



**Calderdale and
Huddersfield NHS
Foundation Trust**

**Five Year Strategic
Plan**

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**Budget Life cycle Cost
Model (Rev 3)**

3rd December 2015



BUDGET LIFE CYCLE COST MODEL - CONTENTS

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BUDGET LIFE CYCLE COST MODEL - EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This Feasibility Cost Model reflects the expected life cycle, maintenance and operational out-turn costs for three options in the redevelopment of the Calderdale, Huddersfield and Acre Mill sites, providing a rationalisation of the clinical facilities on the existing sites, in line with the Trust's Schedule of Accommodation Version 3. Importantly, a number of assumptions have been taken at this stage that need validation, particularly in relation to excluded items. The assumed procurement route is still to be determined; an initial procurement paper has been produced summarising the options the Trust will consider at the next stage. As part of the number of assumptions being considered for the purpose of the life cycle budgets, we have assumed that all areas of refurbishment work where indicated within the Feasibility report, will attract additional life cycle cost due to the enhancement of the existing facilities.

OPTIONS

Budget Life Cycle Forecast Outturn Cost

000's

Option 1	Backlog Maintenance only-no life cycle	£933,040,000
Option 2c	HRI Hot site; CRH Cold Site; Extend HRI	£1,247,062,311
Option 3a	CRH Hot Site; HRI Cold Site on AM; New Build behind Maternity	£941,426,053

FINANCIAL SUMMARY

PURPOSE

The purpose of this document is to establish a budget life cycle cost for the differing feasibility options at both Huddersfield Royal Infirmary (HRI) and Calderdale Royal Hospital (CRH), for the Calderdale and Huddersfield NHS Foundation Trust project business case.

RISK

A detailed risk workshop has still to be undertaken and as such a contingency allowance has been included within this Cost Model at 15% for all options. This aligns to the benchmark norm for contingency at this stage of the project and provides the requisite level of contingency to cover planning, design and price risk. We would advise that a risk workshop be undertaken and a priced risk register produced for the shortlisted options.

BENCHMARKING

The life cycle costs for the various functional areas comprising the overall scheme have been benchmarked against comparable healthcare schemes built over the past 5 years, and from current data sources provided by the Trust for the current operational sites at Acre Mill, Huddersfield Royal Infirmary and at Calderdale Royal Hospital. These have been normalised to provide a benchmark figure for each of the areas in the schedule of accommodation. It is worth noting the Trust will incur a much higher cost per square metre for life cycle and maintenance where they have a much greater concentration of high cost clinical space compared to admin and research space and offices or in-patient accommodation.

BASIS OF COSTS

LCC budget estimates based upon Feasibility Cost Model (Rev 2) which provides the Capital sum or capital costs for the given period of the life cycle analysis.

Existing Site Plans

Schedule of Accommodation Version 3 issued 30/11/2015

Ernst and Young Capacity Model issued Tuesday 10th November with agreed updates via email on 11th, 12th, 16th, 19th, 26th and 27th November 2015 respectively.

Backlog maintenance data reviewed by Lendlease in the period up to and including 30 November 2015.

FORECASTERS ASSUMPTIONS

- 1 The estimates are based upon the gross internal floor areas as shown in the cost estimate. These areas have been taken from the Schedule of Accommodation, Version 3, produced by the Healthcare Planner in discussions with Ernst & Young on the required clinical activity for each of the options. requirements.
- 2 To allow comparison between different size buildings and time periods associated with these budget estimates, life cycle costs are expressed in units of £/unit/year for the given period. Units are expressed in m² of building area. The life cycle costing is based on an agreed investment period of 40 years.

BUDGET LIFE CYCLE COST MODEL - EXECUTIVE SUMMARY

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- 3 The life cycle cost is the sum of the capital cost allowances for each option as indicated within the main feasibility report for the Capital cost estimates.
- 4 It is assumed that VAT will remain at 20% and the client is the end user under VAT rules.
- 5 Present values; all costs remain at present day values. No adjustments are made for either inflation or for investment earnings. Annual, periodic and cyclical costs are calculated at real costs with no allowance for inflation within the cash flow forecasts provided at part of this report.
- 6 Life cycle costing calculation intervals are assumed to be annual.
- 7 Backlog maintenance data reviewed by Lendlease in the period up to and including 30 November 2015 does not form part of the life cycle cost analysis.
- 8 The method of valuation used for the assessment of cash flow forecasting for each option has been undertaken using 'smooth' cash flow approach for the given period of 40 years.
- 9 Equipment; assumed all equipping costs will be undertaken directly by the Trust throughout the given period of 40 years (see also exclusions).
- 10 Current Life cycle, Maintenance and Operational costs included in the 'Overall Summary' are based upon current cost data sources provide by the Trust.
- 11 Life cycle 'Give backs' assessments; The life cycle costing reclaim value is based on a period of 5 years, being equal to the design and construction phase time allowance/program for the new build projects.

