred option highlighted in the OBC. It reviews the changes in capital and revenue costs from the OBC and identifies reasons why the changes have happened and their impact on the position of the preferred option.

#### 2.15

The OBC approved by the Trust Board covered the transfer of the vascular service to the Glenfield Hospital, the development of an angiography suite for vascular patients and the development of a Hybrid Theatre to support the expansion of the vascular service.

### 3.2 OBC Options Appraisal

The three shortlisted options at OBC stage were as follows:

- ▶ **Option A:** Vascular ward/VSU on ward 23a; angiography suite in vacated TSSD, hybrid theatre in new build in courtyard
- ▶ **Option B:** Vascular ward/VSU on ward 23a; angiography suite in vacated TSSD, hybrid theatre in combined theatres 5 and 6
- ▶ **Option C:** Vascular ward/VSU on ward 23a; angiography suite in vacated TSSD, hybrid theatre in converted theatre 9

The OBC financial appraisal across all vascular services can be summarised in the following table:

*Table 8 OBC Economic Appraisal Summary*

Option	Appraisal period	NPC £'000	Risk Adjusted £'000	Risk Adjusted NPC £'000
Do Nothing	60 years	237,892	0	238,272
Option A	60 years	378,437	380	378,817
Option B	60 years	379,701	412	380,113
Option C	60 years	376,714	332	377,046

This was combined with the non-financial scores to provide a combined appraisal resulting in the following:

Table 9 Combining the OBC Financial and Non-Financial Scores

Option	Option A	Option B	Option C
Weighted Scores	878.9	638.7	649.9
Rank (non-financial)	1	3	2
Net present cost (NPC) (£k)	378,438	379,701	376,715
Rank (VFM)	2	3	1
NPC per point score (£k)	431	594	580
Rank	1	3	2

In conclusion, Option A was identified as the preferred option which has been progressed to FBC stage.

At the time of the OBC, the Do Minimum was not evaluated from a non-financial perspective. This was subsequently carried out on a consistent basis by the same team involved in the original option appraisal. The weighted score for the Do Minimum was 314.5. The Net Present Cost (NPC) per benefit point would therefore have been £756 and the Do Nothing would have been ranked 4<sup>th</sup>.

### 3.2.1 Estimating Costs

The FBC costs have been determined by Interserve Construction and the Trust's Cost Advisors, and are in accordance with NHS standards. The total capital costs for the preferred option at OBC stage and FBC stage are summarised below.

Table 10 Vascular Capital Costs for the Hybrid Theatre, Vascular Ward, Angiography Suite and Vascular Studies Unit at OBC &amp; FBC

Capital Costs	OBC Stage	FBC Stage
	(£)	(£)
Construction	6,007,911	6,434,391
Fees	1,568,256	1,341,404
Non Works Costs	603,200	687,394
Equipment	1,656,298	1,310,586
Planning Contingency	464,023	381,983
Optimism Bias	802,761	368,176

<b>Total for approval purposes</b>	<b>11,102,448</b>	<b>10,523,934</b>
Inflation	845,712	2,664,753
<b>Grand Total</b>	<b>11,948,160</b>	<b>13,188,687</b>

The above analysis shows a reduction in costs at a common price base for approval purposes (PUBSEC 173) of 5.2%. The OBC had assumed a PUBSEC index of 191 to forecast outturn expenditure this has increased to PUBSEC 213.

This FBC reflects the Hybrid theatre component of the Vascular OBC. The Trust has calculated the split of the overall OBC cost to identify any changes on costs reflecting the ward development. This is as follows:

*Table 11 Hybrid Theatre Capital Costs at OBC & FBC*

<b>Capital Costs Hybrid Theatre</b>	<b>OBC Stage (£)</b>	<b>FBC Stage (£)</b>
Construction	1,849,221	2,053,281
Fees	482,706	414,982
Non Works Costs	0	0
Equipment	1,351,400	1,122,394
Planning Contingency	184,905	145,786
Optimism Bias	319,886	140,516
<b>Total for approval purposes</b>	<b>4,188,117</b>	<b>3,876,959</b>
Inflation	318,771	951,537
<b>Grand Total</b>	<b>4,506,888</b>	<b>4,828,496</b>

This reflects a 9.6 % reduction in the approval sum, comparing the outturn figures for the total vascular programme and the vascular hybrid theatre project. The percentage changes in capital cost are as follows:

Vascular Programme -10.4%

Vascular Hybrid Theatre Project – 7.1%

### 3.2.2 Revenue costs

The revenue changes in the OBC have been reviewed and worked up in more detail. The following table reflects the position at OBC of the preferred option:

Table 12 OBC Revenue Costs for all Vascular Services

Revenue cost for GEM	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20	2020 /21
	£'000	£'000	£'000	£'000	£'000	£'000
Current Costs (Do Nothing)	11,854	11,854	11,854	11,854	11,854	11,854
Additional staff costs	0	0	825	882	810	570
UHL Other staff	0	0	613	1,226	1,226	1,226
New FM costs	0	0	113	150	150	150
Additional Non Pay	0	0	28	37	37	37
<b>Total Costs</b>	<b>11,854</b>	<b>11,854</b>	<b>13,433</b>	<b>14,149</b>	<b>14,077</b>	<b>13,837</b>

This showed an increase in costs of circa £2.5 million. Some of these costs were transitional and the additional cost was reduced to £2.1 million by 2020/21. A significant element of these costs related to theatres at the LRI, where £1.2 million had been allowed for to reflect the additional cost of running emergency theatres on three sites and the level of fixed costs at the LRI. The additional costs were partially offset by additional income of £368,000 per annum

The current position for the vascular programme is as follows:

Table 13 FBC Revenue Costs for all Vascular Services

Revenue cost for GEM	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20	2020 /21
	£'000	£'000	£'000	£'000	£'000	£'000
Current Costs (Do Nothing)	11,854	11,854	11,854	11,854	11,854	11,854
Additional staff costs	0	1,542	1,498	1,498	1,498	1,498
Savings from 2 Site consolidation					(1,255)	(1,255)
New FM costs	0	0	12	48	48	48
Additional Non Pay	0	19	88	184	184	184
<b>Total Costs</b>	<b>11,854</b>	<b>13,414</b>	<b>13,452</b>	<b>13,584</b>	<b>12,329</b>	<b>12,329</b>

Additional costs have been reviewed in the context of the requirement for Angiography and theatres at the Glenfield. The Vascular programme now accounts for the critical care moves required to be implemented to ensure sustainability of the service. Additional income of £187,000 in 2016/17 and £486,000 in 2017/18 has been assumed.

