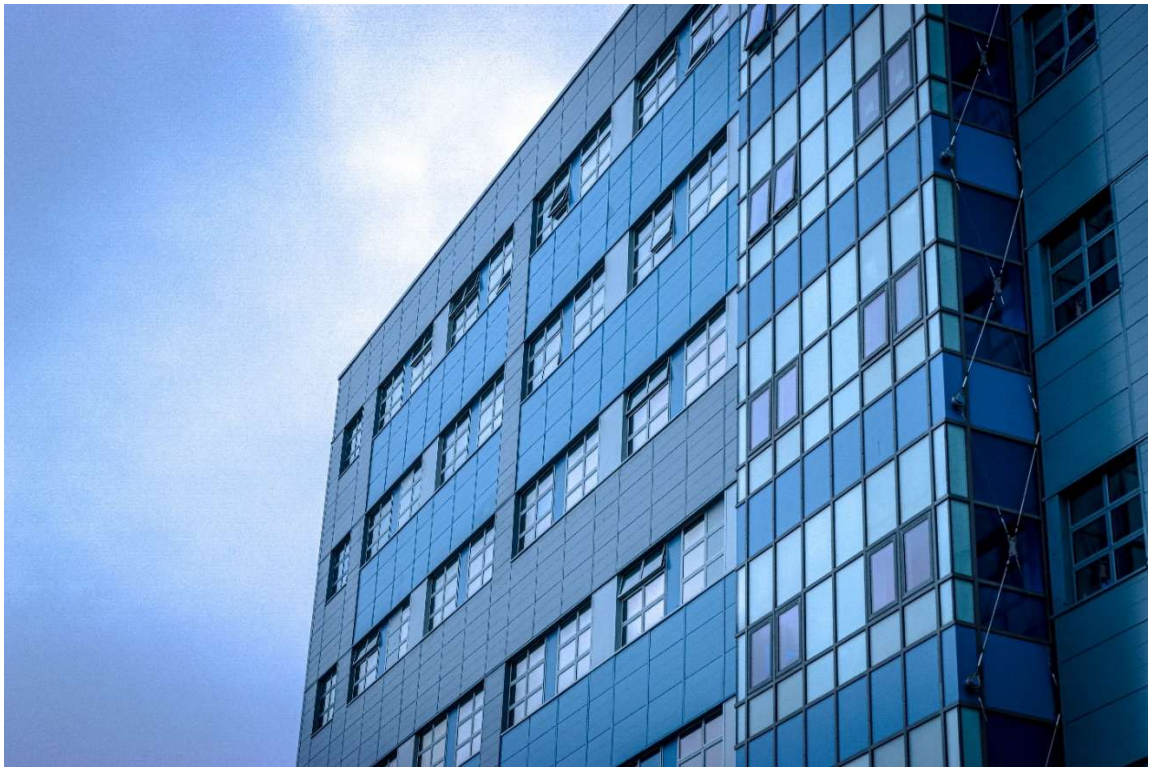
Adeiladu GIG i Gymru
NHS Building for Wales

DESIGN & CONSTRUCTION POST PROJECT EVALUATION (DCPPE)

Singleton Hospital Recladding

March 2026



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SECTION 1

PROJECT SUMMARY

Introduction: Project background

Following the Grenfell Tower fire in 2017, Swansea Bay University Health Board (SBUHB) reviewed its entire estate for any potential similar risks. Singleton Hospital had previously undergone a cladding upgrade, making it a priority for review.

The Health Board worked proactively with NHS Wales Shared Services Partnership (NWSSP) Specialist Estates Services (SES) Senior Fire Advisor and initially reviewed the details and specification on the external façade of the centre ward block at Singleton Hospital. In July 2017 SBUHB's senior leadership commissioned Fire Engineering specialists from ARUP to assist the Health Board in establishing a definitive position.

Arup Fire Engineer survey & report

The Arup survey report, completed in October 2017, highlighted potential issues with the 2010 cladding installation:

- two types of cladding system had been installed
- both cladding systems contained combustible materials
- no cavity barriers were observed within either
- no information was available for façade cavity abutting compartment walls.

In conclusion, the report noted that neither installed cladding system was compliant with Health Technical Memoranda (HTM 05-02) or Approved Document B.

Non-compliant foam-filled spandrel panels to main facade

Foam insulation to rear of curtain walling and lack of fire stop between floors

Plywood and foam insulation to column faces (main facade)

Foam insulation to flank wall and lack of cavity barriers

Recommendations were included for risk mitigation measures that could be adopted in the short, medium and long term.

SBUHB, therefore, commissioned Arup Façade Engineers to develop options for remediation works on the non-compliant over-cladding.

Limited technical information was available from SBUHB on the existing 2010 façade. ARUP's review of information from Building Control and the original contractor raised further questions over technical

design, specification, compliance and execution, leading to extensive intrusive surveying both externally and internally; particularly of the structural integrity of the terracotta-clad flanking walls.

The 2010 cladding installation left the original 1968 Portland limestone cladding in place and fitted new cladding on top with returns to existing sash windows which were all retained.

