

Stage 1 Costing Report

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Documents included as appendices to the Stage 1 Report (WHHT-BDP-XXX-XX-RP-A-00003) were produced as part of the design development during the period from January 2021 to January 2022. Throughout this period the Client and Design Team refined the design brief to reflect the development of the clinical model and design strategy, alongside emerging national guidance from the New Hospital Programme. The Design Team consider that information included in these appendices is still relevant and supplements the content of the main report. These documents should be treated as part of the “work in progress” at the time they were produced and include historical data / figures that have not been updated following publication. Where updates were required, these were made in the main Stage 1 Report.

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WEST HERTFORDSHIRE HOSPITALS REDEVELOPMENT PROJECT

RIBA Stage 1 Cost Report

Rev 04

JANUARY 2022



VERSION CONTROL

Version	Date	Author	Checker	Approver	Changes
1	10/1/22	M Stokes	R Howell	R Howell	-
2	12/1/22	M Stokes	R Howell	R Howell	NZC details added to Section 2
3	26/1/22	M Stokes	R Howell	R Howell	Omission of WGH BAU and Digital Cost Updates
4	27/1/22	M Stokes	R Howell	R Howell	Adjusted option naming

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Appendix B – Hemel Hempstead Hospital OB Forms
Appendix C – St Albans City Hospital OB Forms

1 Introduction

The purpose of this RIBA Stage 1 Cost Report is to provide West Hertfordshire Hospitals NHS Trust with a cost estimate for the proposed redevelopment programme to facilitate the approval for progression to RIBA Stage 2.

West Hertfordshire Hospitals NHS Trust runs three National Health Services Hospitals and the redevelopment programme considers the three sites at:

- Watford General Hospital
- Hemel Hempstead Hospital
- St Albans' City Hospital

The redevelopment programme works consider a number of options at each of the sites and the costs are summarised below. Further details can be found within the Appendix A, B and C:

CAPITAL COSTS: WGH Summary Only

		Revised Stage 1 Option 2 report costs - updated 15 November 2021	Revised Stage 1 Option 3 report costs - updated 15 November 2021	Revised Stage 1 Option 4A-D report costs - updated 10 November 2021	WGH Option 5 - Revised Stage 1 costs - SOA v6 + As drawn uplift as BDP Areas (Dated 15 December 2021)	WGH Option 5 - Revised Stage 1 costs - SOA v6 + As drawn uplift as BDP Areas (Dated 7 December 2021)	
WATFORD Summary (Excluding Demolition Costs to Land for Sale)		Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Areas (m2)							
	New Build	-	7,855	45,214	66,740	96,795	102,616
	Refurbishment - PMOK	-	3,052	11,630	21,000	-	-
	Refurbishment - AAU	-	-	-	-	-	see item 3.2 below
	Refurbishment - Shrodells	-	-	6,148	6,148	3,297	-
	Total GIA	-	10,907	62,992	93,888	100,092	102,616
Capital Costs							
1.1	Full Out-Turn cost excluding inflation (includes fees, equipment, risk, VAT)	-	249,253,697	459,335,873	675,572,578	741,577,407	742,288,110
1.2	Inflation and VAT on Inflation	-	47,031,209	98,119,110	150,378,339	142,708,581	142,843,683
1	Forecast Business Case Total (including inflation)	£ -	296,284,906	557,454,983	825,950,917	884,285,988	885,131,792
Must Do Additions							
2.1	Energy Centre	Excluded	Excluded	26,785,757	26,785,757	26,785,757	26,785,757
2.2	Plant and communications area pressure for risers and tall buildings	Excluded	Excluded	See as-drawn uplift costs	See as-drawn uplift costs	included above	See as-drawn uplift costs
2.3	Enabling Works - demolitions, ACU ward, pathology, etc	Excluded	9,437,076	19,352,188	19,352,188	19,352,188	19,352,188
2.4	Land purchase	Excluded	Excluded	15,000,000	15,000,000	15,000,000	15,000,000
2.5	Demolitions at PMoK (1,121m2)	Excluded	Excluded	-	600,000	not applicable	not applicable
2.6	Option 2 Extension of PMoK (Option 3 Only)	Excluded	Excluded	20,350,587	N/A	N/A	N/A
2.7	Shrodells for Beds in Interim stage	Excluded	Excluded	3,929,472	3,929,472	3,929,472	3,929,472
2.8	Alternative AAU Option 3 (1,633m2)	Excluded	Excluded	-	10,950,812	10,950,812	N/A
2	TOTAL WGH including above	-	305,721,982	642,872,987	902,569,146	960,304,217	950,199,209
Potential Additional Costs							
3.1	Digital strategy - systems and enhancement	Excluded	24,943,583	24,943,583	24,943,583	24,943,583	24,943,583
3.2	Refurbishment of the AAU building to create non-clinical and support / admin	Excluded	Excluded	incl in new build	incl in new build	incl in new build	15,000,000
3.3	Modern Methods of Construction impact - based on modular wards above hot block	Excluded	Excluded	See as-drawn uplift costs	See as-drawn uplift costs	See as-drawn uplift costs	See as-drawn uplift costs
3.4	Net Zero Carbon impact - based on ASHP and GSHP energy solution	Excluded	Excluded	53,673,595	70,460,998	70,460,998	70,460,998
3.5	Multi Storey Car Park	TBC	TBC	TBC	TBC	TBC	TBC
3	TOTAL WGH including above	-	330,665,565	721,490,165	997,973,727	1,055,708,798	1,060,603,790
Additional Inflation Cost							
4.1	Inflation Impact due to 3Q2024 SoS	Excluded	14,879,950	32,467,057	44,908,818	47,506,896	47,727,171
4	TOTAL WGH including above	-	345,545,515	753,957,222	1,042,882,545	1,103,215,694	1,108,330,961

