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<b>Meeting Date</b>	<b>28 July 2022</b>	<b>Agenda Item</b>	<b>3.2</b>
<b>Report Title</b>	<b>Morrison Infrastructure Phase 2 Stage 2 Sub Station 6</b>		
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<b>Presented by</b>	Darren Griffiths, Director of Finance and Performance		
<b>Freedom of Information</b>	Open		
<b>Purpose of the Report</b>	<p>This report updates the Health Board on a planned capital investment at Morrison Hospital, which will address electrical infrastructure capacity risks and compliance issues and also provide compliant ventilation infrastructure in the Hospital's Sterilisation and Decontamination (HSDU) Department.</p> <p>On the 13<sup>th</sup> July 2022, the Management Board considered the report and recommended the report to be submitted to Board for approval of the Business Justification Case (BJC).</p> <p>The Health Board is asked to approve the BJC for submission to Welsh Government (WG).</p>		
<b>Key Issues</b>	<p>This report:</p> <ul style="list-style-type: none"> <li>• Sets out the work which has been carried out to plan for development of a new electrical substation at Morrison Hospital;</li> <li>• Notes that the Programme Business Case which outlined an overall investment of approx. £60m was approved by Welsh Government on the 22<sup>nd</sup> April 2016; and,</li> <li>• Seeks Health Board endorsement of the BJC Phase 2 Stage 2 for £16.5m capital investment from WG.</li> </ul>		
<b>Specific Action Required</b>	<b>Information</b>	<b>Discussion</b>	<b>Assurance</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input checked="" type="checkbox"/>
<b>Recommendations</b>	<p>Members are asked to:</p> <ul style="list-style-type: none"> <li>• <b>APPROVE</b> the BJC for submission to Welsh Government.</li> </ul>		

## **MORRISTON INFRASTRUCTURE PHASE 2 STAGE 2 SUB STATION 6**

### **1. INTRODUCTION**

This report updates Health Board on a planned capital investment at Morriston Hospital, which will address electrical infrastructure capacity risks and compliance issues and also provide compliant ventilation infrastructure in the Hospital's Sterilisation and Decontamination (HSDU) Dept.

This investment was included in the top ten capital investment priorities within the approved Recovery & Sustainability Plan submitted to Welsh Government in March 2022.

The Board is asked to approve the Business Justification case (BJC) for submission to Welsh Government (WG) at the end of the July 2022 Health Board meeting.

### **2. BACKGROUND**

This case is part of a programme for investment as outlined in Swansea Bay University Health Board's (SBUHB) Programme Business Case (PBC) (previously Strategic Outline Business Case (SOC)), which outlined an overall investment of approx. £60m and was approved by Welsh Government on the 22<sup>nd</sup> April 2016. The PBC identified key programme drivers, addressed the need for high standards of ward environment and compliant supporting infrastructure, and supported national and local strategy and good practice documents, including Designed for Life: Creating World Class Health and Social Care for Wales in the 21<sup>st</sup> Century (WG) and Together for Health (WG).

The need for safe and reliable estate infrastructure remains a top priority area for SBUHB and supporting clinical services is the corner-stone of our strategic plan. Significant failures in essential infrastructure systems and essential plant have highlighted the importance of maintaining safe and efficient service delivery, uninterrupted patient care, system resilience, and infrastructure and electrical capacity to support clinical services.

To date, the Health Board has progressed two major infrastructure investments:

- Environmental Modernisation BJC Stage 1 (BJC1) was approved by Welsh Government on the 5th January 2017. This delivered a number of environmental and estates infrastructure investments valued at £7.768m (incl vat) at Morriston, Singleton and the Prince of Wales Hospitals, prior to Health Board boundary changes. Works were completed in 2017/18.
- Environmental Modernisation BJC Stage 2 (Phase 1) was approved by Welsh Government on the 13<sup>th</sup> December 2018. This delivered environmental and estates infrastructure investments valued at £4.069m (incl vat) at Morriston Hospital. Works included installation of new electrical generator as resilience back-up for substation 4 which supplies acute areas such as critical care. These works were completed in 2019.

This business case, Environmental Modernisation BJC2 Stage 2 (Phase 2), will provide a new Substation 6 that is fully compliant with Welsh Health Technical Health Board – Tuesday, 28<sup>th</sup> July 2022

Memorandum/Health Technical Memorandum (WHTM/HTM) and British Standards. It will reduce the potential for Low Voltage (LV) overloading in Substations 3 & 4, which serve the highest clinical acuity areas of the site. In addition it will provide WHTM/ISO compliant ventilation infrastructure in Morriston's Hospital Sterilisation and Decontamination Unit HSDU. This is currently a significant risk for the Health Board with current ventilation in the area less than 50% the required levels.

### **3. GOVERNANCE AND RISK ISSUES**

Morriston Hospital's existing electrical substations are ranked a significant risk. Our status quo issues are non-compliance, overloading risk to existing generators, and electrical protection issues will not be resolved. Neither Substation 3 or 4 is compliant with current British Standards or WHTM requirements and both are at risk of overloading their LV electrical supply with potentially serious consequences for clinical services, clinical delivery and patient safety - if Substation 3 or 4 were to fail it would disrupt Morriston's theatres and theatres recovery areas and Radiology services. Morriston Hospital's Sterilisation and Decontamination (HSDU) Dept.'s ventilation infrastructure is non-compliant with mandatory requirements and presents a serious clinical risk. The proposed ventilation solution is appropriate for a variety of clinical environments and provides a long term solution for the air handling in the area.

This investment provides additional and fully compliant HV/LV electrical infrastructure for the main nucleus site for the next 2-5 years and provides fully compliant HSDU infrastructure.

The Health Board supports NHS Net Zero Decarbonisation targets. This investment supports sustainability by providing an additional 6 Electrical Vehicle Charging (EVC) points, which support reduced carbon emissions, and; the new substation design solution optimises links with SBUHB's new Solar Farm renewable energy infrastructure.

Commencing the works as soon as possible will be key as there is a risk that an extended work programme on the air handling in HSDU in particular could overlap with the operational commencement of the orthopaedic theatres at Neath Port Talbot Hospital. The interim solution of HSDU being provided exclusively from Singleton Hospital will not be able to contain the level of additional activity required to appropriately service those theatres. Any overlap of this scheme and the operational commencement of orthopaedics would potentially require outsourcing of trays at an additional revenue cost until the Morriston and Singleton HSDU's are running separately, which would provide sufficient capacity to meet this new demand. This risk needs management to mitigate.