The additional costs for vascular hybrid theatres in the OBC have been identified as follows, these allow for an uplift to the baseline to account for the Vascular Ward and the Angiography business cases:

Table 14 OBC Revenue Costs Hybrid Theatre

Revenue cost for Hybrid Theatre	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20	2020 /21
	£'000	£'000	£'000	£'000	£'000	£'000
Current Costs (Do Nothing)	11,854	11,854	13,198	13,870	13,798	13,558
Additional staff costs	0	0	101	101	101	101
UHL Other staff	0	0	0	0	0	0
New FM costs	0	0	113	150	150	150
Additional Non Pay	0	0	21	28	28	28
<b>Total Costs</b>	<b>11,854</b>	<b>11,854</b>	<b>13,433</b>	<b>14,149</b>	<b>14,077</b>	<b>13,837</b>
Additional costs of Hybrid theatre	0	0	235	279	279	279

This compares to the following FBC position:

Table 15 FBC Revenue Costs Hybrid Theatre

Revenue cost for GEM Hybrid Theatre	2015 /16	2016 /17	2017 /18	2018 /19	2019 /20	2020 /21
	£'000	£'000	£'000	£'000	£'000	£'000
Current Costs (Do Nothing)	11,854	13,379	13,279	13,279	12,024	12,024
Additional staff costs	0	25	101	101	101	101
Savings from 2 Site consolidation	0	0	0	0	0	0
New FM costs	0	0	12	48	48	48
Additional Non Pay	0	10	60	156	156	156
<b>Total Costs</b>	<b>11,854</b>	<b>13,414</b>	<b>13,452</b>	<b>13,584</b>	<b>12,329</b>	<b>12,329</b>
Additional Cost of Angiography	0	35	173	305	305	305

There is a small increase in the revenue costs as a result of allowing for equipment maintenance. This offset by the assumption that FM costs would be saved as a result of vacating accommodation at the LRI. The FBC anticipates that the Hybrid theatre will be operational by December 2016.

### 3.2.3 Summary of FBC Position compared to OBC

The changes between OBC and FBC are as follows:

Table 16 Changes between OBC and FBC

	OBC £'000	FBC £'000	Comment
Capital Costs – Approval Sum Vascular Programme	11,102	10,524	Equipment at FBC deflated to account for Capital Cost inflation reduction of 5.2%
Capital Costs – Outturn Vascular Programme	11,948	13,188	Capital cost inflation significantly higher than that anticipated at OBC. Increase of 10.4%
Capital Costs Approval Sum Hybrid theatre	4,188	3,876	Decrease of 7.4%
Capital Costs Outturn Hybrid Theatre	4,507	4,828	Increase of 7.1%
Annual Revenue Costs (2020/21)	13,837	12,329	Revision of radiology and non-recurrent costs in Vascular Ward business Case. Small increase in hybrid theatre costs to reflect equipment maintenance offset by FM savings. Overall reduction in revenue of 10.8%

### 3.2.4 Compliance with Capital Investment Manual & NTDA Thresholds

Capital costs have reduced in respect of the approval sum and increased in respect of outturn. Revenue costs for the hybrid are slightly increased to account for equipment maintenance offset by an assumed saving on FM. However the overall costs of Vascular have reduced as a result of assuming the saving on non-recurrent costs on consolidation and revision on radiology costs.

Capital costs are greater than in the OBC, although the scheme is within the 10% threshold in respect of the approval sum. Although the Capital Investment Manual (CIM) states that the option appraisal should be reviewed if costs are outside 10% capital or 5% revenue either way, all the options from a revenue perspective would be affected in a similar way. It is also likely that the capital position for each option would be impacted the same, the next best Option (option 3) would need to reduce revenue costs by over £4 million to become preferred option at OBC this saving would then need to be greater in a revised option appraisal. Even if there was no capital expenditure in Option 3 it would still not be the preferred option. On this basis the preferred option at OBC stage still stands.

## 3.3 The Preferred Option

The Hybrid Theatre scheme will be a new build construction to the northern end of the Glenfield Hospital building adjacent and connected to the theatre complex at 1st floor level. The theatre will be accessed via the existing theatre complex and utilize its ancillary accommodation. This is future proofed to allow further expansion for theatres if required.

### 3.3.1 Design Solution

The final design solution has been developed from OBC to FBC in conjunction with detailed discussions with key clinical stakeholders at all times from initially developing operational policies, patient flows and clinical models to further refinement with the development of a Planning Policy and Design Description document to inform the design solution.

The Trust identified a number of key design principles, which underpinned the development of the design solution.

- ▶ Be fit for purpose
- ▶ Deliver high quality, safe, efficient and effective care
- ▶ Improve patient and staff experience by ensuring patients receive high quality care and service in modern health-care facilities
- ▶ Generic design of facilities to ensure maximum flexibility for future service developments
- ▶ Future proof wherever possible.
- ▶ Conforms to current HBN whenever possible
- ▶ Creates an environment, which respects the needs of all patients in terms of privacy and dignity.

It was recognized that models of service delivery change with time, and therefore essential that the facilities are able to respond to the future changes in technology but also changes in clinical support services. From October 2014, the design team worked with clinical stakeholders to further develop the design from 1:200 as described within the OBC, to more detailed 1:20 detail to show functional room layouts. The Hybrid Theatre design solution was based upon detailed activity reflecting the transfer of vascular activity to the Glenfield Hospital site and with capacity modelling undertaken within the Vascular OBC.