CAPITAL COSTS: HHH Summary Only

Hemel Hempstead Hospital Summary (Excluding Demolition Costs to Land for Sale)	
	Areas (m2)
	New Build
	Refurbishment
	Total GIA
	Capital Costs
1.1	Full Out-Turn cost excluding inflation (includes fees, equipment, risk, VAT)
1.2	Inflation and VAT on Inflation
1	Forecast Business Case Total (including inflation) £
Must Do Additions	
2.1	Land receipt
2	TOTAL HHH including above
Potential Additional Costs	
3.1	Critical infrastructure
3.2	Backlog Maintenance
3.3	Digital strategy A - systems and enhancement
3.4	Digital strategy B - IM&T Hub (604m2)
3.5	Net Zero Carbon impact - based on ASHP and GSHP energy solution
3	TOTAL HHH including above

Revised Stage 1 Option Report Costs - updated 26 January 2022				
	Option 1 -	Option 2	Option 3	Option 4
	-	-	385	345
	-	2,872	6,424	10,557
	-	2,872	6,809	10,902
	-	65,098,820	44,465,089	64,393,438
	-	12,534,294	8,893,564	14,333,057
	-	77,633,114	53,358,654	78,726,495
	excluded	excluded	10,000,000	10,000,000
	-	77,633,114	43,358,654	68,726,495
	Excluded	Included	Included	Included
	Included in lifecycle	Included	Included in lifecycle	Included in lifecycle
	not delivered	1,696,847	1,696,847	1,696,847
	Excluded	Excluded	4,800,000	4,800,000
	Excluded	Excluded	1,118,069	15,338,967
	-	79,329,961	50,973,570	90,562,309

CAPITAL COSTS: SACH Summary Only

St Alban's City Hospital Summary (Excluding Demolition Costs to Land for Sale)	
	Areas (m2)
	New Build
	Refurbishment
	Total GIA
	Capital Costs
1.1	Full Out-Turn cost excluding inflation (includes fees, equipment, risk, VAT)
1.2	Inflation and VAT on Inflation
1	Forecast Business Case Total (including inflation) £
Must Do Additions	
2.1	Land receipt
2	TOTAL SACH including above
Potential Additional Costs	
3.1	Critical Infrastructure
3.2	Backlog Maintenance
3.3	Digital strategy A - systems and enhancement
3.4	Net Zero Carbon impact - based on ASHP and GSHP energy solution
3	TOTAL SACH including above

Revised Stage 1 Option Report Costs - updated 26 January 2022				
	Option 1	Option 2	Option 3	Option 4
	400	1,080	4,028	4,478
	310	895	2,186	2,871
	710	1,975	6,214	7,349
	6,782,946	68,422,302	69,414,823	80,090,630
	1,254,640	12,657,144	14,403,680	15,415,043
	8,037,586	81,079,446	83,818,503	95,505,673
	excluded	excluded	excluded	excluded
	8,037,586	81,079,446	83,818,503	95,505,673
	Excluded	Included	Included	Included
	Included in lifecycle	Included	Included in lifecycle	Included in lifecycle
	Excluded	1,548,570	1,548,570	1,548,570
	Excluded	Excluded	8,172,304	28,167,884
	8,037,586	82,628,016	93,539,376	125,222,126

The above costs should be read in conjunction with the remainder of this report and not read in isolation.