### **4. FINANCIAL IMPLICATIONS**

#### **Capital Costs**

The capital costs have been fully tendered and are as follows (incl recoverable VAT above baseline):

	£000s
Works Cost	13,609
Fees	1,560
Non Works Costs	667
Equipment Costs	12
Planning Contingency	792
Anticipated inflationary increases	161
Less Recoverable VAT	-268
<b>Total</b>	<b>16,533</b>

Given the volatility of current market conditions, as affected by the Ukraine war, high and rising energy costs and other supply chain issues, and in line with current experience elsewhere within Wales, we allowed for recovery of 'abnormal' inflation over and above levels of inflation known and anticipated. Should abnormal inflation occur, then Kier will be entitled to a Compensation Event for same. The sum included in our cost forms includes an anticipated allowance which has been informed by our independent Cost Advisor.

### Revenue Costs

The revenue costs above baseline in 2022/23 and 2023/24 and thereafter are as follows:

	£000s
Non-recurring Revenue 2022/23	106
Recurring Revenue from 2023/24	16

The non-recurring revenue cost identified represents the costs of double running HSDU and the recurring costs reflect the additional maintenance costs of the substation which will impact on the estates budgets. Further work will be undertaken prior to the commencement of the works to reduce these costs which will need to be offset by savings in other areas to have a nil impact on the Health Board revenue position.

### 5. PROGRAMME

Building services could start in October 2022 with the replacement HSDU infrastructure programmed for August 2023 completion and the new electrical substation being operational from December 2023, subject to funding approval.

The Contractor would have built in an allowance for 'risk float' on this programme and therefore improvement on these timelines is a possibility. It is acknowledged that this is of particular importance with regards to the HSDU works in order to mitigate the risk outsourcing due to an overlap with the opening of the new orthopaedic theatres at Neath Port Talbot hospital.

### 6. RECOMMENDATION

Members are asked to:

- **APPROVE** the BJC for submission to Welsh Government.

<b>Governance and Assurance</b>		
<b>Link to Enabling Objectives</b> <i>(please choose)</i>	<b>Supporting better health and wellbeing by actively promoting and empowering people to live well in resilient communities</b>	
	Partnerships for Improving Health and Wellbeing	<input type="checkbox"/>
	Co-Production and Health Literacy	<input type="checkbox"/>
	Digitally Enabled Health and Wellbeing	<input type="checkbox"/>
	<b>Deliver better care through excellent health and care services achieving the outcomes that matter most to people</b>	
	Best Value Outcomes and High Quality Care	<input type="checkbox"/>
	Partnerships for Care	<input type="checkbox"/>
	Excellent Staff	<input type="checkbox"/>
	Digitally Enabled Care	<input type="checkbox"/>
	Outstanding Research, Innovation, Education and Learning	<input type="checkbox"/>
<b>Health and Care Standards</b>		
<i>(please choose)</i>	Staying Healthy	<input type="checkbox"/>
	Safe Care	<input checked="" type="checkbox"/>
	Effective Care	<input type="checkbox"/>
	Dignified Care	<input type="checkbox"/>
	Timely Care	<input type="checkbox"/>
	Individual Care	<input type="checkbox"/>
	Staff and Resources	<input type="checkbox"/>
<b>Quality, Safety and Patient Experience</b>		
Without additional HV/LV capacity current clinical services could be placed at risk and planned expansion of services within the nucleus site will not be supported. HSDU's essential ventilation infrastructure is no longer compliant and could compromise patient safety. .		
<b>Financial Implications</b>		
Alternative HSDU provision may need to be provided on or off-site.		
<b>Legal Implications (including equality and diversity assessment)</b>		
Failure to invest will increase patient safety risks.		
<b>Staffing Implications</b>		
Works in HSDU will involve relocation of services and staff support off-site for the duration of works. The service has consulted with staff and union representatives.		
<b>Long Term Implications (including the impact of the Well-being of Future Generations (Wales) Act 2015)</b>		
Provision of additional electrical capacity and safer HSDU infrastructure will ensure the sustainability of clinical services to Morriston Hospital's main nucleus for the next 2-5 years.		
<b>Report History</b>	n/a	
<b>Appendices</b>	Morriston Infrastructure Phase 2 Stage 2 BJC main case and associated appendices (resource folder)	



## **Business Justification Case (BJC)**

# **Morrison Infrastructure Modernisation Phase 2 Stage 2**



## Document control sheet

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# 1 The Strategic Case

## 1.1 Introduction

This Business Justification Case (BJC) seeks support from Welsh Government (WGov) of £16.533m (including recoverable VAT and excl Optimism Bias) for strategic capital investment to address significant electrical infrastructure condition, capacity risks and compliance issues, and to provide compliant ventilation infrastructure in the Hospital Sterilisation and Decontamination (HSDU) Dept. at Swansea Bay University Health Board's (SBUHB's) Morrision Hospital, Swansea.

The risk rating on Morrision Hospital's existing sub stations is ranked a significant risk. Our status quo issues are non-compliance, overloading risk to existing generators, and electrical protection issues will not be resolved. Neither Substation 3 or 4 is compliant with current British Standards or WHTM requirements and both are at risk of overloading their LV electrical supply with potentially serious consequences for clinical services, clinical delivery and patient safety - if Substation 3 or 4 were to fail it would disrupt Morrision's theatres and theatres recovery areas and Radiology services. This investment is therefore a key priority for Health Board plant & systems.

Current ventilation system at Morrision's HSDU is also a high risk as regards non-compliance with ventilation rates - only 50% of required standards and pressure cascade non-compliant. Enhanced environmental air monitoring has been put in place to provide some assurance but this has also been failing recently requiring continual re-testing. This investment will address these issues and provide compliant infrastructure.

## 1.2 Background

This case is part of a programme for investment as outlined in SBUHB's Programme Business Case (PBC) (previously Strategic Outline Business Case (SOC)), which outlined an overall investment of approx. £60m and was approved by Welsh Government on the 22nd April 2016. The PBC identified key programme drivers, addressed the need for high standards of ward environment and compliant supporting infrastructure, and supported national and local strategy and good practice documents, including *Designed for Life: Creating World Class Health and Social Care for Wales in the 21<sup>st</sup> Century* (WG) and *Together for Health* (WG).

The need for safe and reliable estate infrastructure remains a top priority area for SBUHB and supporting clinical services is the corner-stone of our strategic plan. Significant failures in essential infrastructure systems and essential plant have highlighted the importance of maintaining safe and efficient service delivery, uninterrupted patient care, system resilience, and infrastructure and electrical capacity to support clinical services.

In supporting WGov's Decarbonisation Strategy we aim to deliver additional electrical capacity and optimise links with SBUHBs wider renewable energy infrastructure solutions, i.e. the new Solar Farm.

