Whittington Health NHS

Meeting	**Extraordinary Trust Board**
Date & Time	**14th January 2015** **11.00 – 12.00**
Venue	**Room 6, Whittington Education Centre**

AGENDA

Time	Item	Lead Director
11.00 - 11.05	**Welcome and Introductions**	*Steve Hitchins, Chair*
11.05 -12.00 (15/014)	**Maternity & Neonatal Redevelopment Full Business Case**	*Siobhan Harrington, Deputy CEO, Director of Strategy* *Miss Eben, Divisional Director Women, Children and Families Division* *Phil Ient, Director of Estates and Facilities* *Sophie Harrison, Assistant Director, Estates Management*
12.00	**Close**	

Executive Offices
Direct Line: 020 7288 3943
www.whittington.nhs.uk

Whittington Health NHS

Whittington Health Trust Board

The Whittington Hospital NHS Trust
Magdala Avenue
London N19 5NF

14th January 2015

Title:	Maternity and Neonatal Redevelopment Full Business Case		
Agenda item:		**Paper**	**1**
Action requested:	For approval		
Executive Summary:	The purpose of this paper is seek approval for the Maternity and Neonatal Redevelopment Full Business Case (FBC). The Full Business Case evidences that there is a compelling case for the Trust to invest £11.996m of strategic capital funding in the redevelopment of Whittington Health's Maternity and Neonatal services. The Trust has identified the following key objectives for this investment: ▪ By September 2016, to improve the quality and safety of the neonatal ITU and HDU facilities. ▪ By September 2016, to build a second, co-located, dedicated obstetric theatre, thereby improving the safety of maternity theatre service provision. ▪ By September 2016, to increase the capacity of the maternity and neonatal services to meet the needs of an anticipated 4,700 deliveries. The preferred option would be achieved through a significant refurbishment of the existing unit, with the introduction of a second (co-located) obstetric theatre and the redevelopment of the neonatal ITU and HDU facilities. The solution would be delivered by introducing a new build core block alongside the existing buildings, which would enable an increase in the overall footprint of each floor level. It would also allow the joining up of the existing wings, thus creating bigger footprints to provide for the different elements of the maternity and neonatal services. The preferred option has been designed to ensure no decanting is required and there is no reduction in activity levels during the implementation phase. The FBC has been developed in partnership with Integrated Health Projects (IHP), who were selected via the Department of Health P21+ procurement process. IHP have worked with the Trust to produce a 'not to be exceeded' Guaranteed Maximum Price (GMP), based on further development of the design, to inform the capital cost plan for the FBC. Further more detailed design development will take place between January and April 2015 to finalise the GMP. Following financial modelling of the preferred option, the project is regarded by the Trust as affordable at the base case level of 4,700 deliveries. This represents an increase in activity for the maternity service, above recent historical annual average activity levels of 4,000 deliveries, of circa 700 deliveries by the end of the five year planning period. The FBC details the robust project arrangements that are in place to ensure the finalisation of the GMP and the subsequent implementation of the project. Following approval by the Trust Board, the FBC will be submitted to the Trust Development Authority for approval, and to gain support to obtain external		

	funding via Public Dividend Capital (PDC)						
Summary of recommendations:	The Trust Board is asked to: ▪ Approve the Maternity and Neonatal Full Business Case.						
Fit with WH strategy:	Plans for future delivery of Whittington Health maternity and neonatal services in line with Trust Strategy						
Reference to related / other documents:	Whittington Health Clinical Strategy - Transforming Healthcare for Tomorrow Estates Strategy version 12						
Date paper completed:	11th January 2015						
Author name and title:	**Sophie Harrison Assistant Director of Estates and Facilities**		**Director name and title:**		**Siobhan Harrington, Deputy Chief Executive and Project Sponsor Friedericke Eben Medical Programme Director Philip Ient Director of Estates and Facilities**		
Date paper seen by EC		**Equality Impact Assessment complete?**	**Yes**	**Risk assessment undertaken?**	**Yes**	**Legal advice received?**	**No**

Whittington Health NHS

Maternity and Neonatal Redevelopment

Full Business Case

January 2015

UCL

UCLPartners
Academic Health Science Partnership

Whittington Hospital - aerial view from south looking north

Contents

Abbreviations

A&E	Accident and Emergency
AEDET	Achieving Excellence Design Evaluation Toolkit
ALOS	Average Length of Stay
BREEAM	Building Research Establishment Environmental Assessment Method
BR	Benefits Realisation
CCG	Care Commissioning Group
CEO	Chief Executive Officer
CIL	Capital Investment Loan
DH	Department of Health
FBC	Full Business Case
GMP	Guaranteed Maximum Price
GP	General Practitioner
HBN	Health Building Note
HDU	High Dependency Unit
I & E	Income and Expenditure
IM&T	Information Management and Technology
ITT	Invitation to Tender
KPI(s)	Key Performance Indicator(s)
LoS	Length of Stay
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NICU	Neonatal Intensive Care Unit
OBC	Outline Business Case
OGC	Office of Government Commerce
OJEU	Official Journal of the European Union
OSC	Overview and Scrutiny Committee
PCT	Primary Care Trust
PDC	Public dividend capital
PSCP	Principle Supply Chain Partner
QOF	Quality Outcomes Framework
SLA	Service Level Agreement
TMG	Trust Management Group

Glossary

Building Research Establishment Environmental Assessment Method	The Building Research Establishment Environmental Assessment Method (BREEAM) helps construction professionals understand and mitigate the environmental impacts of the developments they design and build. A new scheme was commissioned by the Department of Health and the Welsh Health Estates to replace the existing NEAT (NHS Environmental Assessment Tool). Further information can be found at www.breeam.org.
Benefits Realisation	Benefits Realisation is a process to help to track the realisation of benefits for a programme.

Approvals

This Full Business Case for improvements to the Maternity and Neonatal facilities at the Whittington Hospital is recommended for approval by:

[insert signature]	[insert signature]
Chairman, Whittington Health	**Chief Executive, Whittington Health**
Date	Date

1 Executive summary

1.1 Introduction

This Full Business Case (FBC) seeks approval to invest £11,996,812 (capital, excluding revenue costs) of strategic capital funding in the redevelopment of Whittington Health's Maternity and Neonatal services, to meet the following objectives:

- By September 2016, to improve the quality and safety of the neonatal intensive care and high dependency unit (ITU and HDU) facilities
- By September 2016, to build a second, co-located, dedicated obstetric theatre, thereby improving the safety of maternity theatre service provision
- By September 2016, to increase the capacity of the maternity and neonatal services to meet the needs of an anticipated 4,700 deliveries.

This business case sets out the compelling reasons why investment in the Whittington Health maternity and neonatal services is required.

A number of options have been considered, and a preferred option developed in partnership with Integrated Health Projects (IHP), appointed as our Principal Supply Chain Partner under the P21+ procurement process.

The Programme set out in this business case will overall contribute £5.2m. There will be a net deficits in years one and two, but during years three to five a surplus will be generated.

The Trust is seeking funding for the capital cost via public dividend capital (PDC), while any operational revenue costs, and income and expenditure cost pressures in years one and two will be funded by the Trust.

There have been a number of changes made to the business case since the approval of the Outline Business Case. The major changes to the business case are as follows:

- Updating of the strategic case, including further development of the marketing strategy
- Updating of the commercial and management cases to reflect the appointment of Integrated Health Projects (IHP) as our P21+ principle supply chain partner and the subsequent more detailed development of the preferred option
- Revision of the long and short lists of options in line with the Trust Development Authority (TDA) OBC feedback
- The Full Business Case follows the five case model for business case production and an economic and financial analysis has been conducted
- The economic analysis is conducted using the Generic Economic Model (GEM Model). GEM aims to facilitate economic appraisals in accordance with the principles of Green Book and GEM guidance;
- The financial and economic modelling is for five years, i.e. 2015/16 to 2019/20 (year 1 to 5), whilst the economic analysis via the GEM is conducted for sixty two years
- The economic analysis includes efficiency savings, income displacement, the Retail Prices Index (RPI) for capital cost, and uses real income and expenditure
- The additional capital cost is added over the life of project where relevant. For example, the capital cost of equipment which depreciates fully in seven years, is added over sixty two years

- The life cycle cost has been added and is assumed to be the same for all options with capital spend
- The capital costs, including VAT, have increased from £9,997,834 to £11,996,812 due to inflation and some change in the scope of works.
- The equipment costs, including VAT, have increased from £135k to £240k
- Public Dividend Capital (PDC) funding has been assumed to fund the capital cost, instead of a loan, due to the Trust's current financial position
- The staff requirements and profiling have been modified in line with the revised workforce plans
- Activity forecasting and the neonatal cot capacity have been revised
- The operational revenue costs have changed in line with new activity and workforce assumptions
- It was agreed by the Programme Board to rebase activity, and thus income, on the basis of the last three full years of historical data, and to use 15/16 as year one for this business case. This approach has been adopted due to concerns with activity data recording in 2014/15.

1.2 Strategic case

Whittington Health is an Integrated Care Organisation (ICO), established in 2011, following the transfer of Haringey and Islington community services to the Whittington Hospital Trust, providing high quality co-ordinated services to local people in partnership with CCG's, GPs, Local Authorities and other local providers. Maternity and Neonatal services are an integral part of the ICO, providing the essential beginning of 'co-ordinated healthcare' for the local population.

The Trust has demonstrated consistently good performance in achieving national standards, including the best standardised hospital–level mortality indicator (SHMI) in the England and in 2013 won the CHKS Top Hospitals programme patient safety award. The quality of the Trust's maternity services has been recognised with the Trust performing well in the NHS 2013 Maternity Survey, released in December 2013.

The need to invest in the maternity and neonatal services is driven by the need to improve the current physical environment of the neonatal unit and the capacity constraints of the current labour ward and obstetric theatre provision.

The evidence and analysis set out in this FBC presents a compelling case that Whittington Health must invest in these services to:

- Address the physical environment and space constraints of the neonatal ITU/HDU and labour ward. Without this investment, these will become increasingly unacceptable, making it difficult to meet not only the best clinical standards but also patient expectations.
- Improve the quality and safety of obstetric theatre provision by ensuring there is sufficient theatre capacity that is easily accessible from the labour ward and maternity and neonatal services.
- Create further delivery capacity to provide real choice for local women.
- Address the poor quality of staff facilities, which may otherwise impact on the future recruitment and retention of staff in an already competitive labour market.

This business case is based on an assumed increase in maternity activity of circa 4,700 deliveries per annum by 2018/19. The Trust believes that improvements in facilities, combined with an excellent service reputation and active marketing will lead to an increase in demand for maternity and neonatal services, particularly from local women and their families.

The Trust has developed a marketing strategy, supported by a detailed communications plan and service development/transformation plan to ensure local women choose Whittington Health for their maternity and neonatal care.

1.3 Economic case

The economic analysis has been conducted using the Generic Economic Model (GEM Model). GEM is created by the Department of Health and aims to facilitate economic appraisals in accordance with the principles of Green Book and GEM guidance.

1.3.1 Options considered

In developing the OBC, the Maternity Steering Board considered a long list of options. These options have been reviewed and revised as part of the process of developing this FBC.

The table below summaries, the long list of options, it includes high level assumptions for activity, workforce and capital investment.

Table1.1: Long list of options

Maternity & Neonatal Full Business Case						
OPTIONS						
Options	Option Name	Financial Modelling	Capital Spend 5 Years	Activity	Summary	Comment
Option 1	Do Nothing	Yes	0	Goes down by Various %	• Activity decreases by 5% from 15/16 to 17/18, 3% 18/19 and 2% 19/20 • No capital investment	
Option 2	Do Minimum	Yes	£10M	3,945	• Status quo • Activity level remain same as '15/16 level • Maintain current services with minimum backlog maintenance	
Option 3A	Strategic Investment - With Marketing growth	Yes	£12M	4,700	• Marketing growth assumed • • Activity level increases; by 18/19 deliveries increase to 4,700 and neonatal cots increase from 23 to 27 • Workforce increase to in line with increased activity. • Capital investment of £12M	PREFERRED OPTION
Option 3B	Strategic Investment - Decreasing Activity	No	£12M	Goes down by Various %	Not modelled as downside case for do nothing option	Covered via Do nothing
Option 3C	Strategic Investment - No Marketing growth	Yes	£12M	3,945	• No marketing growth assumed • Activity level remain same as '15/16 or historical average level i.e. 3,945 deliveries and neonatal • No increase in workforce to in line with no marketing growth in activity. • Capital investment of £12M	
Option 3D	Strategic Investment - High growth	No	£12M	Goes up by Various %	Not Modelled as best case for preferred option	
Option 4	Relocation	No	NA		Rejected on Non-Financial grounds	Rejected on Non-
Option 5	New Build	Yes	£72M	4,700	• Marketing growth assumed • Activity level increase; by 18/19 deliveries increase to 4,700 and neonatal cots increase from 23 to 27 • Workforce increase to in line with increased activity • Capital investment of £72M	

In drawing up the short list of options the Trust sought to include options which reflected the Trust's corporate objectives and clinical strategies, and options that best met the investment objectives of the project.

Short list of options agreed was as below:

- Option 1: Do Nothing
- Option 2: Do Minimum
- Option 3A: Strategic Investment - with marketing growth
- Option 3C: Strategic Investment - no marketing growth
- Option 5: Strategic Investment – New Build

1.3.2 Capital and life cycle costs

- **Initial Capital Expenditure**

The following table summarises the initial capital costs (excluding life cycle capital) for each option for year 1 to 5:

Table 1.2: 5 Years Initial Capital Cash flows before discounting

Capital Expenditure	**Option 3A - Strategic Investment - With Marketing growth**	**Option 1 - Do Nothing**	**Option 2 - Do Minimum**	**Option 5 - New Build**	**Option 3C - Strategic Investment - No Marketing growth**
	£'000	£'000	£'000	£'000	£'000
Capital Expenditure	11,997	0	10,000	72,000	11,997
Total	**11,997**	**0**	**10,000**	**72,000**	**11,997**

- **Discounted capital expenditure over 62 years**

Table 1.3: 62 Years total Capital Cash flows from GEM after discounting

Capital Expenditure	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
Initial capital	10,291	0	9,397	67,702	10,291
Lifecycle capital	2,810	0	2,810	2,810	2,810
Total	**13,102**	**0**	**12,207**	**70,512**	**13,102**

1.3.3 Net Present Cost/Value

The Net Present Cost/Value (NPC/NPV) analysis combines the relevant cash flows of each option over the time period of the project i.e. 62 years. The figures were then discounted at the rate of 3.5% for 30 years and 3.0% thereafter to apply the current value of money concept. The NPC analysis excludes VAT, capital charges and RPI on revenue cost.

A risk appraisal of the shortlisted option has been conducted and the adjusted NPC has also been calculated. The following table summarises the NPV. It risk adjusted NPV and ranked options on this basis.

Table1.4: Net Present Cost/Value

	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
Net Present Cost	631,272	851,077	692,479	688,683	693,373
Financial Rank on NPC	**1st**	**5th**	**3rd**	**2nd**	**4th**
Cost of Risk	1,150	2,600	2,000	3,150	1,150
Risk Adjusted NPC	632,422	853,677	694,479	691,833	694,523
Financial Rank on Risk Adjust	**1st**	**5th**	**3rd**	**2nd**	**4th**

On the basis of the capital spend, NPC, and risk adjusted NPC, Option 3 A Strategic Investment - With marketing growth- is the preferred option.

1.3.4 Value for Money Analysis

The Programme Board conducted an analysis of qualitative benefits and scored them using a benefits scoring matrix. In the value for money analysis, both the benefit levels and the costs of the options are considered. The option offering the best score, with regards to the lowest cost per benefit point, is considered to be the best value for money. The following table summarises the value for money analysis which again ranks Option 3A as the preferred option.

Table1.5: Value for Money Analysis

	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
Benefit points per Option	8.3	0.5	1.9	7.8	8.3
Rank	**1st**	**4th**	**3rd**	**2nd**	**1st**
NPC per benefit point (NPC / Benefit	76,057	1,702,155	364,462	88,862	83,539
Rank	**1st**	**5th**	**4th**	**3rd**	**2nd**
Risk adjusted NPC per benefit point	76,195	1,707,355	365,515	89,269	83,677
Rank	**1st**	**5th**	**4th**	**3rd**	**2nd**

1.3.5 Sensitivity Analysis

A sensitivity analysis was carried out to determine the robustness of the selection of the preferred option. The sensitivity analysis indicates that Option 3A - Strategic Investment with marketing growth, is robust and remains the preferred option in all the scenarios as listed in the table below.

Table1.6: Sensitivity Analysis

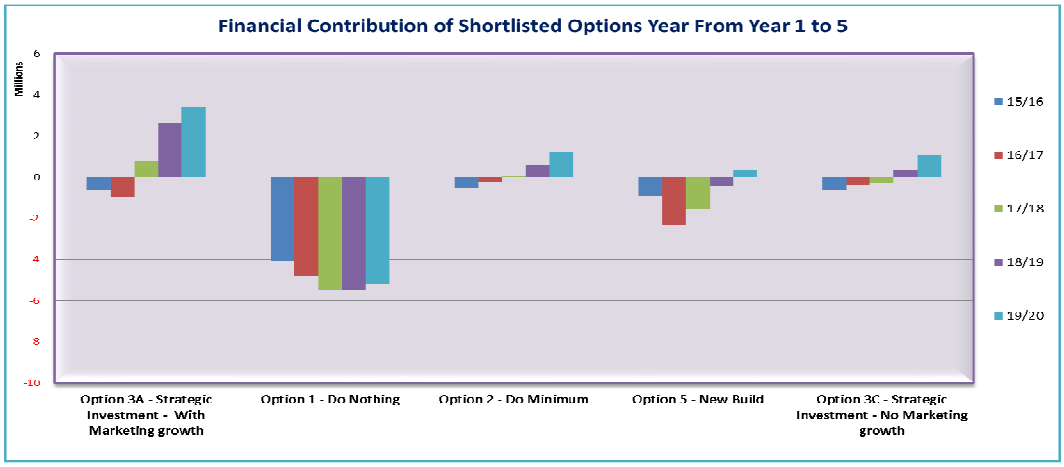
	Options									
	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth	Option 3A - Strategic Investment - With	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No
	£000s	£000s	£000s	£000s	£000s	Ranking				
Baseline NPC	631,272	851,077	692,479	688,683	693,373	1st	5th	3rd	2nd	4th
Capital & Lifecycle Costs Increase by 25%	634,548	851,077	695,530	706,311	696,649	1st	5th	3rd	2nd	4th
Capital & Lifecycle Costs decrease by 25%	627,997	851,077	689,427	671,055	690,098	1st	5th	3rd	2nd	4th
Income displacement increase by 10%	631,272	880,839	704,146	688,683	705,040	1st	5th	3rd	2nd	4th
Income displacement decrease by 10%	631,272	821,316	680,812	688,683	681,706	1st	5th	2nd	4th	3rd
Revenue Costs Increase by 10%	693,089	906,423	748,839	750,500	749,733	1st	5th	2nd	4th	3rd
Revenue Costs Decrease by 10%	569,455	799,574	636,118	626,866	637,013	1st	5th	3rd	2nd	4th
Revenue Costs Increase by 20%	754,906	961,769	805,199	812,317	806,093	1st	5th	2nd	4th	3rd
Revenue Costs Decrease by 20%	507,638	740,385	579,758	565,049	580,653	1st	5th	3rd	2nd	4th
Income displacement increase by 25%	631,272	925,481	721,646	688,683	722,541	1st	5th	3rd	2nd	4th

1.3.6 Conclusion of the economic analysis

The economic case concluded that Option 3A - Strategic Investment with marketing growth, is the preferred option. This is the option that has been progressed via the P21+ procurement route, with the appointment of Integrated Health Projects at stage 3 (October 2014) to support the Trust in developing this option for the FBC.

The analysis below shows the financial contribution of the shortlisted options in nominal terms and after capital charges and RPI from Year 1 to 5. This also confirms that option 3A is the preferred option.

Table 1.7: Analysis of Financial contribution of shortlisted options



1.4 Commercial Case

The commercial case outlines the proposed procurement route and contractual arrangements associated with the preferred option. It provides an update as to how the commercial workings of the project have developed since OBC approval.

The procurement will be for capital works only. This covers some refurbishment of the existing areas and a new four storey integrated building to provide: a new neonatal ITU and HDU facility; a second (co-located) obstetric theatre, with recovery area; and additional delivery rooms for the labour ward. This will enable the Trust to provide facilities which meet modern health building standards, improve privacy and dignity for patients and their families, and improve further the clinical safety. The solution will be delivered by introducing a new build core alongside the existing buildings, which will enable an increase in the overall footprint of each floor level. It will also allow the joining up of the existing wings, thus creating bigger footprints to provide for the different elements of the maternity and neonatal services.

The project will be delivered under a Principal Supply Chain Partner (PSCP) under the 'Procure 21+ National Framework Agreement' using an NEC3 (ECC Option C) contract.

The Trust appointed a PSCP at Stage 3 to work with the Trust to prepare this Full Business Case and submit an associated 'not to be exceeded' GMP (Guaranteed Maximum Price). The costs and programme in the business case are based upon proceeding with this procurement route; however, the Trust will continue to monitor the relative value for money of procurement route options to ensure that best value is achieved.

The PSCP was selected following the standard procedure of issuing a High level Information Pack to the Department of Health shortlisted suppliers and selecting a preferred partner based upon responses and interview. While the FBC is in the approvals process, the Trust will work with the PSCP to validate or reduce the 'not to be exceeded GMP' through market testing of works packages, value engineering or further design refinement.

The Trust has developed an equipment schedule using the NHS Activity Database and exemplar rooms, and in-house expertise from the Medical Physics team. The equipping budget is based on ensuring that appropriate equipment is procured for each department, with maximisation of equipment transfer from existing inventories.

Soft and Hard Facilities Management services for the facilities affected by this project are undertaken and managed in-house, supported by sub-contracts for some services including catering, food supplies and laundry services. FM costs will increase marginally as a result of the project, due to the projected increases in activity and the Trust's overall floor area, being offset by a relocation of services and improved quality and performance of facilities

Sustainability, environmental impact and energy efficiency have all been considered as part of the design development.

A Town Planning application is in progress, with detailed discussions taking place with the London Borough of Islington. Whilst the scheme is considered to be a 'major' scheme, to date, no significant issues have been raised by the planners to suggest that approval would not be granted.

1.5 Financial case

The purpose of the financial case is to demonstrate affordability for the preferred option established in the economic case, over the 5 years life of the programme (years 1 to 5).

1.5.1 Assumptions

The financial modelling uses a number of assumptions as follows:

Table1.8: Assumptions for preferred option

Financial Model Assumptions						
Preferred Option YoY						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
In Year	15-16	16-17	17-18	18-19	19-20	Year 1 - 5
Growth - Demographics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth - Marketing	0.0%	0.0%	10.1%	8.2%	0.0%	18.3%
Growth - Other	8.7%	0.0%	0.0%	0.0%	0.0%	8.7%
Total Growth	**8.7%**	**0.0%**	**10.1%**	**8.2%**	**0.0%**	**27.0%**
CIPs	0.0%	4.0%	4.0%	4.0%	4.0%	16.0%
Tariff Deflator - all except deliveries & postnatal	-1.6%	0.4%	-0.6%	-0.7%	-0.7%	-3.2%
Tariff Deflator - Deliveries	8.1%	0.4%	-0.6%	-0.7%	-0.7%	6.5%
Tariff Deflator - Postnatal	3.9%	0.4%	-0.6%	-0.7%	-0.7%	2.3%
Inflation - Pay	1.3%	3.5%	2.0%	2.0%	2.0%	10.8%
Inflation - Non Pay	1.6%	1.6%	1.6%	1.6%	1.6%	8.0%
Cquin	2.5%	2.5%	2.5%	2.5%	2.5%	12.5%

- Financial modelling is for 5 years i.e. 2015/16 to 2019/20
- Equipment will be transferred where possible
- NICU will operate at 80% occupancy (overall cot numbers will increase from 23 to 27)

1.5.2 Activity

The financial modelling assumes the following activity forecast:

Table 1.9 Activity forecast

Activitity	2015-16	2016-17	2017-18	2018-19	2019-20
	Year 1	Year 2	Year 3	Year 4	Year 5
Maternity					
Antenatal	4,826	5,168	5,464	5,765	5,765
Deliveries	3,945	3,945	4,345	4,700	4,700
Postnatal	3,812	3,812	4,198	4,541	4,541
Total	**12,582**	**12,925**	**14,007**	**15,006**	**15,006**
Neonatal					
High Dependency	1,657	1,657	1,971	1,971	1,971
Intensive Care	624	624	876	876	876
Special Care	4,359	4,359	4,417	4,417	4,417
Neonatal Excl Transitional Care	**6,640**	**6,640**	**7,264**	**7,264**	**7,264**
Transitional Care	6,621	6,621	7,386	7,990	7,990
Total	**13,261**	**13,261**	**14,649**	**15,254**	**15,254**

1.5.3 Capital

The overall, five year capital investment is £11,996,812, including Trust procurement and deployment costs. The capital requirement for the preferred option is as below:

Table 1.10: Capital spend and timing

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1-5
	£000s	£000s	£000s	£000s	£000s	£000s
Building	8,305	3,452	0	0	0	11,757
P&M	0	240	0	0	0	240
Net Disposal proceeds						
TOTAL	8,305	3,692	0	0	0	11,997

The capital costs for the programme, including VAT and inflation, have increased since the OBC from £9,997,834 to £11,996,812. This is mainly due to inflation and changes in the scope of works. This is shown in the table below.

Table 1.11: Capital Costs in OBC and FBC

Capital Cost £	Per OBC	Per FBC	Variance OBC vs FBC	Reasons for Variance		
	Option: 3	Option: 3	Option: 3	Inflation	Change in scope of works	Other
	£	£	£	£	£	£
Departmental areas	5,045,218	5,630,717	585,499	606,529	(21,030)	
Plant and corridors (On Costs)	1,137,188	1,887,004	749,816	109,315	640,501	
Location adjustments	432,768	676,595	243,826	188,075	55,751	
TOTAL WORKS COSTS (4Q 2014)	**6,615,174**	**8,194,315**	**1,579,141**	**903,919**	**675,222**	
Equipment Costs	100,000	200,000	100,000	-	100,000	
Planning Contingencies	377,065	466,102	89,037	51,523	37,514	
TOTAL OTHER COSTS (4Q 2014)	**477,065**	**666,102**	**189,037**	**51,523**	**137,514**	
Optimism Bias	400,918	199,763	(201,155)	(100,578)	(100,578)	
Inflation Adjustment	180,742	151,094	(29,648)	(29,648)	-	
Sub-total	**7,673,899**	**9,211,274**	**1,537,374**	**825,216**	**712,159**	
VAT	1,397,811	1,657,816	260,005	139,563	120,442	
Fees *	926,124	1,127,722	201,598	-	201,598	
Total Capital	**9,997,834**	**11,996,812**	**1,998,977**	**964,779**	**1,034,199**	**- 1**

The main differences in capital costs between the OBC and FBC are as follows:

- Impact of inflation
  The cost plan for the OBC was prepared in September 2013 using indices current at that time. Updating the cost plan for current indices has led to an overall inflation impact of £964,779.

- Change in scope of works
  The main elements of increase in the works costs relate to the additional costs of the modular versus traditional build for the new core, and the movement of the plant from level 5 to level 6 of the new core.

  A modular build approach to the new core has been adopted to minimise on-site disruption during the build phase and to maximise the space available within the courtyard area. Movement of the plant from level 5 to level 6 has been agreed to enable maximum value and efficiency from the investment. This change will enable an increase in the footprint available to clinical services on level 5.

1.5.4 Project Income and Expenditure

The Programme set out in this business case will overall contribute £5.2m including RPI, efficiencies and capital charges, from years 1-5. There will be net revenue deficits in years 1 and 2, but during 3 to 5 year a surplus will be generated.

Table 1.12: Project Income and Expenditure

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
REAL	£000s	£000s	£000s	£000s	£000s	**£000s**
Income						
Maternity	18,964	19,568	21,101	22,530	22,530	**104,692**
Neonatal	7,610	7,610	8,662	8,938	8,938	**41,758**
Cquin	664	679	744	787	787	**3,661**
Total Income	**27,238**	**27,857**	**30,508**	**32,254**	**32,254**	**150,111**
Pay	18,026	19,141	19,827	19,879	19,879	**96,753**
Non-pay	9,312	9,374	9,679	10,226	10,226	**48,817**
Efficiency savings	0	-1,196	-2,435	-3,723	-5,053	**-12,407**
Total Operational Costs (REAL)	**27,338**	**27,320**	**27,071**	**26,382**	**25,052**	**133,163**
EBITDA (REAL)	**-100**	**537**	**3,437**	**5,872**	**7,202**	**16,948**
Inflation/Deflation	383	1,109	1,993	2,626	3,187	**9,299**
EBITDA After Inflation	**-483**	**-572**	**1,444**	**3,246**	**4,015**	**7,649**
EBITDA %	-1.8%	-2.1%	4.7%	10.1%	12.4%	**5.1%**
Depreciation	0	38	230	230	230	**729**
PDC @ 3.5%	145	355	415	406	398	**1,719**
Total Annual Capital Charges	**145**	**393**	**645**	**637**	**629**	**2,448**
Surplus/(Deficit)	**-628**	**-965**	**799**	**2,609**	**3,386**	**5,200**
Surplus/(Deficit) %	-2.3%	-3.5%	2.6%	8.1%	10.5%	**3.5%**

1.5.5 Affordability conclusion

In order to judge the net revenue cost affordability of the preferred option, the Trust regards any position that shows an aggregate surplus of income over expenditure measured over the Long Term Financial Model period as affordable in terms of the Income and Expenditure account.

The programme set out in this business case will overall contribute £5.2m including RPI, efficiencies and capital charges, from years 1-5. There will be net revenue deficits in years 1 and 2, but during years 3 to 5 year a surplus will be generated. The Trust assumes it will to fund any cost pressures and I&E deficits in the earlier years.

Table 1.13: I&E – Funding

	2015-16	2016-17	2017-18	2018-19	2019-20	Total (Year 1-5)
	£000s	£000s	£000s	£000s	£000s	**£000s**
Net Operating Cost	-483	-572	1,444	3,246	4,015	**7,649**
Depreciation	0	-38	-230	-230	-230	**-729**
PDC	-145	-355	-415	-406	-398	**-1,719**
Total Contribution	**-628**	**-965**	**799**	**2,609**	**3,386**	**5,200**
Funded by Trust	-628	-965	799	2,609	3,386	**5,200**
Cost Pressure	**0**	**0**	**0**	**0**	**0**	**0**

It has been assumed that the capital expenditure required for this project will be financed in full through PDC, rather than internally or via a loan, for the following reasons:

- With an expected average annual Capital Resource Limit (CRL) for the Trust of £9m, the Trust does not believe that the project can be afforded from internal capital.
- An overview of the Trust's historical and current financial performance, indicates that though the Trust has positive historical financial performance, the Trust is forecasting a deficit of £7.4m for current year 2014/15 and further deficits for 2015/16 and 2016/17, returning to balance thereafter. In view of this position and having investigated alternative funding routes, the Trust has concluded that PDC is the best option. With PDC the funding cost relates purely to capital charges which will be funded by the Trust via I&E.

If this business case is approved, there will be no gap in funding for capital.

Table 1.14: Capital Cost Funding Assumptions

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
	£000s	£000s	£000s	£000s	£000s	**£000s**
Capital Required	8,305	3,692	0	0	0	**11,997**
PDC Funding	8,305	3,692	0	0	0	**11,997**
Shortfall	**0**	**0**	**0**	**0**	**0**	**0**

For completeness, an analysis of the remaining shortlisted options has been carried out for years 1-5 with the following conclusions:

- Option 1: Do nothing has a cumulative deficit of £25m
- Option 2: Do Minimum has a cumulative surplus of £1.1m
- Option 5: New Build has a cumulative deficit of £4.8m.

These all show worse positions than the Trust's preferred option, by £30m, £4m and £10m respectively. A cash flow analysis indicates that the additional requirement for cash for the preferred option is substantially lower than for all other shortlisted options.

In summary, the Trust is seeking funding of a capital cost of £11,996,812 via PDC, with any operational revenue costs i.e. I&E cost pressures/deficit in the fist two years being funded by the Trust.

1.6 Management case

The management case outlines how the Trust will manage the project implementation through to commissioning and opening, and then into the operational and post-project evaluation phases.

The programme structure has been developed to follow those set out in the ProCure 21+ Guide, NHS Estates Capital Investment Manual and the Treasury Green Book, NHS TDA's Accountability Framework for Trust Boards and the NTDA Capital Regime Guidance for NHS Trusts. It is supported by the project management disciplines of PRINCE2, which will be tailored to suit the needs of this Programme.

The Trust has in place a robust project governance structure, which clarifies responsibilities, including the relationship with the Trust's P21+ Principal Supply Chain Partner - Integrated Health Projects (IHP).

A project programme has been established, informed by a detailed stage 3 (FBC) and 4 (construction) programme prepared by IHP.

The Trust has held discussions with its key Clinical Commissioning Groups (CCGs) - Islington and Haringey, and NHS England, who have indicated their support for the business case.

The Trust recognises the importance of good communication and in preparing this FBC has developed a detailed communications plan, with weekly updates on progress with implementing the plan provided to the Programme Board.

Fortnightly risk workshops have been held during the FBC preparation period to identify and manage risks associated with the project. The key current risks associated with project are described, with the top risk being the securing of Town Planning approval. This risk is being actively managed with on-going dialogue with London Borough of Islington regarding the application and a focus on the preparation of robust supporting documentation.

This FBC includes a planning contingency of 5% within the cost plan. An additional optimism bias allowance has also been included, at a reduced level to that within the OBC to reflect the involvement of IHP in the preparation of the FBC and the significantly greater detail to which design and construction plans have been developed.

The management case concludes with a description of the Benefits Realisation Plan and also details how the project will be evaluated to ensure that the identified benefits of the programme schemes are realised.

1.7 Conclusions

This Full Business Case concludes the following:

- The Trust must address the physical environment and space constraints of the neonatal ITU/HDU and labour ward and improve the quality and safety of obstetric theatre provision
- The Trust must create further delivery capacity to provide real choice for local women
- There is only one option which meets all the agreed investment criteria and is deliverable within the required timescales
- Capital investment of £11,996,812 is required and should be funded via PDC
- The preferred option is affordable and will contribute to the long term sustainability and viability of the Trust.

2. Strategic Case

Changes from OBC to FBC

The strategic case fundamentally remains the same as set out in the Outline Business Case.