FORECASTERS EXCLUSIONS

- 1 Legal costs.
- 2 VAT recovery.
- 3 Equipment
- 4 Running costs generally; e.g. utilities etc.
- 5 Occupancy costs
- 6 End of life costs or disposal costs
- 7 Inflation
- 8 PFI fees
- 9 Trust direct fees



BUDGET LIFE CYCLE COST SUMMARY (40 years)

Item	Cost (Option 1)		Cost (Option 2c)		Cost (Option 3a)		Comments
Existing Building (HRI)	£ 375,360,000		£ 375,360,000		£ -		Current Life cycle , Maintenance and Operational costs
Existing Building (CRH)	£ 517,240,000		£ 517,240,000		£ 517,240,000		based on 40 year concession period
Existing Building (AM)	£ 40,440,000		£ 40,440,000		£ 40,440,000		Existing Building (HRI) not applicable to Option 3a
New Build (As Options)	£ -		£ 314,022,311		£ 430,666,053		Options 2c and 3a-Additonal Life cycle , Maintenance and Operational costs
Anticipated total life cycle cost	£933,040,000		£ 1,247,062,311		£ 988,346,053		
Estimated Life cycle reclaim	£ -		£ -		£ 46,920,000		Life cycle credits; Option 3a-5 year allowance based upon delivery time frame for Options 2c and 3a
Adjusted Total life cycle cost-net of VAT	£ 933,040,000		£ 1,247,062,311		£ 941,426,053		
VAT	£ 186,608,000		£ 249,412,462		£ 197,669,211		
Life Cycle Out-Turn Total	£ 1,119,648,000		£ 1,496,474,773		£ 1,139,095,264		

Project : Calderdale and Huddersfield NHS Foundation Trust
Estimate: Budget Life Cycle Cost Model - 3 December 2015
Price Date: 4Q 2015



BUDGET LIFE CYCLE COST PLAN

EXAMPLE Option1-Backlog Maintenance

GIFA (HRI)	67,493	m2
GIFA (CRH)	55,551	m2
TOTAL GIFA	123,044	m2
PERIOD OF ANALYSIS	40	year concession

Construction Costs	£/m2	£ 000's
Backlog maintenance-nil life cycle cost	(excluded)	-
Total		-
Maintenance costs	£/m2/yr	
Major and Minor replacement, repairs and maintenance		
Backlog maintenance-nil life cycle cost	(excluded)	
Total		-
Operation costs	£/m2/yr	
Cleaning/Catering etc.	- (excluded)	
Utilities	- (excluded)	
Admin	- (excluded)	
Total		-
Total Life Cycle Cost		-
Total Life Cycle cost £/m2/yr.		-

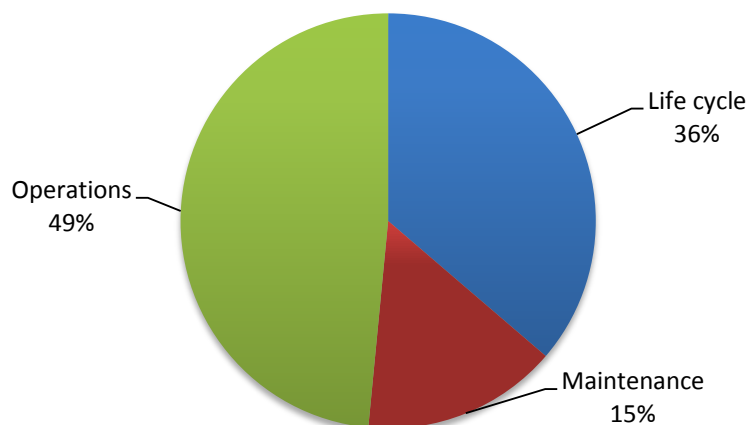
BUDGET LIFE CYCLE COST PLAN

EXAMPLE Option 2c-HRI Hot Site, CRH Cold, Extend HRI

GIFA (HRI)	25,448 m2
GIFA (CRH)	2,600 m2
TOTAL GIFA	28,048 m2
PERIOD OF ANALYSIS	40 year concession