Original façade: Sash windows, crittal glazing and open balconies (source: SBUHB)

The interim ARUP report, issued January 2019, stated that *'No structural calculations for the main elevation and flank wall cladding support systems have been reviewed in connection with this study and none appear to be available.'*

The final ARUP report, issued March 2019, identified the following issues and risks:

- <u>General façade issues:</u>

  - Product specifications found to be ambiguous
  - Use of incorrect fixings for the façade structure and cladding
  - Fixings & steelwork lacked suitable protection against corrosion
  - Some elements of the façade were unpainted
  - General workmanship was deemed of low or questionable quality

- <u>Compliance with Fire Safety Regulations:</u>

  - Lack of fire barriers and fire compartmentation provision in 2010 design.
  - Use of products not designed for buildings over 18m high (Part B4, 2010).
  - 2010 cladding design does not comply with Building Regulations, Part B
  - 2010 cladding design deemed unsafe in the event of a fire

- <u>Structural stability and integrity of the installation:</u>

  - Structural loading of window beams on main façade insufficient
  - Structural load path ambiguous on both main façade and flank walls
  - Incorrect anchors used; washers missing
  - Loose bolt fixings on all elevations
  - Unsuitable materials (METSEC) used

- Asbestos contamination:

    - Potential asbestos penetration identified in crawlspaces and service voids. Contamination on back of cladding.

- Existing sash windows: Overheating

    - Longstanding issue of overheating of hospital's wards due to original sash windows and lack of mechanical ventilation.

The ARUP report identified severe risks and recommended options for mitigation:

- short-term action: Opening up survey works (already undertaken)
- medium-term action: Cladding removal to east and west flank walls
- long-term action: Full replacement of 2010 cladding façade and windows

The Health Board's preferred option was to replace the existing non-compliant cladding through a programme of works. WG approved funding of the medium-term action to remove the cladding from the flank walls as they were deemed to be at risk of structural failure.

Kier Construction was awarded the priority remediation works contract in June 2019. Surveys undertaken by Kier confirmed serious issues with the structural integrity of the flank wall cladding. Further asbestos was also detected, prompting appointment of SHIELD, a specialist asbestos removal contractor.

In tandem with these urgent remedial works, the outline business case for long term action proceeded, with development of a detailed client brief, compliant technical design for the façade and a fully costed programme of works.

The OBC considered the following key project drivers:

- minimising the impact on the operational services
- decanting of 12no. wards across six floors
- providing a safe environment during the works
- safely removing asbestos contamination and asbestos installations
- working at significant height: safety, scaffolding, high winds

- The proposed programme of works within the OBC included:
- Removal of cladding and non-complaint insulation materials
- Removal of cladding support frame
- Seal openings into crawl spaces
- Provide new support frame, face-fixed to structure
- Install cavity barriers/fire stops as required
- Install compliant cladding panels
- Replacement of original windows

The OBC was submitted to WG in October 2019. Project programme duration was estimated as 184 weeks, with a construction phase of 148 weeks, based on a decant strategy of replacing two hospital wards at a time, in horizontal progression. At commencement of the project the programme timeline was as follows:

- Start FBC development: 02/03/2020
- SBUHB sign off FBC: 28/09/2020
- WG approval FBC: 23/11/2020
- Start on site: 30/11/2020
- Practical completion: 11/09/2023

OBC approval was received in November 2019 and appointments for professional services via the Building for Wales framework (BfW) confirmed in March 2020:

- Supply Chain Partner: Kier Construction
- Project Manager: Mace
- Cost Adviser: Gleeds

Arup were appointed directly as NEC Supervisors, under a separate services contract arrangement.

The Health Board finalised the FBC in September 2020. The agreed target price was based upon:

- limited numbers of specialist contractors
- thorough market testing
- client and SCP agreeing shared risk apportionment

WG approved funding of £13.42M in October 2020 (excluding enabling works).

Construction stage:

Kier's proposed alternative programme of works was approved. With 4 phases and vacating three vertical wards, the impact on hospital operations was minimised. Benefits identified were:

- H&S: Working at height reduced for workforce = increased safety
- H&S: Cladding replacement highest levels first = programme reduction
- Scaffolding comes down level by level, as work progresses = cost reduction
- Improved workflow, shortened programme = cost reduction

Construction started in March 2021. Phase 1 of the works focused on the side elevation cladding and a full replacement with a new cladding system over 20 weeks. A further three phases of work and phased completion followed.

Benefits of phased completion, workflows and efficiencies:

- The HB accepted a decant strategy developed by Kier to safely remove asbestos contaminated materials via a safe buffer zone.
- Existing ward sizes meant small repetitive work operations, by small work gangs. The timeliness of completion of these works improved as the phases progressed.
- Kier implemented a strategy of Project Manager rotation to address long contract periods of repetitive activities with influx of renewed managerial energy and fresh perspective.
- Overall approach achieved a marked reduction in inspection snags and a reduction in the forecast Planned Completion, attributed particularly to the Project Manager who oversaw the final 15 months of the contract.
- NEC Supervisor and Kier site management's proactive communication led to an effective collaborative inspection regime and any making good procedures, ensuring that completed works were of the quality expected and the remedial works were completed quickly and to the required standard.