The strategic case has been updated to reflect the revised programme timeline, and any updates or additional information available.

2.1 Introduction

This Full Business Case (FBC) sets out the case for strategic capital investment in Whittington Health's maternity and neonatal services. This investment will improve the quality and safety of the environment in which our services are provided and enable the continued provision of outstanding services, which meet the needs of the local population.

Furthermore, this investment will support the Trust's vision as an Integrated Care Organisation (ICO), to provide co-ordinated, safe and high quality healthcare across primary, community, intermediate and acute care settings. The investment will support the Trust to deliver our clinical strategy.

This section reviews and updates the strategic section presented in the Outline Business Case, describing the Trust's existing maternity and neonatal services, the demand for these services, the physical environment from which they are delivered and the current safety and quality concerns associated with those facilities. The analysis undertaken in this section of the FBC has led the Trust to believe that there continues to be a compelling case for change.

In order to deliver safe and high quality services, which meet the NHS Constitution Pledge which states[1]:

> "to ensure that services are provided in a clean and safe environment that is fit for purpose, based on national best practice,"

The Trust must undertake further investment to address the following:

- By September 2016, to improve the quality and safety of the neonatal ITU and HDU facilities. (Using Health Building Note (HBN) 09-03, sec 7.15/7.16 as the benchmark).
- By September 2016, to build a second, co-located, dedicated obstetric theatre, thereby improving the safety of maternity theatre service provision.
- By September 2016, to increase the capacity of the maternity and neonatal services to meet the needs of an anticipated 4,700 deliveries.

2.2 Full Business case structure

This FBC has been prepared using the agreed standards and format for business cases, as required by the NHS Trust Development Authority's: "Capital Regime and Investment Business Case Approvals Guidance for NHS Trusts".

The approved format is the Five Case Model, which comprises the following key components:

- **Strategic case**. This sets out the strategic context and the case for change, together with the supporting investment objectives for the scheme,
- **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),

[1] The NHS Constitution for England 26 March 2013

- **Commercial case**. This outlines the content and structure of the proposed investment,
- **Financial case**. This confirms funding arrangements and affordability and explains any impact on the Balance Sheet of the organisation,
- **Management case**. This demonstrates that the scheme is achievable and can be delivered successfully to cost, time and quality.

2.3 Whittington Health

Whittington Health is an Integrated Care Organisation (ICO) providing high quality co-ordinated services to local people in partnership with Clinical Care Commissioning Groups (CCGs), GPs, local authorities and other local providers. Maternity and neonatal services are an integral part of the ICO, providing the essential beginning of 'co-ordinated healthcare' for the local population.

There is a rich history associated with Whittington Health where healthcare services have been provided from the hospital site since 1473. The St Mary's Wing, where the current maternity and neonatal services are provided from, opened in 1900. The hospital became a university teaching hospital in 1976 and incorporated the City of London Maternity Hospital in 1983.

Following consolidation of services onto the current main hospital site, there have been significant developments to the site, including:

- 1970s: ED/OP/pathology block (K Block)
- 1980s: Main wards and theatre block (Great Northern Building/L Block)
- 2000s: Day surgery/imaging/wards/UCL facilities(mainly new Build/A Block)
- 2014: Opening of new ambulatory care centre providing same day emergency care for adults/children and a new Tuberculosis Centre for North Central London

Whittington Health (WH) was established in its current form in 2011 following the integration of Haringey community health services and Islington community health and social care services into the Whittington Hospital NHS Trust (the Trust).

The Trust now provides high quality acute, community, social care, maternity and neonatal care services for a total population of circa 500,000 people. Services are principally provided from the Whittington Hospital site, with 329 beds - which includes 205 adult beds in medicine and surgery, and from locations in the communities of Haringey and Islington with links to 331GPs in 91 practices.

The Trust generates income of circa £290m and has two main commissioners, Islington (45%) and Haringey (36%) Clinical Commissioning Groups (CCGs). Some specialist services, such as neonatal activity, are commissioned by NHS England.

Whittington Health employs more than 4,000 staff, treats circa 96,000 people in the Emergency Department (ED) and has seen emergency admissions rise. Despite increasing ED contacts the trust achieved the 95% Emergency Department target in 2013/14. The trust delivers circa 4,000 babies, performs over 900,000 diagnostic tests, has 48,000 out-patient attendances, operates on 19,500 day cases and makes over 640,000 community contacts.

The Trust is also a significant provider of education and training to the clinical workforce with 400 students in clinical practice, including 150 medical school undergraduates, 130 nurses and midwives and 160 postgraduate doctors, generating revenues of over £17m per annum. The Trust has recently been identified as the host organisation for the new Islington Community Provider Education Network. Delivering education to future clinicians and staff is important to all staff who work in the organisation

Clinical services are split into three divisions – Integrated Care and Acute Medicine (ICAM), Surgery, Cancer and Diagnostic (SCD), and Women, Children and Families (WCF).

The Trust has historically demonstrated good performance in achieving national standards, including the best standardised hospital–level mortality indicator (SHMI) in England and year on year improvement in the Care Quality Commission (CQC) in-patient, out-patient and cancer surveys. The trust achieved the 95% Emergency Department target in 2013/14.

In 2013, the Trust won the CHKS Top Hospitals programme patient safety award. This award recognises outstanding performance in providing a safe hospital environment for patients and is based on a range of indicators, including rates of hospital-acquired infections and mortality.

After a history of financial delivery, the Trust is currently (2014/15) declaring a deficit position due to CIP under delivery and the impact of the ambulatory care model. These issues are being addressed internally and with commissioners and a recovery plan is in place. The maternity FBC forms a key part of this plan.

2.4 Whittington Health clinical strategy and supporting strategies

2.4.1 Clinical Strategy (See Appendix 2 Clinical Strategy - Transforming Healthcare for Tomorrow)

Whittington Health's vision is to be an outstanding provider of high quality joined up healthcare to local people in partnership with GPs, councils and local providers.

The Trust articulated its five-year clinical strategy in the document 'Transforming Healthcare for Tomorrow', which was approved by the Trust Board in 2013 following a three month stakeholder 'listening exercise' on the Trust's clinical strategy.

The strategy document describes how the Trust will transform over five years with the aim of becoming a powerful enabler of improved health outcomes for its local population. The Trust's vision is to be an organisation providing fully joined-up, effective and high quality healthcare across primary, community, intermediate and acute care settings and supporting positive lifestyle changes to improve health and well-being.

The Trust's five strategic goals are to :-

1. Integrate models of care and pathways to meet patient needs,
2. Deliver efficient, affordable and effective services and pathways,
3. Ensure 'no decision about me without me' through excellent patient and community engagement,
4. Change the way we work by building a culture of education, innovation, partnership and continuous improvement, and
5. Improve the health of local people in the community.

The Trust is delivering change through an ambitious transformation programme, of which significant improvements to maternity and neonatal services are one part.

The clinical strategy is supported by a number of key organisational strategies:

2.4.2 Strategy for a Modern Healthcare Estate (See Appendix 3)

The Trust's strategy for a modern healthcare estate has been developed to support the delivery of the Whittington Health vision through ensuring both the maintenance of a safe and good quality estate for the delivery of services and through targeted support to specific initiatives.

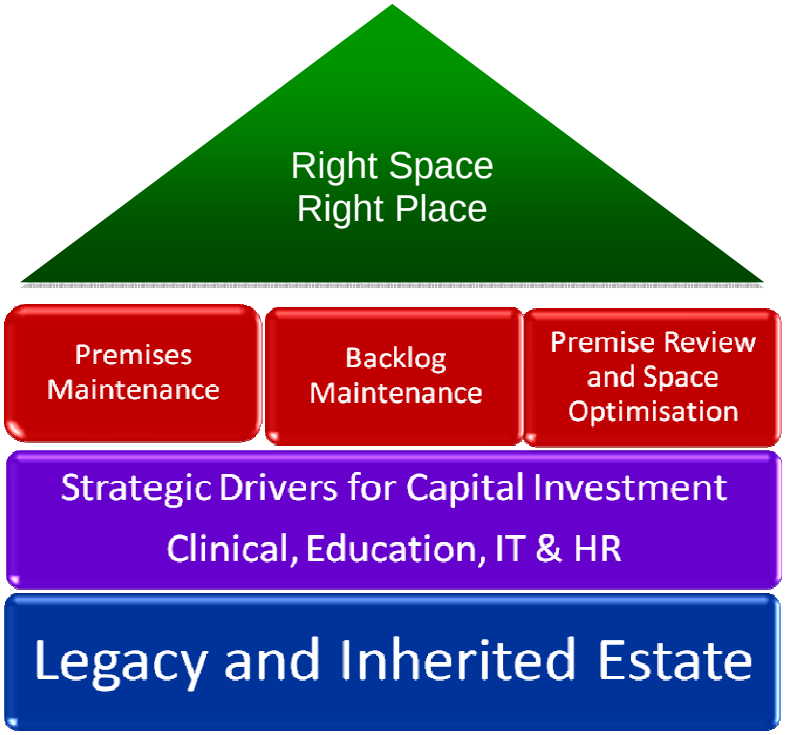
The vision statement for the strategy 2015-19 is:

'To create an estate that provides a safe and effective environment for staff to deliver the right care to patients: at the right time; the right space and the right place.'

This vision is underpinned by a number of principles:

Function	Principle
Premises	- Patient focused - Compliant with legislation - Available when and where required - Managed to ensure utilisation is optimized 'right space, right place'
Services	- Estate service delivery using proven systems to minimise risk - Compliant with estate and industry standards - Support carbon reduction strategy - Deliver services that are affordable and high quality and meet the needs of staff
Staff	- Access to premises and space that is suitable and sufficient to deliver the clinical or support services they need to, to meet the Trust's strategic objectives

The schematic below encapsulates this vision



The delivery of the strategy will transform clinical care and organisational efficiency through:

- Capital investment to reduce and eliminate premises backlog,
- Through robust business planning, identify estate development needs that are required to support the trust clinical strategy and the investment needed to deliver them in a timely manner
- Optimise use of premises to improve estate KPIs.
- Developing an effective and efficient pan trust hard facilities management service to ensure that premises are available when they are required for as long as they are needed.

The strategy is delivered through a number of work plans:

- Clinical Strategy and capital investment – to ensure that the trust property aligns with the clinical needs of the organisation
- Backlog investment and carbon reduction – to ensure that the Trust reduces backlog to £0 by 2020 and to reduce direct carbon emissions from premises occupation
- The Estate Terrier and the Seeker database – to complete lease and license documentation and establish a robust system of management for lease reviews and to develop the Seeker database to provide real-time information to managers about utilisation of premises.
- Space Utilisation – to promote effective use of space by introducing space charging and smart working and to reduce the effective cost of occupancy to match the best in class for ICOs.

The strategy recognises one of the major challenges facing the Trust is the need to modernise and optimise its estate so that it can deliver integrated and co-ordinated care to people from across some of the most diverse populations in London.

The strategy identifies the need to:

- Modernise maternity and neonatal accommodation to improve the quality of patient experiences, with this business case seeking approval for the additional capital required to facilitate this transformation.
- Relocate clinical services in the community to provide care closer to home as and when there is evidence that the Trust can sustain the change, and there is evidence that the benefits anticipated can be delivered
- Re-use space vacated by clinical services to develop new, or expand existing, services,
- Make intelligent use of non-clinical accommodation to reduce the space used by support administration.

The Trust estate is described in more detail in section 2.5 below.

2.4.3 Quality Strategy (see Appendix 4)

The purpose of this strategy is to outline the strategic goals for the Trust in providing high quality services for the local population. It supports the broad organisational objectives articulated within the Trust's five-year strategy and provides a vehicle for the delivery of the Whittington Health vision, through measurable objective quality goals and metrics.

The strategy identifies three domains of quality as the focus for this aspiration:

- **Providing safe services:** means taking action to reduce harm to patients in the Trust's care and protecting the most vulnerable and it means ensuring that the workforce receives the right education and training in preparation for the delivery of competent and skilful intervention.
- **Providing effective services:** means providing care that is based upon the best evidence and that produces the best outcomes for patients.
- **Providing the best experience of our services:** means ensuring that the services that the Trust provides are person centred and that people are treated as individuals with dignity, privacy and with compassion at the right time and in the right place for them.

This business case describes specific areas of concern within maternity and neonatal services relating to the three domains articulated above, including: labour ward capacity; access to obstetric

theatres; control of infection in neonatal services; inefficiency of service provision because of poor functional layout and concerns raised by women and their families. The Benefits Realisation plan attached at Appendix 11 details the improvements expected as a result of implementing the proposals set out in this case.

2.4.4 Information Technology (IT) Strategy (Appendix 5)

The Whittington Health IT strategy sets out the Trust's ambitious vision to become one of the first digital organisations in the NHS.

The vision statement for the IT Strategy is:

> "To create a digital integrated care organisation that provides secure on-line access to the right information, to the right person, to the right place"

Planned IT capital investment totals £12.3 million for the period 2011-16, with a peak in 2011-12 reflecting the £5 million Department of Health capital awarded for the procurement of the Electronic Patient Record (EPR) system.

The EPR system will become the foundation upon which the digital ICO will be developed. It will provide the strategic platform to integrate patient records across the Trust and enable secure data sharing with external stakeholders e.g. Patients, GPs, and Social Services.

The key IM&T Developments for 2014/15 are:

- Clinical Noting, E-handover and Task Management functionality delivered in EPR to improve patient care
- On-going development of the Integrated Community EPR solution in preparation for migration off RIO in October 2015
- Integration of third party solutions into EPR in patient context e.g. Picture Archiving and Communication System (PACS), Electronic Document Management System (EDMS) to improve patient care
- Electronic Document Management System (EDMS) and Electronic Workflows go-live to improve operational efficiency
- Roll out of the GP Portal and enhance the functionality to improve patient care
- Implementation of desktop Business Intelligence solution to improve operational efficiency and support delivery of CIP
- Implementation of free patient Wi-Fi to improve the patient experience

These improvements will support the redevelopment of maternity and neonatal services and are an integral part of the transformation of the services.

2.4.5 Leadership and Workforce Plan (Appendix 6)

The Whittington Health Leadership and Workforce plan has been developed as part of the Trust's Integrated Business Plan. It aims to ensure that the Trust's services are outstanding in quality, delivered by empowered, highly skilled and motivated staff providing improved and transformed services to meet the health needs of local people.

The Leadership and Workforce plan sets out a number of key messages.

Whittington Health will:

- Ensure that clear and consistent messages about the Trust's vision and strategic goals are communicated to all staff
- Develop and reinforce a culture which is consistent with the delivery of our vision
- Clarify and support workforce behaviours consistent with core values and principles
- Create, resource and support a sustainable, realisable and coherent transformation programme
- Promote a learning environment encouraging innovation and continuous development
- Support the development of skills which will enhance partnerships and promote new ways to support delivery of our integrated care model
- Measure progress and reward success.

The workforce strategy is supported by an organisational development plan (OD plan) which presents the rationale for engagement and investment in a co-ordinated programme of people based initiatives to drive change.

This business case describes the need for additional staff and a changing skill mix in maternity and neonatal services. The workforce strategy and associated organisational development plan will support the recruitment, retention and development of staff to deliver excellent services.

2.5 Whittington Health estate

The Trust is continuing to transform from a single-site acute hospital into a multi-site Integrated Care Organisation providing seamless care across acute and community services. The transformation is on-going; with the transfer of qualifying community properties adding a layer of complexity in determining how best to configure the estate to support the clinical strategy.

2.5.1 Whittington Hospital site

For the purpose of this business case, the main focus is the Whittington Hospital site, situated in the London Borough of Islington between Dartmouth Park Hill to the west, Highgate Hill to the east, a primary school to the north and Magdala Avenue to the south (fig 2.1). It occupies a single site of 4.57 hectares between the urban centres of Archway to the south ($^1/_4$ km) and Highgate Village to the north ($^1/_2$ km). The closest underground station is Archway on the Northern Line and numerous bus routes pass or terminate close to the hospital.

The site is densely developed with a mix of Victorian and contemporary hospital buildings. It provides a range of in-patient wards, ambulatory services, emergency department, residential accommodation, administration and other support departments. On the site there is one Grade II listed building, which is used for administration.

Fig 2.1: Whittington hospital site

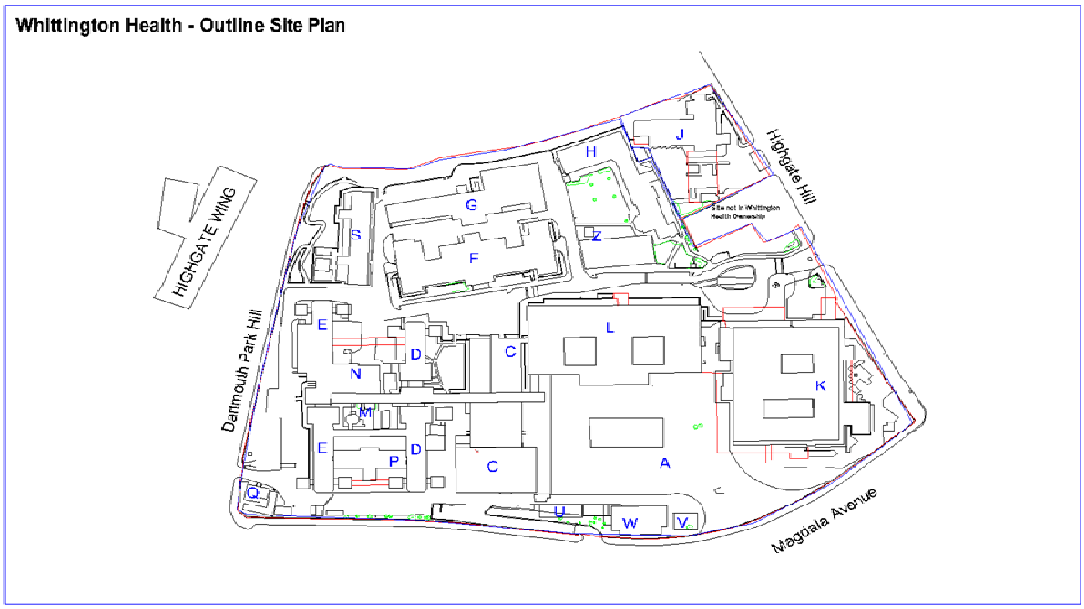


Fig 2.2: Aerial view of the Whittington hospital site (2007) (from south looking north)

2.5.2 Whittington Health Six-Facet survey

The Trust undertakes a regular six-facet survey, the most recent completed in 2012/13, to provide up to date information about the condition of both the main hospital site and the other premises that are now part of the Trust's property portfolio. This information is used to inform capital planning.

Table 2.1: Six-facet survey summary data for Whittington Health 2012/13

Category	Performance standard (A-D)* % at 2013 (2012 in brackets)	Cost 2013* (2012 in brackets)
1. Physical condition	A= 0% (16.8%) B= 63.9% (58.1%) B(c) = 14.1% (2.8%) C= 10.0% (22.0%) D= 6.6% (0.2%)	£7.07m (£9.10m)
2. Functional suitability	A= 0.0% (0.4%) B= 89.9% (78.3%) C= 10.1% (20.4%) D= 0.0% (1.0%)	£6.50m (£3.90m)
3. Space Utilisation	Empty= 0.7% (1.3%) Underused= 1.6% (2.3%) Fully Used= 97.2% (95.9%) Overcrowded= 0.6% (0.5%)	£4.40m (£4.40m)
4. Quality of the Environment	A= 0% (0%) B= 97.8% (87.1%) C= 2.2% (12.9%) D= 0% (0%)	£0.45m (£0.07m)
5. Statutory Requirements	A= 0% (0%) B= 90.4% (84.8%) C= 9.6% (15.2%) D= 0% (0%)	£0.36m (£0.42m)
6. Environmental performance	A= 1.3% (1.3%) B= 69.2% (47.6%) C= 29.5% (51.0%) D= 0% (0.2%)	£0.05m (£0.67m)
	Totals	**£18.83m (£18.65m)**

*Key: A = as new; B = sound, operationally safe and exhibits only minor deterioration; C = operational but major repair or replacement will be needed soon, D = runs a serious risk of imminent breakdown

Key messages from the six-facet survey: (See Fig 2.1 for block references):

- The majority of the backlog lies in blocks, D, E and K.
- Functional suitability is an issue in blocks D and E.
- The site is shown as well utilised however some areas are used for inappropriate functions (e.g. acute areas used as storage).
- Almost 50% of the estate has an energy performance of B or better.
- J Block (the Waterlow Unit) is impaired.
- Total site backlog estimated to be circa £18m in 2013 (before VAT and costs)
- The functional suitability estimate covers only clinical accommodation for which NHS standards are available as a measure.

Maternity and Neonatal services are mainly provided from D and E blocks which are the areas with the most significant backlog and functional suitability issues.

In the past five years the Trust has invested £13m on backlog/legal and statutory improvements and £9.7 million on improvements associated with the delivery of its objectives.

2.6 Maternity Services

2.6.1 Services & model of care

Whittington Health believes in a truly co-ordinated approach to maternity care. The Trust offers a personalised, safe women-centred approach to health promotion, disease prevention and management with implications for long-term, cross-generational gain.[2]

This includes services from pre conception, such as health promotion, gynaecology and sexual health services. The Trust also provides neonatology, health visiting, school nursing and paediatric services. This means that the antenatal care, delivery and postnatal care of women and their babies, is uniquely integrated with health visiting and general paediatrics. In addition the true integration of the Trust's healthcare services, such as sexual health within the early pregnancy diagnostic unit and early access to midwifery care, allows easily available lifestyle and nutritional education and support to women in the reproductive age. There is a close relationship between maternity services, health visiting and general paediatric services to ensure the provision of integrated care for every child.

The quality of the Trust's maternity services has recently been recognised with the Trust performing well in the NHS 2013 Maternity Survey released in December 2013. The results were positive, reflecting significant improvement on nearly all areas since the 2010 survey.

The Trust's model of care for core maternity services is based on ensuring services are delivered to maximise ease of access through the provision of community-based midwife services and, where required, consultant-led antenatal care.

Re-engaging with local general practitioners and formulating shared care packages for core, and some specialist, pathways is a priority. This is supported by agreement of the roles and responsibilities of the midwives, general practitioners and obstetricians involved in the care of pregnant women.

Other key features of the Trust's maternity services are:-

- A choice of delivery options for women

  Including home birth, midwife-delivered care in a dedicated midwifery-led birthing unit and obstetric-led care in the Labour ward.

  Home birth activity levels have remained consistent at 2% for the last 4 years. A 24 hour on-call service is provided to support women who want a homebirth and women are made aware of the options of birth throughout their pregnancy, with home births being actively promoted.

  The development of the midwifery-led birthing unit in 2009 significantly improved the choice of delivery options for women at the Whittington Hospital, with circa 17% of deliveries (650 deliveries) projected to take place in the birth centre in 2014/15. Further development of care pathways is increasing the number of births taking place on the birthing unit. Initiatives include: women who are 'low risk inductions' being encouraged to use the birth centre; active birth classes being set up to encourage women to use the birth centre; and work being progressed to reduce c/section rates and therefore increasing potential birth centre and labour ward activity.

  The labour ward has two birthing pools, and telemetry. It thus embraces the 'normalising birth pathway' for the more high risk women who give birth there.

[2] Why should we consider a Life Course Approach To Women's health Care, Scientific Impact paper 27, RCOG

- Integration of the Trust's health visiting and early years services with maternity services

  The WH maternity and health visiting services are currently working together to create an integrated pathway for first time pregnant women which will provide consistent and seamless support and care for families. The pathway, currently being piloted, includes: joint midwife, health visiting and children's centre staff meeting for information sharing; joint meetings with GPs; introduction of health promotion guides in the antenatal period by health visitors; joint (midwife and health visitor) appointments for most vulnerable women; the offer of 'Preparation for Birth and Beyond' group sessions facilitated jointly by midwives, health visitors and children's centre staff; new birth assessment; and postnatal promotional guide. First time parents meet as a group and are jointly supported by the Community Adolescent Mental Health Service and Speech and Language Team services.

  The Trust is already the leader in London for Family Nurse Partnerships (FNPs) offering a structured support programme to first-time teenage parents in Haringey and Islington and winning a tender to provide FNP services in Hackney and the City of London.

- Inpatient care services

  The Trust provides antenatal, postnatal and transitional care for those women and babies that need to stay in hospital.

- All partners are now able to stay overnight

  This improves bonding between fathers and their babies. The service has won the 'Islington Nursing Courage Award' and was a 2014 All Party Parliamentary award winner. This service has been viewed as hugely successful and is now being rolled out nationally.

- A Consultant Midwife-led obstetric weight and nutrition clinic

  This clinic is prompted by statistics that show obese women have a higher risk of dying in childbirth. The clinic is designed for women with a BMI over 35 at the time of booking, and is run together with a dietician. It is supported by a weight management programme through the public health agenda in Islington and Haringey

- Specialist antenatal care for high risk women

  Pregnant women with diabetics, women with twin pregnancies, medical complications in pregnancy and vulnerable women in HMP Holloway are cared for in highly specialised clinics. Personalised care pathways ensure that these women experience their pregnancy as normal as possible, that medical intervention is kept to a minimum. These clinics provide ambulatory based care, where possible, supported by a dedicated maternity day unit.

- Female Genital Mutilation (FGM) service

  This service reaches out into the community. Of the women referred to the maternity service, 2.2% were referred to the FGM service in 2013/14 and referrals received from GPs from areas both within London and areas outside London, such as Norfolk, Manchester and Liverpool. Women can access this service pre pregnancy and are also supported throughout pregnancy and delivery. One of the Trust's Somali midwives and the local community leaders regularly present a feature on Somali television in an attempt to change cultural views and practices.

- Responding to the needs of women who choose to deliver at Whittington Health

  - The Trust has set up a weekly community antenatal clinic in the Lubavitch centre in Hackney and created a very well received Shabuoth room in the hospital.
  - Acupuncture Services: 98.57% of women who used our antenatal acupuncture services say that acupuncture positively affected their journey/patient experience through their pregnancy at Whittington Health. To enhance the service, 2015 will see the introduction of acupuncture services at WH on the labour ward and the birth centre.

- The Trust's consultant midwife has set up a 'Normalising Birth Project'
  - To reduce our Birth Centre transfer rate, increase homebirth rates, and reduce the instrumental delivery and emergency caesareans section rate.
  - To enable high risk mothers attempt normal birth by improving antenatal education, give birth preparation tools and provides an environment of birth that optimizes chances of normal birth.
- A midwifery run Vaginal Birth after Caesarean (VBAC) clinic to reduce caesarean section rates has been set up and a Whittington Maternity VBAC Pathway has been created.
- A weekly review meeting of emergency caesarean sections has been established.
- Our enhanced recovery programme enables women who have an uncomplicated caesarean section delivery to play an active role in their recovery and return to their families within 24 hours of their elective caesarean.

Further development plans for the service include:

- Review of the bereavement services for maternity and the development of an improved service model focussing especially on women with early losses, by integrating the Women's Diagnostic and Early Pregnancy Units with the Trust's midwifery services,
- Use phone apps to share information with women on all aspects of pregnancy and aftercare. Recent consultation with women highlights the need to focus on improved information, dignity and respect,
- Review of linking hand held maternity records to Electronic Patient Record (EPR) for maternity. Work has started with the Trust's EPR providers (Medway) to allow web-based links to maternity notes for GP's and health visitors, paediatricians and the safeguarding team. The Trust is keen to implement the electronic red book where possible. This will encourage even greater integration of services, focused on the needs of all local women and children, supported by training and information.
- Improving access. The Trust's midwives and health visitors are already placed in all the children centres in Haringey and Islington. The Trust is embracing the public health objective of improving access, particularly for vulnerable women. Care pathways are being created for these women to ensure early antenatal referral, co-ordinated care throughout pregnancy and in the postnatal period involving GPs, midwives, health visitors, paediatricians, social services and safeguarding teams. Importantly this work also links well with the 'early years' strategy, helping vulnerable new parents and children to a better start in life.
- Implementation of customised growth charts project from January 2015. Epidemiological analysis based on the comprehensive West Midlands database has underlined the impact that fetal growth restriction has on stillbirth rates, and the significant reduction which can be achieved through antenatal detection of pregnancies at risk. Customised assessment of birth weight and fetal growth has also been recommended by the RCOG since 2002 and is reemphasised in the 2013 revision of the Green Top Guidelines.

2.6.2 Staffing

The unit presently works to a midwife to birth ratio of 1:26-28 which is the nationally recognised standard ratio. This compares to the 1:30 ratio that has been adopted across London. The service meets current standards for midwife ratios such as the requirement for 1:1 midwife support during labour, and the standards required for Consultant Labour ward presence - currently providing 80 hour obstetric-consultant led care on the Labour ward.

The Trust has an excellent track record in recruiting to midwifery posts and offers good support to staff with the "Supervisor of Midwives" team recently winning the 2013 Supervisor Team of the Year Award for London. Our consultant midwife in her supervisory role won the 2014 London Supervisor of the Year Award.

2.6.3 Facilities and physical environment

- **Current Facilities**

The Trust's hospital based maternity services are delivered from buildings on the west side of the hospital site that were part of the original St Mary's wing which opened in 1900 (Blocks D, E, N and P) and as such the basic building fabric is over 100 years old. The additional obstetric capacity (c/sections and emergency cover) is provided from main theatres in L block which is a considerable distance from the labour ward.

Set out below is a table showing the existing service facilities.

Table 2.2: Current Maternity Facilities

Service Element	Facilities
Community provision	Children's Centres and Health Centres
Ambulatory facilities	Antenatal Clinic Maternity Day Unit Triage
Birthing Rooms – Midwifery-led	5
Delivery Rooms – Consultant-led	7 x single rooms 1 x 2 bedded room
Obstetric Theatre (dedicated/co-located)	1 3 bedded recovery bay
Main theatre (use of one theatre)	5 sessions per week and also made available 24/7 for obstetric emergencies
Beds	39 (in 2 wards)

There is significant backlog, (as described in section 2.5), associated with the accommodation in which maternity and neonatal services are provided (mainly D and E Blocks) mainly in relation to condition and functional suitability. For example, the maternity labour ward provides poor accommodation for women and families, with no en-suite facilities to the delivery rooms and poor provision for storage both within the rooms and for equipment not in immediate use. Staff facilities are limited, with poor changing facilities, rest facilities and office accommodation,.

The current footprint of D and E Blocks creates significant obstacles to remedying the functional suitability deficits that have been identified in the six-facet survey. The services need larger footprints to: i) enable the provision of neonatal accommodation to meet current Health Building Note standards; ii) provide en-suite facilities; iii) enable the co-location of two dedicated obstetric theatres with Labour Ward (see 2.6.4, access to theatres); iv) allow departmental areas configured in such a way that enables them to be staffed efficiently.

Furthermore the physical dislocation of some maternity service elements, combined with poor staff facilities, creates a more stressful working environment and places additional pressures on staff which can reflect on the rest of the service.

- **Historical investment**

Previous capital investment in maternity services has primarily focused on backlog and maintaining existing facilities, with only limited piecemeal or opportunistic expansion.

Historical investment in the maternity facilities has included:

- Development of a Midwifery-led Birthing Unit
- Relocation of maternity day services and fetal medicine service to vacant ward space
- Upgrade and expansion of antenatal clinic facilities
- Minor refurbishment of Labour Ward and theatre (new flooring, new ventilation unit).

The Midwifery-led Birthing Unit in particular sets a benchmark for future development in terms of quality of patient accommodation. An existing ward footprint is being converted to provide individual birthing rooms with en-suite WC/Shower rooms. To enhance the experience of a normal delivery, in-room storage has been configured to enable emergency equipment for women and babies to be stored out of sight but set up ready and immediately available if needed.

The Midwifery-led Birthing Unit opened in 2009 following a refurbishment of a ward area in E Block south. It receives very positive feedback from women and their families on NHS choices

- 'Thank you - great maternity experience'
- 'Our baby was delivered in the birth centre on 16th Dec. We were so impressed with the facilities in the birth centre.' (24 December 2014)'
- 'I have had three babies in five years all in the Whittington birth centre. Fantastic experience every time.' (21 November 2014)'

- **Consultation on maternity services environment**

To support the Trust's planning, a consultation was carried out with staff, women, families and carers between April and June 2013, focusing on the maternity services environment (see also section 2.6.3, consultation). The key conclusions of the consultation were as follows:

- Women's primary interest is the relationship with staff and consistency in care. Women chose to come back because of the service they experience
- Cleanliness and an impression of order is important
- Accessible storage is of high value to staff
- Lighting is of high value so that staff are supported in their work and women are able to create a more intimate ambience
- 'Neutral colours' are preferred
- Women want staff to be happy in their environment
- Personal, intimate pictures of babies and women are of high value
- Facilities to go to the toilet, drink and eat and keep children amused are of high value
- Neither women or staff highlighted a need for a 'wow' factor, more a need for a working, practical environment which engenders a feeling of competency
- Access is of high value. This includes clear, legible and uniform signage, automatic doors and services that flow between each other
- Privacy, the reduction of noise and a sense of calm is very important to women.

This consultation demonstrated that the primary interest for women is the relationship with staff and consistency in care. However cleanliness and an impression of order are also important, as is privacy, the reduction of noise and a sense of 'calm'.

A further consultation was performed in October/November 2014 involving qualitative interviews with 65 women who delivered their babies at Whittington Health and were attending the Archway Children's Centre baby clinic.

Most women commended the staff and in particular the midwifery care. Considerable negative feedback was received regarding: the facilities; the noise, and the lack of privacy on the labour ward antenatal and post natal wards.

Key comments were:

- The general quality of staff and care was good throughout the women's stay in hospital
- 'Staff all really great and professional, felt very positive about great service'
- The quality of the facilities in triage, labour ward, theatre, recovery and the postnatal ward received very mixed and many more negative reviews
- 'Cramped, unpleasant distressing to hear other women in labour'
- 'Lights too bright, No privacy, terrible space, felt very alone, really crowded,'

The staff and the environment of the Birth Centre were universally highly praised.

- 'Private, quiet, spacious, calming colours (not overwhelming), low lighting, intimate, ensuite , water birth, equipment in cupboard, superb staff, luxurious, home away from home, excellent feeding support, nice to spend night with partner in double bed, staff not intrusive but available'

2.6.4 Quality and Safety

The Trust provides high quality maternity services, evidenced by patient feedback, peer review and the meeting of clinical targets.

- **NHS 2013 Maternity Survey**

The NHS 2013 Maternity Survey asked women who have given birth about their experiences. It was coordinated by the Care Quality Commission (CQC) and carried out by Quality Health.

The results were positive, reflecting significant improvement on nearly all areas since the 2010 survey.