Construction Costs	£/m2	£ 000's
Building (HRI)	2,624.80 (ave)	66,795,027.71
Building (CRH)	3,005.87 (ave)	7,815,250.00
Site Infrastructure		841,637.50
Traffic management		15,028.88
External works		127,170.00
Car parking & MSCP		1,250,000.00
Sustainability		746,102.78
Preliminaries		10,862,630.36
Fees		10,614,341.67
Risk & Contingency		14,860,078.33
Total		113,927,267.22
Maintenance costs	£/m2/yr	
Major and Minor replacement, repairs and maintenance		
Building Fabric and Services (HRI)	45.00 (ave)	45,805,841.46
Building Fabric and Services (CRH)	20.00 (ave)	2,080,000.00
Backlog maintenance (excluded)		
Total	65.00	47,885,841.46
Operation costs	£/m2/yr	
Cleaning/Catering etc.	135.67	152,209,202.46
Utilities	- (excluded)	-
Admin	- (included)	-
Total	135.67	152,209,202.46
Total Life Cycle Cost		314,022,311.15
Total Life Cycle cost £/m2/yr.		279.90

HRI Hot Site, CRH Cold, Extend HRI



BUDGET LIFE CYCLE COST PLAN

EXAMPLE Option 3a-HRI Cold Site, CRH Hot, New Build behind Maternity

GIFA (HRI)	18,118 m2
GIFA (CRH)	18,441 m2
TOTAL GIFA	36,559 m2
PERIOD OF ANALYSIS	40 year concession

Construction Costs	£/m2	£ 000's
Building (HRI)	3,062.16 (ave)	55,480,150.00
Building (CRH)	2,521.75 (ave)	46,503,600.00
Site Infrastructure		1,342,560.00
Traffic management		22,946.34
External works		214,016.00
Car parking & MSCP		1,250,000.00
Sustainability		1,019,837.50
Preliminaries		14,816,635.38
Fees		14,477,969.43
Risk & Contingency		20,269,157.20

Total **155,396,871.85**

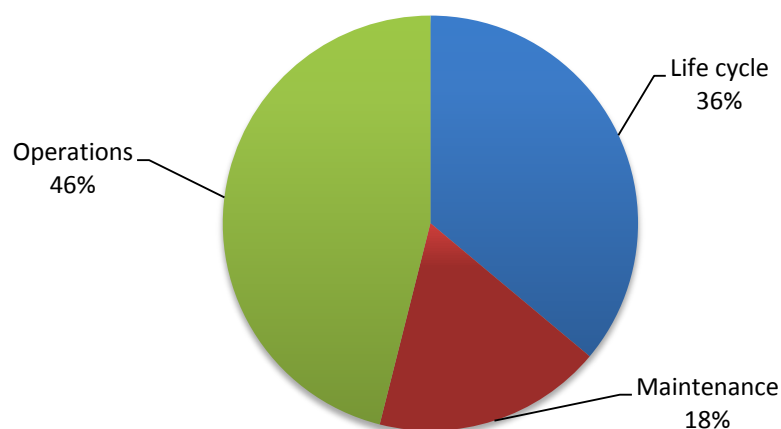
Maintenance costs	£/m2/yr	
Major and Minor replacement, repairs and maintenance		-
Building Fabric and Services (HRI)	45.00 (ave)	32,612,400.00
Building Fabric and Services (CRH)	60.00 (ave)	44,258,400.00
Backlog maintenance	(excluded)	
Total	105.00	76,870,800.00

Operation costs	£/m2/yr	
Cleaning/Catering etc.	135.67	198,398,381.20
Utilities	- (excluded)	-
Admin	- (included)	-
Total	135.67	198,398,381.20