To date, the Health Board has progressed two major infrastructure investments:

- Environmental Modernisation BJC Stage 1 (BJC1) was approved by Welsh Government on the 5th January 2017. This delivered a number of environmental and estates infrastructure investments valued at £7.768m (incl vat) at Morrision, Singleton and the Prince of Wales Hospitals, prior to Health Board boundary changes. Works were completed in 2017/18.
- Environmental Modernisation BJC Stage 2 (Phase 1) was approved by Welsh Government on the 13<sup>th</sup> December 2018. This delivered environmental and estates infrastructure investments valued at £4.069m (incl vat) at Morrision Hospital. Works included installation of new electrical generator as resilience back-up for substation 4 which supplies acute areas such as critical care. These works were completed in 2019.

This business case, Environmental Modernisation BJC2 Stage 2 (Phase 2), will provide a new Substation 6 that is fully compliant with Welsh Health Technical Memorandum/Health Technical Memorandum (WHTM/HTM) and British Standards. It will reduce the potential for Low Voltage (LV) overloading in Substations 3 & 4, which serve the highest clinical acuity areas of the site. In addition it will provide WHTM/ISO compliant ventilation infrastructure in Morrison's Hospital Sterilisation and Decontamination Unit HSDU. This is currently a significant risk for the Health Board with current ventilation in the area less than 50% the required levels.

Future phases will provide a whole-system infrastructure solution by addressing statutory and site strategy compliance requirements in Morrison's Substations 3 & 4. This phase will provide additional electrical capacity to support known current and future clinical requirements within the main Morrison Hospital nucleus footprint for the next two to five years.

## Part A - The Strategic Context

### 1.3 Business Strategies

This BJC supports the following national, regional and local strategies plans and drivers for change and delivery of the main benefits:

This investment supports WGov's Decarbonisation Strategy and optimises links with SBUHBs wider renewable energy infrastructure solutions.

It supports 'A Healthier Wales' (2018), the cluster approach to population health will underpin our plan to reconfigure the roles of our major hospitals and support the effective delivery of timely, high quality hospital based care when it is needed.

This project aligns with key national, regional and local strategic drivers. Both SBU and Hywel Dda UHBs support this business case, which 'fits' with SBU HB's Organisational Strategy: *Better Health, Better Care, Better Lives 2019 - 2030, Clinical Services Plan 2019-2024*, and our 3 year Recovery and Sustainability submitted in March 2022 and with the Masterplan for Morrison Hospital.

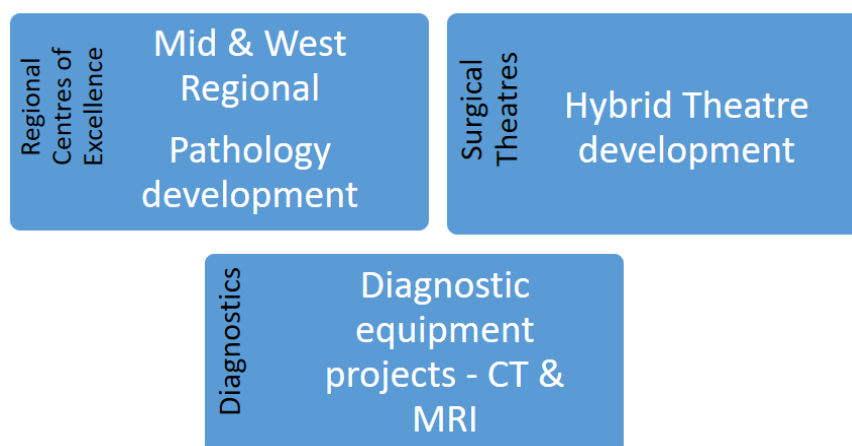
This investment provides efficient infrastructure which supports: SBUHB's Decarbonisation Delivery Plan 2002-24's objectives; SBUHBs emerging Estates Strategy, and; NHS Net Zero Wales' improved energy performance target & a reduction in emissions target, which support WHO's declaration of a global health (and climate) emergency (January 2020).

It supports sustainability by providing an additional 6 Electrical Vehicle Charging (EVC) points, which support reduced carbon emissions, and; the new substation design solution optimises links with SBUHB's new Solar Farm renewable energy infrastructure.

### 1.4 Key Interdependent Projects

The following projects are planned for the Morrison site over the next two to five years. Some, for example, The Hybrid Theatre and replacement/new diagnostic developments will be dependent on this investment and supports HV capacity in short term developments north of the main nucleus site:

**Figure 1 – Interdependent Projects**



## Part B - The Case for Change

### 1.5 Problems with Status Quo

When Morrison's existing Substations (3 & 4) were installed in the 1980s they were fully compliant with British Standards at that time. Now, both Substations 3 & 4 are in urgent need of investment due to the increased level of clinical acuity, which has intensified far beyond that originally envisioned. Increased levels of activity and acuity of services has placed immense strain on the existing electrical infrastructure.

Morrison is an 'Acute Hub' under the key recommendations of the South Wales Programme and will require significant investment in its electrical resilience (i.e. duplication of essential capacities to provide back-up electrical supply in the event of a systems failure) in order to deliver clinical services in the future. Historically, the Health Board's estate has been competing against other priorities for allocations for investment pressures on the capital programme. The resulting imbalance between demand for capital and the availability of capital has placed increased reliance on using robust risk methodology to identify areas of significant risk. Estates and Facilities Performance Management System (EFPMS) risk assessment methodology has provided a predictive model for capital investments, however, competition is increasing for scarce resources, and the aging profile of SBUHB's acute sites and demand for more modern clinical services is placing severe pressure on the estate. This has contributed towards the funding 'gap' between what is desirable and what is achievable within current funding constraints and demand on services.

This situation was recognised by the Welsh Government/NWSSP's Major Risks Framework initiative, which addressed significant infrastructure risks across Wales, and with their assistance and the application of a robust risk methodology herein, SBUHB has identified and prioritised a number of significant and high risk areas for investment across our acute hospital estate, which are considered essential if current and future requirements are to be supported.

The ventilation system at Morrison's HSDU is non-compliant with ventilation rates - only 50% of required standards and pressure cascade non-compliant. Enhanced environmental air monitoring has been put in place to provide some assurance but this has also been failing recently requiring continual re-testing. This investment will address these issues and provide compliant infrastructure.

### 1.6 Spend Objectives

In accordance with NHS Wales's guidance and this infrastructure investment, the key spend objectives have been limited in scope as follows:

**Figure 2 – Spend Objectives**

<b>Spend Objective 1</b>	<b>Capacity</b> - To free up capacity in two overloaded Substations (3 & 4) by providing additional capacity in a new Sub Station. Increase ventilation capacity in HSDU to compliant levels.
<b>Spend Objective 2</b>	<b>Safety</b> - To reduce risk and provide a safer working environment for staff. Reduce the risk of ineffective decontamination processes in HSDU.
<b>Spend Objective 3</b>	<b>Efficiency &amp; Effectiveness</b> - To provide fully compliant electrical infrastructure facility and energy efficient ventilation plant in HSDU.