Programme challenges, delays, and mitigation:

- COVID 19 lead to initial delays to the programme in work phases 1 and 2.
- The initial programme planned for internal and external works progressing simultaneously. This programme was compromised and required adjustment, due to delays caused by issues with the scaffolding anchorage, the cladding installation fixings and the supplied glazing (see below).
- Extensive expert witness' site inspections of the 2012 installation works, on behalf of SBUHB, led to a programme delay of 3 months during Phase 1.
- Euroclad stainless steel fixings: incorrect washers were supplied, triggering delays. A settlement agreement mitigated potential programme delays and cost increase.
- Window specification: Supplied windows did not meet specification requirements. Kier had to divert to sourcing from a different supplier.
- Ward 5: Kier's initial strategy was too disruptive and too expensive. A less disruptive solution, with a cost reduction of £170K, was developed with the Health Board.

  Arising issues were resolved in a highly collaborative environment, with prompt workshops to address arising issues. Practical Completion was scheduled for September 2023, but due to delays a revised practical Completion date for February 2024 was agreed.

  Final Practical Completion was achieved on 24th February 2024.

Main Elevation: Main contract: Works Phase 1 (source: SBUHB)

The Recladding of Singleton Hospital was delivered through the NHS Building for Wales Regional Framework with the following main parties appointed:

Supply Chain Partner	:	**KIER CONSTRUCTION**
Project Manager	:	**MACE**
Cost Adviser	:	**GLEEDS**
NEC Supervisor	:	**ARUP**

IN THE PRESS

The SBUHB's Assistant Director of Strategy Simon Davies said:

"Some of the steel frame support was found to be corroded from the rain and salt coming in from the seafront."

"The work will involve removing the terracotta tiles and steel frame support from the existing external brick wall."

"The existing structure is safe but is not considered durable in the long term."

"However, during the tests and inspections experts carried out on our behalf following the tragic events in London, we became aware that the cladding was not suitable for the hospital's main block."
"It was intended for buildings up to a maximum of 18 metres in height, whereas Singleton is in excess of 30 metres."

"The advice to the health board was that it should be replaced due to non-compliance with building regulations."

Following completion the following statements were made by stakeholders:

Antony Jones, Capital Business Manager, SBUHB:

"The re-cladding of Singleton Hospital proved a challenging project as we were working at a high level in an exposed coastal location."

"However, lessons were learned as works progressed, with each additional phase completed more productively."

"Whilst achieving these results, the quality of work and health and safety were never compromised, which is quite an achievement when working in a live hospital environment,"

(Source: News article on Swansea Bay University Health Board's website, February 2024)

Elaine Lewis, Singleton's Service Manager for Hospital Operations, said:

"Despite the complexity of the work, we were delighted that no services were disrupted as part of the project."

"It did impact staff more than services as often specialities were mixed as the project was completed over four phases and nursing teams were split for the duration of the transfer, with each phase taking place in half of a ward area on three different levels."

News article on Swansea Bay University Health Board website:

"Our staff have been fantastic in supporting this project despite the disruption. The ward staff and our domestic team were hugely supportive in maintaining areas and getting them ready for moves."
"Our estates, IT team and porters ensured the wards were ready to transfer and then getting them ready to move patients back in while our car park team maintained the traffic flow consistently throughout."
"Clear communication between the Supply Chain Partner, operational management and our estates team enabled access to areas isolated for the work, which allowed estates to undertake backlog maintenance while the wards were empty."

"In conjunction with the various moves, staff also managed the transfer of services as part of the health board's Changing for the Future plans, which has seen certain services move to Neath Port Talbot and Morriston hospitals and from Morriston to Singleton."

Main Elevation: New cladding installation with enclosed balconies (source: SBUHB)

DCPPE METHODOLOGY

The requirement for undertaking a Design and Construction Post-Project Evaluation is a constituent part of delivering the NHS Capital Programme within Wales; this was highlighted within the Welsh Government circular WHC (2018) 043: NHS Wales Infrastructure Investment Guide published October 2018. Framework Members can view this guidance on the Welsh Government website.

Consequently Design and Construction Evaluations are to be facilitated by NWSSP Specialist Estate Services and are to be undertaken during Stage 5: Operational Commissioning and Project Closure; the outputs of an evaluation should focus upon the performance of the project delivery from start of Stage 2: Outline Business Case development to Stage 5: Operational Commissioning and Project Closure (N.B. Stages as defined in the NHS Building for Wales process maps and Schedules of Services).

Accordingly, NWSSP Specialist Estate Services issued guidance in the form of 'Guidance Note: Procedure for Design and Construction Post-Project Evaluation – October 2023'. Framework Members can find this guidance on-line using this hyperlink: DCPPE Guidance Note V8.docx

Why carry out a Design & Construction PPE?

Post-Project Evaluation is a fundamental tool in achieving Best Value for Money and through lessons learnt can improve future project performance and decision making by key stakeholders.