One mum commented:

"I felt my care was as good as it would have been if had I paid for private health care services. Excellent maternity services."[3]

A mother who had a high risk pregnancy said:

"I loved my labour because of the care I received. Many thanks for such a great service and care."[4]

- **Environmental concerns (see also 2.6.3)**

The Trust believes that the majority of the environment in which services are provided and the capacity of some key elements of the facilities, need to be upgraded to meet today's NHS standards as they will not meet the NHS Constitution pledge[5] which states

> "to ensure that services are provided in a clean and safe environment that is fit for purpose, based on national best practice".'

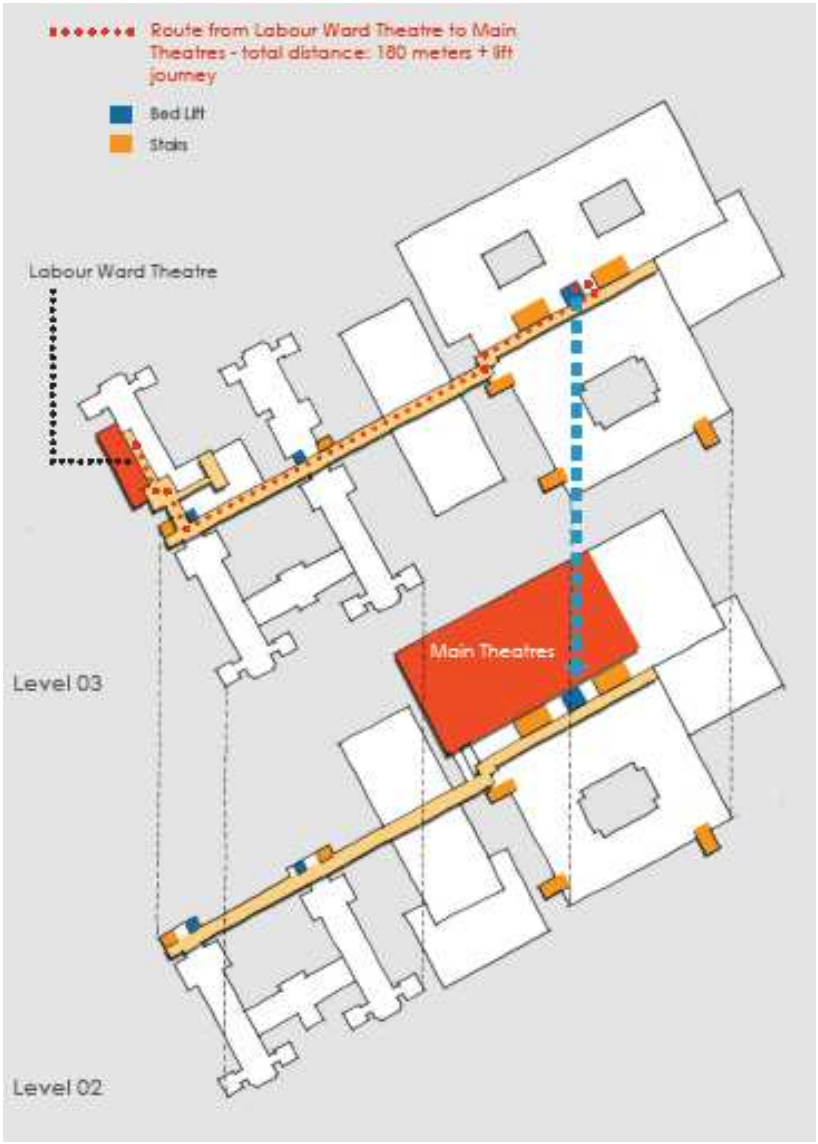
[3] NHS 2013 Maternity Survey
[4] NHS 2013 Maternity Survey
[5] The NHS Constitution for England 26 March 2013

Whilst the Trust currently ensures that there are sufficient safeguards in place to ensure the delivery of safe services, there are two key elements of the maternity services which give significant cause for concern, evidenced by adverse clinical incident data and by reference to HBN guidance. These areas are: access to theatres and Labour Ward facilities.

- **Access to theatres**

The service currently operates with one dedicated obstetric theatre which is co-located with the Labour Ward. However, in order to meet existing activity levels the maternity service also requires the use of a second theatre, predominantly for planned C-sections and for 24/7 emergency back-up. Currently the service uses one of the main hospital theatres which is located on level 2 of L block – this requires a journey to and from Labour Ward along a public corridor and down one level. Whilst the Trust ensures that women are safe, well and appropriately supported when the use of main theatres is required, this journey is unacceptable as it can delay response times for an emergency situation and can involve a significant loss of privacy and dignity for women in labour. In addition to being an inefficient use of staff resources it is not consistent with the 21st century healthcare the Trust is committed to provide.

Fig 2.3 Access to main theatres from Labour Ward



A review of reported incidents over a 24 month period identified a number of incidents relating to the use of main theatres as a second obstetric theatre. These included: use of main theatres for an emergency case; use of a third theatre for obstetrics; the transfer of a sick women to Labour ward from main theatre; the transfer of a collapsed neonate to NICU from main theatre; and delays in access to main theatre.

Furthermore, the maternity service has had to work closely with the main theatre team to improve the management of stock and address staffing issues, arising from having split obstetric theatres.

A second, dedicated, co-located with Labour Ward, obstetric theatre would enable the Trust to enhance the safety of its services and better mitigate against the associated risks. It would also significantly improve women's experience of the service with a better recovery environment and access to specialist services if required (e.g. bereavement facilities and neonatal support). It would also enable the more efficient and flexible use of staff between the areas of Labour Ward, theatres and recovery.

- **Labour ward capacity**

Historically, the Trust Labour Ward has often operated close to full capacity. This presents particular challenges when there are peaks in demand and has resulted in a number of reported incidents.

The current Labour Ward operates at below the recommended number of consultant-led delivery rooms as shown by the analysis below.

The Health Building Note (HBN) schedules[6] for maternity accommodation recommend a ratio of 1 Consultant-led delivery room per 333-357 deliveries and 1 birth centre delivery room to 166-200 deliveries. (The variation in the ratio results from greater efficiencies as overall unit size increases). The table below sets out the recommended number of rooms when the HBN is applied.

Table 2.3 Number of delivery rooms recommended by HBN

Total Deliveries	Consultant –led Deliveries	Consultant –led delivery rooms	Birth Centre Deliveries	Birth Centre delivery rooms
4,000	3,400	10	600	3 - 4
4,000	3,000	9	1,000	5 - 6
4,700	3,700	10 - 11	1,000	5 - 6
Current Whittington Health (Circa 4,000 del)	3,400	8	600	5

The Whittington Health "listening exercise" carried out from March to May 2013, sought the views of stakeholders, including local communities, on Whittington Health's clinical strategy and the implications for estates. This showed strong support for the Whittington Health maternity services and in particular the need to continue to meet local demand.

The Trust provides maternity services to a population case mix which has an above average number of women who would be categorised as having complex healthcare needs by comparison to both the London and national averages. This has recently been re-confirmed by an analysis undertaken to inform the implementation of the new tariff arrangements. The analysis has used the definitions set out in the national maternity tariff, such as: high numbers of diabetic women; social concerns; women over 45; and women from HMP, and used the national categories to calculate the three

[6] Health Building Note 09-02 – Maternity care facilities, 2013

levels of payment for each part of the maternity pathway. With an above average number of high risk women presenting to the Trust's maternity services there is a high and increasing demand for additional care from a range of professional groups and can increase the need for a Consultant-led Labour Ward environment.

Whilst the Midwifery-led "Birthing Unit" has enabled the Trust to meet some of the recent additional demand with respect to deliveries that are regarded as "low" risk it has not been able to relieve the increasing pressure on the unit as a whole.

Following a review of reported clinical incidents in the period August 2011 to July 2013, a number of incidents relating to Labour ward capacity were identified including: delays in transfer to Labour ward; Labour ward full or very busy; babies born elsewhere in the unit due to capacity issues; delays in treatment due to capacity/high activity; a whole unit closure, and unit on amber alert.

2.6.5 Demand for services

- **Historical demand**

The Trust experienced a significant increase in demand for its maternity services over a ten year period from 2003/4, resulting in a 26% increase in the number of deliveries until to 2012/13, as demonstrated in table 2.3 and Figure 2.3.

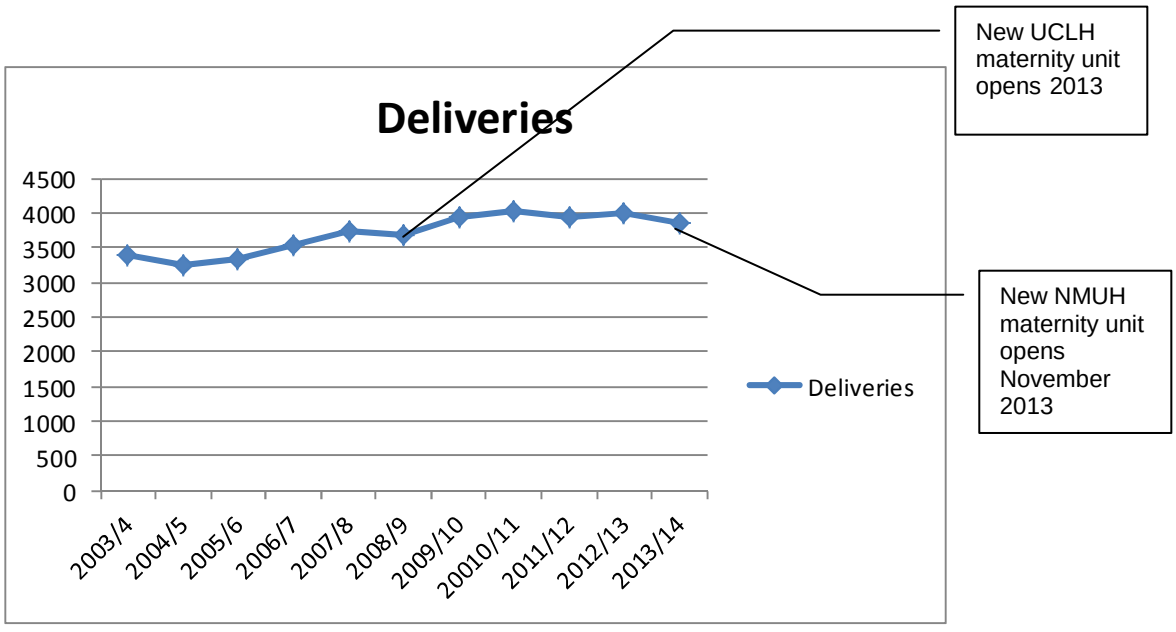
With the average annual number of home birth deliveries remaining constant at circa 90 deliveries per annum over the last five years, the vast majority of the increase in delivery activity had been met through more efficient use of the existing Labour Ward delivery rooms, and the development of the Midwifery-led Birthing Unit. This later development, although busy, still has further capacity to provide care especially to low risk mothers.

Two dips in demand for maternity services have occurred in the period since 2004 and these have coincided with the opening of new local maternity facilities, at UCLH in 2008 and North Middlesex in 2013.

Table 2.4: Annual deliveries 2003/4 to 2013/14

FY	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14
Deliveries	3,402	3,240	3,333	3,532	3,741	3,683	3,936	4,018	3,942	3,986	3868

Fig 2.4: Annual Deliveries, Whittington Health Maternity Services 2003/4– 2013/14



- **Current Demand**

The Trust provides maternity services to a broad based area served by a number of Clinical Commissioning Groups (CCGs). Recently the growth in the number of births in the North Central London (NCL) area has slowed, leading to increased competition between maternity units.

Table 2.5 shows the number of births by CCG for Trusts in the NCL area for 2013/14. It shows total births at 23,164, with the WH delivering 3,868.

The final column shows the WH market share. Overall WH had a 17% share of the market highest in Islington and Haringey (41% and 39% respectively), but attracts births also from Barnet (8%), Camden (5%) and Enfield (5%) and other areas such as Hackney.

Table 2.5: Total number of births in NCL 2013/14

	Trust							
CCG	**Barnet & Chase Farm**	**RFH**	**NMUH**	**UCLH**	**WH**	**Others**	**Grand Total**	**WH %**
BARNET CCG	2,471	1,330	21	631	371	83	4,907	8%
CAMDEN CCG	3	739		1,381	122	82	2,327	5%
ENFIELD CCG	1,691	77	2,122	216	213	76	4,395	5%
HARINGEY CCG	71	118	1,750	389	1,678	73	4,079	41%
ISLINGTON CCG	8	39	6	1,597	1,119	72	2,841	39%
Others	1,472	565	246	1,741	365	226	4,615	8%
Total	5,716	2,868	4,124	5,955	**3,868**	612	23,164	**17%**

Table 2.6 below shows similar figures for 2014/15 for the months Apr 2014 – Oct 2014 (the first 7 months of the current year). The total for these 7 months is 13,793 number of birth.

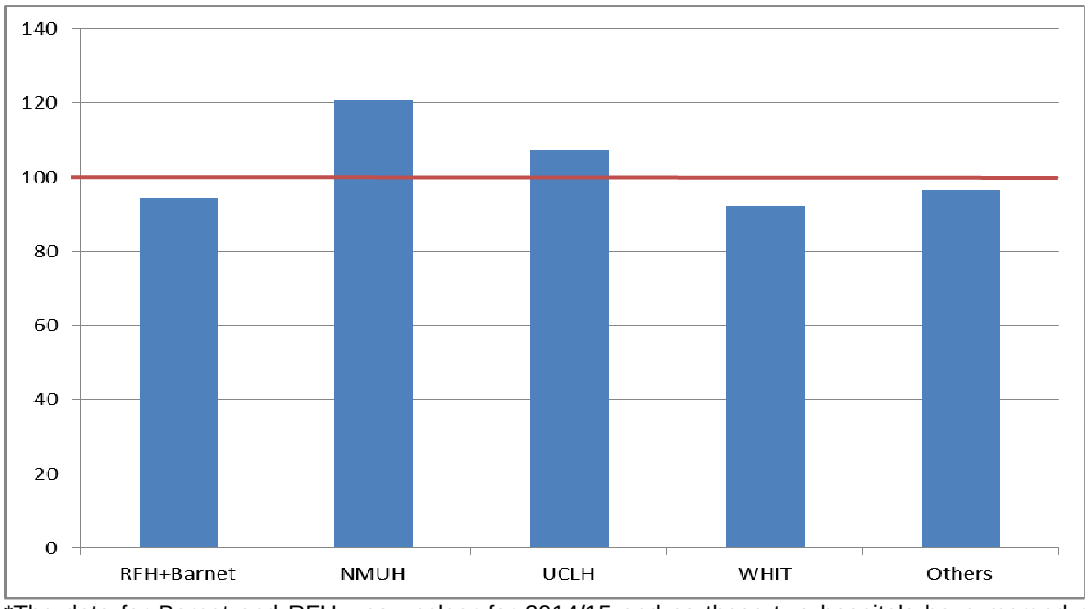
Table 2.6 Total number of births in NCL 2014/15 – for months April 2014 – October 2014

		Trust						
CCG		**Barnet, Chase Farm & RFH**	**NMUH**	**UCLH**	**WH**	**Others**	**Grand Total**	**WH %**
BARNET CCG		2,141	25	413	238	27	2,844	8%
CAMDEN CCG		408	3	809	51	24	1,295	4%
ENFIELD CCG		661	1,691	149	154	39	2,694	6%
HARINGEY CCG		99	935	249	849	25	2,157	39%
ISLINGTON CCG		42	5	901	583	29	1,560	37%
Others		1,374	258	1,203	208	200	3,243	6%
Grand Total		**4,725**	**2,917**	**3,724**	**2,083**	**344**	**13,793**	**15%**
		55%	**70%**	**63%**	**54%**	**56%**	**60%**	

Analysing the data from Table 2.5 and Table 2.6 shows that the relative market share for WH has reduced for the year 2014/15 compared to 2013/14 from 17% to 15%. This is likely to represent monthly fluctuations or possibly an overall annual decline.

Fig 2.5 represents this analysis and demonstrates that only the two most recently rebuilt maternity units (NMUH and UCLH) have significantly increased their number of birth in NCL.

Fig 2.5: 2014/15 births as a % of 2013/14 births at maternity hospitals in NCL



*The data for Barnet and RFH was unclear for 2014/15 and as these two hospitals have merged recently the data has been combined

This supports the view that the opening of new and/or improved facilities will influence women and their families when choosing a care provider. The Trust experienced the impact of this following the

opening of the new UCLH maternity unit in 2008 and the opening of the new NMUH unit in November 2013.

- **Meeting future demand (see also section 2.8 Promoting Whittington Health maternity and neonatal services)**

The Trust believes that improvements in facilities, combined with an excellent service reputation and active marketing will lead to an increase in demand for maternity and neonatal services, particularly from local women and their families. The investment described in the business case will allow the Trust to meet this additional demand up to 4,700 deliveries by 2018/19, thus ensuring that the Trust does not have to operate a poor quality service, or close the maternity service to women in the future.

From 2009/10, the Whittington Health Maternity service has often operated at the upper limits of its physical capacity. To reduce the risk of incidents, keep patients safe, ensure quality of experience and reduce the pressure on staff, the Trust has actively managed the annual delivery rate to circa 4000.

At times when the service was operating at full capacity, women from areas other than Islington and Haringey ('out of area' women) were asked to use other units closer to their home address. This approach was targeted at women who had already had maternity care from other providers and who were over 34 weeks. These women were encouraged to stay with their existing provider. This enabled the Trust to meet demand from local women from Islington and Haringey, but restricted the choice for women from neighbouring areas.

Consequently, despite being rated among the best maternity units in the country, the Trust has neither proactively advertised its maternity services, or encouraged local GPs to increase their referral rates, in stark contrast to other local providers. This lack of promotion allowed the service to provide safe, high quality services without the additional pressure that might otherwise have arisen.

2.6.6 Consultation/Engagement (see also section 2.6.3)

Whittington Health has consulted and engaged with a range of stakeholders to inform the future plans for maternity and neonatal services.

- **Wider community**

The extensive stakeholder 'Listening Exercise' conducted by Whittington Health in early 2013 indicated strong support for the Whittington Health maternity services, with a key message being that the service should always remain open, with sufficient capacity to meet the needs of any local women who choose Whittington Health for their maternity service.

- **Women, families & carers**

Further consultation with staff and at least 30 women, families & carers, through a user workshop, and a Local Supervisory Audit (LSA) audit day, took place between April and June 2013 (also referenced in section 2.6.2) and focused on the maternity services environment and patient experiences. The consultation demonstrated that women's primary interest is the relationship with staff and consistency in care. However cleanliness and an impression of order are also important, as is privacy, the reduction of noise and a sense of 'calm'.

A further consultation was performed in October/November 2014 involving qualitative interviews with 65 women who delivered their baby at Whittington Health and were attending the Archway Children's Centre baby clinic.

Most women commended the staff and in particular the midwifery care. However, some negative feedback was received regarding: the facilities; the noise, and the lack of privacy on the labour ward antenatal and post natal wards.

Key comments were:

- The general quality of staff and care was good throughout the women's stay in hospital

- 'Staff all really great and professional, felt very positive about great service'
- The quality of the facilities in triage, labour ward, theatre, recovery and the postnatal ward received very mixed and many more negative reviews
- 'Cramped, unpleasant distressing to hear other women in labour'
- 'Lights too bright, No privacy, terrible space, felt very alone, really crowded,'

The Trust also collects regular feedback from a number of sources:

- Complaints and plaudits about the services- specific comments are noted and trends analysed
- Trust wide patient experience systems - allow women to make comments about the service
- National maternity survey, - collected comments from women about the services
- 'Walk Abouts' by the senior midwifery staff, as part of the Trust's 'visible leadership' are carried out regularly and women are asked during these about their experience of the services
- Friends and family testing collects 'free text' which provides additional information.

As part of the detailed design development and service modelling required for the preparation of the Full Business Case, the Trust further involved local women, families and carers. This has taken a number of forms, such as: service user representation on the Programme Board; workshops on particular aspects of the design and service pathways; and use of the Maternity Services Liaison Committee (MSLC).

- **GPs**

Some initial engagement at the OBC stage took place through the GP representatives on the CCGs and through our Medical Director.

In addition, the Head of Midwifery attended the Trust GP engagement meeting to discuss with local GPs the draft proposal of the refurbishment. Those who were spoken to were very enthusiastic about the plans.

Further engagement during the development of the FBC, has involved qualitative interviews with four local GP practices in December 2014, to ascertain what women are looking for 'as a pregnancy/delivery package' when seen in early pregnancy. It also asked questions regarding: the information GPs give to women; how well GPs are informed about the Trust's maternity and neonatal services; what GPs like about the services; and what could the Trust could do better. Finally, GPs who do not currently refer to the Trust's maternity services were asked what services they would like provided to help them change their mind?

Key messages are:

- GPs are supportive of the Whittington maternity and neonatal services and the quality of care given
- Whittington Health is a well-known brand in the community
- GPs very much like the integration of midwifery and health visiting services which they believe improves communication and co-ordination of services
- Central Islington GP's are not as well informed about our services and our presence in most of the children centres, which may influence their referral patterns.
- GPs would like easier access to midwifery or medical advice via a dedicated telephone line and e-mail
- GPs would appreciate more educational meetings with midwives and doctors
- GPs imply that some women have a clear idea where they want to deliver and that the modern facilities in other local units influence these decisions.

  'I know already where I want to have my baby UCH is the best hospital around', or my friend has had her baby in unit x and that is where I want to go'.

2.7 Neonatal services

2.7.1 Services & model of care

- **Services**

The Trust's Neonatal unit provides level 1 and level 2 neonatal care services for babies who are born at The Whittington Hospital. It also provides level 2 care for babies born in adjacent hospitals, (ex-utero transfer) either because they do not offer level 2 care or when those neonatal providers have capacity constraints of their own. For the same reasons the Trust's Labour ward and Neonatal Unit liaise to accept women transferred from other hospitals before their baby is born, where it is thought in advance that the baby may need level 2 neonatal care (in-utero transfer)

The neonatal service operates as an integral part of the North East Central London Perinatal Network. The North Central and North East Central networks merged in 2013. However from a managerial perspective the clinical pathways of each network have not changed. UCLH, Barnet, The Royal Free and The Whittington hospitals operate as a group, with a small amount of overlap with adjacent hospitals to the east, ie. the Homerton and North Middlesex hospitals.

These hospitals provide the following level of neonatal care.

Table 2.7 Levels of neonatal care within the North Central London Perinatal Network

Trust	Neonatal Levels of Care
UCLH	1, 2 & 3
Barnet	1 & 2
Whittington Health	1 & 2
Royal Free	1
Homerton	1, 2 & 3
North Middlesex Hospital	1 & 2

In addition, the unit will also take babies who are transferred from other "out of area" networks at times when there is no capacity within the existing network.

Within the remit of Whittington Health there is a pathway of care for local families beginning in maternity and supporting ill newborns in the neonatal intensive care unit. Continuity of care is provided through existing close cooperation with the general paediatric ward; offering a pathway, where on-going care of complex premature infants is continued in hospital by paediatric services and links with discharge into the care of community based nursing and community services. The neonatal unit also facilitates early discharge home of babies from Haringey and Islington via our neonatal community nursing team. The pathway is underscored by the development of a paediatric hospital at home service which has been supported by Islington CCG to implement early discharge and reduce admissions of specific conditions that would have traditionally resulted in hospital care. Since the inception of WH the Trust has also developed novel integrated 'hybrid' hospital/community nursing and paediatric consultant posts which allow more efficient continuity of care for those children with neuro-disability.

Child Protection and Safeguarding services, successfully reconfigured following Social Service cuts, provide a novel integrated and cooperative pathway between maternity and paediatrics for vulnerable women and newborns infants

- **Neurodevelopmental Care**

There is a focus on developmental assessment of premature infants at risk of future problems who require targeted care within the Neonatal Unit and subsequent follow up. The Trust offers a comprehensive team, as recommended nationally, including a neonatologist, psychologist, physiotherapist, occupational therapist, speech and language therapist, lactation consultant and trained nursing staff to address neurodevelopment. This level of support is not achieved in all neonatal units. In 2012, the Whittington Health neonatal service, along with its sister neonatal units in North Central London, achieved the highest rate of neurodevelopmental follow up in the country.

- **Training**

The paediatric and neonatal services consistently score excellent for teaching and training. Since the inception of Trainee doctor surveys in 2007, Whittington Paediatrics has rated within the first four top rated departments and has been a "positive outlier" in all General Medical Council surveys (2010) in categories including: overall satisfaction; local teaching; and educational supervision. In the most recent 2013 survey the Trust was one of the top rated paediatric training units, 1st in London and 8th in UK overall.

2.7.2 Quality and safety

The Trust provides high quality neonatal services, evidenced by patient feedback, peer review and the meeting of clinical targets.

However, the environment in which neonatal ITU and HDU inpatient services are provided needs upgrading to meet today's NHS standards and to ensure it meets the NHS Constitution pledge, which states:

> 'to ensure that services are provided in a clean and safe environment that is fit for purpose, based on national best practice.'

As with maternity services, neonatal services are also subject to a number of forms of scrutiny, internally and externally. A review of available evidence, and reference to HBN guidance, suggests that the service is operating in a challenging physical environment.

- **Infection control**

The Neonatal ITU and HDU services are delivered within accommodation built in 1900 that, as activity levels have increased and as modern neonatal incubators and equipment have increased in size, falls below current Health Building Note (HBN) space standards, thus posing a challenge to infection control. The Trust's current ITU and HDU areas regularly accommodate six incubators/cots in spaces that should, under present standards, accommodate less than two. The recommended standard for an ITU cot bay is 4.1m x 3.2m which places cots at just over 4m from cot centre to cot centre. In the current unit cot centre spacing is only 1.6m. This poses significant physical challenges, making it difficult to plug in and fit equipment between cots, alongside chairs for parents to touch and hold and mothers to breastfeed their babies. The space constraints also carry an infection control risk of cross-transfer of micro-organisms from one baby to the next. To address this risk the service currently operates an isolation strategy.

Therefore any baby identified as colonised or infected with a transferable micro-organism such as MRSA, cytomegalovirus (CMV) or a resistant Gram negative organism such as E. Coli, is moved into an isolation cubicle or nursery, where they are cared for 1:1 by a neonatal nurse who does not care for other babies for the entire shift. (Sometimes, babies can be colonised with these organisms on admission, acquired from their mother, or they may be known to have the organism at the time of transfer from another unit.)

This strategy comes at the cost of inefficient use of neonatal nursing staff, as an extra member of staff is required for every shift of a baby's stay, which can be for many weeks. The parents' room in intensive care is also closed at such times, so that parents of babies colonised or infected with a

transferable micro-organism, do not inadvertently spread their babies' organism to other parents who could pass it onto their own babies. This further reduces the quality of our parent facilities.

This strategy of isolation, along with extreme vigilance and a close working relationship between Neonatal Senior Nursing and Consultant staff and the Infection Control Team, has proved effective. Over recent years the unit has had a good track record for preventing cross-infection, but it reduces the efficiency of the Neonatal Unit in its ability to accept new babies from other hospitals, as well as increasing nursing costs. This need to isolate would be reduced by adopting current HBN space standards, which significantly reduce the risk of cross-transfer of micro-organisms from one baby to the next.

Fig 2.6: Neonatal ITU and HDU care – existing accommodation

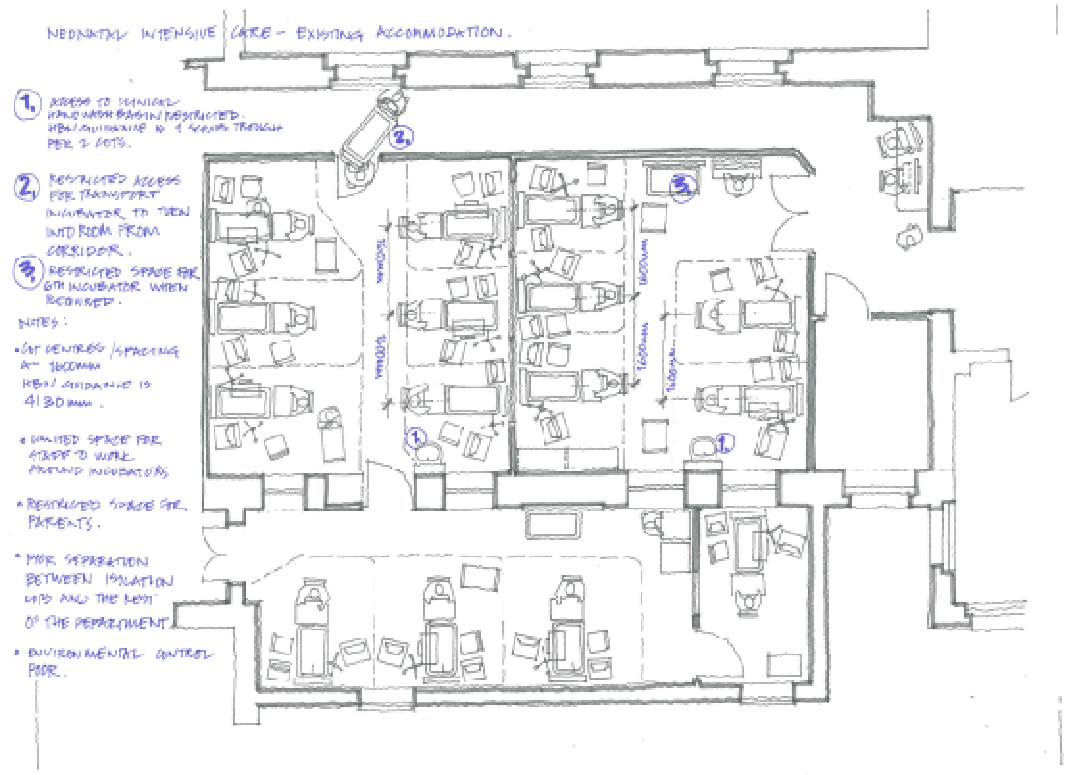
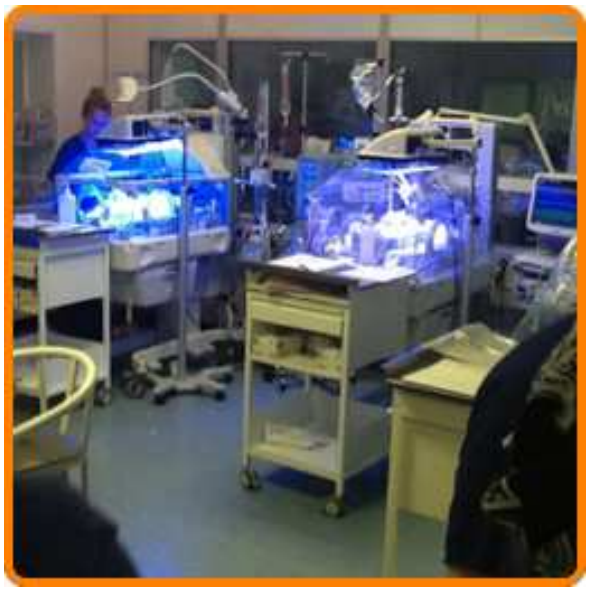
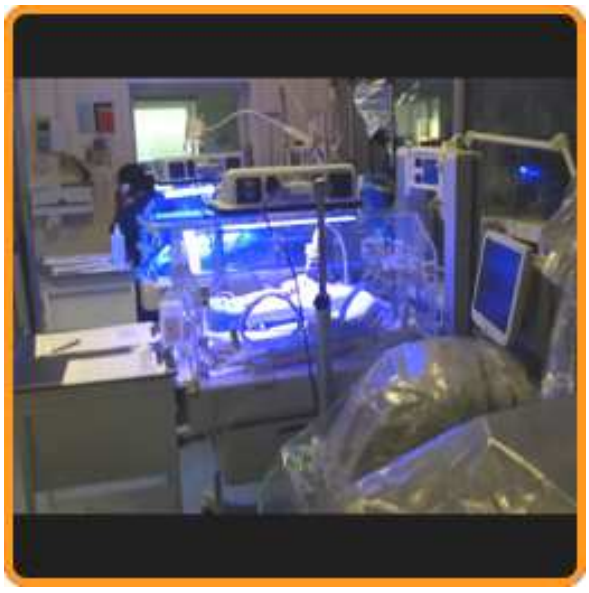


Fig 2.7: Whittington Health Neonatal Unit 2013





2.7.2 Facilities and physical environment

The neonatal unit was established during the late 70's; developed by an enthusiastic paediatrician Dr Max Friedman. The neonatal unit was never purpose built but took over it's current location, modifying an area within the St Mary's Wing adjacent to the maternity service. Funding was obtained for an extension of the neonatal services on the east side in the early 1980's, at a time when The Whittington Hospital was one of the three prominent neonatal units in north London along with the Homerton and University College.

An upgrade and refurbishment of the neonatal unit from its very basic facilities took place in 1994, with the installation of piped oxygen and air, replacement of ceilings, divisions and lighting. At that time neonatal units accepted both in and ex-utero transfers, and cared for infants of all gestations.

Neonatal care is currently provided on the Whittington hospital site from two separate ward locations, on two different floor levels:

Level 3: ITU and HDU care (11 cots)

Level 4:; SCBU (12 cots)

The SCBU was established in 2007 (in the vacated adult critical care unit) and also has 3 overnight stay rooms for women to spend time with their babies preparing to take them home.

As described above, previous investment in neonatal services has primarily focused on maintaining existing facilities with some piecemeal, opportunistic expansion, including the creation of the separate SCBU to enable the neonatal service to meet increased demand. Consequently, the ITU and HDU elements of the service remain in poor accommodation and there is an overall configuration of inpatient neonatal services on two different floor levels that is inefficient. See impact on quality and safety described in 2.7.3 above.

In addition to the fundamental issue of cot spacings described above, control of the environmental conditions within the ITU/HDU unit is poor in relation to temperature and ventilation. Periods of hot weather can create difficult working conditions for staff and unpleasant conditions for babies and parents.

There is also a deficit of core support accommodation on the unit such as: a minor procedures room, an adequate room for expressing breast milk and sufficient numbers of hand washing sinks and safe and clean storage areas.

A number of recent reviews have further highlighted concerns with the physical environment:

- Perinatal Network Appraisal

The Whittington Health neonatal services were recently appraised as part of the North Central London Perinatal Network Appraisal. The network is made up of six units: UCLH; GOSH; Barnet; Whittington; Royal Free; Chase Farm

The report contained a number of items specific to the Whittington services, including the following strengths:

- Support for junior medical staff on NNU
- "A happy place to work"
- Teaching for junior medical staff
- Neonatal consultants extremely supportive
- Excellent education programme for neonatal medical staff
- NNU nurses have good access to in-service education and were able to go on externally funded courses
- All senior qualified nurses have specialist qualification

- Evidence of very good parental support mechanisms.