All the above to be achieved by end of the December 2023, subject to funding and planning approvals. There are no potential dis-benefits.

### 1.7 Business Needs

This investment will provide a new Substation fully compliant with WHTM/HTM and British Standards.

This investment will reduce the potential for Low Voltage (LV) overloading in Substations 3 & 4, which serve the highest clinical acuity areas of the site. It will also provide WHTM/ISO compliant ventilation infrastructure in Morrison's HSDU and provides a more resilient HSDU service for the Health Board's three acute hospitals.

## 1.8 Potential Scope

This section describes the potential scope for the project in relation to the above business needs in terms of modalities and service drivers. The potential scope has been assessed against a continuum of need. The potential service scope framework options within these ranges are described in the figure below:

**Figure 3 - Potential Service Scope Framework Options**

Business as Usual	Do Minimum	Do Maximum
Low Voltage (LV) insufficient capacity / poor safety / poor compliance in Morrison Hospital's current Sub Stations 3 & 4. HSDU remains a significant Health Board risk.	Provide additional HV/LV capacity to support Morrison Hospital's electrical requirements within the main hospital nucleus over the next 2-5 years (supports known schemes on the main hospital site). Upgrade HSDU ventilation to WHTM/IOS compliant standards	Provide additional HV/LV capacity to support Morrison Hospital's electrical requirements over the next 5-10 years (supports known schemes on the main hospital site) Upgrade HSDU ventilation to WHTM/IOS compliant standards

## 1.9 Main Outcomes and Benefits

The main potential outcomes benefits to patients, the Health Board and the wider health community would be classified in terms of cash releasing benefits (CRBs), non-cash releasing benefits (NCRBs), quantifiable or quantitative benefits (QBs), and non-quantifiable or qualitative benefits (NQBs). The main benefits include the following:

- Availability of modern Substation plant (NB Substation 6 is clinically compliant).
- Reduce risk of catastrophic failure in essential clinical systems.
- Provide a safer working environment for estates staff.
- Provide spare LV/HV capacity for short-term development schemes in Substations 3 & 4.
- Provide compliant ventilation infrastructure in HSDU, replacing obsolete plant with modern equipment to achieve mandatory compliance requirements.
- Improve patient safety and maintains a continuum of clinical services, having reduced overloading in Substations 3 & 4.
- Provide functionally safe and appropriate infrastructure to support clinical delivery.
- Provide improved control mechanisms.
- Mitigate breakdown risk (direct & indirect) of essential plant and services impacting on patient services.

See **Appendices C & D** for further details.

### 1.10 Main Risks

The main business and service risks associated with the potential scope across all the options for this project together with their counter measures, are detailed in **Appendix A**. Refer to **Appendix B** for details of the appraisal team members. The key risks and mitigations are outlined below:

Risk	Risk Rating Probability x Impact	Mitigation
<b>STRATEGIC RISKS:</b>		
Programme delay due to WG approvals. Funding approval delayed or timing of funding does not match current programme.	3x3 = 9	Regular liaison by SBUHB with WG with regards to development of BJC and timing of submission.
Impact of labour market shortages, inflation on Plant and Materials	5x4 = 20	Ongoing monitoring of indices during FBC stage
<b>PLANNING RISKS:</b>		
Content of Planning Conditions	3x3 = 9	Early review of requirements and programme for closure
<b>FINANCIAL RISKS:</b>		
Capital costs - Capital Cost over-run	1x3 = 3	BJC fully tendered, costs are scrutinised Liaison with WG SS
Revenue affordability - Affordability of revenue model is over/under estimated	1x3 = 3	Finance Working Group established; Finance lead regularly report to Project

		Board.
<b>DESIGN RISKS:</b>		
Planning guidance - Changes to Legislation/ British Standard/ HTM/ HBN/ ISO's/ CPA Accreditation/ HTA's/ Royal Colleges' guidance/ best practice	2x4 = 8	(1) Project Board monitors wider NHS design changes; (2) Continued liaison between partners
Contaminated ground, both in the trenching areas external to the works area such as the adjacent field/substation area, road cross overs and cable trenching	3x3 = 9	Ground investigations
Unforeseen service diversion works	2x4 = 8	Survey of all routes
<b>SITE &amp; CONSTRUCTION RISKS:</b>		
Validation of HSDU identifies issues delaying the department from reopening e.g., water quality tests, air tests	3x3 = 9	Protection of equipment, clean area regime, early testing to determine condition
Logistics daily operation of hospital including deliveries	3x3 = 9	Liaison with Health Board
Decommissioning and recommissioning of existing plant	3x3 = 9	Agree minimum requirement, record performance before decommissioning and after recommissioning
Vehicular/Pedestrian movements on site - proximity to public	3x3 = 9	Control of parking to minimise impact on access routes
Contract works overlap with other projects on hospital site/impact of works on other hospital sites	3x3 = 9	SBUHB to advise of potential issue

### 1.11 Constraints and Dependencies

The key constraints are as follows:

- Services must be maintained seamlessly during any works or systems replacements to avoid significant disruption of service delivery.
- Working within a live site.
- Availability of capital funding and cash flow.
- Deliver a cost effective and value for money solution.
- Buildability of the technical solution, strategic 'fit' with the SDCP and planning permissions.
- The solution must be affordable in capital and revenue terms and be delivered within project budget.
- The solution must support WGov's Decarbonisation Strategy by delivering additional electrical capacity and optimise links with SBUHBs wider renewable energy infrastructure solutions.

### Recommendation

This BJC presents a compelling case for change given the significant risk to clinical services on the Morrison Hospital site of continued Low Voltage (LV) non-compliance and overloading risk is recommended that the Welsh Government support the investment proposals set out in this BJC. It will provide WHTM/ISO compliant ventilation infrastructure in Morrison's HSDU.

This scheme can be undertaken as a single contract and building services could start October 2022, subject to funding approval.

..... Deb Lewis, Deputy Chief Operating Officer, SBUHB

Signed & Dated:

## 2 The Economic Case

### 2.1 Introduction

In accordance with the Capital Investment Manual and requirements of HMT's *The Green Book: Central Government Guidance on Appraisal and Evaluation* (2018), this section of the business case demonstrates the wide range of options that have been considered in response to the potential scope identified in this BJC.