Further estimates will be necessary as the design is developed in greater detail.

This report has been produced using the relevant pricing information and information from the Trust and design team. Inflation has been applied to the mid-point of the construction programme. However, it is noted that given the current volatility within the construction market due to workload fluctuations, Brexit and Covid-19, the project budget will require close monitoring to ensure it continues to reflect both scheme requirements and market conditions.

2 Pricing Basis

At this stage of the project, there is limited design information currently available, and Arcadis have built up the costs from benchmark information and through discussions with the Trust and Design Team to identify items for incorporation within each of the options. As further design information becomes available, further estimates will be required to refine and develop the allowances currently incorporated.

We have identified the departmental areas for each of the options from the information provided within the Schedule of Accommodations and / or from the information interpreted by Building Design Partnership (BDP).

We have then utilised the published Healthcare Premises Cost Guides and applied those rates to each of the departmental areas, which is a requirement of NHSE/I as part of their Business Case Checklist. These rates have then been adjusted to base date reporting levels (PUBSEC 250) and a location factor (1.10) has also been applied, which are taken from the published BCIS indexes.

Where there is refurbishment works, we have adjusted those rates which are based on discussions with the design team. The levels of refurbishment are heavy, medium and light and the HPCG rates applied have been adjusted accordingly, pending further design information. The percentage reductions applied are heavy (30%), medium (40%) and light (70%) which is based on previous benchmark refurbishment schemes. This has informed the costs for the SOC2 Forms.

Specific project variables have been considered and identified through various means including applying the applicable HPCG rates to the various departmental areas. Other project variables have been included within the on-costs (Plant and Circulation Space, External Works, Engineering, Auxiliary Buildings, Abnormals such as ground improvement etc) have been considered and allowances included pending further design development. At this early stage of design, these are predominantly lump sum cost allowances to reflect the team's understanding of project external works and abnormals which included level issues, demolitions/asbestos removal, transition works, etc.

In addition, the optimism bias has been reviewed. Inflation forecasts have also been calculated from the programmes provided and forecasted using Published Indices to the mid-point.

Through the optioneering, this has identified a number of enabling works that are required to be undertaken in advance of the proposed works and the Trust have appointed a design team to progress those works. For example, a multi storey car park is required and is currently being constructed.

A project fee percentage has initially been consistently applied, however as further information becomes available such as fee quotations for design stages and the procurement approaches across the 3 sites are established, we will refine those allowances to reflect the scale of the works to the respective sites.

A percentage-based allowance has been included for non-works costs pending further details, which is based on similar schemes delivered elsewhere. This is based on percentage of the construction (works) cost at this stage and is to cover Trust costs such as removals/decanting into the new building, artwork, specialist commissioning and cleaning, Trust risk assessments on completion such as water and fire risk assessments.

A high-level equipment allowance only has been included at 30% of the departmental costs on Watford General Hospital. This covers all theatre and lab equipment. A 33% reduction to this figure has then been applied for re-used equipment on WGH. This re-use assumption was agreed with the Estates team for SOC and agreed to be carried through to the current interim OBC costings.

As part of the development, an equipment specialist has now been appointed and the Trust and the design team are currently holding meetings to discuss the equipment requirements on WGH, and a Bill of Quantities for the Equipment is evolving. This schedule will be costed by the equipment team, including the agreed re-use abatements and will be co-ordinated with the digital requirements.

On the Planned Care Sites, allowances have been included for equipment which is based on recent discussions. These allowances will need testing during the next stage.

An initial 5% allowance has been included for planning contingency. Regular risk reviews are being undertaken and the planning contingency allowance will be replaced with a costed risk register value during the next stage.

A review of the optimism bias was initially carried out at SOC stage and regular reviews of this have since been carried out and were previously reviewed with the Trust. As the design develops, it is anticipated that the level of optimism bias will reduce as there becomes more certainty over the scope, the risk register development and the cost allocations.