Post Project Evaluation can be an aid to:

Improved design, organisation, implementation and strategic management of projects.
Promote organisational learning to improve current and future performance.
Avoid repeating costly mistakes.
Improve decision-making and resource allocation (e.g., by adopting more effective project management arrangements).
Improve accountability by demonstrating to internal and external parties that resources have been used efficiently and effectively; and
Demonstrate acceptable outcomes and/or management action thus making it easier to obtain extra resources to develop healthcare services.

How has this PPE been carried out?

In accordance with the 'Guidance', this evaluation has been undertaken in an impartial, objective and blame free culture, which has involved the Health Board and all other key stakeholders of the Project Delivery Team. A specially structured suite of Pro-forma & questionnaire was issued to all (refer to Appendix A) to evoke memoirs of issues both good and not so good that occurred during the project journey. A workshop was held with a select number of attendees representing Client, Supervisor, Project Manager, Cost Advisor and Supply Chain Partner, to further investigate the main themes and issues noted within the questionnaires to fully understand and highlight lessons learnt. The draft report was circulated to all respondents for review to enable input into the final edited version, for sign off by the Health Board prior to publishing.

In the interest of continuous learning and to benefit future project design, planning, development and management; this Design and Construction Post-Project Evaluation will be shared with Welsh

Government, all NHS bodies, Framework Members and the Service Post Project Evaluation Team Members.

The Service Post-Project Evaluation, completed in accordance with the Benefits Realisation timeframe, will be initiated by the Health Board (normally during Stage 6: Completion). The Welsh Government Integrated Assurance Hub provides support in developing and undertaking the Service evaluation.

PROJECT ACHIEVEMENTS AND BENEFITS

The feedback provided by the project's stakeholders and the external team in their returned questionnaires and the discussions held as part of the DCPPE workshop, confirmed that the project objectives were successfully achieved.

The project delivered an acceptable, secure and resilient solution by meeting the following objectives:

- delivering a new compliant and safe façade
    - removing the fire safety issues of the previous façade
    - minimised risk of fire by providing more effective fire barriers
    - achieving full compliance with WHTM 05/02 Fire Code

- eliminating the risk of asbestos contamination:
    - through removal of asbestos behind the facades
    - through encapsulation of asbestos within the inter floor service voids

- providing more effective, efficient and safer building maintenance

- providing an environmentally cleaner solution
    - provided a more energy efficient solution
    - improved environmental conditions for staff and patients
    - met higher insulation standards
    - improved façade glazing

- completing the project to budget, despite additional costs

EXECUTIVE SUMMARY: BEST PRACTICE & LESSONS LEARNT

Best Practice	Lessons Learnt
General	
The client team's early stakeholder engagement and consultations enabled the development of an efficient programme strategy to ensure continuity of live hospital services throughout the construction phase.	Early and positive stakeholder engagement aids strong collaboration, whilst providing a positive and solid basis for the inception and progression of a project.
Limited record construction information was available from SBUHB for the 2010 cladding installation. This was mitigated by obtaining information from Building Control and the contractor, and by findings of opening-up works, as part of the Enabling contract.	Provision of comprehensive site information, subject to the availability of accurate historical record, and survey data during pre-tender and pre-construction stage ensure robust risk identification and mitigate against potential programme and cost overruns. Maintenance of accurate engineering system drawings (or BIM data) is essential for management of a modern healthcare facility and estates management.
Project Governance	
To successfully overcome challenges, clear lines of communication were essential for consistent engagement between end users and the project team.	A clear and strong client governance structure and clear communication routes between all parties aids processes and administration of a project.
Early risk identification and management procedures is crucial for the development of a programme of works and robust cost envelope.	Early robust risk identification on a project followed by regular reviews of the risk register, updated to identify and assist mitigation against potential programme and cost overruns.
Considering the duration and complexity of this project in a live environment, a minimum of contractual issues arose on the project, mostly during the construction stage; these were swiftly and amicably resolved between the parties. No formal dispute resolution was required.	A strong spirit of collaboration in line with NEC principles aids positive amicable resolution of arising contractual matters and disputes. This avoids programme overruns and potential formal dispute resolution.
The client's project team benefitted from a high degree of team continuity. Equally beneficial for this long project programme and its repetitive work element was a well implemented staff rotation strategy for working gangs and senior site management on the SCP side.	Strong team continuity facilitates relationship building, ensures knowledge retention and engenders the 'buy in' and 'seeing through' of successful project delivery. A well-developed staff rotation strategy by the SCP, tailored to suit the specific nature of a project will benefit a seamless programme execution and a successful project delivery.
Communication and Collaboration	
The client's early stakeholder engagement ensured strong engagement and collaboration from all parties involved and was key to developing a robust brief.	Early and positive stakeholder engagement aids strong collaboration, whilst providing a positive and solid basis for the inception and progression of a project.