At the same time a number of issues were also identified, including the following:

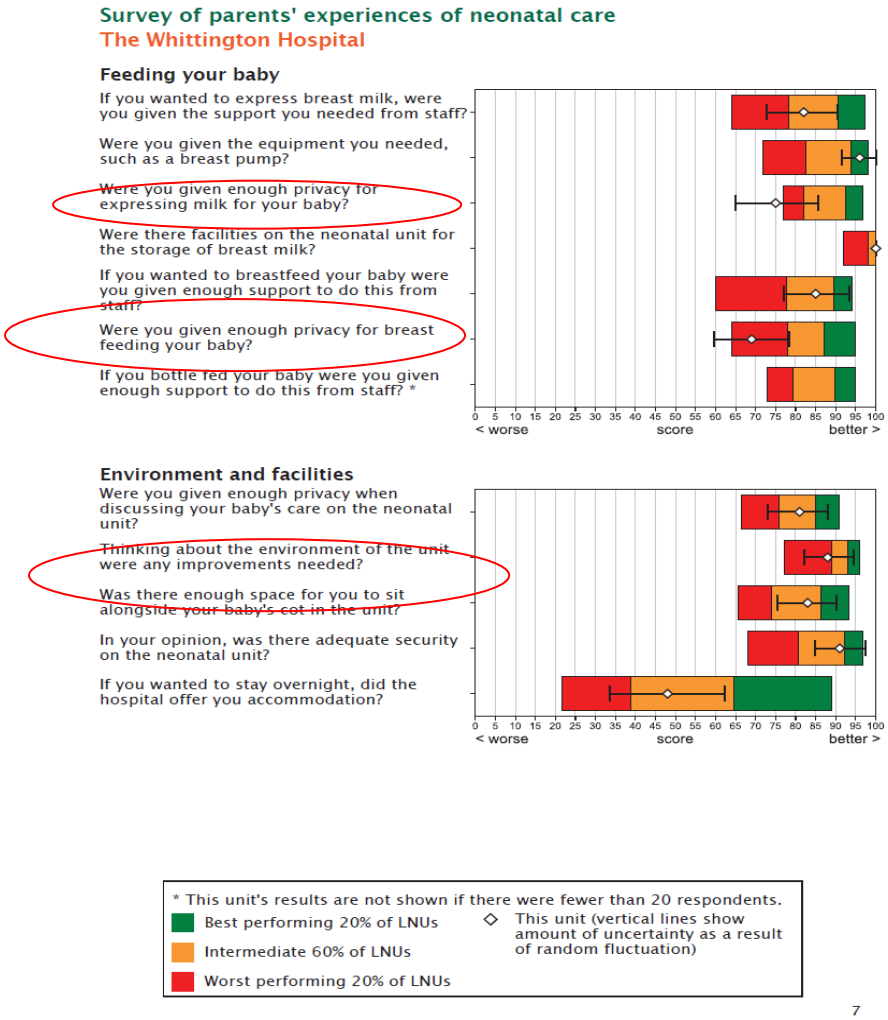
- Challenging physical environment on labour ward and neonatal unit
- Lift between labour ward and floor with general theatres of concern
- Unsatisfactory arrangement of SCBU on different floor to IC/HD which meant not the most efficient use of staff (i.e. doubling up of some posts)
- Capacity to cope with predicted increase in deliveries.

- **Picker Survey[7] of parent's experiences of neonatal care**

The "Picker Survey" focuses on understanding what parents think about the neonatal care and treatment their baby received. The survey provides a detailed picture of the current quality of the Whittington Hospital neonatal services and how they compare to other units.

In general the unit scored well for parameters for care and empathy, it however highlighted particular concerns with support accommodation for parents, particularly the lack of privacy for mothers.

Fig 2.8: Picker Survey result showing Whittington Health position vs other units



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[7] Picker Institute Europe Survey 2011 - Parents' experiences of neonatal care

2.7.2 Activity and demand for services

The Trust's neonatal inpatient services often operate at 90% occupancy. Although demand for these services is primarily driven by the level of deliveries within the maternity services, some additional demand comes from other network providers looking to create capacity in their own services by transferring babies to the Trust's level 2 or level 1 cots, both for intensive and high dependency care.

The neonatal unit also acts as a step down service for babies who have been initially cared for in a level 3 unit and who require ongoing high dependency care. It performs this role not only for babies born at less than 27 weeks gestation whose mothers booked at the Whittington hospital, but also those who booked at the Royal Free Hospital who are not yet ready for level 1 (special) care, and for those booked at UCLH for whom the Whittington is the local hospital. Babies born with the most extreme prematurity (23-27 weeks gestation), often need high dependency care for a protracted period of weeks or months, mainly due to chronic lung disease of prematurity. Without the capacity at The Whittington to take these babies, UCLH would not be able to vacate level 3 intensive care cots for new referrals.

When the unit is operating at full capacity, it is not always able to accept babies for step down care as promptly as it would want. Furthermore, the parents' stress of the transfer of their baby to a different unit is sometimes exacerbated by our poor environmental conditions, particularly if their previous stay had been in one of the more spacious and modern facilities offered by local level 3 units.

Table 2.8: 2013/14 Neonatal activity levels

	Intensive Care	High Dependency	Special Care Baby Unit
Cot days	660	1,409	4333

2.8 External Environment

2.8.1 Commissioning environment

The development of Whittington Health maternity and neonatal services has to be placed within the context of national policy and the local commissioning environment. Key elements of these are described below.

- **National Policy**

- **NICE Guidelines (2014)**[8]
  - Commissioners and providers should ensure that all four birth settings are available to all women (in the local area or in a neighbouring area).
  - Providers, senior staff and all healthcare professionals should ensure that in all birth settings there is a culture of respect for each woman as an individual undergoing a significant and emotionally intense life experience, so that the woman is in control, is listened to and is cared for with compassion, and that appropriate informed consent is sought.
  - Senior staff should demonstrate, through their own words and behaviour, appropriate ways of relating to and talking about women and their birth companion(s), and of talking about birth and the choices to be made when giving birth.

- **National Service Framework for Children, Young People and Maternity Services**
  This is a 10-year programme to stimulate long-term and sustained improvement in children's health. It aims to ensure that fair, high-quality and integrated health and social care is provided for mothers in pregnancy and children from birth through to adulthood.

[8] NICE Guidelines [CG190} published December 2014

- **Towards Better Births - Healthcare Commission Review of Maternity Services in England**
  This report is the culmination of a programme of work by the Healthcare Commission that incorporates the previous 2007 maternity services review. The report highlighted concerns that in some Trusts:
  - Levels of staffing were well below the average, indicating that they may have been inadequate
  - Consultant obstetricians did not spend the time recommended by their professional body on labour wards
  - Doctors and midwives did not attend in-service training courses consistently across trusts
  - There was not adequate continuity of care for women
  - Recommendations were not adequately adhered to for ante-natal care, particularly for those women whose pregnancies were likely to be more risky
  - Women experienced poor communication; care and support after their babies were born.

- **Maternity Matters: Choice, Access and Continuity of Care in a Safe Service (2007)**
  The key aim of Maternity Matters is to improve the quality of service, safety, outcomes and satisfaction for all women through offering informed choice around the type of care that they receive, and improved access to services whilst ensuring continuity of care and support. This means providing high quality, safe and accessible services that are both women-focused and family-centred.
  In 2005, the government committed to offer all women and their partners a wider choice of type and place of maternity care and birth, stating that four national choice guarantees would be available for all women by the end of 2009 and women and their partners will have opportunities to make well-informed decisions about their care throughout pregnancy, birth and post-natally. The four national choice guarantees are:
  - Choice of how to access maternity care
  - Choice of type of ante-natal care
  - Choice of place of birth
  - Choice of place of post-natal care

  Maternity Matters describes a comprehensive programme for improving choice, access and continuity of care and it sets out a strategy that will put women and their partners at the centre of their local maternity service provision. It highlights how commissioners, providers and teams of maternity care professionals will be able to use the health reform agenda to shape the provision of services to meet the needs of women and their families. It emphasises the roles that each can play in providing women-focused, family-centred services and gives examples of what could be in place to achieve this.

- **Local Commissioning**

Whittington Health works closely with its two main local commissioners, Islington and Haringey CCGs to ensure that service development meets the needs of local populations. Within north London the CCGs also work collaboratively on certain areas, including maternity services, and this was reflected in the published commissioning intentions for 2014/15.

- **North London CCGs**
  The North London CCGs collaborative commissioning intentions identified a number of commissioning requirements for maternity services for 2014/15.

Providers will be expected to continue their local programmes of improvements to clinical quality and women's experience of childbirth and to participate with the programme of change being driven jointly across Clinical Commissioning Groups in North Central London. This includes working with commissioners to support the full adoption of the maternity Payment by Results (PbR) tariff and a model of care encompassing the following attributes:

- Accessible and timely antenatal care
- Midwife coordinated care
- Provision of continuity of care
- Choice and non-medicalised care
- Safe births
- Commission and provide for diversity
- Improved postnatal care
- Strengthened user involvement

- **Islington CCG**

In addition, Islington CCG has identified the following priority area:

- to work with the Whittington Health ICO to extend capacity through the Maternity Business Case

- **NHS England**

Neonatal services are commissioned by NHS England, who work closely with the Neonatal networks to ensure comprehensive provision of all levels of service.

2.8.2 Clinical Networks

- **Neonatal network (Barnet, Camden, Enfield, Islington and Haringey)**

The Neonatal network is well established and provides different levels of neonatal care, distributed across the five hospitals. There are defined pathways which means that all extremely preterm babies go to University College Hospital; and from 27 weeks gestation can be treated at the Whittington Hospital or Barnet Hospital. This makes most efficient use of personnel, experience and other resources. The Whittington Hospital service has been a part of this network from its inception and accepts the majority of babies over 27 weeks gestation referred from the Royal Free and other hospitals.

- **Maternity and Newborn North Central Network (Barnet, Camden, Enfield, Islington and Haringey)**

The maternity network was established in 2010, based on the neonatal network. It is concerned primarily with the establishment and monitoring of quality in the Maternity Services of the five local hospitals. This is to benefit women during their pregnancy and postnatal periods; their babies; the commissioners; and member hospitals.

The Whittington Hospital maternity service has been an active member of this group since its inception and from 2013, has facilitated the secondment of Chandrima Biswas, Consultant Obstetrician, to be Obstetric lead for the network.

To date the network has produced standards for the local hospitals, including pathways for:

- Caesarean section for Maternal Request
- Birth Centre inclusion Criteria
- The introduction of diagnostic fetal fibronectin testing throughout the network hospitals
- The introduction of magnesium sulphate for neuroprotection of preterm babies.
- Assistance in monitoring of caesarean section rates
- Shared experience in for example the introduction of outpatient induction of labour.

- **Pan London Strategic Clinical Maternity Network**

  The Whittington Health Head of Midwifery is an active member of the Pan London Strategic Clinical Maternity Network which is looking at how to improve maternity service provision across London working with other colleagues to improve the provision of maternity care. The network is looking more specifically at: reducing maternal death; a reduction in stillbirth rate; and improving patient experience.

2.8.3 Local Provider Context

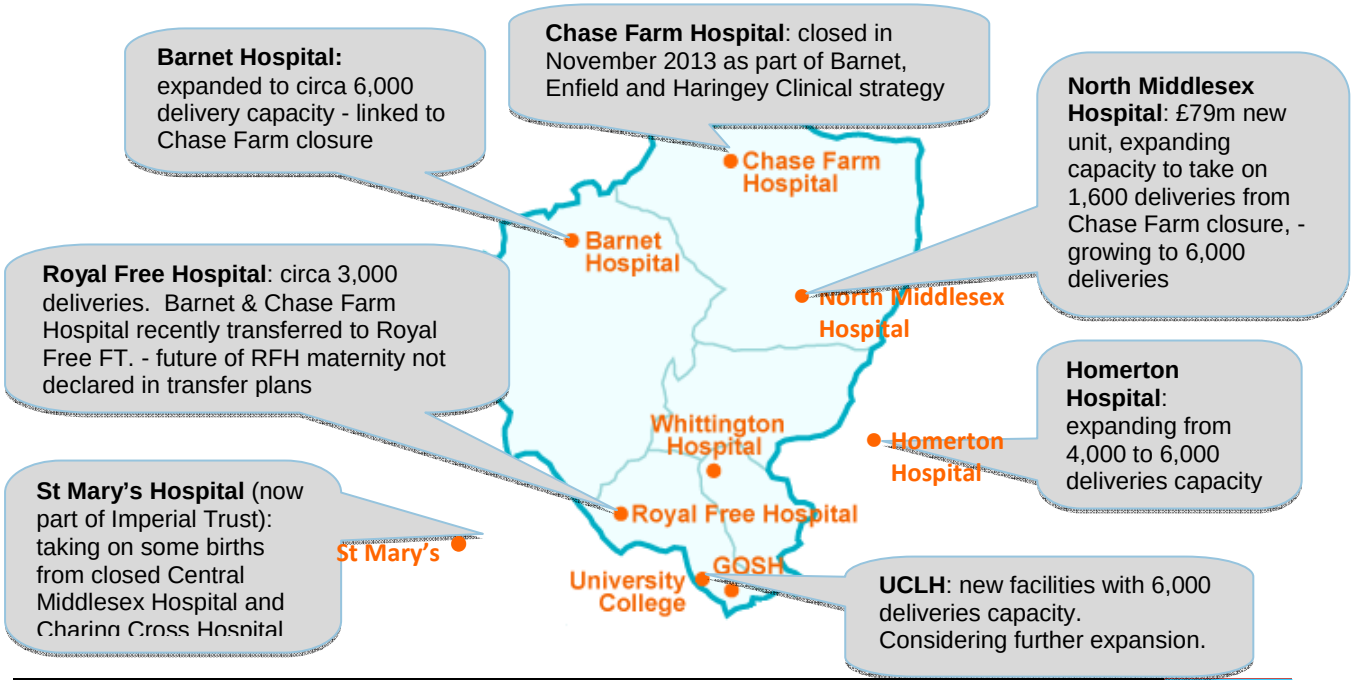
Maternity is one of the few healthcare services where the patient has a significant degree of choice over the facility in which they chose to be treated. In the modern environment women are also able to make more informed choices due to the increasing impact of social media and other sources of local information and women are prepared to travel greater distances to obtain the healthcare of their choice.

Maternity services are provided by all the surrounding local acute trusts and women are able to freely choose which service they wish to use, without necessarily being referred by their GP. This sometimes results in women initially booking with a number of different service providers and keeping open their eventual choice of where to have their delivery.

The following is a brief analysis of the maternity services local to the Whittington Hospital with regards to the quality of facilities and capacity.

- Barnet Hospital has relatively new, high quality facilities and circa 6,000 delivery capacity, expanded to support the closure of the Chase Farm Unit
- University College London Hospital (UCLH) has high quality facilities and is currently exploring the option of expanding capacity further from 6,000 to 8,000 deliveries.
- North Middlesex University Hospital has just opened a new, expanded facility following the closure of Chase Farm Unit.
- Homerton University Hospital has good facilities and expects to expand from 4,000 to 6,000 deliveries.
- The Royal Free Hospital currently has acceptable facilities. Since its merger with Barnet and Chase Farm Hospitals it transfers most of the premature babies born before 34 weeks gestation to Barnet Hospital.

Fig 2.10: Surrounding local providers for maternity care provision



2.9 Promoting Whittington Health Maternity and Neonatal services

(see Appendix 7– Marketing Strategy)

This business case is based on an assumed increase in activity circa 4,700 deliveries per annum by 2018/19 as described in section 2.6.5.

The Trust believes that improvements in facilities, combined with an excellent service reputation and active marketing will lead to an increase in demand for maternity and neonatal services, particularly from local women and their families.

This is supported by an analysis of the use of NCL maternity services which suggests that there are a significant number of local women who are choosing to deliver elsewhere – thus representing an opportunity for Whittington Health. This can be seen from the map at Fig 2.9 which shows the level of referrals made by the most local GP practices.

Fig 2.9: Percentage of a practice's estimated total births per year that are at Whittington Health

More recently, the Trust has seen a drop in monthly deliveries which may have been an unintended consequence of trying to keep WH deliveries below 4000, with neighbouring providers with high quality facilities also beginning to promote their services more aggressively.

Furthermore, in 2012/13 4,812 women booked to have their baby delivered at WH although only 3,986 actually delivered at the WH Trust. The current attrition rate lies between 17% -18% and is similar to other providers within the NCL area. This represents a potential loss of over 800 births at WH.

Some of the attrition is due to women miscarrying or moving out of the area. Although no detailed analysis exists to reconcile this attrition rate, it is thought that some of it is due to women self-referring to more than one hospital before booking. In addition women who are referred to WH later choose to have their delivery elsewhere either for personal or clinical reasons. Once the reasons are established for this attrition rate, there is an opportunity to reduce it and thereby increase the number of deliveries taking place at WH.

The Trust has developed a marketing strategy, supported by a detailed communications plan and service development/transformation plan to ensure local women choose Whittington Health for their maternity and neonatal care.

The marketing strategy addresses both the shortterm and longer term view:

- In the short term, the Trust will actively promote the maternity and neonatal services to local women and GPs, offering the choice of a service that provides: a true range of delivery options; local community based antenatal and postnatal provision; and ambulatory-based acute care; coupled with neonatal intensive and special care provided in adjacent facilities if needed.

- Following the planned investment in facilities, the Trust will use the improvements to inform further marketing activities.

There are a number of elements to the Trust's marketing plan for maternity and neonatal services including:

- External Audit Summary
  - Broad external changes
  - Competition
  - Women's choice in where to have their babies
  - Births in the area
  - Whittington Health maternity service and GP referrals in area
  - Internal service review
- SWOT Analysis
- Marketing Objectives
- Marketing Strategy for years 2014/2015- 2016/2017
  - Existing services in existing areas
  - Existing services in newer geographic areas
  - New services in newer geographic areas
  - Target markets
  - Positioning of the Whittington Health maternity service
- Delivering the strategy
- Action Plan

2.10 The "Case for change"

Whittington Health provides maternity services that are among the best in England, according to the 2013 National NHS survey coordinated by the Care Quality Commission (CQC) and carried out by Quality Health[9]

Whittington Health believes that maternity and neonatal services are central to the operation of an Integrated Care Organisation and integral to Whittington Health's vision of providing high quality co-ordinated healthcare to local people. A 'life course' approach to women's health offers a more

[9] 2013 National Maternity Survey, Quality Health

unified and women-centred approach to health promotion, disease prevention and management with implications for long-term, cross-generational gain care.[10]

The Whittington Health maternity and neonatal service models are well established and meet national standards. Review and development of service provision is on-going, with recent initiatives including: partners now being able to stay overnight on the postnatal ward (received 'Islington Courage Award'); Consultant Midwife-led obstetric weight and nutrition clinic; weekly community antenatal clinic in the Lubavitch centre; better Integration of the Trust's health visiting services with maternity services and midwives; and Family Nurse Partnerships - with the service now expanding into Hackney. Neonatal services are linked more closely to community based nursing and paediatric services facilitating earlier discharge.

Further developments are already planned, including: further improvements in shared care arrangements with GPs; review of emergency caesareans and the creation of a midwifery run VBAC clinic to reduce caesarean section rates; review of the bereavement services for maternity; the use of phone apps to share information with women on all aspects of pregnancy and aftercare and closer working with paediatric services to focus on the early years of life.

However, the Whittington Health maternity and neonatal services need facilities that meet current NHS standards and meet the needs of the local population.

The quality and constraints of the current physical environment will make it increasingly difficult for the Trust to continue to deliver a safe, high quality and viable service in the future.

Whittington Health has had to implement a broad range of strategies to mitigate against the impact of operating in inadequate and cramped facilities. These strategies do not always provide the optimal solution and often represent an inefficient use of resources.

Whittington Health must invest in maternity and neonatal services to:

- Address the poor physical environment and space constraints of the neonatal ITU/HDU and Labour Ward. Without investment, these will become increasingly unacceptable, making it difficult to meet not only clinical standards but also patient expectations.
- Improve the quality and safety of obstetric theatre provision by ensuring there is sufficient theatre capacity, easily accessible from the Labour ward and maternity and neonatal services.
- Create delivery capacity to provide real choice for local women. When functioning at the level of 4,000 deliveries annually, the maternity service is operating at the upper bounds of capacity, quality and safety.
- Address the poor quality and absence of staff facilities, which will increasingly impact on the future recruitment and retention of staff in an already competitive labour market.

Whittington Health must invest in maternity and neonatal services to ensure that they:

- continue to be safe,
- continue to meet expected clinical standards,
- offer real choice to local women
- support staff, and
- are provided within facilities that meet NHS standards.

[10] Why should we consider a Life Course Approach To Women's health Care, Scientific Impact paper 27, RCOG

The Trust considers that there is a compelling case for change.

2.11 Investment objectives

In responding to the case for change the Trust has identified the following key investment objectives:-

- By September 2016, to improve the quality and safety of the neonatal ITU and HDU facilities. (using Health Building Note (HBN) 09-03, sec 7.15/7.16 as the benchmark).
- By September 2016, to build a second, co-located, dedicated obstetric theatre, thereby improving the safety of maternity theatre service provision.
- By September 2016, to increase the capacity of the maternity and neonatal services to meet the needs of an anticipated 4,700 deliveries.

2.12 Business Scope

In looking at the scope of any future development the Trust has considered the following key constraints and dependencies:

- The need to improve the overall service by constructing a second dedicated obstetric theatre that is co located with the Labour ward,
- The need to bring neonatal services on to the same floor level,
- The need to ensure that the Trust develops enough capacity to cover the local population growth. The Trust is also obliged to consider the "future proofing" of any proposed development,
- The transfer effect, where women exercise choice over where to have their delivery, also needs to be taken in to account, and this is likely to act to increase the number of deliveries that the service will need to manage.

2.1.3 Benefits criteria

i) Ensure that the quality of the clinical facilities meets modern healthcare standards and is sympathetic to the patient pathways and working practices.
   - Ensure that the neonatal service meets current HBN standards
   - Ensure that second obstetric theatre capacity is provided in the best clinical location.

ii) Meets the needs of the local (and wider) population for maternity and NICU services.
   - Ensure that the facilities are able to cope with the projected long term increased demand from the local population.
   - Ensures that the facilities provided are comparable to those offered by other provider organisations that are readily accessible to the local population.

iii) Provide 21st century facilities in a timely manner whilst continuing to ensure operational patient safety and achieving the earliest opportunity to reduce the clinical risk identified.
   - Objectives can be reached within timescales that do not lead to a loss of reputation for the Trust or its services.

iv) Supports the Trust's strategic objectives
   - Ensures that the Trust can meet its quality strategy to have patient centred care where people are treated with dignity, in privacy and with the compassion at the right time and in the right place for them.

v) Effective use of the estate

- Ensures optimal use of the footprint of the estate
- Is compliant with the Trust's Strategy for a Modern Healthcare Estate and does not unnecessarily compromise any future service plans.
- Ensures that plans are acceptable to local stakeholders - residents and planning authority.
- Is in accordance with the Development Control Plan and allows potential for future service flexibility.

3. Economic Case

3.1 Purpose and Changes since Approval of the OBC

The purpose of this section is to highlight the options appraisal process and show which options offer the best value for money in meeting the Trust's requirements over the life of the programme.

The major changes to the business case since approval of the OBC are:

- Revision of the long and short lists of options in line with the Trust Development Authority (TDA) OBC feedback
- The Full Business Case follows the five case model for business case production and an economic and financial analysis has been conducted
- The economic analysis is conducted using the Generic Economic Model (GEM Model). GEM aims to facilitate economic appraisals in accordance with the principles of the Green Book and GEM guidance
- The financial and economic modelling is for five years i.e. 2015/16 to 2019/20 (years 1 to 5) while the economic analysis via GEM is conducted for sixty two years
- The economic analysis includes efficiency savings, income displacement, the Retail Prices Index (RPI) for capital cost, and uses real income and expenditure
- The additional capital cost is added over the life of project where relevant. For example, the capital cost of equipment which depreciates fully in seven years, is added over sixty two years
- The Life cycle cost has been added and is assumed to be the same for all options with capital spend
- The capital costs including VAT have increased from £9,997,834 to £11,996,812 (see table 3.1 below)
- The equipment costs including VAT have increased from £135k to £240k
- Public Dividend Capital (PDC) funding has been assumed to fund the capital cost, instead of a loan, as the Trust is currently forecasting a deficit position
- The staff requirements and profiling have been modified in line with the updated workforce plans
- Activity forecasting and neonatal cot capacity have been revised
- The operational revenue costs have changed in line with the new activity and workforce assumptions
- It was agreed by the Programme Board to rebase activity, and thus income, on the basis of the last three full years of historical data, and to use 15/16 as year one for this business case. This approach has been adopted due to concerns with activity data recording in 2014/15.

Table 3.1: Capital Costs – change between OBC and FBC

Capital Cost £	Per OBC	Per FBC	Variance OBC vs FBC	Reasons for Variance		
	Option: 3	Option: 3	Option: 3	Inflation	Change in scope of works	Other
	£	£	£	£	£	£
Departmental areas	5,045,218	5,630,717	585,499	606,529	(21,030)	
Plant and corridors (On Costs)	1,137,188	1,887,004	749,816	109,315	640,501	
Location adjustments	432,768	676,595	243,826	188,075	55,751	
TOTAL WORKS COSTS (4Q 2014)	**6,615,174**	**8,194,315**	**1,579,141**	**903,919**	**675,222**	
Equipment Costs	100,000	200,000	100,000	-	100,000	
Planning Contingencies	377,065	466,102	89,037	51,523	37,514	
TOTAL OTHER COSTS (4Q 2014)	**477,065**	**666,102**	**189,037**	**51,523**	**137,514**	
Optimism Bias	400,918	199,763	(201,155)	(100,578)	(100,578)	
Inflation Adjustment	180,742	151,094	(29,648)	(29,648)	-	
Sub-total	**7,673,899**	**9,211,274**	**1,537,374**	**825,216**	**712,159**	
VAT	1,397,811	1,657,816	260,005	139,563	120,442	
Fees *	926,124	1,127,722	201,598	-	201,598	
Total Capital	**9,997,834**	**11,996,812**	**1,998,977**	**964,779**	**1,034,199**	**- 1**

3.2 Critical success factors

The critical success factors for this project, as set out in the Outline Business Case and revised to fit with current timeline, are considered to be:

Strategic fit and business needs – how well the option meets the investment objectives set out in the Strategic Case, supports the Trust's clinical strategy and objectives of moving towards a sustainable and viable Trust.

The investment objectives are:-

- By September 2016, to improve the quality and safety of the neonatal ITU and HDU facilities. (Using Health Building Note (HBN) 09-03, sec 7.15/7.16 as the benchmark).
- By September 2016, to build a second, co-located, dedicated obstetric theatre, thereby improving the safety of maternity theatre service provision.
- By September 2016, to increase the capacity of the maternity and neonatal services to meet the needs of an anticipated 4,700 deliveries.

- **Potential Value for Money –**how well the option supports service development and integration, the requirements of guidance, and optimises the potential return on expenditure.
- **Potential Achievability** – how likely is it that the option will be successfully delivered:
  - In view of the Trust's ability to respond to the required level of change and adapt the Midwifery model of care to best use the revised space.
  - In view of the level of disruption that will accompany any option and the need to minimise the cost of such disruption, in terms of financial cost and reputational cost.
- **Potential affordability** – how well the option matches the likely available funding and enables the Trust to meet its key financial targets in the medium to long term.

These success factors have shaped the criteria for short listing options to be considered within the business case.

3.3 Long List of Options

In developing the OBC, the Maternity and Neonatal Steering Board considered a long list of options. These options have been reviewed as part of the process of developing the FBC.

The options that have been examined in this FBC are:

Option 1	Do Nothing
Option 2	Do Minimum
Option 3A	Strategic Investment – With marketing growth
Option 3B	Strategic Investment – Decreasing activity
Option 3C	Strategic Investment – No marketing growth
Option 3D	Strategic Investment – High growth
Option 4	Relocation
Option 5	New Build

The table below summaries the options and the high level assumptions for activity, workforce and capital investment for each option.

Table 3.2: Long list of options

Maternity & Neonatal Full Business Case					
OPTIONS					
Options	**Option Name**	**Financial Modelling**	**Capital Spend 5 Years**	**Activity**	**Summary**
Option 1	**Do Nothing**	Yes	0	Goes down by Various %	• Activity decreases by 5% from 15/16 to 17/18, 3% 18/19 and 2% 19/20 • No capital investment
Option 2	**Do Minimum**	Yes	£10M	3,945	• Status quo • Activity level remain same as '15/16 level • Maintain current services with minimum backlog maintenance • Capital investment of £10M
Option 3A	**Strategic Investment - With Marketing growth**	Yes	£12M	4,700	• Marketing growth assumed • Activity level increases; by 18/19 deliveries increase to 4,700 and neonatal cots increase from 23 to 27 • Workforce increase to in line with increased activity. • Capital investment of £12M
Option 3B	**Strategic Investment - Decreasing Activity**	No	£12M	Goes down by Various %	Not modelled as downside case for do nothing option
Option 3C	**Strategic Investment - No Marketing growth**	Yes	£12M	3,945	• No marketing growth assumed • Activity level remain same as '15/16 or historical average level i.e. 3,945 deliveries and neonatal • No increase in workforce to in line with no marketing growth in activity. • Capital investment of £12M
Option 3D	**Strategic Investment - High growth**	No	£12M	Goes up by Various %	Not Modelled as best case for preferred option
Option 4	**Relocation**	No	NA		Rejected on Non-Financial grounds
Option 5	**New Build**	Yes	£72M	4,700	• Marketing growth assumed • Activity level increase; by 18/19 deliveries increase to 4,700 and neonatal cots increase from 23 to 27 • Workforce increase to in line with increased activity • Capital investment of £72M

3.3.1 Option Description

The options are described in more detail as follows.

Option 1: Do Nothing

The option is defined:

- No capital investment
- Activity reduction of 5% from 2015/16 to 2017/18, 3% in 2018/19 and 2% in 2019/20.

In summary, the key feature of this option is reducing activity due to loss of market share. Under this option the Trust would continue to deliver services from the existing facilities but would cease to invest any further capital in the services.

Option 2: Do Minimum

The option is defined:

- Maintain current services with minimum backlog maintenance capital investment
- Activity levels remain same as 2015/16 level.

In summary, the key feature of this option is support and investment in the existing services to maintain existing functionality. Under this option the Trust will continue to deliver the 2015/16 level of clinical activity for the maternity and neonatal services, and the number of deliveries would stay at this level for each of the successive years. The Trust will ensure this via minimum capital spend for backlog maintenance, assumed to be £2m per annum. The capital spend would be targeted at ensuring that a safe service can be offered from the existing facilities, with no consideration of expanding capacity. This option would not enable the co-location of a second obstetric theatre, or allow for the expansion and redevelopment of the Neonatal ITU/HDU unit.

Option 3A: Strategic Investment – With marketing growth

The option is defined:

- Marketing growth assumed
- Activity levels increasing: by 4,700 deliveries to 2018/19, and an increase in neonatal cots from 23 to 27
- Workforce increase in line with increased activity
- Capital investment of £12m over 2 years

In summary the key feature of this option is continual clinical improvement and investment in the maternity and neonatal services to upgrade existing services and improve physical environment. Under this option, the Trust would seek to invest to improve the quality of patient experience and to create capacity for a rise in the number of deliveries.

A number of the existing facilities and spaces would be upgraded to a higher specification than at present, which would include better co-location of services. This would enable the Trust to move towards meeting its overall intention of creating a first class facility, fit for the 21st century, and capable of managing up to 4,700 deliveries. This would be achieved by the introduction of a second (co-located) obstetric theatre, additional Labour Ward delivery rooms and the redevelopment of the neonatal ITU and HDU facilities to meet modern health building standards, which will improve privacy and dignity whilst further improving clinical safety.

Option 3B: Strategic Investment – Decreasing Activity

The option is defined:

- No marketing growth assumed and activity declines
- Activity levels decreasing; number of deliveries decrease by 5% from 2015/16 to 2017/18, 3% in 2018/19 and 2% in 2019/20
- Neonatal cots increase from 23 to 27
- Capital investment of £12m

In summary, the key feature of this option is investment in the maternity and neonatal services of £12m i.e. same as option 3A, but activity reducing over time as the Trust fails to increase market share and loses its current market position. Under this option, the Trust would seek to invest to upgrade current facilities and to create capacity for a rise in the number of deliveries but will fail to reverse the decline in activity for both maternity and neonatal services. Thus, capacity will increase but activity and income will decrease. This will be the worst case scenario of do nothing and has not been modelled financially separately as the consequences of reducing activity levels is already modelled in the Do Nothing option.

Option 3C: Strategic Investment – No Marketing growth

The option is defined:

- No marketing growth assumed
- Activity levels remain the same as 2015/16 (or historical average level i.e. 3,945 deliveries)
- Neonatal cots increase from 23 to 27
- No increase in workforce in line with no marketing growth in activity
- Capital investment of £12m

In summary, the key feature of this option is investment in the maternity and neonatal services of £12m i.e. same as option 3A but activity remaining the same as 2015/16 levels i.e. at historical average, as the Trust fails to increase market share. Under this option, the Trust would seek to invest to upgrade current facilities and to create capacity for a rise in the number of deliveries but will fail to gain intended market share and thus there will be no marketing growth related activity increase for both maternity and neonatal services. Capacity will increase but activity and real income will remain stagnant. This is assumed to be the worst case scenario for option 3A and thus has been modelled financially.

Option 3D: Strategic Investment – High growth

The option is defined:

- Marking growth is higher than Option 3A
- Activity levels increase; maternity activity growing to 5,000 deliveries by 2018/19
- Neonatal cots increase from 23 to 27
- Capital investment of £12m

In summary, the key feature of this option is investment in the maternity and neonatal services of £12m i.e. same as option 3A, but activity increases higher than the 4,700 deliveries in option 3A as the Trust attracts higher market share because of its better clinical care and improved services. Under this option, the Trust will seek to invest to upgrade current facilities and to create capacity for a rise in the number of deliveries but will gain higher than expected gain in market share and activity for both maternity and neonatal services. Thus, capacity will increase but activity and income will be more than expected. This will be best case scenario of option 3A and has not been modelled financially.