Total Life Cycle Cost **430,666,053.05**

Total Life Cycle cost £/m2/yr. **294.50**

HRI Cold Site, CRH Hot, New Build behind Maternity



BUDGET LIFE CYCLE COST CASHFLOW FORECAST OPTION 2c

Year	Lifecycle	Costs		Operation Cleaning/Catering / Admin etc.	Total	Total inc VAT	Cumulative Value
	Annual	Annual	Intermittent			20.00%	
1	3,930,491	1,147,146		3,805,230	8,882,867	10,659,440	10,659,440
2	4,101,382	1,147,146		3,805,230	9,053,758	10,864,509	21,523,949
3	398,745	1,147,146		3,805,230	5,351,122	6,421,346	27,945,295
4	2,620,327	1,147,146		3,805,230	7,572,703	9,087,244	37,032,539
5	3,303,891	1,147,146	250,000	3,805,230	8,506,267	10,207,520	47,240,059
6	3,303,891	1,147,146		3,805,230	8,256,267	9,907,520	57,147,580
7	3,759,600	1,147,146		3,805,230	8,711,976	10,454,371	67,601,951
8	911,418	1,147,146		3,805,230	5,863,794	7,036,553	74,638,504
9	2,164,618	1,147,146		3,805,230	7,116,994	8,540,393	83,178,897
10	3,987,454	1,147,146	250,000	3,805,230	9,189,830	11,027,797	94,206,693
11	4,101,382	1,147,146		3,805,230	9,053,758	10,864,509	105,071,203
12	3,303,891	1,147,146		3,805,230	8,256,267	9,907,520	114,978,723
13	2,050,691	1,147,146		3,805,230	7,003,067	8,403,680	123,382,403
14	2,050,691	1,147,146		3,805,230	7,003,067	8,403,680	131,786,083
15	3,076,036	1,147,146	250,000	3,805,230	8,278,412	9,934,095	141,720,178
16	2,392,473	1,147,146		3,805,230	7,344,849	8,813,818	150,533,997
17	2,620,327	1,147,146		3,805,230	7,572,703	9,087,244	159,621,241
18	3,417,818	1,147,146		3,805,230	8,370,194	10,044,233	169,665,473
19	3,417,818	1,147,146		3,805,230	8,370,194	10,044,233	179,709,706
20	5,696,363	1,147,146	250,000	3,805,230	10,898,739	13,078,487	192,788,194
21	4,101,382	1,147,146		3,805,230	9,053,758	10,864,509	203,652,703
22	4,101,382	1,147,146		3,805,230	9,053,758	10,864,509	214,517,212
23	3,417,818	1,147,146		3,805,230	8,370,194	10,044,233	224,561,445
24	1,139,273	1,147,146		3,805,230	6,091,649	7,309,979	231,871,424
25	4,557,091	1,147,146	250,000	3,805,230	9,759,467	11,711,360	243,582,784
26	4,557,091	1,147,146		3,805,230	9,509,467	11,411,360	254,994,144
27	6,038,145	1,147,146		3,805,230	10,990,521	13,188,626	268,182,770
28	1,481,054	1,147,146		3,805,230	6,433,431	7,720,117	275,902,886
29	1,594,982	1,147,146		3,805,230	6,547,358	7,856,829	283,759,716
30	1,481,054	1,147,146	250,000	3,805,230	6,683,431	8,020,117	291,779,832
31	1,481,054	1,147,146		3,805,230	6,433,431	7,720,117	299,499,949
32	1,367,127	1,147,146		3,805,230	6,319,503	7,583,404	307,083,353
33	2,278,545	1,147,146		3,805,230	7,230,921	8,677,106	315,760,459
34	2,392,473	1,147,146		3,805,230	7,344,849	8,813,818	324,574,277
35	4,784,945	1,147,146	250,000	3,805,230	9,987,321	11,984,786	336,559,063
36	2,620,327	1,147,146		3,805,230	7,572,703	9,087,244	345,646,307
37	2,506,400	1,147,146		3,805,230	7,458,776	8,950,531	354,596,838
38	1,139,273	1,147,146		3,805,230	6,091,649	7,309,979	361,906,816
39	1,139,273	1,147,146		3,805,230	6,091,649	7,309,979	369,216,795
40	1,139,273	1,147,146	250,000	3,805,230	6,341,649	7,609,979	376,826,773
Total	Life cycle 113,927,267	Maintenance 45,885,841	2,000,000	Operations 152,209,202	Total 314,022,311	VAT 62,804,462	Total inc VAT 376,826,773