The theatre will comprise of:

- ▶ One hybrid theatre with C arm scanning capability
- ▶ Hybrid theatre to include laminar air flow
- ▶ Anaesthetic room
- ▶ Control room for scanning equipment
- ▶ Theatre Preparation room
- ▶ Clean utility store

- ▶ Vascular Graft store
- ▶ Vascular catheter store
- ▶ Dirty utility
- ▶ Scrub room
- ▶ IT server room
- ▶ Mechanical and Electrical plant room – accessed via 2nd floor

The design solution, including schedule of accommodation and equipment has been reviewed and formally signed-off by all key stakeholders.

Schedules of accommodation and outline 1:20 layouts are described in more detail within the Estates Annex Appendix 3.

### 3.3.2 Equipment Strategy

The specialist equipment required for the vascular hybrid theatre will be procured through the NHS Supply Chain Frameworks. Four suppliers of this equipment exist in the market; Siemens; Toshiba; GE Healthcare; and Phillips.

From initial quotations against an agreed specification it was identified that only two suppliers could meet the needs of the Trust. These were invited to submit further quotations.

Following supplier meetings, the evaluation panel assessed the offers against agreed weighted benefit criteria, with the outcome of the Siemens Zee Q ranked first on a value for money assessment.

The procurement route is still being evaluated: the options are purchasing the equipment or procurement through the Trust's Managed Equipment Service (MES). Assumptions in the cost plan cover procurement through either route.

## 4 | The Commercial Case

### 4.1 Introduction

This section of the FBC outlines the proposed procurement strategy in relation to the preferred option outlined in the Economic Case.

- ▶ Procurement of the specialist Hybrid Theatre equipment;
- ▶ Construction/ installation services.

### 4.2 Procurement Strategy

Key external advisors and construction services are as follows:

Table 17 Key External Advisors & Construction Services

Role	Organisation
<b>Pre-construction</b>	
Business case preparation	Trust
Mechanical and electrical consultants	Capita
Architects	P&HS
Structural engineers	Curtains
Cost consultants	RLB
CDM	Interserve
Trust project management & cost advisors	RLB
GMP development	Interserve Construction
<b>Construction</b>	
CDM	RLB
Project management & cost advice	RLB
Building contractor	Interserve Construction
MEP Detailed Design & Installation	Interserve Construction

Under the framework, Interserve Construction has:

- ▶ Taken single point responsibility to manage the design and construction process from completion of OBC through to project completion

- ▶ Assembled a dedicated team from its supply chain of experienced health planners, designers and specialists, to successfully deliver facilities that will benefit patients and staff alike
- ▶ Provided benefits of experience of long term partnering arrangements that will continue throughout the life of the project
- ▶ Committed to identifying construction solutions that will assist in the implementation of improved service delivery, best practice and delivering best value

Interserve Construction and UHL have worked together through the FBC stage to develop and agree a guaranteed maximum price (GMP) for delivery of the scheme. This reflects:

- ▶ Fees for professional advice such as design and cost management
- ▶ Market tested packages for construction works on an open book basis

The GMP has been received and falls within the value allowed within the cost allowances highlighted in sections 3 and 5. The GMP will now be assessed for overall value for money and affordability by cost consultants acting for UHL (Rider Levett Bucknall - RLB). This will take into account elements such as:

- ▶ Prevailing rates for similar works nationally and locally
- ▶ Published cost indices
- ▶ Knowledge of the cost of work in the hospital from other recent schemes
- ▶ Prime contractor and client retained risks as identified in the joint risk register

This assessment will be complete by Thursday 30<sup>th</sup> July 2015.

## 4.3 Key Factors Affecting Outcomes

### 4.3.1 Planning Permission

The preferred solution is a new build solution and as such required planning consent – Planning consent was granted 15<sup>th</sup> June 2015. A number of conditions were stipulated and are described within the Estates Annex however none are deemed to be onerous and will be delivered as part of the scheme.

## 4.4 Risk

A detailed risk register has been developed throughout the FBC process which is regularly reviewed and updated. This is a combined risk register for all components of the vascular service move (hybrid theatre, angiography suite and VSC and ward) which includes common risks as well as those attributable to only one project. The latest version is attached at Appendix 4.

Risks will be classified as:

- ▶ Client – these will be the responsibility of the Project Board to manage and monitor
- ▶ Contractor – a project specific risk register will be set up for the Project. These will be the responsibility of the Contractor to monitor and will form part of the GMP

The qualification of the costs of identified risks will enable the calculation of a realistic client contingency.

A pro-active risk management regime will be employed throughout the project. It is essential on any project (in particular one of this size and complexity) that the risk management process involves all key members of the project team including:

- ▶ Trust Estates
- ▶ Trust FM
- ▶ Project Consultant Team
- ▶ Contractor
- ▶ Designers

For each identified risk the following are noted:

- ▶ Reference
- ▶ Category
- ▶ Risk and associated likely impact
- ▶ Probability and impact factors and associated overall risk rating
- ▶ Mitigation measures
- ▶ Cost and time impacts
- ▶ Risk owner and / or manager
- ▶ Action Date

Over time the allocation of the individual risks (Trust or PSCP) will also be reviewed to ensure risks are placed with the party best placed to deal with it.

## 4.5 Proposed Charging Mechanisms

The Trust intends to make payments in relation to works required in accordance with the Proposed Key Contractual Clauses in the Lot 2 framework.

## 4.6 Proposed Contract Lengths

A period of mobilisation would be required following approval of the FBC. The indicative construction programme reflected in the capital cost FB forms is 12 months (plus 2 months technical commissioning).

It should be noted that there would potentially be a 10-12 week lead time on any steel orders required in addition to manufacture time associated with the construction of the Hybrid Theatre (8-12 weeks lead time) and the potential lead in time for specialist equipment – this would be applicable across all procurement routes

It is planned to raise the purchase order on August 10<sup>th</sup>, following Trust Board approval on August 6<sup>th</sup>, at the same time as that of the Vascular Ward and Angiography Suite, in order to achieve the identified benefits of combined preliminaries.