Option 4: Relocation

The option is defined:

- Relocating services from present location to an alternative location either on, or off, the existing Whittington Hospital site

In summary, the key feature of this option is investment in the maternity and neonatal services but after relocating from present location to an alternative location. Under this option, the Trust could look to meet its strategic objectives by relocating from its present location to an alternative location either on, or off, the existing Whittington hospital site. This would require the re-provision of all maternity and neonatal facilities in a location separate from the main hospital acute services, including the acute Critical Care Unit. There was a lack of clinical support for this option and hence this option was rejected on non-financial grounds and has not been modelled financially.

Option 5: New Build

The option is defined

- Marketing growth assumed
- Activity level increasing: by 4,700 deliveries increase to 2018/19 and neonatal cots increase from 23 to 27
- Workforce increase in line with increased activity
- Capital investment of £72m

In summary the key feature of this option is continual clinical improvement and investment in the maternity and neonatal services via a brand new facility. Under this option, the Trust would seek to invest £72m to provide a brand new facility within the existing Whittington Hospital site.

This would enable the Trust to move towards meeting its overall intention of creating a first class facility, fit for the 21st century, and capable of managing up to 4,700 deliveries. However, this would require a significantly higher capital investment and is likely to require the re-provision of all maternity and neonatal facilities.

3.3.2 Short listing of Options – Process

In developing the OBC, the short listing process was undertaken by the members of the Maternity and Neonatal Steering Board in consultation with their respective professional colleagues.
The conclusion at OBC was to take forward two options: Option 3A – the strategic investment and option 2 – the Do Minimum. The long list has been reviewed again in developing the FBC and the shortlist expanded, see table 2.3 below.
In drawing up the short list of options the Trust sought to:

- Include options which reflected the Trust's corporate objectives, clinical strategy and best met the investment objectives of the project
- Test options against the following key investment objectives:
  - By September 2016, to improve the quality and safety of the neonatal ITU and HDU facilities. (Using Health Building Note (HBN) 09-03, sec 7.15/7.16 as the benchmark).
  - By September 2016, to build a second, co-located, dedicated obstetric theatre, thereby improving the safety of maternity theatre service provision.
  - By September 2016, to increase the capacity of the maternity and neonatal services to meet the needs of an anticipated 4,700 deliveries
- Avoid significant decant or double running costs
- Retain current location
- Maintain or enhance the Trust's reputation as the provider of choice to the people of Haringey and Islington
- Minimise implementation timescales
- Assess requirement for funding to deliver objectives i.e. capability of completion within foreseeable funding.

Table 3.3: Short listing the options

Options:	Option Name	Improvement of quality and safety in the neonatal service	Provision for a second co-located obstetric theatre	Delivery of increased capacity associated with increased activity up to 4,700 deliveries	Maintenance or enhancement of Trust's reputation as the provider of choice to the people of [illegible]	Avoidance of significant decant or double running costs	Retention of current location	Implementation Timescales	Funding	Comment	Shortlisted
Option 1	Do Nothing	No	No	No	No	Yes	Yes	Yes	No	Whilst this option would not enable the Trust to meet its investment objectives, it has been added to the short list for comparative purposes.	Yes
Option 2	Do Minimum	No	No	No	No	No	Yes	No	No	Although this option would not enable the Trust to fully meet its investment objectives it does represent a viable option for the Trust. This option has therefore been shortlisted.	Yes
Option 3A	Strategic Investment - With Marketing growth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	This option does meet the Trust's strategic objectives and therefore been shortlisted	Yes
Option 3B	Strategic Investment - Decreasing Activity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	This option has not been taken through to the short list as the financial modelling is represented by Option 1 Do nothing, worst case	No

Option 3C	Strategic Investment – No Marketing growth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	This option has been shortlisted as it represents an activity sensitivity analysis for option 3A	Yes
Option 3D	Strategic Investment – High growth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Not shortlisted as modelled via the GEM sensitivity analysis of option 3A.	No
Option 4	Strategic Investment – Relocation	Yes	Yes	Yes	Yes	No	No	Yes	No	**3)** Relocation to off-site location The possibility of moving the services away from the existing hospital site has been dismissed as not viable due to the need to be co-located with the other Whittington Health acute clinical facilities Furthermore, not only would it take a significant amount of time in identifying an appropriate site, but the move of services away from The Whittington Hospital site might require fresh and possibly lengthy public consultation. This option would not be able to address the investment objectives within the required timeframe. ii) Relocation on site The possibility of re locating within any of the existing structures on The Whittington Hospital site has also been reviewed at a high level. Within the existing plans, and with reference to the existing Estates Strategy, no space of any significant size could be available to maternity and neonatal services without a significant level of disruption and double decant Based on this the Trust have decided not to short list this option.	No
Option 5	Strategic Investment – New Build	Yes	Yes	Yes	Yes	No	No	Yes	No	This option would involve the development of new facilities for the maternity and neonatal services on the current Whittington Hospital site. Whilst this would enable the Trust to meet its strategic objectives, it is unlikely that it could be delivered without a significant level of disruption and double decant and at a high capital cost. It has been included on the short list for comparative purposes.	Yes

3.4 Shortlisted Options

The conclusions of the short listing exercise are summarised in the table above, with the following options included in the FBC shortlist

- Option 1: Do Nothing
- Option 2: Do Minimum
- Option 3A: Strategic Investment - With marketing growth
- Option 3C: Strategic Investment – No marketing growth
- Option 5: Strategic Investment – New Build

The following options have not been shortlisted for financial evaluation because of the following reasons:

- Option 3B: Strategic Investment – Decreasing Activity:

This is a downside case for the 'Do nothing' option as this option will require additional capital investment but still have decreasing activity, and thus won't give additional useful information for decision making other than what is already covered in the Do nothing' option.

- Option 3D: Strategic Investment – High growth

This is not modelled as this is the best case sensitivity for 'Preferred option' where activity will increase to 5,000 with no increase in workforce or cost and thus will increase surplus. Overall, this best case won't provide additional useful information for decision making other than what is already covered in the preferred option.

- Option 4: Relocation

This has been rejected on Non-Financial grounds as this would require re-provision of all maternity and neonatal facilities in a location separated from the main general acute services.

3.5 Description of Shortlisted Options

Details of shortlisted options are described as follows.

Option 1: Do Nothing

The option is defined by:

- No capital investment
- Activity reduction by 5% from 2015/16 to 2017/18, 3% in 2018/19 and 2% in 2019/20

In summary the key feature of this option is reduced activity due to loss of market share, with competitors increasing market share. This would lead to a gradual decline in maternity activity as women and their families choose to receive their maternity care from other providers with higher quality facilities. This would also have a further negative impact on neonatal activity which will decline in line with Maternity activity. With this option there is a significant risk that the neonatal unit will become clinically unviable due to the substandard environment.

The option will impact on all services and the impact on activity is as follows:

Table 3.4: Activity for Option 1 – Do Nothing

Activitity	2015-16 Year 1	2016-17 Year 2	2017-18 Year 3	2018-19 Year 4	2019-20 Year 5
Maternity					
Antenatal	4,168	3,959	3,761	3,648	3,575
Deliveries	3,449	3,277	3,113	3,019	2,959
Postnatal	3,333	3,166	3,008	2,917	2,859
Total	**10,949**	**10,402**	**9,882**	**9,585**	**9,394**
Neonatal					
High Dependency	1,379	1,310	1,245	1,208	1,183
Intensive Care	616	585	556	539	528
Special Care	3,954	3,756	3,568	3,461	3,392
Neonatal Excl Transitional Car	**5,949**	**5,651**	**5,369**	**5,208**	**5,104**
Transitional Care	5,227	4,966	4,718	4,576	4,485
Total	**11,176**	**10,617**	**10,087**	**9,784**	**9,588**

Under this option the Trust would continue to deliver services from the existing facilities but would cease to invest any further capital in the services. This reduction in activity coupled with no capital investment is analysed financially.

It should be noted that a number of clinical requirements cannot be met by this option and there will be very high reputational risk along with loss of activity and market share.

Option 2: Do Minimum

The option is defined

- Activity level remain same as '15/16 level
- Maintain current services with minimum backlog maintenance

In summary the key feature of this option is continual support and investment in the existing services to maintain existing functionality.

This investment in existing functionality will enable the Trust to continue to deliver the 2015/16 level of clinical activity for the Trust maternity and neonatal services. The number of deliveries would stay at the 2015/16 or historical average level i.e. 3,945 deliveries for each of the successive years. Similarly, neonatal cot capacity will remain at 23 cots and thus activity level for neonatal will remain at the 2015/16 level.

The option will impact on all services and the impact on activity is as follows:

Table 3.5: Activity for Option 2 – Do Minimum

Activitity	2015-16 Year 1	2016-17 Year 2	2017-18 Year 3	2018-19 Year 4	2019-20 Year 5
Maternity					
Antenatal	4,826	4,826	4,826	4,826	4,826
Deliveries	3,945	3,945	3,945	3,945	3,945
Postnatal	3,812	3,812	3,812	3,812	3,812
Total	**12,582**	**12,582**	**12,582**	**12,582**	**12,582**
Neonatal					
High Dependency	1,657	1,657	1,657	1,657	1,657
Intensive Care	624	624	624	624	624
Special Care	4,359	4,359	4,359	4,359	4,359
Neonatal Excl Transitional Care	**6,640**	**6,640**	**6,640**	**6,640**	**6,640**
Transitional Care	6,621	6,621	6,621	6,621	6,621
Total	**13,261**	**13,261**	**13,261**	**13,261**	**13,261**

The Trust would continue to make investment for minimum backlog maintenance in the facilities from its own internal resources. The minimum capital spend of £10m over five years would be targeted at ensuring that a safe service can be offered from the existing facilities, with no consideration of expanding capacity. For this option it is assumed that in the absence of any upfront capital investment, £2m per annum will be required to for backlog maintenance to provide existing services.

Table 3.6: Backlog Investment Programme

TOTAL CAPITAL INVESTMENT	
	£'000
2015/16	2,000
2016/17	2,000
2017/18	2,000
2018/19	2,000
2019/20	2,000
Total year 1 – 5	10,000

At this level of spend there would be no strategic expansion of the facility in terms of added capacity to cope with the assumed increased demand, nor would there be sufficient capital to create a co-located second obstetric theatre and thereby reduce some of the existing safety concerns. The space occupied by the neonatal services would remain constrained by the fabric of the Victorian building. Therefore, in terms of patient experience, the facilities would be improved over the 5 years but not to the extent that they met the investment criteria set out in the Strategic case.

It should be noted that this option will not allow the Trust to respond to any opportunity in the external environment or to increase market share. Furthermore it will pose substantial clinical risk, reputational risk and risk of reduction in activity.

Option 3A: Strategic Investment – with marketing growth

The option is defined

- Marketing growth assumed
- Activity level increasing; by 4,700 deliveries to 2018/19 and neonatal cots increase from 23 to 27
- Workforce increase in line with increased activity
- Capital investment of £12m

In summary the key feature of this option is continual clinical improvement and investment in the maternity and neonatal services to upgrade existing services and improve the physical environment. Under this option, the Trust would seek to invest to improve the quality of patient experience and to create capacity for a rise in the number of deliveries. A number of the existing facilities and spaces would be enhanced to a higher specification than at present, which would include better co-location of services to provide an overall improved patient experience. A capital investment requirement, calculated at OBC as £9,997,834 and revised to £11,996,812 for the FBC, has been identified.

Under this option the Trust would move towards its overall intention of creating a first class facility, fit for the 21st century, and provide services to meet the needs of 4,700 deliveries and related neonatal activity. This would be achieved by the introduction of a second (co-located) obstetric theatre,

additional delivery rooms and the redevelopment of the neonatal ITU and HDU facilities to meet modern health building standards which will improve privacy and dignity whilst further improving clinical safety.

The option will impact on all services and the impact on activity will be as follows:

Table 3.7: Activity for Option 3A: Strategic Investment – with marketing growth

Activitity	2015-16	2016-17	2017-18	2018-19	2019-20
	Year 1	Year 2	Year 3	Year 4	Year 5
Maternity					
Antenatal	4,826	5,168	5,464	5,765	5,765
Deliveries	3,945	3,945	4,345	4,700	4,700
Postnatal	3,812	3,812	4,198	4,541	4,541
Total	**12,582**	**12,925**	**14,007**	**15,006**	**15,006**
Neonatal					
High Dependency	1,657	1,657	1,971	1,971	1,971
Intensive Care	624	624	876	876	876
Special Care	4,359	4,359	4,417	4,417	4,417
Neonatal Excl Transitional Care	**6,640**	**6,640**	**7,264**	**7,264**	**7,264**
Transitional Care	6,621	6,621	7,386	7,990	7,990
Total	**13,261**	**13,261**	**14,649**	**15,254**	**15,254**

The high level benefits of this option include:

- Create delivery capacity to provide real choice for local women
- Improve the quality and safety of obstetric theatre provision
- Address the poor physical environment and space constraints of the neonatal ITU/HDU and Labour Ward.

This option to enhance the existing footprint was considered at OBC stage with the support of the Trust's design advisers BDP. The solution will be delivered by introducing a new build core alongside the existing buildings, which will enable an increase in the overall footprint at levels 2-5. It will allow the joining up of refurbished existing wings with the new build core, thus creating bigger footprints to provide for different elements of the maternity and neonatal services.

This option has been further developed under the P21+ procurement route, with the appointment of Integrated Health Projects at stage 3 (October 2014) to support the Trust in developing this option for the FBC.

This option requires no decanting and no planned reduction in activity levels during the implementation phase.

Following the establishment of Project Groups involving clinical and user representation, the clinical design has been further developed to achieve clinical and technical sign off for the main clinical layouts (Theatres/Labour Ward and neonatal ITU/HDU) (See Appendix 8 a-d) and schedules of accommodation (See Appendix 9), including sign off for any derogations from the relevant HBN and HTMs. See Appendix 10 and Appendix 11.

An initial Staff and Patient Environment Calibration Toolkit (ASPECT) assessment has been carried out and is at Appendix 12 and a Design Quality Indicator is planned for January 2015

IHP has used the design development to agree key room layouts, and combined with site surveys and the identification of Trust technical requirements have developed a mechanical and engineering strategy. This informed the preparation of a 'Not to be Exceeded Guaranteed Maximum Price', submitted to the Trust on 19th December 2014 and which has been used to prepare the cost plan for the FBC.

IHP have led on the preparation of a detailed stage 3 (FBC and Guaranteed Maximum Price) and stage 4 (construction programme) See Appendix 13.

The total capital costs for this option have been provided by the cost consultant as per table 3.8 below:

Table 3.8: Capital Spend Option 3A: Strategic Investment – With marketing growth

Capital Cost £	Per FBC
	Option 3A
	£
Departmental areas	5,630,717
Plant and corridors (On Costs)	1,887,004
Location adjustments	676,595
TOTAL WORKS COSTS (4Q 2014)	**8,194,315**
Equipment Costs	200,000
Planning Contingencies	466,102
TOTAL OTHER COSTS (4Q 2014)	**666,102**
Optimism Bias	199,763
Inflation Adjustment	151,094
Sub-total	**9,211,274**
VAT	1,657,816
Fees *	1,127,722
Total Capital	**11,996,812**

Option 3C: Strategic Investment – No marketing growth

The option is defined

- No marketing growth assumed
- Activity levels remain same as 2015/16 or historical average level i.e. 3,945 deliveries
- Neonatal cots increase from 23 to 27
- No increase in workforce in line with no marketing growth in activity
- Capital investment of £12m

In summary, the key feature of this option is investment in the maternity and neonatal services of £12m i.e. same as option 3A, but activity remains the same as 2015/16 levels i.e. at historical average as the Trust fails to gain market share. Under this option, the Trust would seek to invest to upgrade current facilities and to create capacity for a rise in the number of deliveries but will fail to

gain intended market share and there will be no marketing growth related activity increase for either maternity or neonatal services.

The option will impact on all services and the impact on activity is as follows:
Table 3.9: Activity for Option 3C – Strategic Investment – No marketing growth

Activitity	2015-16	2016-17	2017-18	2018-19	2019-20
	Year 1	Year 2	Year 3	Year 4	Year 5
Maternity					
Antenatal	4,826	4,826	4,826	4,826	4,826
Deliveries	3,945	3,945	3,945	3,945	3,945
Postnatal	3,812	3,812	3,812	3,812	3,812
Total	**12,582**	**12,582**	**12,582**	**12,582**	**12,582**
Neonatal					
High Dependency	1,657	1,657	1,657	1,657	1,657
Intensive Care	624	624	624	624	624
Special Care	4,359	4,359	4,359	4,359	4,359
Neonatal Excl Transitional Care	**6,640**	**6,640**	**6,640**	**6,640**	**6,640**
Transitional Care	6,621	6,621	6,621	6,621	6,621
Total	**13,261**	**13,261**	**13,261**	**13,261**	**13,261**

Option 5: New Build

The option is defined

- Marketing growth assumed
- Activity level increasing; by 4,700 deliveries to 2018/19 and neonatal cots increase from 23 to 27
- Workforce increase in line with increased activity
- Capital investment of £72m

In summary, the key features of this option are continual clinical improvement and investment in the maternity and neonatal services via a brand new facility. Under this option, the Trust would require a brand new facilities for all of the maternity and neonatal services.

Two potential sites were identified for the new build. These were:

- Block J (the Waterlow) Unit
- Blocks D,E,N and P (the current location of the maternity and neonatal services)

Significant capital cost would be required for either site, as both would require demolition and complete rebuild, with the latter option also requiring significant decanting. For the purpose of the option appraisal an indicative capital cost of £72m has been used.

This would enable the Trust to move towards meeting its overall intention of creating a first class facility, fit for the 21st century, and capable of managing up to 4,700 deliveries. However, this would require a significantly higher capital investment and may require the re-provision of all maternity and neonatal facilities within the existing hospital site. The option impact on activity will be same as for Option 3A and is as follows:

Table 3.10: Activity for Option 5: New Build

Activitity	2015-16 Year 1	2016-17 Year 2	2017-18 Year 3	2018-19 Year 4	2019-20 Year 5
Maternity					
Antenatal	4,826	5,168	5,464	5,765	5,765
Deliveries	3,945	3,945	4,345	4,700	4,700
Postnatal	3,812	3,812	4,198	4,541	4,541
Total	**12,582**	**12,925**	**14,007**	**15,006**	**15,006**
Neonatal					
High Dependency	1,657	1,657	1,971	1,971	1,971
Intensive Care	624	624	876	876	876
Special Care	4,359	4,359	4,417	4,417	4,417
Neonatal Excl Transitional Care	**6,640**	**6,640**	**7,264**	**7,264**	**7,264**
Transitional Care	6,621	6,621	7,386	7,990	7,990
Total	**13,261**	**13,261**	**14,649**	**15,254**	**15,254**

3.6 Determining the Preferred Option (Value for Money Methodology)

A full appraisal of the short listed options has been carried out:

- **Economic Appraisal:** indicative estimates of the costs and financial benefits of each option and providing a discounted cash flow assessment using this to assess the Net present Cost of each shortlisted option
- **Appraisal of Risk:** providing an assessment of risks related to the different options for investment using a scoring mechanism
- **Appraisal of Benefits:** defining the Trust's benefit criteria derived from the Investment Objectives and evaluating the options against these criteria using a scoring mechanism.

The analysis undertaken to determine the preferred option considered:

- Capital costs
- Revenue and lifecycle costs
- Net Present Cost/Value options
- Risk Adjusted Net Present Cost/Value options
- Value for money
- Switching Values
- Sensitivity analysis

In the final Value for Money analysis, both the benefit levels and costs of the options are considered. The option offering the best score with regards to the lowest cost per benefit point is considered to be the best value for money.

Following this analysis, the preferred and agreed option was Option 3A: Strategic Investment – With marketing growth and this is the option that has been progressed via the P21+ procurement route, with the appointment of Integrated Health Projects at stage 3 (October 2014) to support the Trust in developing this option for the FBC.

3.7 Economic Appraisal

The economic analysis is conducted via by using the Generic Economic Model (GEM Model). GEM is created by the DH aims to facilitate economic appraisals in accordance with the principles of Green Book and GEM guidance.

The GEM uses the following as a basis for this assessment:

- All capital charges including PDC are excluded
- All elements of VAT are excluded whether recoverable or not
- Discount factor is applied at 3.5% to first 30 years cash flows and 3% thereafter

Economic analysis via GEM is conducted for an appraisal period of 62 years starting from 2015/16 as year one. 62 years has been selected per advise from cost consultant re life of the building which is assumed to be 60 years and capitalise fully from year three 2017/18.

The financial modelling uses a number of assumptions as follows:
Table 3.11 :Assumptions for Economic Analysis

Assumption Cumulative 1 - 5 years					
Options	**Option 3A - Strategic Investment - With Marketing growth**	**Option 1 - Do Nothing**	**Option 2 - Do Minimum**	**Option 5 - New Build**	**Option 3C - Strategic Investment - No Marketing growth**
Growth - Demographics	0.0%	0.0%	0.0%	0.0%	0.0%
Growth - Marketing	18.3%	0.0%	0.0%	18.3%	0.0%
Growth - Other including activity rebasing	8.7%	-20.0%	8.7%	8.7%	8.7%
Total Growth	27.0%	-20.0%	8.7%	27.0%	8.7%
CIPs	16.0%	16.0%	16.0%	16.0%	16.0%
Tariff Deflator - all except deliveries & postr	-3.2%	-3.2%	-3.2%	-3.2%	-3.2%
Tariff Deflator - Deliveries	6.5%	6.5%	6.5%	6.5%	6.5%
Tariff Deflator - Postnatal	2.3%	2.3%	2.3%	2.3%	2.3%
Inflation - Pay	10.8%	10.8%	10.8%	10.8%	10.8%
Inflation - Non Pay	8.0%	8.0%	8.0%	8.0%	8.0%
Cquin	12.5%	12.5%	12.5%	12.5%	12.5%

Following this analysis, the preferred and agreed option was Option 3A: Strategic Investment – With marketing growth. This option has been further developed under the P21+ procurement route, with the appointment of Integrated Health Projects at stage 3 (October 2014) to support the Trust in developing this option for the FBC.

Other assumptions for the economic analysis are as follows:

- The economic analysis includes efficiency savings, income displacement, RPI for capital costs and uses real income and expenditure;
- Additional capital cost is added over the life of project where relevant. For example capital cost of equipment which depreciates fully in 7 years, is added over 62 years;
- Life cycle cost which has been provided by the capital cost consultant has been added and assumed to be the same for all option with capital spend.
- The economic analysis excludes income generation schemes, but impact of displacement of activity and thus income has been included and this approach has been agreed with the TDA.

3.7.1 Capital costs

The following tables summarises the Initial capital costs (excluding life cycle capital) for each option for year 1 to 5:

Table 3.12: 5 Years Initial Capital Cash flows before discounting

Capital Expenditure	**Option 3A - Strategic Investment - With Marketing growth**	**Option 1 - Do Nothing**	**Option 2 - Do Minimum**	**Option 5 - New Build**	**Option 3C - Strategic Investment - No Marketing growth**
	£'000	£'000	£'000	£'000	£'000
Capital Expenditure	11,997	0	10,000	72,000	11,997
Total	**11,997**	**0**	**10,000**	**72,000**	**11,997**

Notes: All elements of VAT & RPI are included in the above table and discount factor is not applied

Table 3.13: 62 Years total Capital Cash flows from GEM after discounting

Capital Expenditure	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
Initial capital	10,291	0	9,397	67,702	10,291
Lifecycle capital	2,810	0	2,810	2,810	2,810
Total	**13,102**	**0**	**12,207**	**70,512**	**13,102**

Notes: All elements of VAT are excluded in the above table and discount factor is applied

The option with the lowest capital cost is Option 1: Do Nothing, mainly as the capital element is zero. Option 2: Do Minimum has a lower capital investment of £10m than all of the strategic investment options, i.e. Option 3 and option 5, as less functionality would be procured to maintain the status quo. With Option 2: Do Minimum, the Trust would not gain the financial economies of scale associated with preferred option 3A.

It should be noted that before discounting and adding life cycle costs, the difference in capital spend between Option 2: Do Minimum and Option 3A, the preferred option is approximately £2m, but timing of cash flow should be taken in to account. For the preferred option, capital cash flow occurs at the beginning of the project i.e. in 2015/16 and early 2016/17 and this will enable the Trust to reap the benefit of improved capacity. However for the Option 2: Do Minimum, it is assumed that in the absence of any upfront capital investment, £2m per annum will be required to for back log maintenance to provide existing services.

Table 3.14: Comparison of timing of Capital Cash flow

INITIAL CAPITAL INVESTMENT			
£'000	**Option 2-Do Minimum**	**Option 3A – Strategic investment**	**Option 5 – New build**
2015/16	2,000	8,305	25,000
2016/17	2,000	3,962	25,000
2017/18	2,000		22,000
2018/19	2,000		
2019/20	2,000		
Total year 1 – 5	**10,000**	**11,997**	**72,000**

Note for the preferred option, the overall 5 year capital investment is £11,996,812 including Trust procurement and deployment costs (note 2014/15 capital costs £785,064 have been included in 2015/16).

For Option 2: Do Minimum, the Trust would continue to make investment for minimum backlog maintenance in the facilities from its own internal resources. The minimum capital spend of £10m would be targeted at ensuring that a safe service can be offered from the existing facilities with no consideration of expanding capacity.

At this level of spend there would be no strategic expansion of the facility in terms of added capacity to cope with the assumed increased demand, nor would there be sufficient capital to create a co-located second obstetric theatre and thereby reduce some of the existing safety concerns. The space occupied by the neonatal services would remain constrained by the fabric of the Victorian building. Therefore, in terms of patient experience, the facilities would be improved over the five years but not to the extent that they would meet the investment criteria set out in the Strategic case.

Option 3A and 3C have same initial capital spend of £12m, which is substantially lower than capital costs of £72m for option 5: New Build.

Thus, on the basis of capital spend to meet Trust objectives Option 3A and 3C are the preferred options.

3.7.2 Income and Expenditure

For Income and expenditure economic appraisal has been conducted via GEM model and Standard Financial modelling

- **GEM modelling:**

This uses discounted revenue cash flows over 62 years and using assumptions of GEM Economic modelling. The discounted revenue cash flows over 62 years are shown below.

Table 3.15: Discounted revenue cash flows

Revenue Expenditure	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
Clinical and Non clinical costs	618,170	851,077	680,271	618,170	680,271
Total	**618,170**	**851,077**	**680,271**	**618,170**	**680,271**

Notes:
- Excludes all elements of VAT and RPI.
- Excludes capital charges.
- Discount factor is applied
- RPI has Income generation schemes not included in GEM but impact of e displacement of activity and thus Income has been included

The option with the overall lowest revenue expenditure over the 62 year project life cycle is, Option 3A:Strategic investment – with marketing growth. Please note the discounted revenue expenditure for Option 3A and Option 5 is the same because they differ in capital charges only and GEM excludes capital charges. Thus, it is important to look at impact on I&E and undiscounted nominal total cost including capital charges to review these options, this is discussed below.

- **Standard Financial modelling:**

This uses undiscounted cumulative nominal net revenue contribution over 5 years from 2015/16 to 2019/20.

To understand I&E impact and nominal net contribution, undiscounted cumulative nominal revenue contribution over 5 years from 2015/16 to 2019/20 were calculated and analysed in detail for all of the shortlisted options and are as below.

Table 3.16: Undiscounted 5 year cumulative nominal revenue contribution

Revenue Expenditure (Cumulative Year 1-5)	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
Income	150,111	106,098	136,191	150,111	136,191
Pay	(96,753)	(90,130)	(90,130)	(96,753)	(90,130)
Non-pay including Overheads	(48,817)	(44,109)	(46,560)	(48,817)	(46,560)
Efficiency savings	12,407	11,370	11,575	12,407	11,575
Capital charges	(2,448)	0	(1,451)	(12,483)	(2,448)
Total Real	**14,500**	**(16,771)**	**9,625**	**4,465**	**8,628**
Inflation	(9,299)	(8,289)	(8,523)	(9,299)	(8,523)
Surplus/Deficit	**5,200**	**(25,060)**	**1,102**	**(4,834)**	**105**

Notes:
- Includes all elements of VAT and RPI.
- Includes capital charges.
- Discount factor is not applied.
- Financial analysis is not based on GEM assumptions and done outside GEM model.
- Actual income based on forecasted activity for each option and tariff inclusive of MFF and deflation has been included.

Overall this analysis ranks, Option 3A:Strategic investment – with marketing growth, as the preferred option.

3.7.3 Net Present Cost/Value Analysis

The Net Present Cost/Value (NPC/NPV) analysis combines the relevant cash flows of each option over the time period of the project i.e. 62 years. The figures were then discounted at the rate of 3.5% for 30 year and 3.0% thereafter to apply the current value of money concept.

The NPC analysis excludes VAT, capital charges and RPI on revenue cost. Risk appraisal of shortlisted option has been conducted and adjusted NPC has also been calculated.

The following table summarises the NPV and risk adjust NPV, rank options on these basis.

Table 3.17: Net Present Cost/Value

	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
Net Present Cost	631,272	851,077	692,479	688,683	693,373
Financial Rank on NPC	**1st**	**5th**	**3rd**	**2nd**	**4th**
Cost of Risk	1,150	2,600	2,000	3,150	1,150
Risk Adjusted NPC	632,422	853,677	694,479	691,833	694,523
Financial Rank on Risk Adjusted NP	**1st**	**5th**	**3rd**	**2nd**	**4th**

Option 3A:Strategic investment – with marketing growth is the preferred option based both on Net Present Cost and risk adjusted Net present Cost.

3.7.4 Value for Money Analysis

The Trust project team conducted an analysis of qualitative benefits and scored them using a benefits scoring matrix. In the Value for Money analysis, both the benefit levels and costs of the options are considered. The option offering the best score with regards to the lowest cost per benefit point is considered to be the best value for money.

The following table summarises Value for money analysis.

Table 3.18: Value for Money analysis

	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
Benefit points per Option	8.3	0.5	1.9	7.8	8.3
Rank	**1st**	**4th**	**3rd**	**2nd**	**1st**
NPC per benefit point (NPC / Benefit points)	76,057	1,702,155	364,462	88,862	83,539
Rank	**1st**	**5th**	**4th**	**3rd**	**2nd**
Risk adjusted NPC per benefit point	76,195	1,707,355	365,515	89,269	83,677
Rank	**1st**	**5th**	**4th**	**3rd**	**2nd**

The outcome of this value for money analysis demonstrates that option 3A :Strategic investment – with marketing growth, delivers the lowest cost and risk adjusted cost in pounds per benefit point.

3.7.5 Switching Values– Economic Appraisal

This section of the sensitivity analysis deals with switching values of the preferred option until the next best option becomes the preferred option.

A sensitivity analysis has been carried out on the capital and revenue costs to determine how sensitive the preferred option is to a change in NPC. This involved recalculating the NPC for Option 3A;Strategic investment – with marketing growth so that its NPC equates to that in the next best option, which is Option 5:New Build.

Therefore the NPC of Option 3A, the preferred choice, needs to increase by at least 9.3% i.e. to become £675m for option 5:New Build to become the preferred choice. The value is arrived at by deducting the NPC values for options 3A and 5 contained in NPV analysis table.

This is highlighted in table below by either increasing capital or revenue costs.

Table 3.19: Switching Values

Switching value	Original Cost £'000	Revised Cost £'000	%
Increase in capital costs	11,997	59,400	395.1%
Increase in net revenue costs	618,170	675,537	9.3%

The above table demonstrates the following:

- **Capital cost changes** - The capital costs for Option 3A:Strategic investment – with marketing growth would have to increase by £59.4million (395.1%) before Option 5:New Build would become the preferred choice. This is because Option 5 has a very high capital spend.
- **Revenue Cost Changes** - The revenue costs for option 3A:Strategic investment – with marketing growth would have to increase by £57.4million (9.3%) to make Option 5:New Build the preferred choice.

3.7.6 Sensitivity Analysis

A sensitivity analysis was carried out via the GEM model to determine how robust the selection of the preferred option is.
The aim was to see if a change in assumptions around the preferred option would result in another option being preferred. The following sensitivities and variables were selected, and the resultant NPV's compared for:

- Capital & Lifecycle Costs Increase by 25%
- Capital & Lifecycle Costs decrease by 25%
- Income displacement increase by 10%
- Income displacement decrease by 10%
- Revenue Costs Increase by 10%
- Revenue Costs Decrease by 10%
- Revenue Costs Increase by 20%
- Revenue Costs Decrease by 20%
- Income displacement increase by 25%

The results of the change in NPC for all shortlisted options under the above conditions are shown in the table 3.20 below.

	Options									
	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth	Option 3A - Strategic Investment - With	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No
	£000s	£000s	£000s	£000s	£000s	Ranking				
Baseline NPC	631,272	851,077	692,479	688,683	693,373	1st	5th	3rd	2nd	4th
Capital & Lifecycle Costs Increase by 25%	634,548	851,077	695,530	706,311	696,649	1st	5th	3rd	2nd	4th
Capital & Lifecycle Costs decrease by 25%	627,997	851,077	689,427	671,055	690,098	1st	5th	3rd	2nd	4th
Income displacement increase by 10%	631,272	880,839	704,146	688,683	705,040	1st	5th	3rd	2nd	4th
Income displacement decrease by 10%	631,272	821,316	680,812	688,683	681,706	1st	5th	2nd	4th	3rd
Revenue Costs Increase by 10%	693,089	906,423	748,839	750,500	749,733	1st	5th	2nd	4th	3rd
Revenue Costs Decrease by 10%	569,455	799,574	636,118	626,866	637,013	1st	5th	3rd	2nd	4th
Revenue Costs Increase by 20%	754,906	961,769	805,199	812,317	806,093	1st	5th	2nd	4th	3rd
Revenue Costs Decrease by 20%	507,638	740,385	579,758	565,049	580,653	1st	5th	3rd	2nd	4th
Income displacement increase by 25%	631,272	925,481	721,646	688,683	722,541	1st	5th	3rd	2nd	4th

The sensitivity analysis indicates that option 3A : Strategic investment – with marketing growth is extremely robust and remains the preferred option in all of the scenarios.

3.8 Risk Appraisal

3.8.1 Risk Value Assessment

Risk appraisal focuses upon the most significant business and operational risks relevant to the Trust. A risk register has been maintained (described in more detail in Section 6 – the Management case).

The Programme Board identified and reviewed the probability of each risk and the likely impact of it occurring. The outcome was a Probability Impact (PI) score indicating the magnitude of the each risk. Each risk deemed to be high or very high for any one of the options was subsequently quantified for each shortlisted option. The Risk Value Assessment is at Appendix 14.
Note, that the actual activity reduction is already included in the base case for all options for the evaluation of the various options. Thus, it is not included again for risk evaluation to avoid duplication. However, if there is any additional risk for activity and income reduction due to other reputational risk and delays, then additional loss of activity and thus income has been factored into the risk calculation.