### 2.2 Critical Success Factors

The Critical Success Factors (CSFs) have been identified to allow evaluation of the potential options. These are shown below:

**Figure 4 – Critical Success Factors (CSFs)**

CSF	Description
CSF1 Strategic Fit & Business Needs	The solution must address the current and known future business needs of the main Morrison Hospital site for the next 2-5 years & improve staff safety.
CSF2 Benefits Optimisation	The solution should optimise benefits and provide value for money.
CSF3 Potential Achievability	The organisation's ability to support clinical and non-clinical service delivery in the future & mitigate operational risk & reduce estate infrastructure risk profile.
CSF4 Capacity and Reliability	The ability to deliver the required services and deliverables – provide additional HV/LV capacity; Comply with British Standards and HTMs/WHTMs & Reduce overloading risk in Substations 3 & 4.
CSF5 Potential Affordability	The organisation's ability to fund the required level of expenditure; viz, the capital and revenue consequences associated with the proposed investment.

### 2.3 Methodology

The Appraisal Group identified a range of framework options (as follows) in accordance with Treasury Green Book and Capital Investment Manual. An Options Appraisal Workshop was held on in March 2021. A list of participants is attached in **Appendix B**.

- **Potential Service Scope Options** – what is the potential coverage of the service to be delivered (the 'what');
- **Potential Technical Solution Options** – the potential technical (i.e. estates) options for delivering the preferred service solution option (the 'where');
- **Potential Implementation Options** – the potential timescales options for delivering the preferred service scope, preferred service solution, preferred technical solution options (the 'when');
- **Potential Service Delivery Options** – who will deliver the preferred service scope, preferred service solution, preferred technical solution, preferred implementation options (the 'who');
- **Potential Finance Options** – the potential funding and affordability options for delivering the preferred service scope, preferred service solution, preferred technical solution, preferred delivery options.

### 2.4 The Long Listed Framework Options

The long list of options was generated using the Scoping Options framework. The sections below summarise the assessment of each scoping option as they were assessed against the Investment Objective and CSF criteria to determine their short list suitability. The framework options findings are summarised in **Appendix C**. The possible solutions were carried forward into the short list for further appraisal and evaluation. All the 'discounted' options were excluded at this stage.

## 2.5 Summary of Short List Options

The short list is as follows:

**Figure 5 – Short List Options**

Option	Reason for Acceptance or Rejection for further consideration
<b>Option 1 - Business as Usual (BAU)</b> - Low Voltage (LV) insufficient capacity / poor safety / poor compliance in Morrison Hospital's current Sub Stations 3 & 4 and HSDU remains a significant Health Board risk.	Discounted – retained as baseline comparator.
<b>OPTION 2 - Do Minimum</b> Provide additional HV/LV capacity to support Morrison Hospital's main nucleus electrical requirements over the next 2-5 years; Develop fully compliant new Sub Station 6 & two Generators; It will provide WHTM/ISO compliant ventilation infrastructure in Morrison's HSDU; Health Board delivery; Capital investment.	Shortlisted - supports known schemes on the main hospital site. Provides essential additional HV/LV capacity to support Morrison Hospital's main nucleus and reduces risk a catastrophic failure on substations 3 & 4. Mitigates immediate Health Board decontamination compliance risk within HSDU. Supports HV capacity in short term developments north of the main nucleus site.
<b>OPTION 3 - Do Maximum</b> Provide additional HV/LV capacity to support Morrison Hospital's electrical requirements over the next 5-10 years; Develop fully compliant existing sub stations 3 & 4 and provide new Sub Station 6 & two Generators; It will provide WHTM/ISO compliant ventilation infrastructure in Morrison's HSDU; Health Board delivery; Capital investment.	Rejected - supports known schemes on the main hospital site. Higher strategic planning risk. Supports HV/LV capacity in short term developments north of the main nucleus site. Significantly more capital investment required compared to Do Minimum.

## 2.6 Indicative Capital and Revenue Costs of each Short Listed Option

### Capital Costs

The project's cost advisor, Gleeds, has prepared fully tendered capital costs. The capital costs excluding VAT and Optimism Bias (see **Appendices D & E**) are as follows:

**Figure 6 – Capital Costs (excl VAT £000s and including Optimism Bias above baseline)**

	Option 2 Do Minimum
Works Cost	11,341
Fees	1,300
Non Works Costs	556
Equipment Costs	10
Planning Contingency	660
Anticipated inflationary increases	134
<b>Total</b>	<b>14,001</b>
OB Adjustment (works only)	227
<b>Grand Total</b>	<b>14,228</b>

The key assumptions underlying the development of the capital costs are:

- Capital Cost includes works, non-works, abnormals allowances, equipment costs and risk contingency, which is assessed at 5%.

- Given the volatility of current market conditions, as affected by the Ukraine war, high and rising energy costs and other supply chain issues, and in line with current experience elsewhere within Wales, we allowed for recovery of 'abnormal' inflation over and above levels of inflation known and anticipated<sup>1</sup>. Should abnormal inflation occur, then Kier will be entitled to a Compensation Event for same. The sum included in our cost forms includes an anticipated allowance which has been informed by our independent Cost Advisor.
- The BIS PUB SEC indices at this stage is 285 for 2Q 2022. The Business Case reporting Index will be the standard one for Wales of 0.97.
- This BJC excludes a Generic Economic Analysis (GEM) as agreed with WGov given this project has limited options.
- Please see **Appendix G** for the Whole Life Costing Report.
- VAT is excluded in this section of the case.

### Revenue Costs

The future revenue cost for the preferred option above baseline are outlined in the figure below:

**Figure 7 – Revenue cost impact above baseline (£000's)**

	Option 2 Do Minimum
Non-recurring Revenue 2022/23	106
Recurring Revenue from 2023/24	16

The revenue costings have been costed at 2022/23 prices. The additional service revenue costs will be covered within the Health Board's financial plan

## 2.7 The Preferred Option

The preferred option is **Option 2 – Do Minimum** (i.e. Provide additional LV capacity to support Morrison Hospital's electrical requirements over the next 2-5 years; Develop fully compliant new Sub Station 6 & two Generators; Health Board delivery; Capital investment).

The Substation would comprise of a new building constructed of brickwork to meet planning requirements. The Substation building would have an Aluminium standing seam roof and profiled aluminium soffit and fascias. The Substation would be situated within a compound surrounded by new palisade type fencing measuring 2.3 metres in height. The Substation building would house Switchgear and Transformer units. Two Standby Generators are proposed within the compound to provide compliant emergency power under an "N + 1" arrangement to achieve WHTM standard.

The LV Switchroom would comprise of a new building constructed of brickwork to match that in the existing vicinity. The LV Switchroom would also have an Aluminium standing seam roof and profiled aluminium soffit and fascias. The LV Switchroom would house 2 main LV Switch panels.

A new oil line would be installed to form a connection between the new Substation and Morrison Hospital's oil storage tanks. Site Location and scheme drawings are included in **Appendix G**.