## 4.7 Financial Reporting Standard 5 Accountancy Treatment

Any assets underpinning delivery of the service will be reflected on the Trust's balance sheet.

## 5 | The Financial Case

### 5.1 Introduction

The Financial Case examines the affordability of the options and sets out the financial implications for the Trust in terms of capital expenditure and cash flow, income and expenditure account and borrowing. The purpose of this section is to set out the forecast financial implications of the preferred options as set out in the Economic Case and the proposed deal (as described in the Commercial Case).

### 5.2 Capital Costs

The capital costs of the preferred option total £4.2m outturn and £3.8m approval sum. Below is an analysis of the total costs.

*Table 18 Summary of Capital Costs*

Capital Costs	£
Construction	2,053,281
Fees	414,982
Non Works Cost	0
Equipment	1,122,394
Planning Contingency	145,786
Optimism bias	140,516
Sub Total	3,876,959
Inflation	951,537
<b>Total</b>	<b>4,828,496</b>

#### 5.2.1 VAT Recovery

The Trust has made the following assumptions in respect of recoverable VAT. It assumes £53,933 is recoverable over the project.

Table 19 Recoverable VAT

	Value (£)	VAT (20%)	Recovery of VAT (%)	Total (£)	Comment
Works Cost	1,725,446	345,089	5%	17,254	Based on VAT extension banding
PSCP fees	202,883	40,577	5%	2,029	Based on VAT extension banding
Trust fees	173,550	34,710	20%	34,710	100% recoverable
Non Works Costs					
Equipment	935,328	187,066	0%	0	
Planning Contingency (Trust Risk Generally)	121,488	24,298	0%	0	
PSCP Risk – Optimism Bias	117,097	23,419	0%	0	
Inflation	792,900	158,580	0%	0	
<b>Total</b>	<b>4,068,692</b>	<b>813,738</b>	<b>6.63%</b>	<b>53,933</b>	

VAT recoverability assumptions have been based on discussions with the Trust's VAT advisers. The Trust will provide the agreed GMP to them, on which a submission to HMRC will be made.

## 5.2.2 Financing

The Trust has assumed the scheme will be funded through Interest Bearing Debt (IBD) in line with Department of Health guidance. This assumption would not be the preferred option for the Trust but guidance dictates that IBD has to be considered as the primary funding source in a business case. The Trust requires funding in 2015/16 as the capital development is due for completion by April 2016.

## 5.3 Income and Expenditure

The table below summarises the current income and running costs associated with the Vascular Department together with the impact of this scheme on the current costs of the Vascular Department and the impact a Trust level. Baseline costs have been adjusted to reflect the Ward and Angiography business cases.

Table 20 Adult Vascular Services – Income &amp; Expenditure

Baseline Costs	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<u>Income</u>						
Vascular Tariff	7,493	7,581	7,581	7,581	7,581	7,581
<b>Total Income</b>	<b>7,493</b>	<b>7,581</b>	<b>7,581</b>	<b>7,581</b>	<b>7,581</b>	<b>7,581</b>
<u>Expenditure</u>						
Current Staff	3,699	3,819	3,819	3,819	3,819	3,819
Current Non pay	1,539	1,560	1,567	1,567	1,567	1,567
Current FM costs	102	102	102	102	102	102
Current Support costs	2,757	4,154	4,034	4,034	2,779	2,779
<b>Total Expenditure</b>	<b>8,097</b>	<b>9,635</b>	<b>9,522</b>	<b>9,522</b>	<b>8,267</b>	<b>8,267</b>
<b>Overheads</b>	<b>2,238</b>	<b>2,404</b>	<b>2,406</b>	<b>2,398</b>	<b>2,390</b>	<b>2,382</b>
<b>Total Current Costs</b>	<b>(2,842)</b>	<b>(4,458)</b>	<b>(4,357)</b>	<b>(4,339)</b>	<b>(3,076)</b>	<b>(3,068)</b>
Hybrid Income and Costs	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<b>Additional Income</b>		<b>(100)</b>	<b>(399)</b>	<b>(399)</b>	<b>(399)</b>	<b>(399)</b>
<b>Recurrent Costs</b>						
Vascular and Support Staffing		25	101	101	101	101
Additional Non Pay		10	40	40	40	40
New FM Costs			38	150	150	150
Vacated FM Costs			(26)	(102)	(102)	(102)
Equipment Maintenance			34	136	136	136
<b>Total Recurrent Costs</b>		<b>35</b>	<b>187</b>	<b>325</b>	<b>325</b>	<b>325</b>
<b>Depreciation &amp; Capital Charges</b>						

Change in Depreciation		52	208	208	208	208
Interest Payable	26	83	112	107	102	97
<b>Total Depreciation &amp; Capital Charges</b>	<b>26</b>	<b>135</b>	<b>320</b>	<b>315</b>	<b>310</b>	<b>305</b>
<b>Total Additional Cost</b>	<b>26</b>	<b>71</b>	<b>108</b>	<b>241</b>	<b>236</b>	<b>231</b>

The additional cost of the Hybrid theatre is made up of:

- ▶ Additional Radiology staff to support the hybrid theatre and to provide an extended day case facility at the Glenfield Hospital;
- ▶ Maintenance of the Hybrid theatre equipment
- ▶ Non pay on additional activity assumed as a result of the Hybrid theatre

## Workforce

The workforce changes are as follows:

*Table 21 Workforce Changes*

	WTE	Cost £
Imaging Radiographers - B6	0.45	17,187
Imaging Nursing - B6	1.61	61,471
Imaging Support	0.99	22,401
<b>Total Workforce Cost</b>	<b>3.04</b>	<b>101,059</b>

The additional workforce relates to the Radiology staff required to support the Hybrid Theatre and the additional radiology staff required to support the Angiography Day ward being open all day. This will enable the vascular ward to accommodate the increased activity generated by the Hybrid Theatre with no additional cost. The Trust has assumed £399,000 of additional income as a result of the Hybrid Theatre. This is broken down as follows:

*Table 22 Assumptions for additional activity*

Additional Activity	Spells	£	Assumptions
Angiography	65	100,425	The provision of a dedicated angiography room at GH with 'ring-fenced' day-case beds will enhance the service offered to vascular patients in addition to reducing the current level of demand for inpatient beds. There has been a steady increase in demand for minimally invasive treatments such as angioplasty, fibroid embolisation, vascular malformation treatments, dialysis fistula preservation and EVAR. The regional vascular surgery review has recognised UHL as a key provider of

			these services. The provision of a dedicated angiography imaging suite for vascular with dedicated day-case beds will enable efficiencies to be made, the outcome of which is estimated to be in the region of 250 additional cases per annum.
EVARS	30	185,640	As a centre for major vascular surgery, it is assumed that UHL would provide capacity for devolved patients from Lincolnshire and possibly Northamptonshire. It is envisaged that this would produce at least 30- 50 additional EVAR with associated outpatient review,
Additional Lincoln Activity	36	112,536	The service expects that a proportion of the 'standard' elective workload from Lincolnshire will be performed in UHL as outreach services from UHL in the future. A 50% share of the current workload from Lincolnshire would represent 25 AAA repairs and 11 CEA per year.
<b>Total Additional Activity</b>	<b>131</b>	<b>398,601</b>	

At the time of writing the additional Lincoln and potentially Northampton activity has not yet been agreed, however advanced discussions with the health community in Lincolnshire are in place and it is very likely that this work will be secured.

## Capital Charges

The table below shows the basis of the capital charges calculation

Table 23 Capital Charge Impact of Scheme (IBD)

Hybrid Theatre Capital Charges	2015/16	2016/17	2017/18	2018/19
Opening Balance		2,129,368	4,642,802	4,445,236
Draw down	2,172,824	2,655,674		
Loan Repayments	(43,456)	(142,240)	(197,566)	(197,566)
Closing Balance	2,129,368	4,642,802	4,445,236	4,247,670
Interest on loan (1 July 2015 rate 2.46%)	26,458	83,298	111,783	106,923
Depreciation		51,963	207,854	207,854
Total Capital Charges and interest	26,458	135,261	319,636	314,776

The Trust has modelled the use of PDC to fund the development rather than Interest Bearing debt. The Position using PDC is as follows:

Table 24 Capital Charge Impact of Scheme (PDC)

Hybrid Theatre Capital Charges	2015/16	2016/17	2017/18	2018/19
Return on Asset	37,644	71,400	139,162	131,887
Depreciation		51,963	207,854	207,854
Total Capital Charges (PDC)	37,644	123,363	347,015	339,740

The use of PDC would have a small positive impact on the Trust's I&E position. The impairment of the asset (estimated at £855,000) offsets the higher Rate of Return over the rate of interest. The Trust would be paying back the loan required to fund the scheme. It is assumed that £44,000 of loan repayment would be made in 2015/16 rising to a figure of £198,000 per annum until 2041. Therefore although the impact on income and expenditure is marginal there is a more significant impact on the Trust's cashflow of nearly £200,000. With everything else being equal this would reduce the amount of operational capital available to the Trust by this amount.

## 5.4 Impact on Trust Income, Cash Flow & Balance Sheet

The Table below sets out the impact on the Trust's balance sheet.

Table 25 Impact on Trust's Balance Sheet

Impact on Trust's Balance Sheet	2015/16 £	2016/17 £	2017/18 £	2018/19 £
Opening Balance		2,172,824	4,080,034	3,872,180
Capital Expenditure	2,172,824	2,655,674		
Impairment		(696,501)		
Depreciation		(51,963)	(207,854)	(207,854)
Closing Balance	2,172,824	4,080,034	3,872,180	3,664,327

The new Hybrid Theatre is expected to be operational in January 2017.

On coming into use, the Trust has assumed that contingency and fees will not add to value. The impairment therefore relates only to the contingency and fees. The basis of this as follows:

Table 26 Value of Impairments

	£
<b>Capital Cost</b>	<b>4,828,439</b>
Less Equipment	(1,394,068)

Revised Capital Cost Excluding Equipment	3,434,371
Planning contingency	181,073
Fees	515,428
Total Impairment	696,501

## 5.5 Affordability

The development causes a net recurrent increase in revenue costs of c£240k per annum. Of this, c£325k is operating costs which is more than offset by c£399k of additional income which has been secured. Therefore, the driver of net increase in costs is the non-operating costs identified, i.e. capital charges and interest.

The Trust Financial Strategy, approved by the Trust Board on 4<sup>th</sup> June 2015, assumes the non-operating cost impact of the capital programme. It therefore includes these costs.

### 5.5.1 Long Term Financial Model

The current 5 year LTFM which reflects the detail of the Financial Strategy approved by the Trust Board on the 4<sup>th</sup> June 2015 is constructed in a way which aggregates this development as part of the general site rationalisation service development. The assumptions regarding this service development include the operating costs impact of the developments will be zero.

As shown above, the case identifies only non-operating revenue costs increases and additional outturn capital costs of £322k. The revenue costs are therefore consistent with the LTFM whilst the capital cost increase will be mitigated across the total capital funding projection of c£330m.