3.8.2 Risk for options

Option 1: Do Nothing
This option exposes the Trust to an unacceptable level of risk to normal operation from 2015/16 onwards. The Trust has assessed that no investment in the facilities poses a high risk of reputational loss which could lead to a significant drop in maternity activity. This decrease in activity, combined with no investment in the neonatal facilities could ultimately lead to the closure of the neonatal unit. The value of these risks has been assessed at £2.6m.
Option 2 : Do Minimum
The Trust has assessed that even with limited investment in the facilities there is still a high risk of loss of reputation as the investment will not address many of the current deficiencies within existing facilities. There is a risk of decreasing activity levels similar to the Do nothing option. The value of these risks has been assessed at £2m.
Option 3A : Strategic Investment - with marketing growth
The Trust has assessed that are a number of risks associated with this option. In particular, there are a number of risks which could generate delays in the completion of investment and the opening of the facilities. In addition a risk of £150,000 has been identified in relation to the revenue assumptions. The total value of these risks has been assessed at £1.15m
Option 3C: Strategic Investment - No marketing growth
The Trust has assessed that are this option carries the same risks as identified for Option 3A.
Option 5: Strategic Investment - New Build
The Trust has assessed that this option carries the same risks as identified for Option 3A and an additional risk relating to the accuracy of capital cost. The total value of these risks has been assessed at £3.15m

3.8.3 Risk cost and Risk Score:

Based on above discussion the risk score for each option is shown in table below.
Table 3.21: Summary of Risk Analysis

	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
Total Cost of Risks (£'000)	1,150	2,600	2,000	3,150	1,150
Risk Cost Rank (£'000)	**1st**	**3rd**	**2nd**	**4th**	**1st**
Risk adjusted NPC per benefit point	76,195	1,707,355	365,515	89,269	83,677
Rank	**1st**	**5th**	**4th**	**3rd**	**2nd**

Thus the preferred option remains as Option 3A : Strategic investment – with marketing growth as it poses fewer risks than all other options.

The key driver for option 3A:Strategic Investment - with marketing growth is the ability to improve the way care is delivered within the Trust, utilising "best practice care pathways and protocols" and therefore progresses both quality and benefits.

3.9 Benefit Appraisal

3.9.1 Benefits criteria for shortlisted options

A range of Benefits criteria were developed by the Maternity Steering Board to reflect the project objectives. These were weighted by the members of the Maternity Steering Board and are set out below:

vi) Ensure that the quality of the clinical facilities meets modern healthcare standards and is sympathetic to the patient pathways and working practices.

- Ensure that the neonatal service meets current HBN standards
- Ensure that second obstetric theatre capacity is provided in the best clinical location.

vii) Meets the needs of the local (and wider) population for maternity and NICU services.

- Ensure that the facilities are able to cope with the projected long term increased demand from the local population.
- Ensures that the facilities provided are comparable to those offered by other provider organisations that are readily accessible to the local population.

viii) Provide 21st century facilities in a timely manner whilst continuing to ensure operational patient safety and achieving the earliest opportunity to reduce the existing clinical risk identified.

- Objectives can be reached within timescales that do not lead to a loss of reputation for the Trust or its services.

ix) Supports the Trust's strategic objectives

- Ensures that the Trust can meet its quality strategy to have patient centred care where people are treated with dignity, in privacy and with the compassion at the right time and in the right place for them.

x) Effective use of the estate

- Ensures optimal use of the footprint of the estate
- Is compliant with the "Estate strategy" and does not unnecessarily compromise any future service plans.
- Ensures that plans are acceptable to local stakeholders - residents and planning authority.
- Is in accordance with the Development Control Plan and allows potential for future service flexibility.

These benefits criteria map to the investment objectives as shown in the following table

Table 3.22: Mapping of benefits criteria map to investment objectives

Investment objectives	Benefits criteria
▪ By September 2016, to improve the quality and safety of the neonatal ITU and HDU facilities. (Using Health Building Note (HBN) 09-03, sec 7.15/7.16 as the benchmark). ▪ By September 2016, to build a second, co-located, dedicated obstetric theatre, thereby improving the safety of maternity theatre service provision**.**	▪ Ensure that the quality of the clinical facilities meets modern healthcare standards and is sympathetic to the patient pathways and working practices. ▪ Provide 21st century facilities in a timely manner whilst continuing to ensure operational patient safety and achieving the earliest opportunity to reduce the existing clinical risk identified. ▪ Supports the Trust's strategic objectives and provides flexibility over future planning. ▪ Effective use of the estate including full consideration of sustainability issues
▪ By September 2016, to increase the capacity of the maternity and neonatal services to meet the needs of an anticipated 4,700 deliveries.	▪ Meets the needs of the local (and wider) population for maternity and NICU services.

3.9.2 Qualitative (non-financial) option appraisal

Members of the Maternity Steering Board ranked the options in order to determine the best option for the maternity and neonatal services. The appraisal was based on qualitative benefits without taking financial matters in to consideration. The appraisal was reviewed for the FBC and extended to include all short listed options.
The group considered how the benefits should be weighted in terms of relative importance of individual criteria to the success of the project and agreed on the following weighting.

Table 3.23: Benefit criteria weightings

	Criterion	Weight %
1	Ensure that the quality of the clinical facilities meets modern healthcare standards and is sympathetic to the patient pathways and working practices	**30 %**
2	Meets the needs of the local (and wider) population for maternity and neonatal services.	**20 %**
3	Provide 21st century facilities in a timely manner whilst continuing to ensure operational patient safety and achieving the earliest opportunity to reduce the existing clinical risk identified.	**20 %**
4	Supports the Trust's strategic objectives and provides flexibility over future planning.	**15 %**
5	Effective use of the estate including full consideration of sustainability issues	**15 %**
		100 %

The FBC short listed options were then scored, with scores of 1 – 10 allocated to each option against each criterion. A score of zero indicated that the option failed to satisfy the criterion in any respect. A score of ten indicated that the option fitted the criterion perfectly.

The tables below show the raw un-weighted scores and weighted scores.

Table 3.24: Raw un-weighted scores

	Criterion	Un-weighted scores				
		Option 1 – Do Nothing	**Option 2 – Do Minimum**	**Option 3A – Strategic Investment – With Marketing growth**	**Option 3C: Strategic Investment – No Marketing growth**	**Option 5 –New Build**
1	Ensure that the quality of the clinical facilities meets modern healthcare standards and is sympathetic to the patient pathways and working practices	1.00	2.00	9.00	9.00	9.00
2	Meets the needs of the local (and wider) population for maternity and neonatal services.	1.00	2.00	8.00	8.00	8.00
3	Provide 21st century facilities in a timely manner whilst continuing to ensure operational patient safety and achieving the earliest opportunity to reduce the existing clinical risk identified.	-	-	8.00	8.00	6.00
4	Supports the Trust's strategic objectives and provides flexibility over future planning.	-	3.00	8.00	8.00	7.00
5	Effective use of the estate including full consideration of sustainability issues	-	3.00	8.00	8.00	7.00
	Total	**2.00**	**10.00**	**41.00**	**41.00**	**38.00**

Table 3.25: Weighted scores

	Criterion	Weighted scores				
		Option 1 – Do Nothing	Option 2 – Do Minimum	Option 3A – Strategic Investment – With Marketing growth	Option 3C: Strategic Investment – No Marketing growth	Option 5 –New Build
1	Ensure that the quality of the clinical facilities meets modern healthcare standards and is sympathetic to the patient pathways and working practices	0.3	0.6	2.7	2.7	2.7
2	Meets the needs of the local (and wider) population for maternity and neonatal services.	0.2	0.4	1.6	1.6	1.6
3	Provide 21st century facilities in a timely manner whilst continuing to ensure operational patient safety and achieving the earliest opportunity to reduce the existing clinical risk identified.	0	0	1.6	1.6	1.2
4	Supports the Trust's strategic objectives and provides flexibility over future planning.	0	0.5	1.2	1.2	1.1
5	Effective use of the estate including full consideration of sustainability issues	0	0.5	1.2	1.2	1.1
	Total	0.5	1.9	8.3	8.3	7.75
	RANKING	**4**	**3**	**1**	**1**	**2**

From the scores it is clear that the Option 3A: Strategic Investment – with marketing growth option scores were higher in every one of the scoring criteria and therefore no further sensitivity analysis with respect to the weighting is required.
Option 3A Strategic Investment – with marketing growth, has been assessed as having the highest number of benefits. This is summarised in the table below

Table 3.26: Results of qualitative appraisal

	Option 3A - Strategic Investment - Refurbishment - Base case	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - Strategic Investment - New Build	Option 3C - Strategic Investment - Refurbishment - Low growth case
Benefit points per Option	8.3	0.5	1.9	7.8	8.3
Rank	**1st**	**4th**	**3rd**	**2nd**	**1st**

3.10 Conclusion - The Preferred Option

A summary of the assessment of the all shortlisted options is detailed below and outlines the rationale for identifying that Option 3A Strategic Investment -with marketing growth as the preferred option.

Option 1: Do Nothing

No capital costs are linked with this option and thus there are no benefits associated with the "Do Nothing" option other than avoiding procurement and implementation risks associated with construction and refurbishment for options 2, 3 and 5. Furthermore there is declining activity in this option due to the Trust's inability to capture increased market share. For this reason, Option 1 potentially has the highest negative revenue consequences and is an untenable solution.

If the Trust chooses to "Do Nothing" there is a very significant risk that the Trust would not deliver clinical activity or achieve efficiencies. Thus this Option is ranked as least preferred for benefits, the NPC analysis, risk adjusted NPC, value for money, and Risk adjusted NPC per benefit point.

Option 2: Do Minimum

There are few benefits associated with the "Do Minimum" option other than avoiding procurement and implementation risks associated with construction and refurbishment for options 3 and 5. For this reason, Option 2 is also the option with the lower capital outlay compared to options 3 and 5 but potentially will have the highest revenue consequences due to costs associated with remaining with existing services and the Trust's inability to capture market share. Option 2 is an untenable position.

If the Trust chooses to "Do Minimum" there is a very significant risk that the Trust would not only loss activity but would also be unable to transform the delivery of clinical pathways to achieve required efficiencies. Thus this Option is ranked 3rdin benefits, the NPC analysis and risk adjusted NPC, and 4th for value for money, and Risk adjusted NPC per benefit point.

Option 3A : Strategic Investment - with marketing growth

The economic analysis detailed above strongly supports Option 3A:Strategic Investment - with marketing growth is ranked as the first option for all appraisals and all sensitivities. This option will contribute to delivery of the Trust objectives - particularly in relation to delivery of the Clinical Strategy, provide a platform for further benefits and is least risky. Potentially the five years net costs associated with this option are significantly less than all other shortlisted options.

The business case does not consider possible additional opportunity benefits from additional capacity such as private patient income, which may result in additional income. The rationale behind this is that the uncertainties associated with quantification of these opportunity benefits and assessing their financial impact too far into the future becomes highly subjective and thus a prudent approach has been adopted by not including these in the business case. However, there is a substantial evidence to suggest these opportunity benefits exist and will be important for achieving savings.

Overall all, every aspect of the economic analysis and sensitivity analysis ranks Option 3A: Strategic Investment - with marketing growth in first place and the switching analysis demonstrates that substantial changes would need to occur to change this ranking.

Option 3C: Strategic Investment - no marketing growth

The benefit score and points for option 3C is the same as for Option 3A. The Trust will incur the same capital outlay and increase capacity but in Option C will fail to gain market share. Thus, this option is covered by the worse case sensitivity analysis of option 3A. It will have the procurement and implementation risks associated with construction and refurbishment as for option 3A, but would not deliver clinical activity to reap the benefit of additional capacity.

This option highlights financial impact of failure to gain market share and associated income. Thus this option is ranked 4th for the NPC analysis and risk adjusted NPC.

Option 5: New Build

The Option 5:New build would deliver the better functionality as with the preferred option, which would provide clinical and environmental benefits. Additional activity and income would flow to Trust in the same way as it would for Option 3A. However, capital outlay will be highest for this

option which makes this option unaffordable and increases procurement and implementation risks associated with construction which will negatively impact on the benefits.

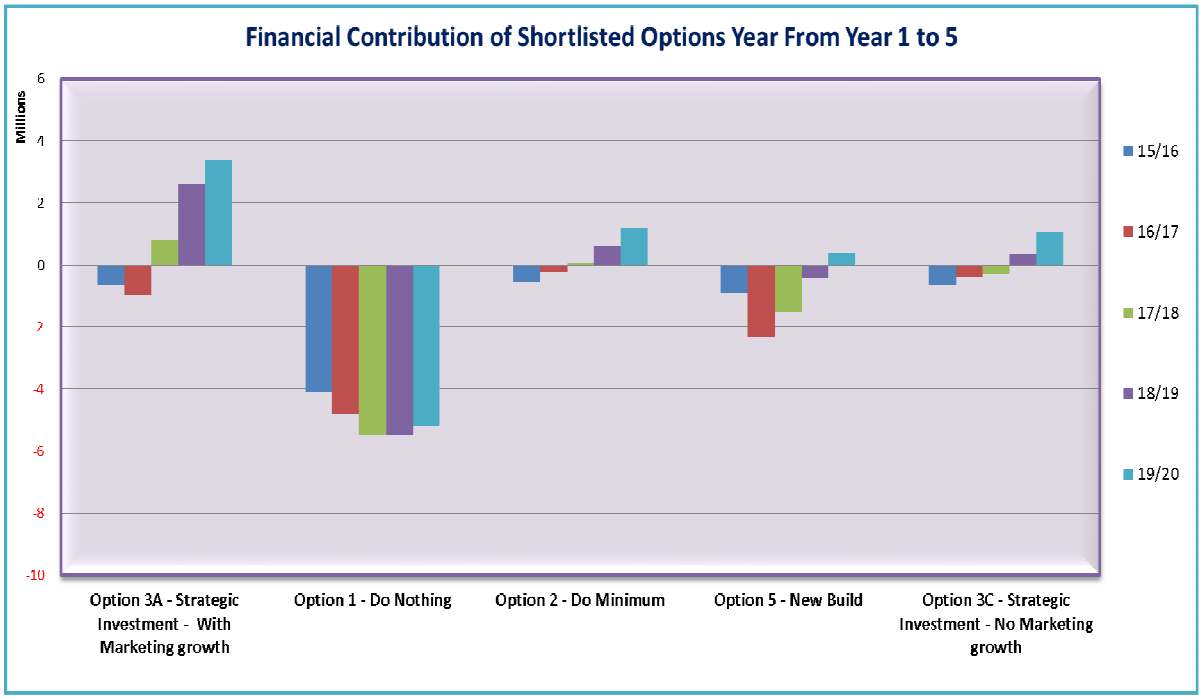
Overall, option 5:New Build is ranked 2nd due to additional income and better functionality as the preferred option. However, this option is not affordable for the Trust and excluded on this basis.

Overall Conclusion

The analysis detailed within this section concludes that Option 3A Strategic Investment -with marketing growth is the preferred option for the Whittington Health Maternity and Neonatal Services.

The table below shows and an analysis of the financial contribution of shortlisted options in nominal terms and after capital charges and RPI from Years 1 to 5. This also confirms that option 3A is the preferred option.

Table 3.27: Analysis of Financial contribution of shortlisted options



4 The Commercial Case

4.1 Introduction

This section of the FBC outlines the proposed procurement route and contractual arrangements associated with the preferred option. It provides an update as to how the commercial workings of the project have developed since OBC approval.

The procurement will be for capital works only. This covers some refurbishment of the existing unit; a second (co-located) obstetric theatre and; upgrades to the neonatal ITU and HDU facilities, to meet modern health building standards to improve privacy and dignity and improve clinical safety further. The solution would be delivered by introducing a new build core alongside the existing buildings, which would enable an increase in the overall footprint of each floor level. It would also allow the joining up of the existing wings, thus creating bigger footprints to provide for the different elements of the maternity and neonatal services.

The project will be delivered under a Principal Supply Chain Partner under the 'Procure 21+ National Framework Agreement' using an NEC3 (ECC Option C) contract.

Services are delivered in a mixed economy across the Trust's estate, including PFI. Soft and Hard FM services for the facilities affected by this project are undertaken and managed in-house, supported by sub-contracts for some services including catering, food supplies and laundry services. The Trust considers these to be services both satisfactory and value for money. In addition it is not considered practicable for these services to be split across different providers. FM costs will increase marginally as a result of the project, due to the projected increases in activity and the Trust's overall floor area being offset by a relocation of services and improved quality and performance of facilities. The scope and delivery of the services will not materially change.

4.2 Procurement route and risk transfer

The Outline Business Case set out the procurement options available to the Trust together with the rationale for the decision.

The Trust, in seeking best value for money through its contractual arrangements and having given further consideration from February to September 2014 to the procurement options available, will be looking to develop the project using the Procure21+ procurement route as the best value procurement method as outlined in the OBC and this FBC. Integrated Health Projects (IHP) was appointed as PSCP (Principal Supply Chain Partner") in October 2014. Introduced in 2010, the ProCure 21+ framework was designed to save the NHS procurement costs and will help upgrade hospitals more quickly. It streamlines, simplifies and makes more transparent the process for NHS Trusts when procuring a construction company to carry out hospital refurbishments or new builds. Crucially, NHS Trusts do not need to go through the complex and expensive European Union procurement process.

The Trust proposes to procure the works using Procure 21+. Contract conditions will be as P21+ Contract template. The Trust's cost advisor (existing appointment, Sweett Group) will continue to assist Trust project managers in ensuring best value for the NHS. A letter from the P21+ team in Leeds, confirming compliance with the process, is included at Appendix 15.

The PSCP has been appointed at Stage 3 to work with the Trust to prepare the Full Business Case and associated 'not to be exceeded' GMP (Guaranteed Maximum Price). The costs and programme in the business case are based upon proceeding with this procurement route; however, the Trust will continue to monitor the relative value for money of procurement route options to ensure that best value is achieved.

The PSCP has been selected following the standard procedure of issuing a High level Information Pack (HLIP) to the Department of Health shortlisted suppliers and selecting a preferred partner based upon responses and interview. The role of IHP as chosen PSCP is to

work with the Trust to prepare the Full Business Case and associated 'not to be exceeded' GMP (Guaranteed Maximum Price) based upon a continuation of the existing approved design. While the FBC is in the approvals process, the Trust will work with the PSCP to validate or reduce the GMP through market testing of works packages, value engineering or further design refinement.

The packages and prices submitted by the PSCP have been scrutinised at each stage by the Trust's cost advisors and substantial clarification and negotiation of some key elements will enable the prices to be reduced to a level at which Sweett Group, exercising their responsibilities within the guidelines of the Procure 21+ framework agreement, are able to confirm the value for money of the prices proposed.

The GMP includes a provision for risks identified by IHP and incorporated into the Trust's Risk Management Plan. Under the Procure 21+ framework contract, such risks will be monitored by the Trust and its cost advisors and the value of the risks which are unrealised at the end of the contract will be shared between the parties in accordance with the share percentages detailed in the contract data. The risk allocation between the Trust and PSCP is set out in Appendix 16.

The contractual terms will be subject to further detailed negotiation but will be based on the NEC3 Contract Template A: Option C Target Contract with Activity Schedule (Scheme for a Single Project) Version: Single Project v1.0 Revision 0.5 ISSUE (March 2012) incorporating optional clause X5 and new clauses Z1 through Z24.

The PSCP has appointed architects employed by the Trust in earlier stages of design (BDP) to ensure continuity in developing the scheme further. The design has been developed in accordance with relevant HTM and HBN requirements or otherwise to agreed derogations. At a high level, the following principles are followed to develop the design:

- Define the phase brief and agree deliverables
- Establish phase costs and obtain Trust approval
- Identify, assess and allocate ownership of project risk
- Lead the supply chain in responding to the Trust brief
- Control expenditure - 'open-book' reporting & timesheets
- Monthly cost forecasts and programme updates
- Notify the Trust of any unforeseen events
- Agree actions to mitigate
- Follow and use prescribed P21+ ECC documentation
- Work as a team, communicate and collaborate
- P21+ is based on a partnering form of contract.

4.3 Services Procurement

- **Equipment**

  The Trust has developed an equipment schedule using the NHS Activity Database and exemplar rooms, and in-house expertise from the Medical Physics team.

  Detailed reviews were conducted of all existing services to determine how much equipment could be transferred or re-used when the new facilities are commissioned. A significant proportion of existing equipment will transfer.

  The schedule was priced by in-house equipping specialists, led by the Trust's Head of Medical Physics, utilising an in-house database and prices for recently completed schemes; this has generated a gross budget for equipment.

  The equipping budget is therefore based on ensuring that appropriate equipment is procured for each department, with maximisation of equipment transfer from existing inventories and any surplus assets (although it is assumed the latter will be minimal). This has generated an equipment budget of approximately £200,000 excluding VAT. (see Appendix 17). A full transfer audit will be undertaken before the equipment procurement begins to ensure maximum re-use of existing equipment.

  User input in design process and equipment detailing was achieved with reviews by clinicians of key Room Data Sheets and equipment lists. This has been supported by one-one meetings to provide further details. All decisions regarding equipment specification will include input from applicable users, considering issues such as infection control, manual handling and health and safety.

  Group 1 equipment will be procured as part of the P21+ contract GMP. This will include fitted items which have a direct bearing on the final design and operation of the building. It also includes items where there would be an unacceptable contractual risk if supplied by the Trust. The Trust recognises that some items of equipment are best supplied by the P21+ provider. This is to offset risk arising from delivery delays (affecting the overall programme) and space planning.

  Special focus has been paid to high-value Group 3 equipment. Allowances have been prepared for Group 2 and lower-value Group 3 equipment, linked to the number and types of rooms. Group 2 and 3 equipment will be purchased by the Trust in line with existing procurement strategies, utilising the benefits of consolidation where possible by way of Trust negotiated contracts and national framework agreements, as long as best value can be demonstrated.

- **Hard FM**

  Hard FM for this section of the site is provided and will continue to be provided by Whittington Health; other parts of the estate are covered under a PFI arrangement. The additional lifecycle costs for new areas have been included in the forecast costs of the project.

- **Soft FM**

  Soft FM services are provided by Whittington Health. The additional costs for new areas have been included in the forecast costs of the project.

- **Information Technology (IT)**

  The construction contract includes for the cabling and provision of wall sockets in each of the new and refurbished departmental areas in accordance with the Trust's existing IT systems (i.e. "up to the socket"). No other changes are proposed and the system will therefore continue to be in line with DH policies and enable the Trust to work toward initiatives such as the 'Clinical 5'. The provision of hardware and its commissioning will be the responsibility of the Trust and allowances included in the budget estimates.

  The strategic plan is to ensure that IT solutions implemented can integrate with the clinical patient record system and the Electronic Patient Record (EPR), once it is fully implemented.

The costs of implementation of the IM&T impact of the project are included in the ongoing IM&T development programme. All additional hardware required for new areas will be purchased in accordance with the Trust's existing IM&T policy and procurement strategy. These costs have been assessed by the Trust IT&T Team as minimal.

4.4 Sustainability & Environmental Impact

The age of the existing buildings presents the opportunity to improve thermal efficiency and performance by improving the external walls with replacement windows and insulated spandrel panels in the refurbished areas of the existing buildings.

The new windows will be selected to improve thermal efficiency and limit the impact of solar radiation and heat gain. They will also be selected to avoid thermal bridging and to improve overall air tightness of the building envelope.

Engineering services in the existing buildings will be renewed as part of the refurbishment works and altered demands, to take advantage of improved technology in such item as lighting, refrigeration, electric motors, etc. The engineering services design will also benefit from the improved insulation and air tightness, resulting in smaller more efficient plant. The controls strategy will also provide more efficient building services operation leading to reduced energy consumption.

The refurbished buildings will comply fully with, and wherever possible exceed, the recommendations of Approved Document L2B 2010 of the Building Regulations (incorporating 2010 and 2011 amendments) to limit CO2 emissions.

The M&E design will comply with Consequential Improvements under the Part L2B 2010 Building Regulations for Existing Buildings. In addition, consultations with Local Borough Council, with regard to sustainable design and low and zero carbon technology use, will result in feasibility studies and energy strategies being implemented to determine a viable means of providing acceptable energy reduction for replacement plant to fulfil the requirements under the London Planning Document.

BREEAM (Building Research Establishment Environmental Assessment Methodology) pre-assessments were completed on the proposed refurbishment and the commitments established will be referenced to identify and drive energy efficiencies on all aspects of the building fabric and services. The assessment will consider the level of renewably sourced energy and progress towards carbon neutrality. The Trust is committed to achieving a BREEAM assessment rating of 'Very Good'.

The BREEAM pre-assessment was carried out on 3 December 2014 and is targeted to achieve the rating of "Very Good" for both the refurbishment (overall score 60.57%) and new build (overall score 61.95%) elements. The project (new build and refurbishment elements) has been registered for BREEAM with BRE. The pre-assessment reports are provided in Appendix 18 and Appendix 19.

- **Energy Efficiency**

Energy and CO_2: The Trust is committed to delivering an energy solution that is efficient in both its energy usage and carbon emissions and will meet the requirements of Building Regulations Part L2 (2013), BREEAM and HTM 07-02 EnCO_2de, whilst following the ethos of the London Plan. The project will work towards an energy target of 55GJ/100m^3/annum.

Strategy for Future Energy Use: A thermal analysis of the building will be undertaken as the design develops. This will ascertain predicted energy usage and carbon emissions, identify which energy saving techniques are to be implemented to complement the existing prime services and plant and achieve the optimum building performance, whilst reflecting the BREEAM aspirations.

As the project design develops the thermal model will be used to test the building in terms of thermal mass, glazing types and treatment, solar shading solutions etc. The aim is to deliver the desired internal environment whilst minimising the energy required in doing so. The use of

improved U valves and insulation will be considered in more detail during the detailed design stages. This will be particularly targeted to the refurbishment area as the new build will be in line with the Building Regulations Part L.

All aspects of the new build façade, including building materials and their thermal properties, air permeability and building leakage and daylight factors have been considered. These will be developed further by the team during the next stages of design with the aid of additional thermal analysis.

Energy Efficient Technologies: As the design develops the following energy technologies will be reviewed and incorporated where considered appropriate and effective:

- Passive Solar Shading (Brise soleil)
- High performance glazing (double / triple)
- Ventilation system heat recovery
- Natural ventilation
- Zoned engineering services systems
- Lighting control systems
- Natural day lighting
- High efficiency motors
- Variable speed drives on motors
- Low loss pipe work and ductwork system design
- Renewable energy sources

Mechanical ventilation is by far the largest consumer of energy for any modern hospital and this will be no different with the clinical accommodation associated with the project.

Air change rates are largely dictated by clinical needs but, where possible, natural ventilation has been specified. All major air handling plant will incorporate heat recovery.

The lighting strategy calls for 100% LED light sources to be utilised wherever clinical function permits. As a minimum, all toilets, stores and other transient areas will be provided with passive infrared (PIR) control. Where possible the use of natural daylight will be encouraged.

The trust has recently completed construction of a decentralised energy network, and the project will be connected to this. No new heat generation plant is being proposed.

Renewables: The team is considering the feasibility of using renewable technology. During the initial design stages a review of possible opportunities was conducted, including a selection of renewable energy systems such as:

- Site specific mini CHP
- PV/ Solar hot water panels
- Ground source heat pumps.

The review concluded that a project-dedicated renewable energy system is not feasible due to lack of options suited to the new build/refurbishment configuration. Future flexibility has been ensured by the proposal to connect into the existing site-wide heating and electrical networks thus ensuring that the project will be connected to any potential future DEN / SHN systems.

4.5 Design Compliance and Consumerism

- **Clinical and non-clinical adjacencies**

As outlined in the Economic Case chapter, attention has been given in the design to meeting the adjacency and patient visitor flows. Arrival/entrance and reception is at the heart of the

building. From the reception it will be possible to easily access the principal circulation core and this will improve wayfinding at all levels. Specific attention has been paid to clinical and non-clinical adjacencies, including:

- Labour Ward and Obstetric Theatres
- Neonatal ITU/HDU with Special Care Baby Unit
- Labour ward and Neonatal Intensive Care
- Access to adult intensive care and specialty input for women with underlying medical conditions,
- Separation of flows for mothers without complications, and high risk births.

- **Design review by external panel**

Discussions with the London Borough of Islington planners indicated that external design review was unnecessary, given the internal location of the new facilities.

- **HBN/HTN compliance**

The design has been developed in line with the parameters set out in the Trust's requirements and the scope and assumptions stated within the Outline Business Case Design Annex. The design adheres to the guidance set in the published HBNs, HTMs. Where existing buildings impose constraints, derogation from guidance and standards will be required. The Trust accepts that there is some compromise in space standards in some areas such as. A full list of current derogations has been compiled, discussed and agreed as part of ongoing detailed design. See Appendix 10 and appendix 11.

- **Infection control design inputs**

The Trust's in-house Infection Control Lead, a consultant microbiologist, has advised on infection control requirements particularly relating to the general arrangement layouts and ventilation requirements. He has confirmed that the facilities are in accordance with Trust policies and reflect best practice.

- **Privacy and dignity requirements**

The Trust's outline business case set out the statement of need - highlighting the current privacy and dignity issues. In particular, the current neonatal cot bays fall below current space standards and are located in small multi cot rooms which offer no privacy to parents. The second obstetric theatre is accessed from the Labour Ward via a main public corridor and lifts. The layouts for both maternity and neonatal care address these issues; the new maternity theatre is located in a dedicated suite with recovery / HDU beds integral to the suite and separate but adjacent to the labour ward; Neonatal has ITU and HDU cot bays organised into discrete areas such that parents have greater privacy and clinical teams can operate effectively without impacting on adjacent cot spaces.

- **Building Information Modelling (BIM) and compliance with Government Soft Landings**

The project is not suited to BIM modelling due to inadequate existing Computer-Aided Design information on Victorian-era buildings. However, the Architectural Design Board (ADB) software will generate 3D room loaded drawings.

The architect, BDP, is a member of the Soft Landings User Group and is committed to ensuring that Soft Landings core principles are applied to our new build and refurbishment projects that operational outcomes match the design intentions, and that the expectations of the buildings end users are met. The development of room layouts from a database of equipment and environmental data has been used at this stage to produce layouts for the key Maternity and

Neonatal rooms - equipped using the ADB database. The survey data is provided in 2D only at this stage and therefore the shell and core design is developed in 2D.

4.6 Town and Country Planning Act 1990

A planning application is being prepared as part of the Full Business Case process, once the necessary supporting documentation are finalised.

Pre-OBC discussions with the London Borough of Islington Planning Department highlighted: the importance of the relationship between D and E blocks and the Jenner building which is Grade II listed; and the elevated walkways and the original entrance with the "Female Receiving Ward stone" being of particular interest. The preferred option addresses these requirements and should substantially improve the overall appearance of the buildings.

For the FBC, an informal meeting with council Planners was held on 24 November 2014, followed by a Pre-Application meeting on 9 December 2014. The following points emerged from the discussion:

- The Council acknowledges the need for, and community benefit arising from, the project
- In supporting the need for the project, the Council will make every effort to meet the project programme requirements to the best of its ability, within the existing statutory framework
- No specific listed building concerns were expressed; the main area of design scrutiny will be on the roofline of the proposed works
- Energy efficiency will also be an area for scrutiny upon application
- The application will be considered as a major scheme and will require a number of supporting documents.

Based on discussion to date, a planning application for the project will be submitted in early February 2015, to allow for planning approvals to run in parallel with TDA approvals of the FBC. The decision can be expected up to 13 weeks after the application. These dates have been included in the project programme.

5 Financial case

5.1 Purpose and Changes since Approval of OBC

The purpose of the financial case is to demonstrate affordability for the preferred option, established in the economic case and the affordability of the proposed programme over the five year life of the programme (years 1 to 5).

The changes made to the Financial Case since the approval of the OBC are the same as described for the economic case.

5.2 Activity

The financial modelling assumes following the activity forecasts:

Table 5.1: Activity forecast

Activitity	2015-16	2016-17	2017-18	2018-19	2019-20
	Year 1	Year 2	Year 3	Year 4	Year 5
Maternity					
Antenatal	4,826	5,168	5,464	5,765	5,765
Deliveries	3,945	3,945	4,345	4,700	4,700
Postnatal	3,812	3,812	4,198	4,541	4,541
Total	**12,582**	**12,925**	**14,007**	**15,006**	**15,006**
Neonatal					
High Dependency	1,657	1,657	1,971	1,971	1,971
Intensive Care	624	624	876	876	876
Special Care	4,359	4,359	4,417	4,417	4,417
Neonatal Excl Transitional Care	**6,640**	**6,640**	**7,264**	**7,264**	**7,264**
Transitional Care	6,621	6,621	7,386	7,990	7,990
Total	**13,261**	**13,261**	**14,649**	**15,254**	**15,254**

5.3 Value Added Tax (VAT)

VAT is applicable to direct purchases of equipment and building works only. No VAT is charged on design and other fees as this is generally recoverable. VAT payable as 'Contracted out Services' will be chargeable by the contractor and will be recoverable by the Trust under VAT Act 1994 Section 41 (3). This will apply to any interface development work, professional fees, requests for change etc.

It is usually possible to recover a proportion of the VAT charged on refurbishment works since part of the cost are considered maintenance. The level of VAT regarded as recoverable has been assessed by Sweett Group based on their experience of similar projects and they have not included recoverable Vat in their cost plan. See Appendix 20.

5.4 Assumptions

The financial modelling uses a number of assumptions as follows.

Table 5.2: Assumptions for Preferred option

Financial Model Assumptions						
Preferred Option YoY						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
In Year	15-16	16-17	17-18	18-19	19-20	Year 1 - 5
Growth - Demographics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth - Marketing	0.0%	0.0%	10.1%	8.2%	0.0%	18.3%
Growth - Other	8.7%	0.0%	0.0%	0.0%	0.0%	8.7%
Total Growth	**8.7%**	**0.0%**	**10.1%**	**8.2%**	**0.0%**	**27.0%**
CIPs	0.0%	4.0%	4.0%	4.0%	4.0%	16.0%
Tariff Deflator - all except deliveries & postnatal	-1.6%	0.4%	-0.6%	-0.7%	-0.7%	-3.2%
Tariff Deflator - Deliveries	8.1%	0.4%	-0.6%	-0.7%	-0.7%	6.5%
Tariff Deflator - Postnatal	3.9%	0.4%	-0.6%	-0.7%	-0.7%	2.3%
Inflation - Pay	1.3%	3.5%	2.0%	2.0%	2.0%	10.8%
Inflation - Non Pay	1.6%	1.6%	1.6%	1.6%	1.6%	8.0%
Cquin	2.5%	2.5%	2.5%	2.5%	2.5%	12.5%

Additional assumptions:

- Financial modelling is for 5 year i.e. 15/16 to 19/20 (year 1 to 5)
- Equipment will be transferred where possible
- NICU will operate at 80% occupancy (overall cots will increase from 23 to 27)

This FBC uses most of the assumptions utilised in the Trust's Long Term Financial Model (LTFM). This is detailed in the LTFM commentary contained in Appendix C and Appendix D. However, there are some key differences, which are as follows:

- Demographic growth
- QIPPs
- Tariff for 15/16 only

In line with CCG assumptions no demographic growth has been assumed for the FBC for Maternity and Neonatology. The LTFM includes demographic growth but doesn't include marketing growth.