The development would also involve the following works:

- Permanent SuDS Drainage Pond and SuDS Swale to serve the proposed Substation;
- Hardstanding Footpaths to the west, south and east of the Substation;
- Enhancement of the access located off Mynydd Gelli Wastad Road and the construction of a hardstanding turning area using asphalt, and;
- Installation of 6 permanent parking spaces with electric vehicle charging points for the Health Board's service vehicle fleet to contribute to their carbon reduction programme.

<sup>1</sup> In the event of further abnormal inflation that is the direct cause of a further significant increase in costs, then the 'Welsh Procurement Policy Note WPPN 09/21: Sourcing building materials for construction projects in Wales' document will take effect. In the event that Policy Document WPPN 09/21 takes effect, and the SCP can demonstrate that additional unforeseeable inflation costs have been incurred as a consequence of said event, then contract clause 60.1 (14) shall apply.

The preferred option also includes the replacement of the air handling plant and associated ventilation system modifications supplying the HSDU at Morrison hospital. The equipment is currently obsolete resulting in significant ventilation capacity issues for the decontamination area. Therefore, considerable non-compliance is evident resulting in high decontamination risks for the Health Board.

## 3 The Commercial Case

### 3.1 Introduction

This section of the BJC outlines the proposed 'deal' as outlined in the Economic Case. The BJC is seeking to secure public funding from the WGov's 'All Wales Capital Programme'.

### 3.2 Required Services

Provision of a new Substation 6 in accordance with HSE requirements. Building Standards, HTM/WHTN and Statutory compliance requirements and technical commissioning. Provide WHTM/ISO complaint ventilation infrastructure in Morrison's HSDU.

### 3.3 Key Appointments & Contract Arrangements

The following key appointments will be made via WGov's Building for Wales Framework procurement route to ensure delivery of this project:

- Supply Chain Partner (construction and design team services) - Kier Western
- Health Board Project Manager (HBPM)

Health Board Cost Advisor (HBCA) (through the Building for Wales framework procurement route) and Supervisor (through an OJEU approved framework). Other technical services are to be being provided by the Health Board.

The contract is the NEC Engineering and Construction Contract (April 2013) with main option clause C (target cost). The Pain/Gain principle will apply.

### 3.4 Required Facilities and Compliance

The new substation and HSDU ventilation system will be in compliance with associated Health Technical Memorandum/Welsh Health Technical Memorandums (HTM/WHTM).

### 3.5 Potential for Risk Management

A risk register has been compiled and costed relative to risks that apply over the whole of the project lifecycle at this stage (see **Appendix A**). The planning contingency has been assessed by an independent cost advisor. The planning contingency includes non-recoverable VAT and excludes OB. This assessment of risk and complies with NHS Wales Shared Services Partnership – Specialist Estates Services (NWSSP - SES) guidance at this planning stage.

### 3.6 Agreed Charging Mechanisms

A collaborative working model is to be adopted. All charging mechanisms will be covered within the framework agreement. Under this arrangement Kier Construction Ltd have been selected by the Health Board from the NHS Building for Wales Regional Framework.

Gleeds, the Health Board's appointed Cost Advisor, confirms the scheme will be tendered to a minimum of 80% cost certainty in accordance with the Framework requirements.

The Contractor will invoice SBUHB Health Board in accordance with the Payment Mechanism. The agreed Payment Mechanism is 4 weekly assessments by the Health Board Cost Advisor with payment due within 14 days of the Assessment Date.

### 3.7 Agreed Contact Length

The contract will cover approx. 55 weeks.

### 3.8 Personnel Implications (including TUPE)

TUPE (Transfer of Undertaking and Protection of Employee) will not apply to this investment.

### 3.9 FRS5 - Accountancy Treatment

It is assumed that public funding will be allocated for this project and therefore capital will be included on the balance sheet.

### 3.10 Indicative Timescales

The indicative milestones are set out below (see **Appendix H**):

**Figure 8 – Key indicative milestones**

<b>Activity</b>	<b>Due Date</b>
Health Board approved BJC	July 2022
WGov approves BJC	Sept 2022
Mobilise and commence works	October 2022
Completed (subject to contractor's programme)	October 2023
Commissioning	November 2023
HSDU & new Substation fully operational	December 2023
Technical Project Evaluation (approx. 3 months post new build handover)	March 2024
Benefits Realisation (12 months post operational)	December 2024

## 4 Funding and Affordability

### 4.1 Introduction

The purpose of this section is to set out the indicative financial implications of the proposed investment (as set out in the Economic Case) and proposed Deal (as described in the Commercial Case).

### 4.2 Capital

The fully tendered capital cost assessment were undertaken by Gleeds, Cost Advisors. These are as follows (see **Appendices D & E**):

**Figure 9 – Capital Costs (incl recoverable VAT £000s and excl Optimism Bias above baseline)**

	Option 2 Do Minimum
Works Cost	13,609
Fees	1,560
Non Works Costs	667
Equipment Costs	12
Planning Contingency	792
Anticipated inflationary increases	161
Less Recoverable VAT	-268
<b>Total</b>	<b>16,533</b>

The key assumptions underlying the development of the capital costs are:

- Capital Cost includes works, non-works, abnormal allowances, equipment costs and risk contingency, which is assessed at 5%.
- Given the volatility of current market conditions, as affected by the Ukraine war, high and rising energy costs and other supply chain issues, and in line with current experience elsewhere within Wales, we allowed for recovery of 'abnormal' inflation over and above levels of inflation known and anticipated<sup>2</sup>. Should abnormal inflation occur, then Kier will be entitled to a Compensation Event for same. The sum included in our cost forms includes an anticipated allowance which has been informed by our independent Cost Advisor.
- The BIS PUB SEC indices at this stage is 285 for 2Q 2022. The Business Case reporting Index will be the standard one for Wales of 0.97.
- This BJC excludes a Generic Economic Analysis (GEM) as agreed with WGov given this project has limited options.
- Please see **Appendix G** for the Whole Life Costing Report.
- VAT is at 20% except for the professional fee and other vat recoverable elements (please see **Appendix O**)

<sup>2</sup> In the event of further abnormal inflation that is the direct cause of a further significant increase in costs, then the 'Welsh Procurement Policy Note WPPN 09/21: Sourcing building materials for construction projects in Wales' document will take effect. In the event that Policy Document WPPN 09/21 takes effect, and the SCP can demonstrate that additional unforeseeable inflation costs have been incurred as a consequence of said event, then contract clause 60.1 (14) shall apply.