Brief & Design Development	
A solid client brief and comprehensive design development greatly benefitted the funding application and procurement for the Enabling Works, the Technical Full Business Case and the Main contract. Early consultations with the local Planning Authority and Building Control bodies also supported the brief development	A robust brief and design development established at the outset of a project provides clarity and confidence and provides a firm basis for the development a project. Early engagement with statutory authorities during pre-construction stage benefits brief and design development, supporting in time submissions and consent of statutory applications. This allows solid forward planning and meeting key programme targets.
The brief development was well informed by ARUP's extensive opening up works and surveying of the existing façade, furthering understanding of the issues and risks at hand.	The provision of comprehensive site information at pre-construction stage, e.g. building records, surveys, etc. is fundamental to reduce the risk of programme and cost overruns.
A solid comprehensive cost envelope was developed in the TFBC stage, which enabled the client to agree a robust target price with the SCP for the construction phase.	A robust cost envelope, established in the design stage, provides clarity and confidence in the project and the team behind it, with regards to project execution and cash flow.
Construction	
Arup was retained by SBUHB and appointed as NEC Supervisor. Asbestos Consultant SHIELD was appointed as a specialist sub-contractor by Kier. These appointments ensured knowledge retention and provided a sound level of scrutiny of the works.	The assembly of a professional and skilled team is an essential basis for the successful delivery of a project. Knowledge retention, aided by strategic appointments, supports continuity and efficiency, benefitting programme and risk management.
A long construction programme with a high degree of repetitive works benefitted from the SCP's strategy to rotate the project manager and to apply work force rotation, achieving solution-driven focus and maintaining high standards.	Comprehensive assessment and understanding of a project and its parameters enable the development of practical and efficient solutions for its successful delivery.
Handover & Commissioning	
Handover procedures for the works were considered by the client team to be very good. Communications with the operational team were emphasised as being particularly good.	A strong and responsible ownership of defects by the SCP and its SCMs is essential for an effective successful DLP period, and to enable the operation of a new facility to its full potential.
Regular liaison of SBUHB's project team with SES' specialists during the witnessing and commissioning process was established and proved very helpful in the process.	The commissioning process benefits from sound coordination between the HB's engineers, the SCP FM and SES' specialist engineers, to achieve a coordinated and agreed sign off process, avoiding late changes and delays.
Aftercare	
Aftercare of the project was considered by the client team to be very good with Kier resolving defects in a timely manner.	It is important that the handover and aftercare process is undertaken in a seamless and efficient manner by all parties, to enable the scheduled start of operations of a new facility, and to support end users in this process.

Further detailed information of above best practice and lessons learnt is included below.

The above positive comments were supported by SBUHB Capital Audit's independent 'significant assurance' rated reviews of this project, post completion (refer to the Executive summary below).

Executive Summary

Purpose

The overall objectives of this audit were to:

- confirm that previously agreed actions have been appropriately actioned by management; and
- determine the adequacy of information provided in support of the Stage 4 (construction) defined costs claimed by the Supply Chain Partner (SCP) (through selective testing of the account).

Overview

Previously agreed actions were found to be fully addressed.

The sum certified by the Cost Adviser was £8,793,369.80 (exc. V.A.T) (as at 28th September 2023). The final account was estimated to be circa £10.53m.

Appropriate methodologies were generally confirmed as having been applied to determine the final sums due. Based on the sample selected, the Cost Adviser had generally obtained sufficient supporting evidence and provided challenge to support the current assessment of the anticipated final account sum.

However, there were some instances where claims had yet to be supported by substantiation of actual costs (being presently supported by estimates of various types).

Some additional matters requiring management attention are included within the detail of the report. However, noting the absence of errors in the current assessment, substantial assurance has been determined in relation to the derivation and support of the account.

Additionally, noting full implementation of agreed management actions, an overall **substantial assurance** has been determined.

Note – the recommendations are rated "medium", as application of these controls is required to avoid "potential" impact at the final account.

Report Classification

		Trend
Substantial 	Few matters require attention and are compliance or advisory in nature. **Low impact** on residual risk exposure.	2022/23

Assurance summary [1]

Assurance objectives		Assurance
1	Previously agreed actions	Substantial
2	Final Account	Substantial

[1] The objectives and associated assurance ratings are not necessarily given equal weighting when formulating the overall audit opinion.

Key Matters Arising		Assurance Objective	Priority
1	Management will obtain assurance that costs charged by way of quotation or purchase order should be substantiated to invoiced costs at the final account.	2	Medium
3.1	Management should obtain a copy of the staged completion certificates together with a formal assessment and any associated damages due for each stage.	2	Medium

Future Assurance Matters		Assurance Objective	Priority
2	VAT reclaim will be adjusted at project completion as agreed with HMRC.	2	Medium

PROJECT DETAILS: DRAWING

Proposed Phasing of the Works as per accepted KIER programme:

- 4 phases of work
- Vertical progression
- Phase 01 illustrated

PROJECT DETAILS: PROJECT TEAM & KEY FACTS

Project Team: Client side			
Client	Swansea Bay University Health Board		
Health Board Project Director, SBUHB	Simon Davies	Senior Responsible Officer, CVUHB	Jeanne Worthing (1st)
Health Board Project Director Health & Safety, SBUHB	Mark Parsons	Health Board Project Manager, SBUHB	Antony Jones
Health Board Project Manager, SBUHB	Heather Edwards	Health Board Project Manager, SBUHB	Mark Jarrett
Estates Manager, Singleton Estates Swansea Bay UHB	Tony Wiltshire		
Stakeholder/ Operators			
Operational Site Manager, Singleton Hospital Swansea Bay UHB	Melanie Collins	Site Management, Singleton Hospital Swansea Bay UHB	Elaine Lewis
Head of Support Services Swansea Bay UHB	Joanne Jones		
Project Team: Consultants			
Project Manager	MACE	Cost Advisor	GLEEDS
NEC Supervisor	ARUP		