## 6 | The Management Case

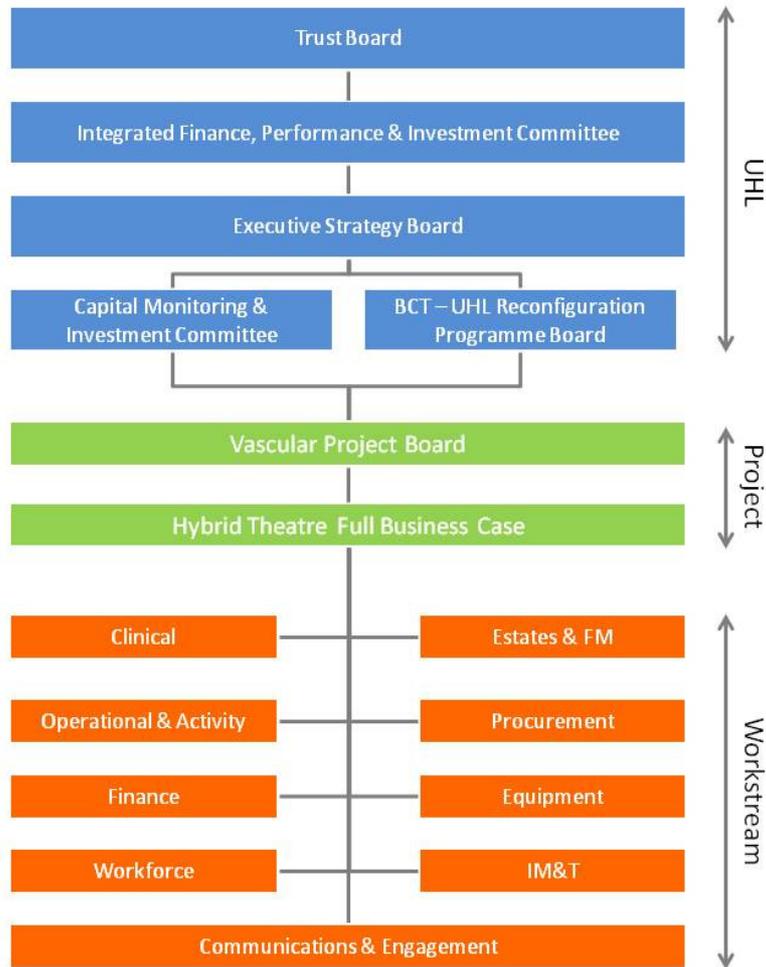
### 6.1. Introduction

The Management Case provides a summary of the arrangements which have been put into place for the successful delivery of a hybrid theatre, the associated other service relocations required as a result of the decanting moves, service operation changes, and to secure the benefits sought through the investment.

### 6.2. Project Governance Arrangements

Project Governance arrangements have been established to reflect national guidance and the Trusts own Capital Governance Framework, as shown in the diagram below.

*Figure 6 Hybrid Theatre Project Structure*



3

4

5

6

6.1

6.2

### 6.2.1 Project Roles and Responsibilities

The Key Project roles are described below:

- ▶ Executive Sponsor /Senior Responsible Owner (SRO): This role is being performed by Kate Shields, with responsibility to the Executive Trust Board for delivery of the project to meet their terms of reference
- ▶ Project Board Chair: This role will be performed by Kate Shields for the Trust, with responsibility for providing impartial leadership of the project board and ensuring the continued commitment of stakeholders in order to deliver the collaborative approach required to deliver service efficiencies.
- ▶ Senior User: This role is being performed by Akhtar Nasim, Head of Service (Vascular Lead Clinician), with responsibility for ensuring that the project maintains alignment with the service and business targets described in the Business Case and working within the terms of reference set by the Project Board.
- ▶ Major Capital Projects Director: This role is being performed by Richard Kinnersley, Major Projects Technical Director with designated responsibility for all Capital Projects across UHL
- ▶ Project Manager: This role is being performed by Neal James with designated responsibility for delivering the FBC document. He will have day-to-day responsibility for administration of the development of the project (within the delegated role permitted by Project Board).
- ▶ Service Project Managers: Senior managers from the Vascular and associated departments will undertake this role, having day to day responsibility for providing advice on the service brief to the development team and for planning and delivery of service and workforce change under the direction of the Senior User.

Regular progress reports will be submitted to the Executive Strategy Board for onward reporting and management within the established Trust management structure

## 6.2.2 Core Group Responsibilities

The roles and responsibilities for the Core Groups are summarised as follows:

### Executive Strategy Board (ESB)

This group is a designated committee appointed by the Trust Board, with responsibilities which in summary, include:

- ▶ To advise the Trust Board on formulating strategy for the organisation.
- ▶ To ensure accountability by holding each other to account for the delivery of the strategy and through seeking assurance that all systems of control are robust and reliable.
- ▶ To lead the Trust executively, in accordance with our shared values, to deliver our vision and, in doing so, help shape a positive culture for the organisation

### Vascular Project Board

The Project Board at OBC stage was set up to manage the development of all the vascular components in a single case. Subsequent to the separation of the cases, it

was deemed appropriate for the same forum to manage all three cases. Membership is as follows:

*Table 27 Vascular Project Board*

Project Team Member	Role
Kate Shields	Director of Strategy, Project Board Chair.
Akhtar Nasim	Consultant Vascular Surgeon, Service Lead
Richard Kinnersley	Major Projects Technical Director
Caroline Sissling	Operational Manager, Vascular Services
Carolyn Stokes	Service Manager, Vascular Services
David Jenkins	Consultant Microbiologist
Debra Green	Project Manager, Strategy
Elizabeth Collins	Infection Prevention Lead
Gaby Harris	ITAPS CMG
Guy Fishwick	Consultant Radiologist
Neal James	Project Manager
Kate Ward	Matron, Vascular Services
Judy Gilmore	Radiology Service Manager
Matthew Bown	Consultant Vascular Surgeon
Richard Power	CMG Clinical Lead, Musculoskeletal & Specialist Surgery
Sam Leak	CMG Lead, Renal, Respiratory, Cardiothoracic & Vascular
Sarah Taylor	CMG Lead, Musculoskeletal & Specialist Surgery

Key roles and responsibilities include:

- ▶ Responsibility for delivering the project within the parameters set within the business case
- ▶ Providing high level direction on stakeholder involvement and monitoring project level management of stakeholders
- ▶ Providing the strategic direction for the project
- ▶ Ensure continuing commitment of stakeholder support
- ▶ Key stage decisions

► Progress monitoring

### Vascular Work Streams

As shown in the Vascular Project structure, Figure 6, a number of work streams have been set up to ensure the successful development of the vascular project.