As briefly mentioned earlier, we have initially incorporated the HPCG departmental rates, and adjusted for location and to PUBSEC 250 for reporting purposes. Inflation has then been forecasted from this point to the mid-point using PUBSEC as far as the TPI currently extends to and then an assessment of annual TPI rise thereafter based on an average of annual rises from various available sources such as the BCIS, our own internal market indices and those provided by other cost consultants.

The programme indicates that we are due to commence the RIBA Stage 2 cost plan shortly and we will be moving away from departmental £/m² and as the drawings become available, we will start developing an elemental cost plan. This will be used to form the final OBC costs for the preferred options.

Arcadis has developed capital cost estimates for each of the shortlisted options. This process has been carried out in close coordination with the Design Team and WHHT. To improve understanding of key differences between each option, the capital costs have been presented with budget allowances for the 'must do' and 'potential additions' listed separately, and the allowances included are based on limited information pending further design development. These include the following elements:

- Must Do Additions
 - Energy Centre
 - Enabling works
 - Land purchase
 - PMoK demolition
 - Option-specific items regarding existing buildings; AAU, Shrodells, PMoK

- Potential Additions
 - Digital Strategy
 - Refurbishment of AA building for non-clinical space (cost incorporated advised by the Trust)
 - Net Zero carbon

The project originally anticipated a start on site date of third quarter 2023 (with exception of Option 2, which would start earlier). Due to delays during the OBC process, the anticipated start on site has now slipped to third quarter 2024. The additional inflation impact of this delay is also shown as a separate cost on Watford General Hospital.

The digital allowance has been identified by the Trust and we were previously advised to include option Two 1 / 2 A (abstracted from the within the latest financial case which equated to £28,189,000) and to split this across the 3 sites, which where applicable, have been attributed on the following basis.

Ref.	Description	Cost (£)
WGH	Digital – (systems and enhancement)	£24,943,583
SACH	Digital – (systems and enhancement)	£1,548,570
HHH	Digital – (systems and enhancement)	£1,696,847
Total	Digital – (systems and enhancement)	£28,189,000

Cash flow Forecasts have been provided separately for each of the options and initial life cycle costs have been compiled and issued however at the time of compiling this report, further information is required from the Trust etc. to progress the life cycle costs further.

At this stage of the redevelopment project, there is limited details on the net zero carbon requirements however BDP have provided some indicative information on the potential implications for the new build net zero carbon target at Watford General Hospital and based on this information, we have included allowances for items such as building fabric measures, HVAC systems, resilience, water consumption, lighting, heat source, green space, renewable energy and additional design implications (specialist façade / designers / supervision etc.) pending further details.

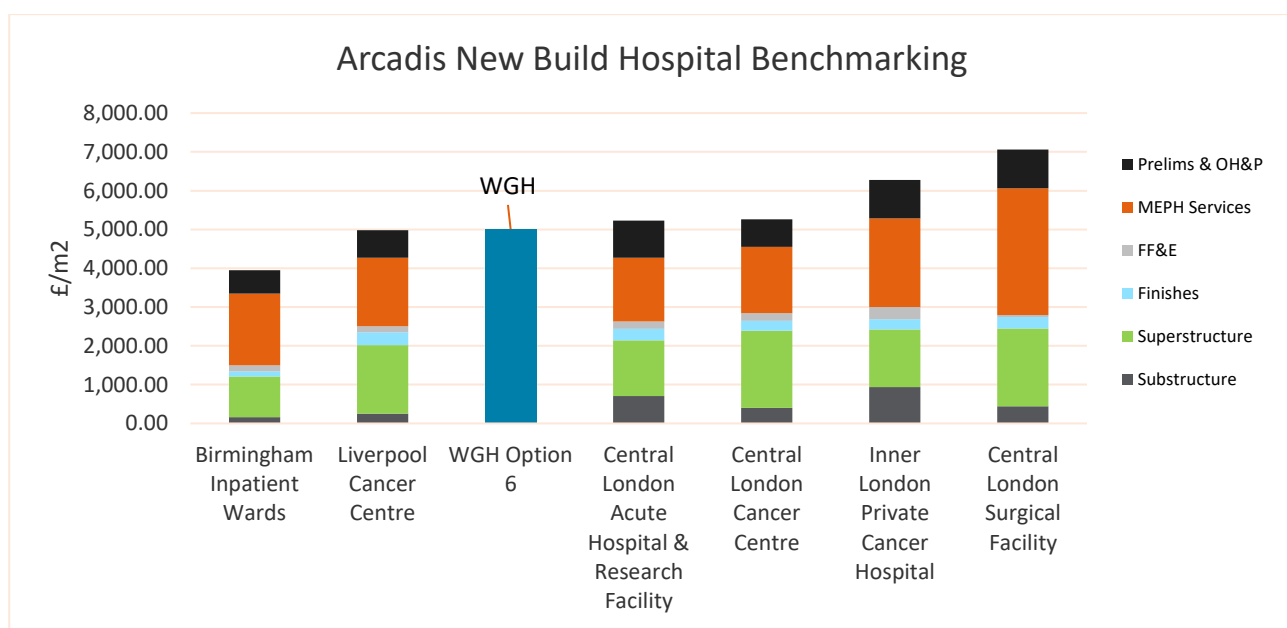
Details of the implications at the planned care sites are required however an initial allowance has been included for the new build elements only of the redevelopment for Options 3 at both HHH and SACH, which is based on benchmark information. Option 4 at HHH and SACH, includes allowances for NZC on the new build elements and we have also included allowances for the replacement of the existing heating infrastructure to Air Source Heat Pumps etc. which will assist the Trust on the journey to achieving NZC. The Trust will need to allow for further NZC investment on the existing estate in future years and allowances have been included within the life cycle costs.