BUDGET LIFE CYCLE COST CASHLOW FORECAST OPTION 3a

Year	Lifecycle	Costs		Operation	Total	Total inc VAT	Cumulative Value
	Annual	Annual	Intermittent	Cleaning/Catering /Admin etc.		20.00%	
1	5,361,192	1,871,770		4,959,960	12,192,922	14,631,506	14,631,506
2	5,594,287	1,871,770		4,959,960	12,426,017	14,911,220	29,542,726
3	543,889	1,871,770		4,959,960	7,375,619	8,850,742	38,393,469
4	3,574,128	1,871,770		4,959,960	10,405,858	12,487,029	50,880,498
5	4,506,509	1,871,770	250,000	4,959,960	11,588,239	13,905,887	64,786,384
6	4,506,509	1,871,770		4,959,960	11,338,239	13,605,887	78,392,271
7	5,128,097	1,871,770		4,959,960	11,959,826	14,351,792	92,744,062
8	1,243,175	1,871,770		4,959,960	8,074,905	9,689,885	102,433,948
9	2,952,541	1,871,770		4,959,960	9,784,270	11,741,124	114,175,072
10	5,438,891	1,871,770	250,000	4,959,960	12,520,620	15,024,744	129,199,816
11	5,594,287	1,871,770		4,959,960	12,426,017	14,911,220	144,111,036
12	4,506,509	1,871,770		4,959,960	11,338,239	13,605,887	157,716,923
13	2,797,144	1,871,770		4,959,960	9,628,873	11,554,648	169,271,571
14	2,797,144	1,871,770		4,959,960	9,628,873	11,554,648	180,826,219
15	4,195,716	1,871,770	250,000	4,959,960	11,277,445	13,532,934	194,359,153
16	3,263,334	1,871,770		4,959,960	10,095,064	12,114,077	206,473,229
17	3,574,128	1,871,770		4,959,960	10,405,858	12,487,029	218,960,258
18	4,661,906	1,871,770		4,959,960	11,493,636	13,792,363	232,752,621
19	4,661,906	1,871,770		4,959,960	11,493,636	13,792,363	246,544,984
20	7,769,844	1,871,770	250,000	4,959,960	14,851,573	17,821,888	264,366,872
21	5,594,287	1,871,770		4,959,960	12,426,017	14,911,220	279,278,092
22	5,594,287	1,871,770		4,959,960	12,426,017	14,911,220	294,189,312
23	4,661,906	1,871,770		4,959,960	11,493,636	13,792,363	307,981,675
24	1,553,969	1,871,770		4,959,960	8,385,698	10,062,838	318,044,513
25	6,215,875	1,871,770	250,000	4,959,960	13,297,604	15,957,125	334,001,638
26	6,215,875	1,871,770		4,959,960	13,047,604	15,657,125	349,658,764
27	8,236,034	1,871,770		4,959,960	15,067,764	18,081,316	367,740,080
28	2,020,159	1,871,770		4,959,960	8,851,889	10,622,267	378,362,347
29	2,175,556	1,871,770		4,959,960	9,007,286	10,808,743	389,171,090
30	2,020,159	1,871,770	250,000	4,959,960	9,101,889	10,922,267	400,093,356
31	2,020,159	1,871,770		4,959,960	8,851,889	10,622,267	410,715,623
32	1,864,762	1,871,770		4,959,960	8,696,492	10,435,790	421,151,413
33	3,107,937	1,871,770		4,959,960	9,939,667	11,927,600	433,079,014
34	3,263,334	1,871,770		4,959,960	10,095,064	12,114,077	445,193,090
35	6,526,669	1,871,770	250,000	4,959,960	13,608,398	16,330,078	461,523,168
36	3,574,128	1,871,770		4,959,960	10,405,858	12,487,029	474,010,197
37	3,418,731	1,871,770		4,959,960	10,250,461	12,300,553	486,310,750
38	1,553,969	1,871,770		4,959,960	8,385,698	10,062,838	496,373,588
39	1,553,969	1,871,770		4,959,960	8,385,698	10,062,838	506,436,426
40	1,553,969	1,871,770	250,000	4,959,960	8,635,698	10,362,838	516,799,264
Total	Life cycle 155,396,872	Maintenance 74,870,800 2,000,000		Operations 198,398,381	Total 430,666,053	VAT 86,133,211	Total inc VAT 516,799,264