Table 28 Work Streams & Deliverables

Work Stream	Lead	Key deliverables
Operational (including key dependencies)	Ahktar Nasim (Consultant Vascular Surgeon & Head of Service)	Clinical / Operational Pathways (SOPs)
		Activity Scheduling
		Schedule of Accommodation / 1:200 Layouts
		Interim ITU Capacity
		Advanced Recovery Capacity
		Emergency Theatre Capacity
Workforce	Clare Blakemore (RRC CMG HR Lead)	Medical Staffing Rota implications
		Clinical Staff implications
		Recruitment
		Management of Change
		Cross-site Transfer
Finance	Tim Pearce	Capital Costing
		Enabling Costs
		Staffing Costs
		Revenue
		Financial Benefits
Procurement & Equipment	David Street (Senior Category Manager)	Hybrid Theatre specification and procurement
		Fittings, Furnishings and Equipment
		Specialist Equipment
		General Equipment
		IM+T
Communications	Rhiannon Pepper(Communications)	External and Internal Communications

Work Stream	Lead	Key deliverables
	Manager)	
Estates & Technical	Neal James (Project Manager) Hybrid theatre	Site-wide Infrastructure
	Debra Green(Project Manager)	Detailed design overview (including Hybrid Theatre interfaces)
		Construction

The work streams have been set up to take responsibility for driving the key work-streams and to report back to the Project Board on a regular basis.

Key roles and responsibilities will include:

- ▶ Day to day responsibility for the delivery of the project to meet the parameters described within the business case
- ▶ Provision of appropriate reports on status to the Project Director
- ▶ Management of risks and issues and escalation of appropriate matters for executive direction/ approval
- ▶ Providing working groups with detailed briefs
- ▶ Monitoring, co-ordinating and controlling the work of the Working Groups
- ▶ Drawing together the outputs of the Working Groups
- ▶ Ensure continuing commitment of stakeholders, both internal and external

## 6.2.3 Project Execution Plan

### 6.1

#### 6.1.1

A Project Execution Plan (PEP) has been prepared (Appendix 5) to provide detailed information on proposed project management arrangements, including:

- ▶ Aims and objectives
- ▶ Benefits and constraints
- ▶ Organisation
- ▶ Roles and responsibilities
- ▶ Detailed programme for stage activities
- ▶ Risk management arrangements
- ▶ Statutory Approvals and Quality Standards

## ► Project Communications

The end stage of the project will result in the completion, handover and commissioning of the new facility. The Project Board is responsible for providing assurance that the project has been delivered in terms of product and quality in line with the business case.

## 6.3 Project Plan

The project will be managed in accordance with the principles of PRINCE2 methodology. The project managers will have support from the capital projects team, and external consultants.

### 6.3

#### 6.3.1 Project Programme

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The Project Programme is intended to deliver the project by autumn 2016. The milestones for this project are set out below. A full copy of the Project Programme can be found at Appendix 6.

*Table 29 Project Milestones*

Milestone	Date
Integrated Finance, Performance & Investment Committee support for FBC to be approved by Trust Board	July 30 <sup>th</sup> 2015
Trust Board Approval of FBC	August 6 <sup>th</sup> 2015
Purchase Order placed for Construction	August 10 <sup>th</sup> 2015
Contractor Mobilisation	24th August 2015
Construction start on site	6th October 2015

Construction Handover	7th November 2016
Trust Commissioning	1 month
Clinical Handover	December 2016

## 6.4 Use of Special Advisors

Special advisers have been used in a timely and cost-effective manner in accordance with the Treasury Guidance.

*Table 30 External Advisors*

Vascular & Hybrid Theatre Development		
1	P&HS Design	Architects
2	RLB	Cost Consultants
3	RLB	Client Advisor: Project
4	Curtains	Structural Engineers
5	CAPITA	Mechanical and Electrical Engineers
6	RLB	PMO
7	Interserve	Building/Construction Supervisors
8	RLB	CDM
9	Interserve	BREEAM Advisor

## 6.5 Stakeholder Engagement

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Methods of communicating information about the Project to various Stakeholders are listed below. The detailed plan can be found at Appendix 7.

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3.17

3.18

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### 6.5.1 Internal

- ▶ Face to face briefings: These should be used as the primary source of communication with staff
- ▶ INsite pages: A section on the Vascular project (Hybrid theatre is a component part) can be included on the staff intranet pages
- ▶ Display boards/ Hoardings around building work
- ▶ Hospital Hopper: Information can be displayed aboard and on the exterior of the Hospital Hopper buses, which travel between the three UHL hospital sites.
- ▶ Factsheet style newsletter
- ▶ Blueprint & Chief Executive's Briefings: Utilise Blueprint reconfiguration newsletter for staff (bi-monthly) to update staff on progress.

### 6.5.2 External

- ▶ Social media: Utilising the Trust's Twitter and Facebook accounts
- ▶ Website: A section on the Vascular project can be included on the UHL website, with a link from the homepage
- ▶ Local media

- ▶ Leicester Mercury Patient Panel: Panel made up of members of the public who provide comment on local issues
- ▶ Annual public meeting (September): Use this as an opportunity to share what has been accomplished and what is planned next
- ▶ Patient information leaflet

## 6

### 6.1

### 6.2

### 6.3

### 6.4

### 6.5

#### 6.5.1

#### 6.5.2

#### 6.5.3 Infection Prevention

Representatives from UHL's Infection Prevention (IP) team, including the Lead IP Nurse and Consultant, have been fully engaged throughout the design development. IP representatives have provided guidance and signed off all relevant aspects of the design.

#### 6.5.4 Health & Safety

Representatives from UHL's Health & Safety team were consulted on the project and design solution. The size and layout of rooms throughout were reviewed in specific detail to ensure compliance for patient and staff safety.

## 6.6 Outline Arrangements for Change & Contract Management

Change management associated with the project will be managed through Trust Board, under the chairmanship of the Chief Executive/Senior Responsible Owner (SRO) and Executive Sponsor. Day to day change management issues will be discussed at the Project Team level and any resultant contract and/or cost changes will need to be approved by the Project Board.

## 6.7 Outline Arrangements for Benefits Realisation

The delivery of benefits will be managed through the Vascular Project Board. A benefits realisation plan has been previously described in section 2.17. This sets out who is responsible for the delivery of specific benefits, when they will be delivered, and how achievement of them will be measured. The key opportunity is presented by the new design for facilities, which will ensure capacity meeting demand, efficiencies in service delivery, compliance to standards and minimised disruption to overall Trust operations.