3 Benchmarking

Arcadis has undertaken a benchmarking analysis and compared against the recent Watford General Hospital (Option 6). We have focused on the new build £/m2 as it would be difficult to compare a combined new build / refurbishment project due to the level of refurbishment, intervention, existing building condition, etc.

A review of the data available has been undertaken and adjustments have been incorporated such as adjusting the location factor, rebasing the indices, removing external works and demolition costs, etc. to compare on a like for like basis.

The benchmarking provides an indication of the anticipated construction costs which incorporate an element of anticipated project fees and risks to compare on a like for like basis and the result are summarised in the table below.



The graph above shows a benchmark range between £3,952/m2 and £7,058/m2 for the comparable projects. When evaluated against the comparable schemes, the Watford General Hospital (Option 6) scheme benchmarks in the middle of the benchmark range which indicates that the current capital cost estimate is appropriate.

Every scheme will vary as the requirements all differ and although benchmarking is a useful guide, the results do need to be interpreted with a reasonable degree of caution. Projects may differ in size, shape, location, tender conditions, there may be abnormalities (on-costs) associated with the project etc. and unless those project details are fully understood then it is difficult to assess on a like for like basis.

4 Assumption and Exclusions

Key Assumptions

Watford General Hospital

Option 1

Business As Usual has no capital - It is assumed that all backlog maintenance etc. would be addressed through the life cycle costs.

Demolition costs associated with the wider estate are excluded.

Option 2

BDP have recently advised that a new build area of 7,855m² is required, of which circa 1,500m² is for Diagnostics with the remaining as inpatient accommodation. There is also a requirement for heavy refurbishment to 3,052m² of emergency department.

We have included all levels of backlog maintenance costs (high, significant, moderate, and low) within the do minimum option, which is based on the Nifes report that has been provided by the Trust. We have also included preliminaries, overheads & profit, and risk etc. to the published costs from the surveys which are net of all project costs.

At this stage, several other project variables have been included within the on-costs (External Works, Engineering, Auxiliary Buildings, Abnormals such as backlog maintenance, ground conditions, asbestos removal, level issues, phasing etc.) have been considered and allowances included pending design development. At this early stage of design, these are predominantly lump sum cost allowances to reflect the team's understanding of project.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation pending further details.

The costs exclude land purchase, energy centre, most of the enabling work's previously identified for other options except for the pathology/mortuary temporary accommodation. Digital and net zero carbon are also excluded. Refer to the OB Forms for further details.

Demolition costs associated with the wider estate is excluded.

Option 3 – BDP have advised that option 3 provides approximately 45,214m² of new build and approximately 11,630m² of low, medium, and heavy refurbishment to departmental areas only of PMoK. In addition, there is low refurbishment for administration space to Shrodell's.

Several allowances have been included for on-costs (External Works, Engineering, Auxiliary Buildings, Abnormals such as ground conditions, asbestos removal, level issues, phasing, bridge links etc.) pending further design development.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for an energy centre, enabling works, land purchase, digital, and an allowance for net zero carbon to the new build element have been included pending further details.