Project Team: Supply Chain Partner			
Supply Chain Partner	KIER Construction	Building Services Engineer	AECOM
Architect	ARCADIS	Building Services Installer	Whiteheads
Structural Engineer	Curtins	Principal Designer	Lawray Architects
Civil Services Engineer	Curtins	Asbestos Consultant	SHIELDS
Project: Key facts			
Project type	Refurbishment: Recladding of existing facades	Façade Area/ storeys/ wards	3356m2/ 5 storeys/ 12 wards
Cost: Construction Flank wall Façade removal	£255,000 (NETT)	WG Funding allocation: Flank wall Façade removal	£335,000
Cost: Construction New Façade installation	£10.518million (NETT)	WG Funding allocation: Project cost Main contract	£13.421million
Cost: Total project incl. Enabling Works	£14.348million		
Start on Site	March 2021	Practical Completion	26 February 2024
Phase 1: Sect. Completion	24 April 2023	Phase 2: Sect. Completion	09 October 2023
Phase 3: Sect. Completion	26 February 2024	Phase 4: Sect. Completion	26 February 2024
Planning application	Submitted & approved 2019	Building Regulations application	Full plans submission 2019; approved;

(Photograph courtesy of SBUHB; SBUHB News, February 2024) *PICTURED: Neil Mogford, Kier's Site Manager; Antony Jones, Capital Business Manager; Ashley Hollington, MACE's Project Manager; Claire Needs, Bed Manager; Christian Everett-Pride, ICT support lead; Mark Jarrett, Capital Project Manager; Melanie Collins, Head of Operations; Neris Wood, Domestic Supervisor; Zaynor Kadir, Housekeeping Team Leader; Elaine Lewis, Service Manager for Hospital Operations; Wayne Durston, Operational Manager in Estates; Dean William, Kier's Project Manager and Gareth Davies from the car park team.*

SECTION 2

BEST PRACTICE & LESSONS LEARNT

1.0 General

1.1 The COVID pandemic, which spanned some of the project delivery, caused a significant amount of additional management on the LHB side in the earlier project stages, which impacted cost and programme.

1.2 Limited record information of the existing 2010 cladding installation was available from SBUHB. This was mitigated by ARUP reviewing the 2010 Building Control submission records, and ARUP's extensive surveying works, benefiting scoping of works and cost envelope.

1.3 Ensuring continuity of operational services whilst undertaking an efficient construction programme in a live hospital environment posed a significant challenge. Concerns over the decanting of 12no. wards was addressed by early close stakeholder engagement and continued liaison with the project team to develop efficient strategies and solutions.

1.4 Minimising the disruption to patients and staff during an extensive construction programme was addressed by regular weekly Monday morning meetings with the project team, end users and the Supply Chain Partner, providing communication updates and allowing organising decant operations.

1.5 Ward 5: Neo-natal was refurbished one year earlier, receiving significant technical upgrades of its service installations which are more complex than those in the other wards; the team successfully developed and implemented a separate working methodology.

2.0 PROJECT GOVERNANCE

2.1 Client and project team right from the outset understood that the complexity and pressure of maintaining effective safe operational services whilst executing a complex works programme required a strong governance structure throughout the course of the project.

2.2 Both Project Manager and Cost Advisor supported the client in navigating the challenges at the early stage of the project, enabling a swift inception and progression.

2.3 Effective communication protocols and structures were essential in facilitating and achieving the ongoing successful liaison between end users and the entire project team.

2.4 A diligent and strong risk management was put in place to underpin the development of this complex programme of works and its solid cost envelope.

2.5 A well thought through and well-coordinated detailed construction programme was needed to achieve the continuity of service whilst progressing the work as efficient and swift as possible. A four-phase-work programme was developed by the project team.

2.6 The overall continuity of the personnel of the client's project team throughout this very long project was highly important. Little if no changes occurred to the team during the duration of the project on the side of stakeholders, end users and consultants. This provided continuity and knowledge retention, whilst enabling solid relationship building.

2.7 Due to strong project governance and collaboration between all project members a minimum of contractual issues occurred on the project. Most matters were arising during the construction stage, with swift amicable resolution. No formal dispute resolution was required.

3.0 COMMUNICATION & COLLABORATION

3.1 The highly complex nature of the project involved a large number of stakeholders and end users, requiring a solid engagement process and a high degree of collaboration from all.

3.2 Clear and efficient communication protocols were essential to facilitate and achieve the ongoing successful liaison between all stakeholders, end users and the entire project team.

3.3 A strong communication developed over time and benefitted the project throughout its duration. In particular the excellent liaison between the site operations team and the clinical operations team during construction was cited as a key factor to the project's success.