## 6.8 Outline Arrangements for Risk Management

The Trust ensures through the involvement of its employees, that risk management serves as a mechanism for risk reduction. Also, by taking a proactive approach to managing risk exposure, the Trust ensures protection of its patients, staff, visitors, assets and reputation. This project will be managed in that context.

6.6

6.7

6.8

### 6.8.1 Risk Management Policy

The risk management system is described in the Trusts Risk Management Policy which is accessible to all staff via the Trust Intranet. It is based on an iterative process of:

- ▶ Identifying and prioritising the risks to the achievement of the organisation's policies, aims and objectives
- ▶ Evaluating the likelihood of those risks being realised and the impact should they be realised
- ▶ Managing the risks efficiently, effectively and economically

This is achieved through a sound organisational framework, underpinned by a robust policy framework, which promotes early identification of risk, the co-ordination of risk management activity, the provision of a safe environment for staff and patients, and the effective use of financial resources.

The Trust Risk Register details, in order of relative importance, all the significant risks facing the Trust which are most likely to affect (positively or otherwise) achievement of the Trust's objectives.

### 6.8.2 Assurance Framework

The Trust's Assurance Framework provides it with a simple but comprehensive method for the effective and focused management of the principal risks to meeting the Trust's corporate objectives. In this way it provides a structure and describes the controls and assurance mechanisms in place to manage the identified risks. This simplifies Board reporting and the prioritisation of action plans, which, in turn, allows for more effective performance management.

The key elements of the Assurance Framework are:

- ▶ Establishment of the Trust's principal objectives (strategic & directorate)
- ▶ Identification of the principal risks that might threaten the achievement of these objectives
- ▶ Identification and evaluation of the key controls intended to manage these principal risks
- ▶ Setting out of the arrangements for obtaining assurance on the effectiveness of the key controls across all areas of principal risk
- ▶ Evaluation of the assurance across all areas of principal risk
- ▶ Identification of the positive assurances and areas where there are gaps in controls and or assurances
- ▶ Putting in place of plans to take corrective action where gaps have been identified in relation to principal risks
- ▶ Maintenance of dynamic risk management arrangements including, crucially, a well-informed risk register

Therefore, the Assurance Framework provides a simple framework for reporting key information to Boards. It identifies which of the organisation's objectives are at risk because of inadequacies in the operation of controls or where the organisation has insufficient assurance about them. At the same time it provides structured assurances about where risks are being managed effectively and objectives are being delivered.

The primary focus is confidence that effective processes are in place to deliver the strategic objectives of the Trust. This allows Boards to determine where to make efficient use of their resources and address the issues identified in order to improve the quality and safety of care.

Where any significant gaps in assurance are identified they are transferred to the risk register and an action plan is developed.

## 6.9 Outline Arrangements for Post Project Evaluation

The outline arrangements for post Project Evaluation (PPE) have been established in accordance with best practice. The trust will ensure that a thorough post-project evaluation is undertaken at key stages in the process to ensure that positive lessons can be learnt from the project. These will be of benefit to:

- ▶ The Trust – in using this knowledge for future capital schemes
- ▶ Other key local stakeholders – to inform their approaches to future projects
- ▶ The NHS more widely – to test whether the policies and procedures used in this procurement have been used effectively
- ▶ Contractors – to understand the healthcare environment better

The evaluation will examine the following elements, where applicable at each stage:

- ▶ The effectiveness of the project management of the scheme – viewed internally and externally
- ▶ The quality of the documentation prepared by the Trust for the contractors and suppliers
- ▶ Communications and involvement during procurement
- ▶ The effectiveness of advisers utilised on the scheme
- ▶ The efficacy of NHS guidance in delivery the scheme
- ▶ Perceptions of advice, guidance and support from the strategic health authority and NHS Estates in progressing the scheme

Formal post project evaluation reports will be compiled by project staff, and reported to the Board to ensure compliance to stated objectives.

### 6.9.1 Post Implementation Review (PIR)

These reviews ascertain whether the anticipated benefits have been delivered and are timed to take place immediately after the hybrid theatre opens and then 2 years later to consider the benefits planned.

## 6.10 Contingency Plans

The Trust has a framework for Business/Service Continuity. The Trust's framework ensures the Trust can comply with the business continuity provisions of the Civil Contingencies Act 2004. Contingency plans have been developed to ensure the Trust can continue to deliver an acceptable level of service of its critical activities in the event of any disruption.

In terms of financial contingency, section 5 highlights a planning Contingency of 5% of the total costs, including fees and equipment, for short listed options.

## 6.11 External Review

Project Health Check reviews (previously known as Gateway reviews) provide a valuable perspective on the issues facing the internal project team, and an external challenge to the robustness of plans and processes. The process provides support to SROs by helping them to ensure the following:

- ▶ The best available skills and experience are deployed on the programme or project
- ▶ All the stakeholders covered by the programme or project fully understand the current status and the issues involved
- ▶ The programme or project can progress more confidently to the next stage of development, implementation or realisation
- ▶ Achievement of more realistic time and cost targets for the programme or project

A Health Check Review 3: Investment Decision was undertaken on both the ICU project and the vascular enabling moves; and associated report issued to the Project SRO on the 9<sup>th</sup> July 2015. A Delivery Confidence Assessment of AMBER was issued by the review team, indicating that: *“successful delivery of the project appears likely. However attention will be needed to ensure risks do not materialise into major issues threatening delivery”*.

Feedback specifically for vascular services related to the need to ensure that all financial tables within the FBC were complete and available for scrutiny as part of the IFPIC and Trust Board approvals process.

# Appendices

Appendices are attached as separate documents and consist of the following:

Appendix	Details
1	Patient Survey Response
2	Due Regard / Quality Impact Assessment
3	Estates Annex
4	Full Risk Register (FBC stage)
5	Project Execution Plan
6	Project Programme
7	Communication and Engagement Plan

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