For tariff deflation/inflation the FBC uses the same assumptions as the LTFM except in 2015/16 where for accuracy the 2015/16 draft tariff was used for the FBC, while the LTFM uses general planning assumptions. However, for neonatal activity tariffs are based on local tariffs and deflation is the same as for other acute activities (i.e.1.6%).

The LTFM assumes general tariff assumptions and applies it to total income, but the FBC uses 2015/16 draft National Tariffs and adjusts the difference via implied efficiencies. This means that some of the maternity tariffs are inflated and thus funding (reducing) the CIP requirement for the services, relevant for the business case in 2015/16 only.

5.5 Summary of Financial Appraisal

5.5.1 Capital

The overall 5 year capital investment is £11,996,812 including the Trust procurement and deployment costs. Capital costs of £785K are shifted from 2014/15 to 2015/16.

Since the development of the OBC, capital costs including VAT and inflation have increased from £9,997,834 to £11,996,812 due to inflation and some change in the scope of work as described in the economic case.

The preferred option requires no decanting and there is no planned reduction in activity levels during the implementation phase.

The capital cost plan has been prepared by the Trust cost consultant. Procurement is being progressed via the P21+ procurement route, with the appointment of Integrated Health Projects (IHP) at stage 3 (October 2014) to support the Trust for the FBC development.

IHP has used the design development stage to agree key room layouts and developed a mechanical and engineering strategy, combined with site surveys and the identification of the Trust technical requirements. This informed the preparation of a 'Not to be Exceeded Guaranteed Maximum Price' and a detailed construction programme, submitted to the Trust on 19th December 2014 and which has been used to prepare the cost plan for the FBC. See Appendix 21 for FB forms

Capital requirements and its timing for the preferred option are as below
Table 5.4: Capital spend and timing provided by the Trust cost consultant

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1-5
	£000s	£000s	£000s	£000s	£000s	**£000s**
Building	8,305	3,452	0	0	0	**11,757**
P&M	0	240	0	0	0	**240**
Net Disposal proceeds						
TOTAL	**8,305**	**3,692**	**0**	**0**	**0**	**11,997**

5.5.2 Impact on Trust's Income and Expenditure Account

- **Preferred Option**

The total programme contribution from years 1-5 will be £5.2m, including RPI, efficiencies and capital charges. The programme will contribute net revenue costs (deficit) in years 1 and 2, but during years 3 to 5 will generate a surplus.

Table 5.5: Preferred Option Income and Expenditure analysis

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
REAL	£000s	£000s	£000s	£000s	£000s	**£000s**
Income						
Maternity	18,964	19,568	21,101	22,530	22,530	**104,692**
Neonatal	7,610	7,610	8,662	8,938	8,938	**41,758**
Cquin	664	679	744	787	787	**3,661**
Total Income	**27,238**	**27,857**	**30,508**	**32,254**	**32,254**	**150,111**
Pay	18,026	19,141	19,827	19,879	19,879	**96,753**
Non-pay	9,312	9,374	9,679	10,226	10,226	**48,817**
Efficiency savings	0	-1,196	-2,435	-3,723	-5,053	**-12,407**
Total Operational Costs (REAL)	**27,338**	**27,320**	**27,071**	**26,382**	**25,052**	**133,163**
EBITDA (REAL)	**-100**	**537**	**3,437**	**5,872**	**7,202**	**16,948**
Inflation/Deflation	383	1,109	1,993	2,626	3,187	**9,299**
EBITDA After Inflation	**-483**	**-572**	**1,444**	**3,246**	**4,015**	**7,649**
EBITDA %	-1.8%	-2.1%	4.7%	10.1%	12.4%	**5.1%**
Depreciation	0	38	230	230	230	**729**
PDC @ 3.5%	145	355	415	406	398	**1,719**
Total Annual Capital Charges	**145**	**393**	**645**	**637**	**629**	**2,448**
Surplus/(Deficit)	**-628**	**-965**	**799**	**2,609**	**3,386**	**5,200**
Surplus/(Deficit) %	-2.3%	-3.5%	2.6%	8.1%	10.5%	**3.5%**

- **Other options**

An income and expenditure analysis has been completed for the other short listed options to enable a comparison to be made.

The outcome of this analysis is shown by the table below, which clearly shows that over the same period: Option 1:Do nothing and Option 5:New build will make deficits, even after 4% per annum efficiency; Option 2:Do minimum has an Income and Expenditure surplus over the same period, but this is £4m lower than preferred option.

By deploying the preferred option the Trust has the opportunity to reduce its Income and expenditure deficit and generate a cumulative surplus of £5.2m by the end of year 2019/20.

For completeness the table below shows the following: for year 1-5, Option 1:Do nothing has a cumulative deficit of £25m, Option 2:Do minimum has a cumulative surplus of £1.1m, and option 5:New Build has a cumulative deficit of £4.8m, which is worse than the Trust's preferred option by £30m, £4m and £10m respectively.

Table 5.6: Other Options - Income and Expenditure Analysis

Maternity & Neonatal Full Business Case					
Cumulative Impact Year 1-5					
Cumulative Impact Year 1-5	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
REAL					
Income					
Maternity	£104,692	£73,283	£94,820	£104,692	£94,820
Neonatal	£41,758	£30,227	£38,050	£41,758	£38,050
Cquin	£3,661	£2,588	£3,322	£3,661	£3,322
Total Income	£150,111	£106,098	£136,191	£150,111	£136,191
Pay costs	£96,753	£90,130	£90,130	£96,753	£90,130
Non pay Costs and Overheads	£48,817	£44,109	£46,560	£48,817	£46,560
Efficiency savings	-£12,407	-£11,370	-£11,575	-£12,407	-£11,575
Total Operational Costs	£133,163	£122,869	£125,115	£133,163	£125,115
EBITDA Before Inflation	**£16,948**	**-£16,771**	**£11,076**	**£16,948**	**£11,076**
Inflation/Deflation	£9,299	£8,289	£8,523	£9,299	£8,523
EBITDA	**£7,649**	**-£25,060**	**£2,554**	**£7,649**	**£2,554**
Depreciation	£729	£0	£621	£3,775	£729
PDC	£1,719	£0	£830	£8,708	£1,719
Surplus/(Deficit)	**£5,200**	**-£25,060**	**£1,102**	**-£4,834**	**£105**
Compared to Preferred Optior	**£0**	**-£30,261**	**-£4,098**	**-£10,035**	**-£5,095**
		Worse off	Worse off	Worse off	Worse off

5.6 Impact on Trust's Balance Sheet

Note, it has been assumed that the capital expenditure on this project is being financed through the PDC.

The impact of the FBC on balance sheet has been calculated as shown in the table below.

Table 5.7: Summary of Cumulative Impact of FBC on Balance Sheet in Year 1- 5

	2015-16	2016-17	2017-18	2018-19	2019-20
	£000s	£000s	£000s	£000s	£000s
Fixed assets addition	8,305	11,958	11,728	11,498	11,268
Fixed assets Disposal					
Current Assets					
Cash	-3,123	-12,354	-15,017	-12,178	-8,561
	5,182	**-396**	**-3,289**	**-680**	**2,706**
Funded By					
PDC	8,305	3,692	0	0	0
Income and Expenditure Reserves	-3,123	-4,088	-3,289	-680	2,706
	5,182	**-396**	**-3,289**	**-680**	**2,706**

This analysis assumes a brought forward deficit in year 1 of £3,123k - a combination of the brought forward deficit of 2014/15 of £2,494k and an additional deficit for 2015/16 of £628k. Thus the starting point when analysing the impact on the Trust's balance sheet is negative.

This position was calculated using 2014/15 month 6 data and this deficit was mainly due to lower actual activity than planned activity. Furthermore, month 6 data may not give a true picture for the year in term of seasonal activity and profiling.

It was therefore agreed by the Programme Board to rebase activity and thus income on the basis of the last three full years historical data and to use 2015/16 as year 1 for this business case.

The FBC will increase the deficit position in 2016/17 due to the initial FBC impact, but the deficit will start to decrease steadily from 2017/18 due to the positive contribution of the project and in 2019/20 I&E reserves becomes £2,706k surplus.

This balance sheet impact has not currently been factored into the Long Term Financial Model, as at this moment the funding and the business case have not been approved.

5.7 Commissioner and NHS England Support

The Trust has held discussions with its key Clinical Commissioning Groups (CCGs) - Islington and Haringey, and NHS England, who have indicated their support for the business case.

5.8 Affordability Analysis

5.8.1 Introduction – affordability

This section describes in more detail the impact of the options on the Trust's financial position by comparing the projected costs with the current position.

Detailed financial analysis spread sheets are at Appendix A and the GEM Model at Appendix B.

The Trust expenditure year against which the options have been measured, and on which the prices have been based is the financial year 2014/15 (year 0). However, the actual forecast for the programme is from years 1 to 5, which is when the programme will start.

It is planned that the investment in neonatal and maternity facilities will commence in June 2015 subject to approval and funding of the FBC. It will be operational from September 2016 when the asset will be capitalised.

Project initiation is dependent upon approval of the FBC. Delay in approval will delay the implementation of the programme, relative to the outline project plan detailed in the management case. This may also result in a requirement to amend the expenditure profile. The project plan will be updated during the planning stages for implementation.

The project capital costs include the cost of equipment, the cost of some new build and cost of refurbishment.

The overall programme costing, as discussed above, includes inflation, efficiencies and capital charges.

The following assumptions have been made when considering affordability:

- Inflation calculations have been included.
- All staffing costs include 22% on-costs.
- Where it is expected that staff will be employed on Trust contracts, AFC pay-scales have been used
- Bank and agency cost has been re-allocated to cover sickness and vacancies

- Opportunity benefits and savings for reduced length of stay or theatre utilisation have not been included as these have not been quantified yet.
- It is assumed that the Trust will have £10m (£2m PA) capital to fund Option 2:Do minimum, as the capital plan has been approved by the Trust.

The £11,997k capital costs for Option 3A, will generate a total capital charge (including depreciation) over five years under revenue assessment of £2,448k, after the 3.5% rate of return on assets is taken into account.

4.8.2 Trust Historical Financial performance

The section provides an overview of the Trust's historical performance before looking specifically at the affordability, financing options and impact of the preferred option on the maternity and neonatal services, and the Trust as a whole.

- **Income and Expenditure**

The Whittington Hospital NHS Trust has for the last eight years achieved its financial targets in respect of breakeven duty, capital (CRL) and Financing (EFL). In the last 3 years, the Trust has demonstrated sound financial performance, delivering a surplus in each year (after allowing for impairments and after excluding the impact of IFRS).

Table 5.8 provides summary detail of the Trusts income and expenditure accounts for last five years from 2009/10 to 2013/14 and its position against its break even duty as described in the published Trust's Annual Report 2013/14 and 201213.

Table 5.8:Income and expenditure accounts for last five years from 2009/10 to 2013/14

Table 6: Trust's breakeven performance

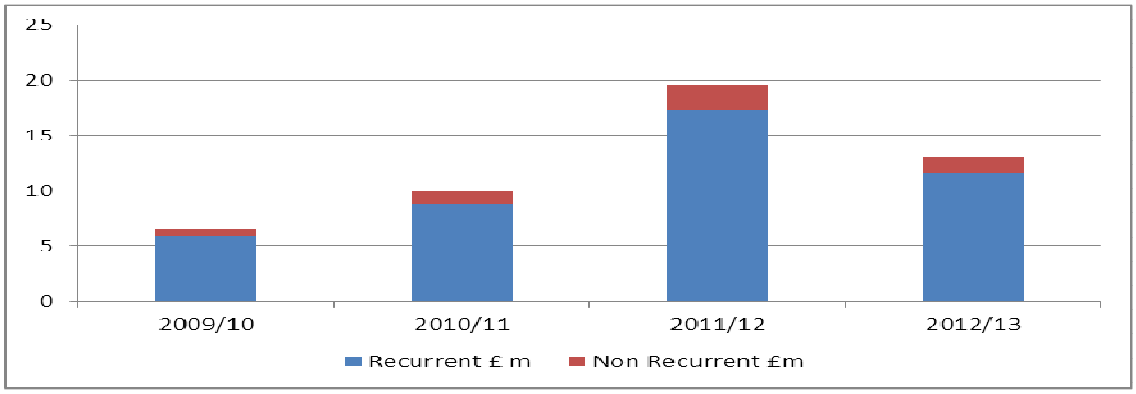
	2013/14 £'000	2012/13 £'000	2011/12 £'000	2010/11 £'000	2009/10 £'000
Revenue	297,397	281,343	278,212	186,300	176,853
Operating expenses (including depreciation)	(294,953)	(277,753)	(275,970)	(182,907)	(176,262)
Surplus before interest and dividends	2,444	3,590	2,242	3,393	591
Other losses	0	(79)	0	(82)	0
Net interest payable	(2,748)	(2,613)	(2,654)	(2,582)	(2,632)
Dividends payable	(2,817)	(2,666)	(2,805)	(2,888)	(3,156)
Retained deficit	(3,121)	(1,768)	(3,217)	(2,159)	(5,197)
Adjustment for non-PFI impairments included in retained deficit	3,136	3,267	1,928	2,208	4,618
Adjustment for impact of IFRS accounting on PFI included in retained deficit	1,062	2,059	2,308	459	718
Position against statutory break-even duty	1,165	3,614	1,120	508	139

- **Historical Achievement of Cost Improvement Programmes**

In arriving at a financial breakeven position the Trust have delivered a significant level of Cost improvement plan (CIP), of which the overwhelming proportion has been from recurrent sources.

The Figure below shows the total CIP achieved in the three years from 2010/11 to 2012/13.

Table 5.9: CIPs 2009/10 to 2012/13



- **Statement of Financial Position**

The most significant recent Balance Sheet development is the inclusion in 2013/14 of the community properties which were transferred to the ICO from the former Haringey and Islington PCTs.

The table below summarise the year-end Statements of Financial Position for the last three years to 31 March 2014.

Table 5.10: Statements of Financial Position for 2013/14

Statement of financial position as at 31 March 2014

	31 March 2014	31 March 2013
Non-current assets	**£'000**	**£'000**
Property, plant and equipment	179,795	137,747
Intangible fixed assets	5,428	1,411
Trade and other receivables	702	635
Total non-current assets	**186,105**	139,793
Current assets		
Inventories	1,294	1,290
Trade and other receivables	17,527	11,042
Cash and cash equivalents	5,123	15,088
Total current assets	**23,944**	27,420
Current liabilities		
Trade and other payables	(36,011)	(32,107)
Borrowings	(1,402)	(1,146)
Provisions	(1,212)	(4,292)
Total current liabilities	**(38,625)**	(37,545)
Net current liabilities	**(14,681)**	(10,125)
Total assets less current liabilities	**171,424**	129,668
Non-current liabilities		
Borrowings	(36,759)	(38,593)
Provisions	(2,014)	(1,763)
Total assets employed	**132,651**	89,312
Public dividend capital	56,461	53,344
Retained earnings	15,277	5,300
Revaluation reserve	60,913	30,668
Total taxpayers' equity	**132,651**	89,312

Table 5.11: Statements of Financial Position for 2011/20 and 2012/13

	31 March 2013	31 March 2012
Non-current assets	**£'000**	**£'000**
Property, plant and equipment	137,747	136,945
Intangible fixed assets	1,411	1,360
Trade and other receivables	635	2,021
Total non-current assets	**139,793**	140,326
Current assets		
Inventories	1,290	1,114
Trade and other receivables	11,042	12,044
Cash and cash equivalents	15,088	9,932
Total current assets	**27,420**	23,090
Current liabilities		
Trade and other payables	(32,107)	(30,394)
Borrowings	(1,146)	(1,209)
Provisions	(4,292)	(3,404)
Total current liabilities	**(37,545)**	(35,007)
Net current liabilities	**(10,125)**	(11,907)
Total assets less current liabilities	**129,668**	128,409
Non-current liabilities		
Borrowings	(38,593)	(36,835)
Provisions	(1,763)	(1,770)
Total assets employed	**89,312**	89,804
Public dividend capital	53,344	53,206
Retained earnings	5,300	6,929
Revaluation reserve	30,668	29,669
Total taxpayers' equity	**89,312**	89,804

- **Cash flow statement**

The Trust maintained a cash balance of £5,123m in 2013/14, £15,088m in 2012/13 and £9,932m in 2011/12 The table below summarises the cash flows for the last three years together with a projection for 2014/15.

Table 5.12: Statements of Cash flow for 2011/20 and 2012/13

Statement of cash flows for the year ended 31 March 2013

	2012-13 £'000	2011-12 £'000
Net cash inflow from operating activities	**12,952**	14,994
Cash flows from investing activities		
Interest received	60	39
Payments for property, plant and equipment	(8,752)	(10,802)
Proceeds from disposal of property, plant and equipment	21	0
Payments for intangible fixed assets	(213)	(357)
Net cash outflow from investing activities	**(8,884)**	(11,120)
Cash flows from financing activities		
Public dividend capital received	138	5,000
Loans received from DH	2,900	0
Loans repaid to DH	(48)	(48)
Other loans repaid	(32)	(16)
Capital element of finance leases and PFI	(1,870)	(2,077)
Net cash outflow from financing	**1,088**	2,859
Net increase in cash and cash equivalents	**5,156**	6,733
Cash at the beginning of the financial year	**9,932**	3,199
Cash at the end of the financial year	**15,088**	9,932

Table 5.13: Statement of Cash flow for 2013/14

Statement of cash flows for the year ended 31 March 2014

	2013/14 £'000	2012/13 £'000
Net cash inflow from operating activities	**2,290**	12,952
Cash flows from investing activities		
Interest received	36	60
Payments for property, plant and equipment	(11,701)	(8,752)
Proceeds from disposal of property, plant and equipment	0	21
Payments for intangible fixed assets	(830)	(213)
Net cash outflow from investing activities	**(12,495)**	(8,884)
Cash flows from financing activities		
Public dividend capital received	12,580	138
Loans received from DH	0	2,900
Public dividend capital repaid	(9,463)	0
Loans repaid to DH	(164)	(48)
Other loans repaid	(32)	(32)
Capital element of finance leases and PFI	(2,681)	(1,870)
Net cash outflow from financing	**240**	1,088
Net increase in cash and cash equivalents	**(9,965)**	5,156
Cash at the beginning of the financial year	**15,088**	9,932
Cash at the end of the financial year	**5,123**	15,088

5.8.2 Trust Current Financial performance

In spite of the Trust's positive historical financial performance, the Trust is forecasting a deficit of £7.4m for the current financial year 2014/15. The Trust's LTFM is also currently forecasting further deficits for 2015/16 and 2016/17.

The Trust will continue to work to improve this position and the LTFM shows recovery of the underlying position over the next two years.

A more detailed commentary can be found in Appendix C.

5.8.3 Financing the Programme

This section considers the affordability and financing options for the FBC.
The programme will require funding from PDC and existing revenue budgets.
The Trust is seeking funding for capital costs via PDC, while operational revenue cost pressures will be funded by the Trust.

- **Capital – Funding and Financing costs**

The preferred option has a capital cost of £11.997m. Given this spend is required over an 18 month timeframe, it cannot be met via the Trust's internal capital resources alone which, although equal to some £9m annually, are required to support other requirements such as backlog and maintenance across the whole Trust estate. Therefore, the Trust will require a strategic capital investment to be able to carry out the project.

In consideration of the Trust's current financial position and having investigated the alternative funding routes, it is clear that the grant of Public Dividend Capital (PDC) would not only be the most beneficial but also it is the only likely option available to the Trust.

The affordability options proposed in this FBC have therefore assumed that the Trust will apply for further Public Dividend Capital (PDC). Unlike at the OBC stage, we are not assuming a Capital Investment Loan (CIL) with fixed interest at 3.13 % pa which was repayable in equal instalments over 25 years. The Trust has discussed this strategy with the TDA and was advised to use the PDC funding option for the financial modelling.

Table 5.14: Funding of Capital spend

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
	£000s	£000s	£000s	£000s	£000s	**£000s**
Capital Required	8,305	3,692	0	0	0	**11,997**
PDC Funding	8,305	3,692	0	0	0	**11,997**
Shortfall	**0**	**0**	**0**	**0**	**0**	**0**

When assessing the total financing cost of the capital project under PDC, the following assumptions have been made:-

- Capital spend during the construction phase is £11,997k
- With the PDC, the funding cost relates purely to the capital charges
- The capital charge is based on 3.5% of the average net asset value on the Balance Sheet for that year
- Depreciation is set at 60 years for the buildings and at 7 years for the equipment
- The financing cost has been for initial capital cost of £11,997k and doesn't assume any life cycle cost.

The CRL is derived from the Trust's operating plan, subject to TDA approval. The basic principle is that capital expenditure cannot exceed depreciation, which is the main internal funding source. Additional expenditure should therefore be planned only if an additional source of funding is identified. As for this FBC external funding via PDC has been assumed, it therefore would not have any impact on current CRL.
As it is assumed that the capital investment will be funded by Public Dividend Capital, if approved, there will be no gap in funding for capital.

However, there will be impact on capital charges. The £11,997k capital cost for Option 3A, will generate a total PDC capital charge over five years under revenue assessment of £1,719k after the 3.5% rate of return on assets is taken into account. However, this is

an I&E cost pressures and will not impact on a capital or capital funding gap and will be funded by the Trust.

- **Revenue affordability**

Revenue affordability will be measured both in terms of the impact on the Income & Expenditure account and the impact on the Cash Flow as measured within the LTFM period i.e. 2015/16 to 2019/20. To assess this, the Trust has developed a range of financial models and the operation of these has been detailed in the economic appraisal section of this FBC.

In summary, the Trust has produced a number of options and forecasted the level of activity under each of these option. The economic appraisal section of this FBC concluded that the preferred option was option 3A:Strategic investment – with marketing growth.

For this preferred option Trust has assumed a marketing growth, as a result of improved facilities, increase of 700 deliveries from a base of 4,000 (18%) over 5 years. This takes into account Haringey CCG and Islington CCG's planning assumption that there is no projected demographic growth in the number of deliveries within the 5 year planning horizon. Any activity growth that arises at the Whittington Hospital maternity services will come from women choosing to come to the unit instead of choosing other providers in the locality.

As such the there is a risk that the Trust does not achieve the projected increase in market share. Thus, as discussed in economic case, the Trust has analysed the impact of new facilities with marketing growth (option 3A) and the Trust has also analysed in option 3C the impact of new facilities without marketing growth to understand the risk of not achieving marketing growth.

Financial models have been produced in both Real (un-inflated) and at Nominal (inflated) terms. In order to judge the revenue cost affordability of the preferred option, The Trust regards any position that shows an aggregate surplus of income over expenditure measured over the LTFM period as affordable in terms of the Income and Expenditure account. The Trust has also assumed to fund any cost pressures and I&E deficits in the earlier years which is discussed further in the LTFM commentary. Please see Appendix C.

- **I&E – Funding**

The Trust regards any position that shows a net surplus of income over expenditure, for the aggregate 5 year LTFM period, as affordable in terms of the Income and Expenditure account.

The impact on the Trust's affordability of the preferred option is detailed below, illustrating an affordability gap for revenue in the early years of the project due to I&E cost pressures. It is assumed that year 1 and 2 I&E cost pressures will be funded by the Trust.

In years 1 and 2 there will be a deficit of £0.628m and £0.97m and the Trust assumes it will be able to fund these pressures. From year 3 i.e.17/18 i.e. programme will become fully operational, it will start contributing a surplus. Going forward surplus will increase every year and over the lifetime of the project there is a surplus of £5.2m.

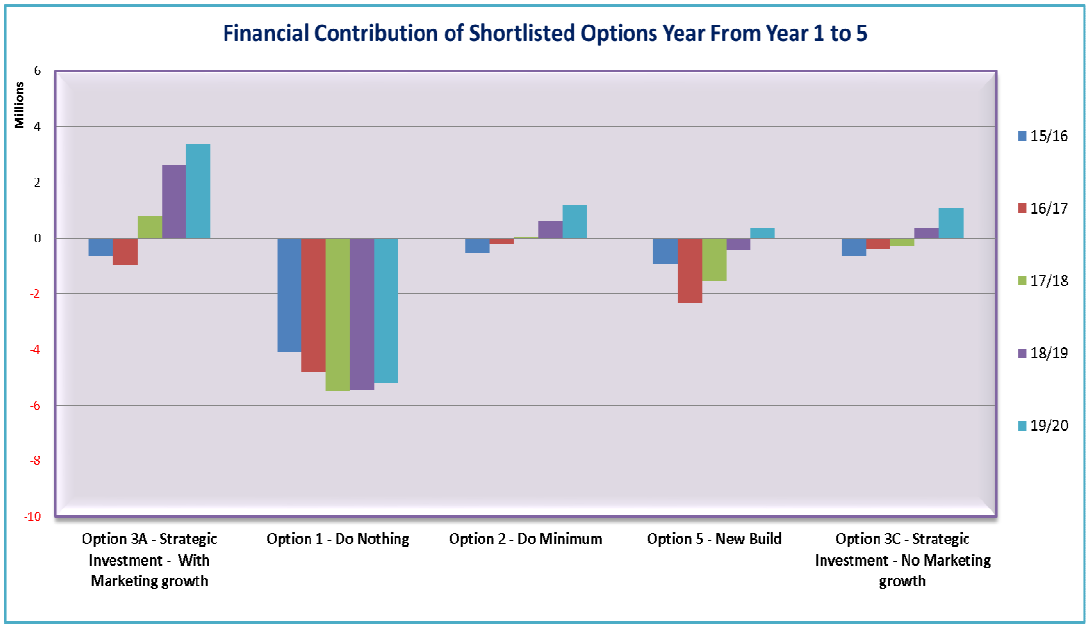
It should be noted that I&E include capital charges as well. However given that capital elements of this project will be fully funded, if approved, in calculating the affordability, depreciation can be ignored and in that case the I&E cost pressure will be lower.

Table 5.15: Funding of I&E cost pressures

	2015-16	2016-17	2017-18	2018-19	2019-20	Total (Year 1-5)
	£000s	£000s	£000s	£000s	£000s	**£000s**
Net Operating Cost	-483	-572	1,444	3,246	4,015	**7,649**
Depreciation	0	-38	-230	-230	-230	**-729**
PDC	-145	-355	-415	-406	-398	**-1,719**
Total Contribution	**-628**	**-965**	**799**	**2,609**	**3,386**	**5,200**
Funded by Trust	-628	-965	799	2,609	3,386	**5,200**
Cost Pressure	**0**	**0**	**0**	**0**	**0**	**0**

The Trust compared the shortlisted options to conclude that the preferred option's contribution will be highest as is indicated by the figure below.

Table 5.16: Financial contribution of shortlisted options



- **CIPs**

Financial models have been produced in both Real (un-inflated) and at Nominal (inflated) terms. When presented in real terms the financial tables indicate the scale of the long term gain after year 1& 2 to the Trust of undertaking the FBC, whereas the nominal tables indicate the level of CIP that would be needed for the Trust to continue to meet its positive surplus position.

Efficiency saving for all options are assumed to be recurrent savings.

As measured over the 5 year LTFM planning period the FBC preferred Option 3A: Strategic Investment - with marketing growth assumes a 4% annual CIP , providing an aggregate contribution to the Trust's CIPs of £12.4m over 5 years.

5.8.4 Cash Flow

The cash flow position related to the preferred option has been considered in conjunction with the funding options to ensure that the proposal is also affordable in cash terms. The Trust has assumed PDC funding for capital and Trust funding for any I&E cost pressure.

The cash flow for the short listed options is detailed in table below. The economic analysis for cash flow for the options demonstrated that overall the cash requirement i.e. cash flow before PDC funding will be significantly lower for the preferred option than the other shortlisted options.

Table 5.17: Cash flow analysis for shortlisted options before PDC funding

Cumulative Cashflow Year 1-5					
Cashflow before PDC funding	Option 3A - Strategic Investment - With Marketing growth	Option 1 - Do Nothing	Option 2 - Do Minimum	Option 5 - New Build	Option 3C - Strategic Investment - No Marketing growth
	£'000	£'000	£'000	£'000	£'000
Capital Expenditure	-£11,997	£0	-£10,000	-£72,000	-£11,997
Cashflow - Revenue	£3,435	-£27,554	-£771	-£3,553	-£1,660
Cashflow - Total Before funding	**-£8,561**	**-£27,554**	**-£10,771**	**-£75,553**	**-£13,657**

The table above clearly indicates that cumulative cash flow for years 1-5 (before funding), for Option 1:Do nothing, Option 2:Do minimum, Option 5:new build and Option 3C is £28m, £11m, £76m and £14m respectively, which are all worse than the Trust's preferred option which has a substantially lower cash flow of £9m. It should be noted that the cash flow position for the Do nothing option relates to the impact on revenue of reducing activity.

This additional cash requirement for Option 2:Do minimum has been recognised and incorporated into the Trust's Long Term Financial Model The FBC preferred option has not currently been included in the LTFM as it is still subject to approval. Approval of this business case would improve the cash flow position in the current LTFM.

Please see table below for detailed year on year cash flow has been analysed for the preferred option. This shows that in the early years of the project there is an increased requirement for cash, largely in relation to capital expenditure and revenue cost pressures. But from year 17/18 it will decrease due to the net contribution from the programme.

Table 5.18: Cash Flow For Preferred Option

	2015-16	2016-17	2017-18	2018-19	2019-20	Total
	£000s	£000s	£000s	£000s	£000s	Year 1-5
I&E	-628	-965	799	2,609	3,386	**5,200**
Add back Depn	0	38	230	230	230	**729**
less Capital Exp	-8,305	-3,692	0	0	0	**-11,997**
Cash out/(in) Flow	**-8,933**	**-4,619**	**1,029**	**2,839**	**3,616**	**-6,067**
Cash out Flow B/F	-2,494	-11,427	-16,046	-15,017	-12,178	**-2,494**
Cash out Flow C/F	**-11,427**	**-16,046**	**-15,017**	**-12,178**	**-8,561**	**-8,561**

The cash flow analysis demonstrates that PDC funding is required. If this FBC is approved and PDC is received, the cash flow position will be addressed by PDC funding and the years 1 and 2 I&E cost pressures will be funded by the Trust, and therefore the revenue cash flow will be fully funded.

5.9 Financial Summary

In summary, Option 3A: Strategic Investment - with marketing growth is affordable in terms of capital if fully funded via PDC and will deliver a surplus (including depreciation) of £5.2million over the 5 year period from year one 2015/16 to year five 19/20. This is equivalent to £5.9m excluding depreciation.

The development of the maternity and neonatal unit described in this business case will contribute to the long term sustainability and viability of the Trust.

6 Management Case

6.1 Project Management and Organisation

6.1.1 Project Board Oversight and Governance

This full business case sets out a preferred option which involves the construction of a new high tech core building and significant levels of refurbishment within a busy teaching hospital site that will continue to be fully operational throughout the construction period. Initial thought has been given to the construction phasing, project organisation and management structure to ensure, safety, smooth running, close control and minimal disruption.

This section outlines how the Trust will manage the project implementation through to commissioning and opening, and then into the operational and post-project evaluation phases.

The programme structure has been developed to follow those set out in the ProCure 21+ Guide, NHS Estates Capital Investment Manual and the Treasury Green Book, NHS Trust Development Authority's (TDA) Accountability Framework for Trust Boards and the TDA's Capital Regime Guidance for NHS Trusts. It is supported by the project management disciplines of PRINCE2, which will be tailored to suit the needs of this programme.

6.1.2 Project Governance Roles

The following roles will be in place for the delivery of the FBC, and throughout the construction and operation phases of the project:

- **Investment Decision Maker** – This role is occupied corporately by the Whittington Health Trust Board. The Trust Board has a scheme of delegation permitting, within defined limits, the Chairman and Chief Executive together to authorise urgent actions in order to progress the project within planned timescales. There is further delegation for the purpose of progressing the project to the Chief Finance Officer and the Director of Estates and Facilities.
- **Project Owner** – the Deputy Chief Executive, as Senior Responsible Officer, retains personal accountability for project delivery.
- **Project Director** – The Trust has appointed a Project Director, (the Director of Estates and Facilities), to be the point within the Trust for providing leadership and direction to the project for internal and external stakeholders. This position is supported by a dedicated Senior Programme Lead.

6.1.3 Decision Making: Construction Programme

The Projector Director will be the decision-maker on behalf of the Trust regarding the progress of the phases of the Construction Programme, with particular reference to avoiding delays and protecting the business continuity of the Trust from avoidable interruption.

Any matters with significant implications regarding the project objectives, beyond resolution by the Project Director, will be referred first to the Deputy Chief Executive if necessary; and secondly by reference to the monthly Estates Strategy Delivery Group (ESDG).

Urgent decisions beyond the Project Director's delegated authority, requiring swift resolution to maintain programme, will be referred to the Chief Executive, and/or Trust Chairman for determination within their powers as delegated by the Trust Board.

6.1.4 Delegated Authority

The Project Director will have delegated authority to act as the Trust Representative and point of contact in all client dealings, with professional advisors and contractors. The Project Director will retain responsibility for project progress, and it will be the duty of the Project Director, to ensure that the Deputy Chief Executive is kept informed of, and updated with, all relevant programme issues as they occur.

The Project Director assumes the specific duties and responsibilities of that role set forth in the ProCure21 Plus guidance. In this role he acts as the Client's representative with responsibility for procurement strategy and the delivery of the project. Other roles within the Procure21 Plus guidance include:

- **The P21+ Project Manager**, who will manage the day-to-day progress of activities of the project and have responsibilities for administering and managing the contract as well as engaging stakeholders,. He will ensure that the processes and procedures in the ProCure21+ NEC3 Contract Template Part A and Part B are adhered to by all. The Project Manager will be the single point of contact for the development and alteration of the Works Information (scope of works). He will also be responsible for the implementation of effective risk management on the scheme.