3.4 A strong team ethos developed over time, forming the basis of a common solution-driven focus by the entire project team, driving cooperation and collaboration to achieve a successful project delivery and outcome.

3.5 The project team's view is that the successful project delivery is largely the result of the above-described strong collaborative working and team ethos.

4.0 BRIEF & DESIGN DEVELOPMENT

4.1 This complex project required a solid client brief for the procurement of the Technical Full Business Case. The brief was supported by a compliant detailed technical design, a well-coordinated scope of work and solid cost envelope, greatly benefitting procurement.

4.2 Brief development was significantly informed by ARUP's extensive opening up works and surveying of the façade elevations. ARUP's detailed survey reports significantly contributed to the understanding of the serious issues and risks at hand, informing brief, scope of works and cost.

4.3 Based on survey findings, ARUP façade engineers developed a strategy for the removal of the existing façade and a full compliant technical design for a new façade as employers requirements for the procurement and tender process.

4.4 Early consultations were undertaken with the local Planning Authority and Building Control bodies. Their feedback assisted the client team in defining the scope, design and cost envelope. This enabled an early submission of both statutory applications and their subsequent consents, to the benefit of procurement and programme.

4.5 Early on considerations of the complexity of the project, its various challenges and parameters led to a well-developed scope of work and cost envelope. The comprehensiveness of these cost considerations meant that a solid target price could be defined early and agreed with the SCP.

4.6 Regular design and technical review meetings and workshops were held, involving project team, stakeholders and end users. This contributed to design and programme development, sequencing of works and addressing of arising contractual matters e.g. delays, thus aiding robust cost control.

4.7 ARUP's early survey work established the asbestos contamination. ARUP subsequently appointed SHIELD Service Group early in 2017/18 as specialists for asbestos contamination.

This appointment benefitted the solution development for asbestos containment and removal as part the works scope, in turn reassuring stakeholder confidence of providing a safe environment for continued safe hospital operations as much as safe continuation of works on site. Early cost allowances were made in the cost plan for asbestos containment and removal, and all sequencing had been allowed for in that regard.

5.0 CONSTRUCTION

5.1 On the back of their initial appointment, ARUP were retained by client SBUHB and appointed as NEC Supervisor.

This strategic appointment not only replaced a clerk of works engagement on the project but also ensured knowledge retention and provided scrutiny of the works being undertaken in accordance with design standards and specifications.

5.2 SHIELD, the asbestos specialist, were subsequently appointed by KIER as part of their team. This appointment also ensured retention of expertise and knowledge of the site.

5.3 The initial client programme, part of the client brief was found to not be efficient enough for the workflow on site and a related effective construction programme. An alternative programme suggested by KIER demonstrated greater efficiencies and was accepted by the client.

5.4 The programme with its duration of approximately 3 years was regarded as long and extensive, with a high degree of repetitive work. KIER adopted a strategy of exchanging project managers and regular rotation of work gangs, to ensure regular new influx of perspective and energy and a continued high quality of work.

Both project team and site team responded very positively to this strategy. In particular Dean Williams, site manager for Phase 3 and 4, was credited to be a key factor in maintaining the strong liaison between site personnel and operational staff and credited with meeting the last construction programme, set 15 months earlier.

5.5 The programme was hit by several arising issues, especially in the earlier phases. Regular technical workshops and reviews attended by all assisted with addressing these matters. Parties collaborated well, focussing on amicable solutions and mitigation, thus limiting delays and cost.

5.6 Learning from previous phases: the first extended phase of the project highlighted several issues and solutions which benefited the remaining phases in the efficiency of completing tasks. A gradual increase in efficiency and productivity was achieved in the following phases. This was due to the repetitive nature of the works and operations in small areas.

5.7 Kier suggested that a sample panel, to include a full window and associated cladding may have highlighted several of the issues found during the construction period.

5.8 A collaborative and effective process of inspections between NEC Supervisor and Kier site management developed over time. This benefitted the quality of the works and the undertaking of any required remedial works, ensuring a high standard.

6.0 HANDOVER & COMMISSIONING

6.1 Handover of the project was overall experienced by the client team as very positive and very good. Emphasized was the good communication with the operational team.

6.2 Four separate sectional completions added to the complexity of the project, however few snagging issues had arisen overall on the project, which is testament to both the design development phase and the construction phase as much as it reflects the excellent communication and collaboration experienced on the project.

6.3 Regular liaison of SBUHB's project team with SES' specialists during the witnessing and commissioning process was established and proved very helpful in the process.

7.0 AFTERCARE

7.1 Aftercare of the project was experienced as very positive by the client team as the SCP responded to latent defects in a timely manner.