The level of intervention to PMoK is limited to the departmental areas identified by BDP, and excludes works to the structural frame, façade, roof and works outside of the departmental areas etc. Refer to the OB Forms for further details.

Demolition costs associated with the wider estate is excluded, except for Pathology, Nequas and Cytology. The life cycle costs address backlog maintenance, replacement of buildings etc.

Option 4 – Option 4 provides approximately 66,740m² of new build and approximately 21,000m² of heavy refurbishment to PMoK. In addition, there is low refurbishment for administration space to Shrodell's.

At this stage, several other project variables have been included within the on-costs (External Works, Engineering, Auxiliary Buildings, Abnormals. WHHT and the design team have considered a higher intervention to PMoK on option 4 and allowances have been included for replacement of windows, local repairs to roof coverings, additional plant areas, additional ducts/risers, lifts replaced / upgraded pending further details. Other Abnormals such as ground conditions, asbestos removal, level issues, phasing etc. have been considered pending design development. At this early stage of design, these are predominantly cost allowances to reflect the team's understanding of project.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for an energy centre, enabling works, land purchase, digital, and an allowance for net zero carbon has been included pending further details. Refer to the OB Forms for further details.

Demolition costs associated with the wider estate is excluded, except for Pathology, Nequas and Cytology.

The life cycle costs address backlog maintenance, replacement of buildings to the wider estate etc.

Option 5 – BDP have advised that option 5 provides approximately 96,795m² of new build accommodation and approximately 3,297m² of refurbishment for administration space to Shrodell's.

Several allowances have been included for on-costs (External Works, Engineering, Auxiliary Buildings, Abnormals such as ground conditions, level issues, phasing, bridge links, sprinklers etc.) pending further design development. A further allowance has been included in the Option 5 abnormals for infrastructure to shrodells pending further details.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for an energy centre, enabling works, land purchase, digital, and an allowance for net zero carbon have been included pending further details.

Demolition costs associated with the wider estate is excluded, except for Pathology, Nequas and Cytology.

The life cycle costs address backlog maintenance, replacement of buildings to the wider estate etc.

Option 6 – BDP have advised that option 6 provides approximately 102,616m² of new build accommodation.

Several allowances have been included for on-costs (External Works, Engineering, Auxiliary Buildings, Abnormals such as ground conditions, level issues, phasing, bridge links, sprinklers etc.) pending further design development.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for an energy centre, enabling works, land purchase, digital, and an allowance for net zero carbon have been included pending further details.

Demolition costs associated with the wider estate is excluded, except for Pathology, Nequas and Cytology.

The life cycle costs address backlog maintenance, replacement of buildings to the wider estate etc.

Hemel Hempstead Hospital

Option 1

Business As Usual has no capital.

It is assumed that all backlog maintenance etc. would be addressed through the life cycle costs.

Demolition costs associated with the wider estate are excluded.

It assumed that all equipment (diagnostic etc.) is funded from Trust capital on BAU.

Option 2

BDP have advised that approximately 2,782m² of heavy refurbishment is required to provide imaging, diabetes, dexta scanner, and the endoscopy departments.

We have included all levels of backlog maintenance costs (high, significant, moderate, and low) within the do minimum option, which is based on the information provided by the Trust. We have also included preliminaries, overheads & profit, and risk etc. to the published costs from the surveys which are net of all project costs.

At this stage, several other project variables have been included within the on-costs (Engineering, Auxiliary Buildings, Abnormals such as backlog maintenance and associated temporary works, asbestos removal, phasing, partial demolition of link bridge, new UTC entrance and canopy structure etc.) have been considered and allowances included pending design development. At this early stage of design, these are predominantly cost allowances to reflect the team's understanding of the project.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation pending further details

The costs exclude net zero carbon, land receipt and the IM&T hub however an allowance is included for Digital (systems and enhancement) pending further details. Refer to the OB Forms for further details.

Demolition costs associated with the wider estate is excluded.

Option 3

BDP have advised that option 3 provides approximately 385m² for a new build imaging area (including plant and communication space) and approximately 6,424m² of low, medium, and heavy refurbishment to departmental areas of part of the Verulam Building.

Several allowances have been included for on-costs (Communication space, External Works, Engineering, Auxiliary Buildings, Abnormals such as asbestos removal, temporary works, ground conditions, additional structure to Imaging, phasing, partial demolition of link bridge, new UTC entrance and canopy structure etc.) pending further design development.