**Figure 10 – Capital Expenditure £000's (incl of non-recoverable VAT & excl Optimism Bias)**

£(000's)	Prior Years	2022/23	2023/24	2024/25	Total
Capital Costs	887	5,339	10,289	18	16,533
<b>Capital Funding</b>	<b>917</b>	<b>5,309</b>	<b>10,289</b>	<b>18</b>	<b>16,533</b>

### 4.3 Impact on the Balance Sheet and Impairment

**Figure 11 – Revenue Expenditure £000's above baseline (£000s)**

£(000's)	22/23	23/24	24/25	25/26	26/27	27/28
Depreciation		81	325	325	325	325
Impairment (AME) Initial Valuation		10,078				

The Health Board will engage the services of the District Valuer to provide a valuation of the scheme following completion. This scheme would result in an estimated AME Impairment of £10,078k on the initial valuation of the unit and this will need to be taken through the Health Board's SOCNE in 2023/24. The Health Board would require funding from WGov and this will be included in the AME impairment funding submission to WGov in 2022/23.

The Health Board will require additional recurring depreciation of £325k from 2024/25 with one quarter depreciation required in 2023/24 of £81k.

### 4.4 Income and Expenditure Analysis

The future revenue cost for the preferred option above baseline are outlined in the figure below:

**Figure 12 – Revenue cost impact above baseline (£000's)**

	Option 2 Do Minimum
Non-recurring Revenue 2022/23	106
Recurring Revenue from 2023/24	16

The revenue costings have been costed at 2022/23 prices. The additional service revenue costs will be covered within the Health Board's financial plan

### 4.5 Overall Affordability

The project requests capital investment 'not to exceed' £16.533m (including VAT and excl Optimism Bias) to be allocated by the WGov.

The Health Board requests AME Impairment funding of £10,078k in 2023/24 and funding to support recurrent depreciation costs of £325k from 2024/25.

## 5 The Management Case

### 5.1 Introduction

The section of the BJC addresses the achievability of the project.

### 5.2 Project Management Arrangements

To ensure successful project delivery a robust project management reporting structure has been established. The structure is based on the Prince2 principles, with key members of the project team trained in Prince2 methodology.

The Health Board's experience of developing and delivering complex projects in a Prince2 environment ensures diligent management and thorough clinical involvement throughout all parts of the development:

Programme:

- The Senior Responsible Owner (SRO) is Mrs Sian Harrop-Griffiths, Head of Strategy, SBUHB.
- The Programme Director is Mr Simon Davies, Assistant Director of Strategy, SBUHB.

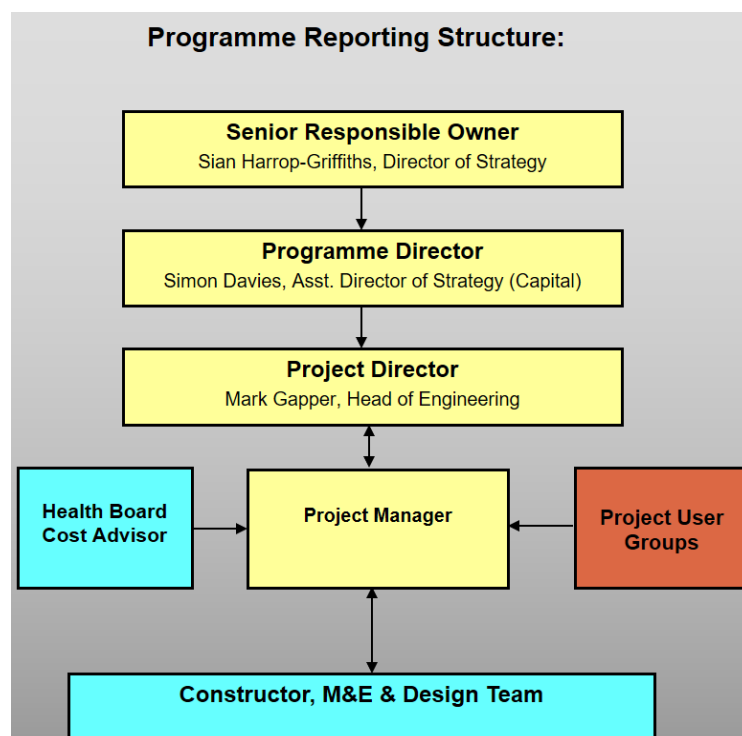
Project:

- The Senior Responsible Owner (SRO) is Mrs Deb Lewis, Deputy Chief Operating Officer, SBUHB.
- The Project Director, is Mr Mark Gapper, Head of Engineering, SBUHB who has the authority and responsibility to manage delivery of the project on behalf of the key stakeholders. The Project Director reports via the Project Board to the Project SRO.
- The Project Manager, is Mr Scott Matthews (Mace) who will support the Project Director.

#### Programme Management Structure

The reporting structure is shown below:

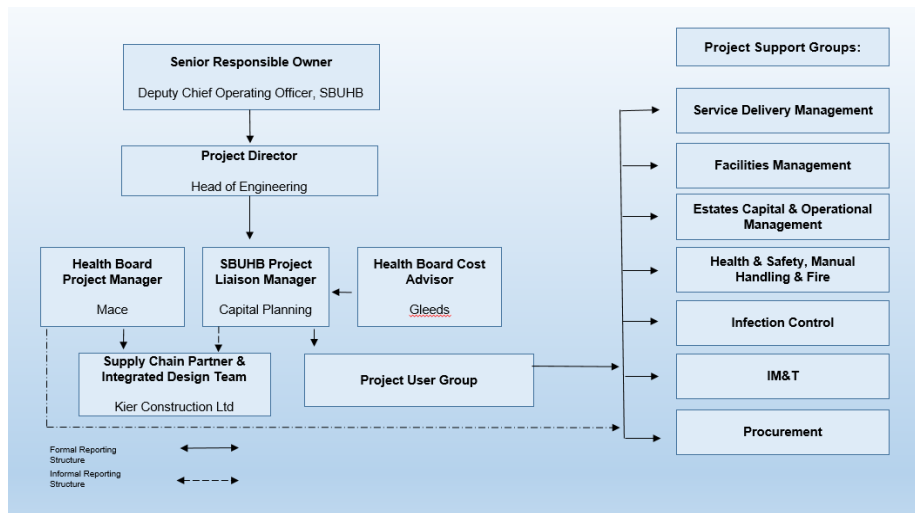
**Figure 13 – Environment Modernisation Programme Management Structure**



#### Project Management Structure

A summary project management structure diagram is shown below for the Morrison Hospital site:

**Figure 14 – Morrison Hospital’s Project Management Structure**



For Terms of Reference please see **Appendix I**.

### 5.3 Project Bank Account

The project is aiming to establish a Project Bank Account to support the implementation of WGov’s policy. At this stage there are on-going discussions being held at on all-Wales basis with WGov around known issues with the ability of the Supply Chain Partner (Kier Western) to currently support a Project Bank Account. If these issues are resolved, the Project Bank Account can hopefully be established during the period of WGov scrutiny.

### 5.4 Use of Special Advisers

Special Advisers will be appointed in accordance with the Treasury Guidance: Use of Special Advisers.