- **The Client Cost Advisor** will support the P21+ Project Manager and the Project Director throughout the construction phase of the project by reviewing assessments submitted for payment, open book audit and control of expenditure. This role will be undertaken by the Trust's technical advisors, Sweett Group.

- **The Supervisor** role is defined within the NEC3 contract. This person will review the works as they progress for quality and adherence to the brief and Works Information.

- **The Construction Design and Management (CDM) Co-ordinator** is the person or organisation nominated to be responsible for Health and Safety as defined in the CDM Regulations 2007. Sweett Group has been appointed to this role by the Trust.

Procedures for assessing and implementing changes to requirements beyond the "design freeze" encapsulated in the contract which impact on the delivery, design and/or cost of the scheme, will be referred to the Project Director, who will obtain approvals as appropriate. All such matters will be subject to the formal change control procedure and will be reported to the Estates Strategy Delivery Group.

The organisation charts below illustrate the internal Trust and PSCP project structures for the delivery of the project. See also Appendix 22.

Figure 6.1: Whittington Health Project Organisation

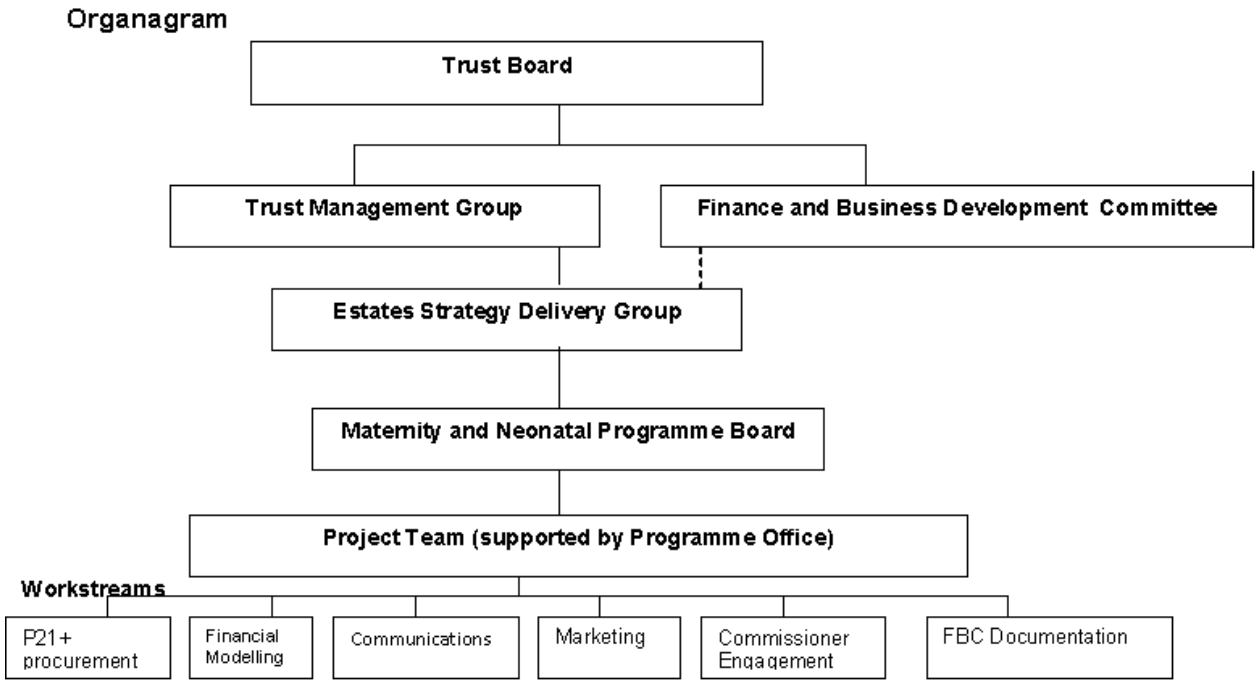
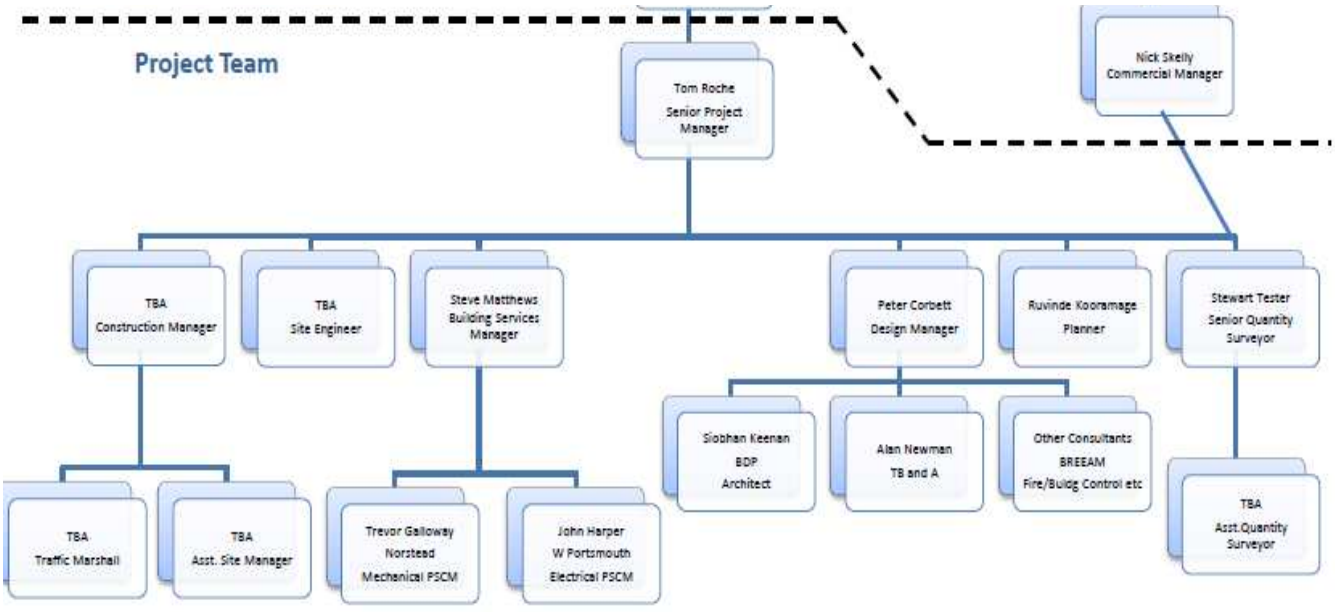


Figure 6.2: PSCP Project Structure for Construction Phase



6.1.5 Roles and Responsibilities

The main responsibilities for each of the roles directly relevant to the delivery of the project are outlined in the table below. Support is provided by the requisite level of external advice. More detail on these roles is provided in 23.

Table 6.1: Project Roles Summary

Role	Works closely with	Key duties	Outputs
Deputy Chief Executive (Senior Responsible Officer)	TDA Commissioners Trust Board Estates Strategy Group Project Director	Business assurance Value for money Project Board Risk monitoring Authorises expenditure & tolerances External interface	Business justification Business Case Project Board meetings Progress reports
Medical Programme Director	TDA Commissioners Service users Service Transformation Co-ordinator Trust Board Project Director P21+ Project Manager Senior Programme Lead	Commissioner interface Project Board GP interface Service transformation Marketing strategy Communications Plan	Commissioner support GP support Service transformation Marketing strategy Communications Plan
Project Director	Trust Board Estates Strategy Group Maternity and Neonatal Programme Board P21+ Project Manager Senior Programme Lead PSCP Management	Leadership Programme development Approvals PSCP appointment Project delivery Benefits realisation Change control Governance and structure Ensuring on-time and on-budget Risk	Business Case Board Reports Board Meetings Project Structure PSCP appointment
Senior Programme Lead	Deputy Chief Executive (Senior Responsible Officer) Medical Programme Director Project Director P21+ Project Manager	Programme development Project delivery Workstream oversight Change control Ensuring business case is on-time and on-budget Risk	Business Case Board Reports
P21+ Project Manager	Estates Strategy Group Project Director Project Team PSCP	Wide ranging – overview of all aspects of the project procurement, including: Design brief H and S PSCP relationship building Risk Construction oversight Planning and Building Control Programme delivery Phasing arrangements Compliance	Project update reports Risk register Issues Log Stage reports and papers
ProCure21+ Supervisor	PSCP Project Team	Monitor site operations Testing and inspections Defect supervision	Progress reports Defect notices
Commissioning Manager	Users Statutory bodies and Inspectorates Procurement Project Team	Op Policy development Developing move programme Tracking / mitigating move risks FF and E procurement inputs	Commissioning Programme Operational Policies O and M Manuals H and S file Health planning compliance
Administrative Support	Project Director Project Team	Admin support Scheduling Filing for Q and A	Producing report documents Minutes and notes

6.1.6 Estates Strategy Delivery Group

The Estates Strategy Delivery Group reports to the Trust Executive Committee. The purpose of the Estates Strategy Delivery Group (ESDG) is to provide oversight and governance on the delivery of the Trust's Strategy for a Modern Healthcare Estate and to provide assurance to the Resources Committee that the aims and objectives are being delivered.

Its functions include:

- Consideration and approval of all estate space transactions to ensure that they support strategic objectives,
- Progressing and controlling major developments and any disposal proposals contained in the Trust's Strategy for a Modern Healthcare Estate,
- Progressing and controlling space and estate management proposals contained in the Trust's Strategy for a Modern Healthcare Estate which support the key objectives, and
- Approving communications plans

The membership of the Estates Strategy Delivery Group is:

- Deputy Chief Executive - Senior Responsible Officer
- Chief Operating Officer
- Chief Financial Officer
- Director of Estates and Facilities
- Assistant Director of Estates and Facilities (x2)

6.1.7 Maternity and Neonatal Programme Board

The Maternity and Neonatal Programme Board reports to the Estates Strategy Delivery Group. The main purpose of the Programme Board has been to oversee the development of a Whittington Health strategy for maternity and neonatal services, and the development of an OBC and subsequent FBC to support the realisation of the strategy. The Board will now oversee the development of detailed design, phasing plans and transition plans from a departmental perspective. Key to the role of the Steering Board will be to ensure the engagement of stakeholders, including the involvement and engagement of women and their families

The membership of the Maternity and Neonatal Programme Board includes:

- Deputy Chief Executive / Medical Programme Director (Joint Chairs)
- Chief Financial Officer
- Director of Operation WCF
- Clinical Lead Neonatology
- Matron- Neonatal Intensive Care Unit
- Head of Midwifery
- Director of Communications
- Director of Estates and Facilities (Project Director)
- Commissioning representation
- User representation
- Shadow Council of Governors representation

6.1.8 Project Implementation Programme

The key milestones for the preferred option are as follows:

Table 6.2 Project Timetable

Milestone	Date
OBC submission	February 2014
OBC approval by TDA	September 2014
Appointment of Trust Advisors and PSCP	October 2014
FBC submission	January 2015
FBC approved and contract signed	March 2015
Contract Signed	May 2015
Construction work commences	June 2015
Construction work completed	June 2016

A summary programme for stage three and four is provided at Appendix 13. The timetable will be reviewed at each stage of the implementation process.

6.1.9 Costs of Project Implementation

The Trust has identified a number of costs associated with the project implementation structure. The table below summarises the resource input by workstream; this will be reviewed on a periodic basis to ensure that the project has adequate resources to deliver to programme. A provision for implementation has been included in project costs and is outlined in the Financial Case chapter

Table 6.3: Resource Profile and Allocation

Resource	Resource Type	Resource Role	Allocation %	Deliverables
Deputy Chief Executive	Permanent	SRO	10%	Overall responsibility at Board Level for Programme Delivery
Programme Board Members	Permanent	Service Leaders	Up to 5% per person	Executive oversight & decision making Operational direction
Director of Estates and Facilities	Permanent	Project Director / Estates Lead	20%	Deliver the Programme on time and to plan Procurement Mgmt Estates Strategy
Assistant Director of Estates & Facilities	Permanent	FBC Programme Lead	50%	Full Business Case
Department Project Group Members (various staff)	Permanent	Implementation Managers	10% per person	Transition and Implementation to support delivery
Service Transformation Co-ordinator	Permanent	Service transformation	10%	Service transformation plan Monitoring of delivery
Communications team	Permanent	Communication Executive Lead Communication Work stream Lead	10% total	Stakeholders and Communications
Finance and Finance/Workforce	Temporary	Combined role: Finance / Capacity and Modelling	100%	Validate and assure the financial elements of the FBC including checking of assumptions and consistency with LTFM Capacity model that ties in with LTFM.

6.1.10 Use of Advisors

Special advisers have been used in a targeted and cost-effective manner for the development of the business case. At OBC, the Trust used the national service framework agreement to appoint the design team BDP, supported by Sweett Group.

The lead advisor appointed under the framework for the FBC is Sweett Group, who provide project management and procurement advice, together with costing services. In addition, they act as Client Cost Advisor within the guidelines for Procure21+ contracts. In that role they support the Programme Lead and the Project Director throughout the project by collaborating with other team members in the development of the FBC, design option appraisal, development and agreement of the GMP and associated contractual documentation, review of assessments submitted for payment, open book audit and control of expenditure.

The PSCP (IHP) has been appointed at stage three to assist the Trust with the development of this FBC, including a 'not to be exceeded' GMP. The design team, architects BDP, were appointed by the PSCP as part of the Procure 21+ arrangement, thus ensuring continuity of knowledge of the design. Technical advisors are Troup Bywaters & Anders, who have also been appointed by IHP via the P21+ supply chain.

At stage three, all advisors have been appointed on a fixed price basis. Costs for all advisors are outlined in the Financial Case chapter.

6.1.11 Letters of Support

These will be provided in Appendix 24. They will include the support from the following organisations:

- Islington CCG
- Haringey CCG
- NHS England.

6.2 Communications

Communications, both with internal and external stakeholders is a key component to managing the successful delivery of this project as the creation of the new core and refurbishment will take place whilst the services continue to operate.

There are a number of considerations for this communications work, which include:

- Ensuring integrated, clear, consistent, communications across all channels to both internal and external audiences to ensure that all stakeholders understand the project and the nature of the work being undertaken.
- Communicating with existing services during the build phase to ensure all colleagues are kept up to date with the schedule and we have clear consistent messages for patients, mothers and other users of our services.
- Ensuring all communications work is aligned to our strategic goals and clinical strategy.

The project communications plan is part of a broader strategic marketing plan (see Appendix 7), which has been developed to support the FBC. The focus of this plan is on increasing the number of women who use our services and raising awareness of the planned improvements. The broader strategic marketing plan and associated communications plan also focuses on how the Trust will engage with our stakeholders, particularly potential service users, referrers, our commissioners and the NHS Trust Development Authority (TDA), to garner understanding, support and buy-in of the planned improvement work.

There will also be a separate communications plan for the launch of the improved facilities.

The plan sets out a programme for communication, including the key messages, delivery channels, audiences, lead personnel and the performance metrics by which to measure success. The detailed Maternity and Neonatal Communications Plan document is provided at Appendix 25

6.3 Procurement Route

The Procure 21+ process is described in the Commercial Case, chapter 4.

6.4 Contract Management

The construction and refurbishment works are being procured under the Procure 21+ framework agreement, which sets out a detailed and structured set of guidelines for the management of contracts.

Procurement guidance is being followed for the procurement process, with the support of professional advisors and appropriate NHS leads. During the process, the Project Director will be responsible for coordination of the clinical and other operational management requirements with those of the PSCP.

ProCure21+ uses the NEC3 Option C: Target Contract with Activity Schedule, to which a number of amendments have been made via Z Clauses. The NEC3 contract sets out the foundations for effective and efficient management of a scheme to deliver it on time, within cost and to the quality specified or better.

The Trust will utilise the guidelines and adopt the ProCure21+ NEC3 Option C Contract Administration pro-formas in accordance with the provisions of the ProCure21+ NEC3 contract template, together with the Works Information Template that incorporates procedures that are to be used.

The Trust has already appointed a Procure 21+ Project Manager, Cost Advisor CDM-C whose job descriptions are based on the templates for these roles included in the guidance; the roles and responsibilities are outlined in Section 6.1.5, above.

6.5 Change Management

A Service Transformation Co-ordinator been appointed as part of the project team to work with the maternity and neonatal services to ensure all opportunities to maximise service benefits from the project are taken. The Transformation Manager is developing a plan in conjunction with services to ensure maximum benefit for Trust colleagues and patients.

A change management process will be developed, incorporating planned workforce changes and key service delivery actions identified in the marketing strategy.

6.6 Risk and Risk Management

6.6.1 Introduction

It is a requirement of the Capital Investment Manual that a risk assessment should be produced for all projects seeking funding. This section of the FBC contains the findings of the risk assessment and subsequent risk management plans

The objective of the risk assessment is to identify risks to the successful delivery of the project.

6.6.2 Risk Management

- **OGC Gateway Risk Potential Assessment**

The Risk Potential Assessment completed at OBC and reviewed for the FBC indicates that the project is not considered to be of sufficient risk to require a Gateway Review process to be implemented (see Appendix 26). Project and risk reviews are being undertaken fortnightly via the Trust's internal risk management / governance arrangements. The Trust is considering the merits of conducting reviews at Gateway 4 (Readiness for Service) and/or Gateway 5 (Benefits Realisation); in any event an equivalent internal or peer review will be undertaken to ensure service risks are minimised.

- **Risk Management Plan**

Risk Management incorporates risk assessment, which is an ordered approach to risk analysis. The risks are logged and scored by matrix analysis to determine whether the levels of risk are acceptable. The risks are colour coded for easy identification of key risks.

Experience indicates that risk management is most effective if it is introduced at the earliest stages of the project with members of the project team involved. However, the process continues throughout the design and construction with reviews being undertaken at key stages.

Risk management techniques offer a systematic approach to the identification, assessment and control of the significant risk factors affecting the progress of the project. Areas of high risk are reviewed to ensure that all reasonably practicable measures have been taken to mitigate them.

The Risk management process is designed to ensure that as far as is reasonable:

- All significant risks are identified
- Risk exposure is understood and reduced to acceptable levels
- Risk control measures are implemented
- Control measures are reviewed and managed to close out.

The allocation of risk has been a key area of focus, particularly at the time of agreeing the not to be exceeded GMP. The standard ProCure21+ joint risk register has been adopted for this project, including the details of the existing Trust project risk register through a number of fortnightly risk workshops and reviews. At the workshops the separation and transfer or risks has been allocated to the Trust and PSCP or 'joint' responsibility determined. Service and activity risks affecting the economic case risks have been considered separately and the results included in the Generic Economic Model. The risk register, including mitigations is presented in Appendix 16.

Progress of the project in relation to the register is reviewed on a regular basis with feedback used to update the risk register and control measures. In parallel with risk identification and classification, mitigation measures are developed in consultation with all involved parties.

PSCP risks have been built up from the standard P21+ list and adapted for project specifics. A sum reflecting the PSCP risks is included within the 'not to be exceeded GMP'. .

The top risks at the time of FBC submission for this project are shown in the table below.

Table 6.4: Top Risks

Risk Description - Causes – Consequences	Probability	Impact	Score
Delayed Planning Approval A delay in receiving planning permission may impact on the implementation timetable and have broader cost implications for the project	4	4	16
WH overall financial position delays approval of FBC	3	5	15
Election date impacts on approvals process	3	4	12
Planned works results in a loss of confidence or preference for the unit within the local community, which results in a reduction in activity	3	4	12
The detail of the design must be developed within an agreed framework and timetable. A failure to do so may lead to additional design and construction costs, particularly with an accelerated programme	4	3	12
Existing Mechanical and Engineering supplies have inadequate capacity or are in insufficient condition to service new facility	3	4	12
Inability to carry out full surveys to determine conditions, dimensions/services/asbestos/etc	4	3	12
The Trust may require changes to the Brief and / or design leading to additional design and construction cost (post GMP)	4	3	12
Design is unable to meet Environmental Performance / BREEAM Requirements	4	3	12
Service requirements (e.g. risers) reduces room areas and / or impacts upon functionality of approved layouts	4	3	12
Changes to the scheme result in affordability issues	4	3	12
Price uncertainty/Inflation - Price increases, steel, Labour Shortages etc	4	3	12

- **Optimism Bias**

It is accepted that there is an inherent tendency to be overly optimistic when compiling project costs and to underestimate the cost of the risks associated with any project. The Trust's Cost Advisors (Sweett) have reviewed the optimism bias assessment undertaken at OBC stage and undertaken an further assessment of the remaining capital cost risks, taking into account the submission of a not to be exceeded GMP. The Cost Advisors have adjusted the overall cost at outturn to reflect those risks by making an adjustment for "Optimism Bias".

The detailed computation schedule has been attached as appendix 27 and the main factors are summarised below:

- **Upper Bound Calculation**

To establish, based on the type of scheme, the upper bounds of any risk that might affect the costing of the scheme, if they were left unmitigated. These percentages have been taken from the approved template. The following upper bound calculation was prepared for the Trust by Sweett, based on initial assumptions for each element of the computation.

Table 6.5 Upper Bound Calculation

Optimism Bias - Upper Bound Calculation for Build				
Lowest % Upper Bound		13%		
Mid %		40%		
Upper %		80%		
Actual % Upper Bound for this project		21.00%		
Build complexity				
Choose 1 category		X		
Length of Build	< 2 years	x	0.50%	0.50%
	2 to 4 years		2.00%	0
	Over 4 years		5.00%	0
Choose 1 category				
Number of phases	1 or 2 Phases	x	0.50%	0.50%
	3 or 4 Phases		2.00%	0
	More than 4 Phases		5.00%	0
Choose 1 Category				
Number of sites involved (i.e. before and after change)	Single site*	x	2.00%	2.00%
	2 Site		2.00%	0
	More than 2 site		5.00%	0
* Single site means new build is on same site as existing facilities				
Location				
Choose 1 Category				
New site - Green field	New build		3%	0
New site - Brown Field	New Build		8%	0
Existing site	New Build		5%	0
	or			
Existing site	Less than 15% refurb		6%	0
Existing site	15% - 50% refurb	x	10%	10.00%
Existing site	Over 50% refurb		16%	0
				13.00%

Scope of scheme				
Choose 1 category		X		
Facilities Management	Hard FM only or no FM	x	0.00%	0.00%
	Hard and soft FM		2.00%	
				0
Choose 1 category				
Equipment	Group 1 & 2 only	x	0.50%	0.50%
	major Medical equipment		1.50%	0
	All equipment included		5.00%	0
Choose 1 category				
IT	No IT implications		0.00%	0
	Infrastructure	x	1.50%	1.50%
	Infrastructure & systems		5.00%	0
Choose more than 1 category if applicable				
External Stakeholders	1 or 2 local NHS organisations	x	1.00%	1.00%
	3 or more NHS organisations		4.00%	0
	Universities/Private/Voluntary sector/Local government		8.00%	0
Service changes - relates to service delivery e.g NSF's				
Choose 1 category				
Stable environment, i.e. no change to service		x	5%	5.00%
Identified changes not quantified			10%	0
Longer time frame service changes			20%	0

Gateway				
Choose 1 category				
RPA Score	Low	x	0%	0.00%
	Medium		2%	0
	High		5%	0
				8.00%

- **Scheme mitigation**

Based on the detailed factors shown in appendix 27 the Trust have already identified a level of actions to mitigate this risk and these indicate that 90% of the risks are being mitigated.

The level of residual (unmitigated) risk is therefore set at 2%and this has been applied to the overall construction cost included in the FB forms in appendix 21.

6.7 Workforce Planning

6.7.1 Introduction

This section sets out the key issues that relate to how the development will affect the Trust's workforce and the Trust's approach to workforce planning. It outlines the Trust's current model, assumptions and plans to achieve the workforce aspects of the development.

Key to successful workforce planning is the involvement of clinical professionals to help ensure the Trust's workforce has the necessary skills to provide outstanding care.

6.7.2 Current and Anticipated Workforce

The Trust is expecting an increase in the number of deliveries from 3,945 in 2015/16 to 4,700 in 2018/19, a rise of nearly 18% over the five year period. The neonatal service is projected to have a similar rise in activity.

Accordingly the current workforce will need to expand to meet the challenges that come from such an increase and these changes will see the existing model of care adapted both to respond to the volume changes but also to changes in the physical environment brought about by the refurbishment.

Key to realising these benefits is the need to ensure redesigned pathways can be delivered, existing practices improved, and to ensure that further efficiencies are "designed in" to the final build solution, ensuring a smooth transition to the improved facilities.

The major components of the workforce changes are set out below:

- From the opening of the new facilities the Trust will move to a "midwife to birth" ratio of 1:30 as opposed to the current 1:28, as the redesigned floor plan will allow this change without compromising on safety.
- From September 2016, the Trust will have a second co-located obstetric theatre which will be fully staffed from the outset. Staff who presently operate the existing service from main theatres will transfer and a number of new staff will be required.
- The neonatal service is expected to operate at 80% cot occupancy and will do so from September 2016, with the consequent increase in staff. The service will continue to operate to the existing guidelines for neonatal staffing.

As the activity levels are expected to increase there are no expected redundancies and all existing staff will be relocated to the improved facilities. There are no issues of TUPE involved.

Historically the services have had no significant issues with recruitment and this is not seen as a risk to the growth of the service over time.

6.7.3 Maternity workforce

Table 6.6 Maternity Workforce 2014/5 – 2018/9

Department	**Workforce 2014/15 (per FYOT)**		Changes		**Workforce 2018/19**	
	wte	**m/b**	wte	m/b	**wte**	**m/b**
Antenatal/MDU	**9.71**	**5.68**	1.00	1.00	**10.71**	**6.68**
Specialist Practioners	**9.50**	**2.16**	-	-	**9.50**	**2.16**
Birth Centre	**17.95**	**12.66**	-	-	**17.95**	**12.66**
Triage	**14.03**	**8.26**	-	-	**14.03**	**8.26**
Cellier/Murray Ward	**44.57**	**24.54**	2.20	-	**46.77**	**24.54**
Labour Ward Inc Theatre	**54.96**	**40.14**	27.30	10.45	**82.26**	**50.59**
Community	**49.25**	**47.30**	7.00	3.80	**56.25**	**51.10**
	199.97	**140.74**	37.50	15.25	**237.47**	**155.99**
Admin addition			6.10	-		
	199.97	**140.74**	43.60	15.25	**237.47**	**155.99**
Deliveries	**3,631**				**4,700**	
Midwife to birth ratio	**26**				**30**	
WTE per delivery	**18**				**20**	

The revised model of care that can be operated from the refurbished facilities will allow the service to be more efficient in terms of the number of qualifying midwives required.

In ensuring that sufficient numbers of appropriately trained staff are available at key milestones of project implementation, the services will be supported to develop individualised workforce plans that take into consideration:

- Recognised establishment and acuity models
- Projected activity changes
- Skill mix assumptions
- Workforce challenges (e.g. hard to recruit posts).

Key outcomes of individual workforce plans will be centralised into a project wide, core consultation document, for consultation with staff and staff side representatives if required.

6.8 Benefits Realisation Plan

The section outlines the strategy, framework and plan for dealing with the management and delivery of benefits.

The Benefits Realisation Plan (BRP) is a working document, which will evolve and develop during the whole life of the project, playing a vital linking thread through the whole process. It is enclosed in Appendix 28. The Benefits Realisation Plan defines each benefit and documents how the benefits listed will be achieved and measured by the end of the project. The BRP objectives include:

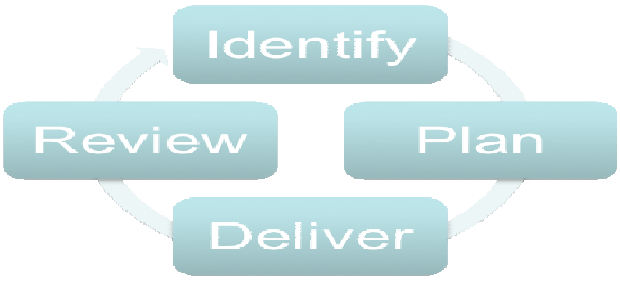
- To improve the quality and safety in the neonatal service
- To provide a second co-located obstetric theatre
- To allow for increased maternity capacity to 4,700 deliveries
- To maintain and enhance the Trust's reputation as provider of choice to the people of Haringey and Islington
- To not incur significant decant or double running costs.

The BRP provides details on specific components of how the project will meet the Trust's objectives and how they will be measured. These have been identified through a benefits mapping exercise, involving the key Clinical Directors, strategic Trust and Programme leads.

These benefits will form the success criteria for the project. The BRP ensures that they are baselined, that robust plans are developed for their realisation and that progress against target benefits are monitored. The Trust Programme Board will take appropriate corrective action at an early point should delivery be threatened.

The management of benefits during implementation will be based on the process outlined below:

Figure 6.3: Benefits Management Process



6.9 Post Project Evaluation

6.9.1 Scope and Aim of Evaluation

The project will need to be evaluated against the original investment objectives set out in the FBC and against any new objectives that have been identified in the meantime. The processes involved in delivering the project will also be evaluated. The Evaluation Plan has been set up to enable a number of benefits to be realised. It is anticipated that the evaluation will help to:

- Improve the design, organisation, implementation and strategic management of other projects, both within and outside the Trust
- Ascertain whether the project is running smoothly so that corrective action can be taken if necessary
- Promote organisational learning to improve current and future performance
- Avoid repeating costly mistakes
- Improve decision-making and resource allocation (e.g., by adopting more effective project management arrangements)
- Improve accountability by demonstrating to internal and external parties that resources have been used efficiently and effectively.

6.9.2 Benefits Realisation Evaluation

The Post Project Evaluation will incorporate a detailed review of all targeted specific outputs from the project, as detailed in the Benefits Realisation Plan.

6.9.3 Project Delivery Evaluation

The processes involved in delivering the project will be evaluated using the four stages described below.

i) Evaluation of the Project Procurement Stage

The objective of the evaluation at procurement stage is to assess how well and effectively the project was managed from the time of OBC approval, to the approval stage of the Full Business Case (FBC) and the subsequent completion of the project procurement.

It is planned that this evaluation will be undertaken within three months following FBC approval subsequent completion of the project procurement and will examine:

- The effectiveness of the project management of the scheme
- The quality of the documentation prepared by the Trust for the procurement
- Communications and involvement during procurement
- The effectiveness of advisers used on the scheme.

ii) Evaluation of the Project Implementation Stage

This stage will assess how well and effectively the project was managed from the time of FBC approval/completion of the project procurement, through to the commencement of operational commissioning.

The evaluation at the implementation stage will examine:

- The effectiveness of the Trust project management of the scheme – viewed internally and externally
- The effectiveness of the development partner's project management of the scheme – viewed internally and externally

- Communications and involvement during construction
- The effectiveness of the joint working arrangements established by the development partner's project teams and the Trust project teams
- The support provided during this stage from other stakeholder organisations

iii) Evaluation of the Project in Use (undertaken shortly after opening)

This stage of the evaluation will be undertaken between three and six months after operational commissioning has been completed so that many of the lessons to be learnt are still fresh in the minds of the project team and other key stakeholders. The evaluation will assess how well and effectively the project was managed during the Trust's operational commissioning phase and into the actual operation of the new facilities.

The evaluation at this "project in use" stage will examine:

- The effectiveness of the Trust project management of the scheme – viewed internally and externally
- The effectiveness of the development partner's project management of the scheme – viewed internally and externally
- Communications and involvement during commissioning and into operations
- The effectiveness of the joint working arrangements established by the development partner's project team and the Trust project team
- The support provided during this stage from other stakeholder organisations
- The overall success factors for the project in terms of cost, time and quality
- The extent to which the design meets users' needs – from the point of view of patients/carers and staff

iv) Evaluation of the Project once the redeveloped facilities are well established

This evaluation is to be undertaken between twelve to eighteen months following completion of commissioning. The objective of this stage will assess how well and effectively the project was managed during the actual operation of the new hospital premises.

The evaluation at this "well established" stage will examine:

- The effectiveness of the working arrangements established
- The extent to which the facilities have met the original objectives and benefits, and additional benefits which have accrued
- The extent to which the design meets users' needs – from the point of view of patients/carers and staff.

6.9.4 Participants in the Evaluation

The participants in the evaluation and their roles are shown in the table below

Table 6.7: Participants in the Evaluation and their Roles

Member	Role in Evaluation
Chief Executive (Senior Responsible Officer)	To provide input on: ▪ achieving strategic objectives ▪ achieving project objectives
Deputy Chief Executive	To provide input on ▪ management processes ▪ achieving strategic objectives ▪ achieving project objectives
Project Director	To provide input on: ▪ management processes ▪ achieving strategic objectives ▪ achieving project objectives ▪ capital costs ▪ estates elements ▪ commissioning programme
Chief Finance Officer	To provide input on: ▪ financial elements ▪ achieving strategic objectives ▪ achieving project objectives ▪ flexibility in use/management of peaks and troughs in activity ▪ flexibility for sustained capacity changes
Medical Director/Director of Nursing	To provide input on: ▪ appropriateness of/adherence to model of care ▪ appropriateness/effectiveness of medical equipping arrangements/solutions ▪ compliance with NHS design guidance and infection control arrangements ▪ staffing efficiency, ergonomics, safety and security
Deputy Director of Human Resources	To provide input on: ▪ workforce planning ▪ recruitment and retention ▪ sickness absence
Director of Estates and Facilities	To provide input on: ▪ design/environmental elements ▪ health and Safety ▪ energy Performance ▪ estates Maintenance Arrangements ▪ site development control planning
Director of Communications	To provide input on: ▪ effectiveness of communications
PSCP and technical team members	To provide input on: ▪ procurement processes ▪ design processes ▪ the construction phase ▪ management processes ▪ costs ▪ commissioning programme ▪ physical outcomes against expectations
Patients/Patients' Representatives	Input on; ▪ design/environmental elements

6.9.5 Management of the Evaluation Process and Resources to Deliver

The evaluation will be driven and undertaken by a small Evaluation Steering Group, led by the Project Director. This will be multi-disciplinary and drawn from personnel within and outside the Trust, as required.

The stakeholders in the evaluation are as follows:

- Senior managers within the Trust
- Staff within the Trust
- TDA
- PSCP
- Islington CCG
- Haringey CCG
- NHS England
- Patients and Carers
- Patients Representatives
- Advisors involved in the project.

The majority of the evaluation will be undertaken via the Project Team. The costs of the final post-project evaluation, once the redevelopment is fully-established, are not included in the costs set out in this FBC but will be met from non-recurrent funding within the Trust.

6.9.6 Dissemination of Findings

All evaluation reports will be completed within three to six months of data being collected. A full report or executive summary, as appropriate, will be made available to participants in each stage of the evaluation.