The Trust also advised Arcadis to include the Window replacement to the Verulam building, which has been abstracted from the backlog maintenance information.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for Land Receipt (cost advised by the Trust), Digital (systems and enhancement and IM&T Hub) have been incorporated. An allowance for net zero carbon to the new build element has been incorporated pending further details.

Demolition costs associated with the wider estate is excluded

The life cycle costs address backlog maintenance, replacement of buildings etc.

Option 4

BDP have advised that option 4 provides approximately 345m² for a new build imaging area (including plant and communication space) and approximately 10,557m² of low, medium, and heavy (predominantly) refurbishment to departmental areas of parts of the Verulam Building.

Several allowances have been included for on-costs (Communication space, External Works, Engineering, Auxiliary Buildings, Abnormals such as asbestos removal, temporary works, ground conditions, additional structure to Imaging, phasing, partial demolition of link bridge, new UTC entrance and canopy structure etc.) pending further design development.

The Trust also advised Arcadis to include the Window replacement to the Verulam building, which has been abstracted from the backlog maintenance information.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for Land Receipt (cost advised by the Trust), Digital (systems and enhancement and IM&T Hub) have been incorporated. An allowance for net zero carbon to the new build element has been incorporated pending further details.

An initial budget allowance for net zero carbon is included within Option 4 to include upgrades to plant and MEP that is required to improve buildings towards the aspirations of achieving Net Zero Carbon however the wider estate will require further investment in future years.

Demolition costs associated with the wider estate is excluded.

The life cycle costs address backlog maintenance, replacement of buildings, additional investment for NZC etc.

St Alban's City Hospital

Option 1

BDP have advised that approximately 400m² of new build theatres space is required (200m² clinical and 200m² plant) together with 235m² of heavy refurbishment to rapid diagnostics and 75m² medium refurbishment to create a link corridor.

At this stage, several other project variables have been included within the on-costs (Engineering, Auxiliary Buildings, Abnormals such as forming connections into existing buildings, ground conditions, asbestos removal, phasing, etc.) have been considered and allowances included pending design development. At this early stage of design, these are predominantly cost allowances to reflect the team's understanding of project. Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation pending further details.

The costs exclude net zero carbon, land receipt, critical infrastructure, and digital pending further details. Refer to the OB Forms for further details.

Demolition costs associated with the wider estate is excluded.

The life cycle costs address backlog maintenance, replacement of buildings etc.

Option 2

BDP have advised that approximately 1,080m² of new build and 895m² of medium / heavy refurbishment is required.

We have included all levels of backlog maintenance costs (high, significant, moderate, and low) within the do minimum option, which is based on the information provided by the Trust. We have also included preliminaries, overheads & profit, and risk etc. to the published costs from the surveys which are net of all project costs.

At this stage, several other project variables have been included within the on-costs (Engineering, Auxiliary Buildings, Abnormals such as backlog maintenance and associated temporary works, ground conditions, asbestos removal, demolition of existing theatre, phasing etc.) have been considered and allowances included pending design development. At this early stage of design, these are predominantly cost allowances to reflect the team's understanding of the project.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation pending further details.

The costs exclude net zero carbon, land receipt however an allowance is included for Digital (systems and enhancement) pending further details. Refer to the OB Forms for further details.

Demolition costs associated with the wider estate is excluded.

Option 3

BDP have advised that option 3 allows for approximately 4,028m² of new build which includes theatres, endoscopy, and rapid diagnostics areas and approximately 2,186m² of medium and heavy refurbishment to departmental areas of parts of the existing estate.

Several allowances have been included for on-costs (External Works, Engineering, Auxiliary Buildings, Abnormals such as asbestos removal, ground conditions, link bridge, demolition of existing theatre, relocation of relevant existing external plant, level issues, phasing etc.) pending further design development. At this early stage of design, these are predominantly cost allowances to reflect the team's understanding of the project.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for Digital (systems and enhancement) have been incorporated. An allowance for net zero carbon to the new build element has been incorporated pending further details.

Demolition costs associated with the wider estate is excluded

The life cycle costs address backlog maintenance, replacement of buildings etc.

Option 4

BDP have advised that option 4 allows for approximately 4,478m² of new build which includes theatres, endoscopy, and rapid diagnostics areas and approximately 2,471m² of medium and heavy refurbishment to departmental areas of parts of the existing estate.