**Figure 15 – Special Advisers**

Role	Advisor
VAT Advisor	Ernst & Young

### 5.5 Arrangements for Benefits Realisation

A project level Benefits Plan and detailed Benefits Realisation Register specifically addressing technical, decarbonisation and net zero targets are included in **Appendices J & K**. Benefits realisation will be monitored at Programme Board.

### 5.6 Building Design Strategy and Decarbonisation

The Design Team have devised a building design and services’ strategy that includes solutions in support of NHS Wales Net Zero targets and in accordance with the requirements of the NHS Decarbonisation Strategic Delivery Plan (March 2021) as appropriate to the design and the scale of this development. The new plant is designed to modern standards and the development will provide six Electrical Vehicle Charging (EVC) points.

### 5.7 Community Benefits

Community Benefits will be agreed at contract stage with the main contractor.

### 5.8 Audit & Assurance

In accordance with the NHS Wales Infrastructure Investment Guidance (2018), the Health Board has sought input from NWSSP Audit and Assurance Services (Specialist Services Unit - NWSSP: A&A (SSu) to “assess the risk profile of the scheme and provide appropriate levels of review”, as required, noting that a Programme level implementation plan was proposed at PBC stage. A fully resourced and costed audit plan has provisionally been developed and provision included within this case (**Appendix L**).

## 5.9 AEDET (Achieving Excellence Design Evaluation Toolkit) & BREEAM

It has been confirmed with NWSSP that an AEDET and BREEAM will not be required for this scheme as it does not involve any direct patient or clinical staffing contact.

## 5.10 Arrangements for Risk Management

A risk framework has been established which outlines the process for managing risk associated with developing this project, including a structure for identifying and mitigating operational and construction related risks. The risk register would use qualitative and quantitative measures to calculate the overall level of risk according to likelihood of any risk occurrence multiplied by the potential impact. The Project Board will formally review the risk register at key stages of the project. A project risk register is attached at **Appendix A**.

## 5.11 Planning Permissions

Planning permissions (ref. 2021/2621/FUL) were approved by Local Planners on the 14<sup>th</sup> March 2022.

## 5.12 Post Evaluation Arrangements / Lessons Learned

Post Evaluation and lessons learned will be undertaken as appropriate to this investment and in accordance with best practice and NHS guidance.

## 5.13 NHS Wales Gateway Review (Stage 3 – Investment Decision)

A Risk Potential Assessments (RPA) has been carried out for this project. A copy is included in **Appendix M**. A Gateway review could be arranged WGov would carry out post submission of this BJC in accordance with WGov Investment Guidance. Further Gateways would be completed according to Office of Government Commerce (OGC) guidelines following further evaluation.

## 5.14 Contingency Plans

The Health Board can identify two major category of project failure: failure to achieve business case approval to deliver the project; failure of the main contractor to deliver the new sub-station to time.

The contingency plan for the project in the event of failure to achieve business case approval is for the Health Board to continue to revise its plans, working with WGov to develop an alternative solution that is acceptable.

In the event of Supply Chain failure, SB UHB would seek recompense in line with the agreed contractual arrangements and other contractor to complete the project.

## Appendix A – Risk Register

## Appendix B – Project Board Membership

## Appendix C – Framework Option Appraisal

## Appendix D – Cost Form

## Appendix E – Optimism Bias Mitigation

## Appendix F – Whole Life Costing

## Appendix G – Drawings

1:00 elevations (1)

1:00 elevations (2)

1:00 elevations (3)

Site Plan (1)

Site Plan (2)

Site Location Plan

## Appendix H – Management Control Plan

## Appendix I – Terms of Reference

## Appendix J – Benefits Realisation Plan

## Appendix K – Benefits Realisation Register

## Appendix L - Audit & Assurance Plan

## Appendix M – Gateway Review - (RPA)

## Appendix O – VAT Letter

## Abbreviations

(W)HBN	Welsh Health Building Note	TP	Integrated Medium Term Plan
(W)HTM	Welsh Health Technical Memorandum	LV	Low Voltage
AEDET	Achieving Excellence Design Evaluation Toolkit	MDT	Multi-Disciplinary Team
AHP	Allied Health Professional	NCRBs	Non Cash Releasing Benefits
AME	Annually Managed Expenditure	NEC	New Engineering Contract
ARCH	A Regional Collaboration for Health	NICE	The National Institute for Health and Care Excellence
BAU	Business as Usual	NWSSP SES	NHS Wales Shared Services Partnership – Specialist Estates Services
BIS PUBSEC	Business Innovation and Skills (Firm Price Index) Tender Price Index of Public Sector Building Non-Housing	OBC	Outline Business Case
BJC	Strategic Outline Business Case	OCP	Organisational Change Policy
BREEAM	Building Research Establishment Environmental Assessment	OGC	Office of Government Commerce
BRP	Benefits Realisation Plan	OOHs	Out of Hours
CRBs	Cash Releasing Benefits	PDP	Portfolio Delivery Plan (ARCH)
CRUK	The Cancer Research UK's	PEP	Project Execution Plan
CSF	Critical Success Factor	PET	Positron Emission Tomography
CSP	(SB UHB's) Clinical Service Plan	PIA	Privacy Impact Assessment
CSS	Clinical Support Services	PPE	Post Project Evaluation
CT	Computed Tomography	QA	Quality Assurance
CVU HB	Cardiff and Vale University Health Board	RIBA	Royal Institute of British Architects
DCC	Direct Clinical Care	RPA	Risk Potential Assessment
DECAG	Departmental Cost Allowance Guide	RTT	Right to Treatment
DGH	District General Hospital	SB UHB	Swansea Bay University Health Board
DGM	Divisional General Manager	SBU HB	Swansea Bay University Health Board
DoH	Department of Health	SDCP	Site Development Control Plan
ECAG	Equipment Cost Allowance Guide	SOP	Standard Operating Procedure
EQA	External Quality Assessment	TAT	Turn Around Time
FBC	Full Business Case	VATS	Video-assisted thoracoscopic surgery
GEM	Generic Economic Model	VfM	Value for Money
HB	Health Board	WAST	Welsh Ambulance Service NHS Trust
HBCA	Health Board Cost Adviser	WGov	Welsh Government
HBPM	Health Board Project Manager	WHSSC	Welsh Health Specialised Services Committee
HCSE	Health Care Systems Engineering	WTE	Whole Time Equivalent
HDU	High Dependency Unit	HSDU	Hospital Sterilisation and Decontamination Unit
HIA	Health Impact Assessment	EVC	Electrical Vehicle Charging
HMT	Her Majesty's Treasury	EFPMS	Estates and Facilities Performance Management System
HSA	Health and Safety Executive		
HV	High Voltage		
ICU	Intensive Care Unit		