Several allowances have been included for on-costs (External Works, Engineering, Auxiliary Buildings, Abnormals such as asbestos removal, ground conditions, connections into existing buildings, demolition of existing theatre, level issues, phasing, temporary link corridor and doors, improvements to front of house, staff wellbeing improvements etc.) pending further design development. At this early stage of design, these are predominantly cost allowances to reflect the team's understanding of the project.

Allowances have been included for project fees, non-works costs, equipment, planning contingency, optimism bias, VAT and inflation have been included. Further allowances for Digital (systems and enhancement) have been incorporated. An allowance for net zero carbon to the new build element has been incorporated pending further details.

Demolition costs associated with the wider estate is excluded

The life cycle costs address backlog maintenance, replacement of buildings etc.

General Assumptions / Exclusions

Specific Exclusions and General Assumptions

The above provides a summary of the key assumptions / exclusions however there are further assumptions / exclusions items and some of those are listed below.

Specific Exclusions

- Site acquisition fees/costs, air rights, rights of light (or any third-party compensations)
- Capital allowances or other incentives/grants
- Client finance costs and insurances
- Archaeological survey or excavation costs
- UXO Surveys and monitoring cost; assumed not to be a red or amber site
- Central Steam Plant – it is assumed that the new build options will move away from this technology to function as a boiler installation etc.
- Legal fees allowance excludes compliance with any law governing public procurement i.e., OJEU as it is assumed an OJEU compliant framework such as P22 to be used
- Significant legal fees
- Abnormal ground conditions above general allowance made in the 'on-costs'
- Ground contamination, asbestos, abnormal debris, and remedial works above the general allowance made on the 'on-costs'
- Anti-vibration measures
- Fire rating or bomb blast specification
- Out of hours working
- Ecological impact mitigation
- Changes in statutory law and regulations
- Removal of Japanese knotweed
- Building services enhancements such as water management, mood lighting installations, feature lighting, acoustics sensors, CCTV/security beyond HTM compliance
- Ongoing life cycle and FM costs
- Drainage attenuation measures over and above drainage allowance included, drainage pumping stations and petrol interceptors are excluded
- Temporary accommodation, unless otherwise advised within the on-costs / enabling works
- Sprinkler installations to existing buildings
- Net Zero Carbon to existing buildings
- Net Zero Carbon off setting costs
- Demolitions of the wider site is excluded, as advise by the Trust

General Assumptions

- HPCG cost rates have been utilised to ascertain the departmental costs. Please refer to the departmental cost summary for details of assumed HPCG categories and inflationary adjustments to reflect current pricing
- Information supplied by the Trusts Strategic Estates team / Design team has been used as the basis for current site areas and level of refurbishment required
- Costs are based on current day rates (4Q18 – pubsec reporting level - 250) with a further allowance for inflation, based on the current programmes. Regular monitoring of inflation forecasts will be required as the forecasts fluctuate
- It is assumed the new buildings on the existing sites will follow the existing site level and contours where possible
- It is assumed the Trust will continue to address backlog maintenance until works on site are complete.
- Prelims and contractor OHP are included in the HPCG rates at 15% and 5% respectively. The same %'s have been applied to the net on-costs.
- No allowance for backlog maintenance on the existing hospitals is included in the capital costs for the period up to opening the new facility
- A high-level equipment allowance only has been included at 30% of the departmental costs on WGH. This covers all theatre and lab equipment. A 33% reduction to this figure for re-used equipment has been assumed. This reflects services provided essentially similar to existing. This assumes investment will continue to maintain the standard of equipment until works on site are complete.
- On the Planned Care Sites, allowances have been included for equipment which is based on recent discussions. These allowances will need testing during the next stage. This assumes investment will continue to maintain the standard of equipment until works on site are complete.
- VAT has been applied to all costs other than professional fees which are assumed to be exempt.
- No recovery of VAT applied to construction works has been included. This ignores any possible recovery through the P22 framework on elements such as PSCP P22 fee.
- An allowance is included for upgrading surrounding main roads and site access junctions and providing enhanced local road network to support the hospital on WGH options 3-6 only.
- On WGH Option 3, we were advised by BDP to include an allowance for a digital hub and ambulance canopy however no details were available at the time of compiling the report, and budget allowances have been incorporated pending further details
- It is assumed that no new motorway junction with the M1 will be provided as part of this project.

Appendix A

Watford General Hospital OB Forms

Appendix B

Hemel Hempstead Hospital OB Forms

Appendix C

St Alban's City Hospital OB Forms

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