For Further Information contact:

Andrew Waddington

Head of Building for Wales

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APPENDICES

List of documents and forms:

A Completion Certificate: MACE

B Completion Certificate: Building Control

C Project Pro-Formas

Client CVUHB	Defects
Cost Advisor	Target Price Comparator
Project Manager	Project Time Predictability
Supply Chain Partner	Waste Generation
Supply Chain Partner	Waste Recycling & Recovery
Supply Chain Partner	Use of recycled Materials
Supply Chain Partner	Local Labour/ suppliers
Supply Chain Partner	Safety

A Completion certificate: MACE Project Manager

COMPLETION CERTIFICATE

PROJECT: SBUHB - SINGLETON HOSPITAL CLADDING WORKS

Contractor/Address: Kier Construction - Western & Wales Conway House St Mellons Business Park Cardiff	Job Reference: 35546 Section(s): N/A Issue Date: 28/02/2024 Completion Serial Nr: 2

Date of Completion: 26/02/2024

Defects date: Refer to Sectional Completion Certificates for each Phase

I certify that completion of the Section(s) of work listed below was achieved in accordance with the terms of Contract on **Monday 26th February 2024**

Façade replacement to Phases 1 - 4 inclusive and associated landscaping works

The aforementioned Section(s) of work were accepted subject to:

1.Completion of the works identified on the Singleton recladding outstanding works list - rev 2 - 26.02.24

Signed: AM Hollington

For and on behalf of
Mace Ltd (PM)

Distribution	Employer	X	Supervisor	n/a
	Contractor	X	Design Team	X
	Cost Advisor	X	File	X

B Completion certificate: Building Control

THE GUILDHALL, SWANSEA, SA1 4PE
TEL: (01792) 635636

COMPLETION CERTIFICATE
THE BUILDING ACT 1984
THE BUILDING REGULATIONS 2010

Building Regulations Plan Number:

20/001068/COMMFP

Mr Mark Jarrett
Construction Project Manager
Swansea Bay University Health Board
Capital Planning Department
Morriston Hospital
Heol Y Mynydd
Morriston
Swansea
SA6 6NL

DETAILS OF WORK
Description
Facade Improvement Works to Front and Side Walls of the Central Ward Block Building (inc. Replacement Cladding and Windows)

LOCATION OF BUILDING TO WHICH WORK RELATES
Address:
Singleton Hospital Sketty Lane Sketty Swansea SA2 8QA

DEPOSIT OF PARTICULARS
Full plans were deposited under the Building Regulations made under Section 1 (3) of the Building Act 1984 on:
24 August 2020

COMPLETION DATE

Date of completion inspection **14 February 2024**

COMPLIANCE WITH BUILDING REGULATIONS

It is hereby certified that the building works described above have been inspected and so far as the authority has been able to ascertain the requirements of the Building Regulations are satisfied.

6

C Project Pro-Formas

Client Swansea Bay UHB: Defects

Defects

Adeiladu GIG i Gymru
NHS Building for Wales

Assessor details		Project details:	
Partner role	Employer	LHB/Trust	Swansea Bay University Health Board
Co. name	SBU Health Board	Project no.	R012
Indiv. name	Tony Jones / Mark Parsons	Project name	Singleton Front Façade Cladding Replacemen
Date	05/08/2024	Project type	Refurbishment
	KIER (SCP) - Works Completed	Project stage	Construction

Score using the 1-10 scale.		Comments	Score
Resolving defects			
	Number of defects appended to completion certificate		17
	Overall defects performance (1-10 scale)		9.0

Performance summary			Star Rating
	Defects - Number at handover	17 defects, but all rectified.	****
	Defects - Impact	Minimal impact to end users.	****

Notes on 1-10 scale:
10 = Defect free
9 = A few minor defects – no impact on end users
8 = Some defects with no significant impact on client or users; dealt with by maintenance
7 = Some defects – minor repairs needed; some impact on end users
6 = Some defects, some impact on end users; defects take time to rectify, cause minor disruption.
5 = Many defects, some impact on users; defects take time to rectify, cause short-term disruption.
4 = Many defects with significant impact on users; planned rectification has a significant impact on end
3 = Major defects, major impact; requires immediate and long term actions;large impact on end users.
2 = Several major & minor defects – many aspects unsatisfactory, redesign/reconstruction needed; major
1 = Totally defective - defects so severe it is not possible to use facility; long term rectification work required, large, long term impact.

Comments

All defects were completed in a timely manner, and had no impact on the end users.

Cost Advisor: Target Price

Target Price Comparator

Adeiladu GIG i Gymru
NHS Building for Wales

Assessor details		Project details:	
Partner role	TCA	LHB/Trust	Cardiff & Vale University Health Board
Co. name	Gleeds	Project no.	
Indiv. name	Ian Bailey	Project name	Maelfa Wellbeing Hub
Date	1st November2023	Project type	new build
		Project stage	construction

Cost Predictability

Costs			Performance %	Star rating
	Project Allowance Construction Cost	13,900,653		
	Target Price	13,561,638	97.56	***
	Final Total of the Prices	10,245,538		
	Final assess: Price for Work done to date	10,245,538	100.00	***
	Amount of total project spend paid through a PBA	0	0	*
	T2 Suppy chain members paid through a PBA	0	0	*
	T3 Suppy chain members paid through a PBA	0	0	*

Comments

The Project Allowance and Target Price costs included reflect the Out-turn costs for the scheme excluding Equipment and Covid costs, for which no approvals were given. Significant sums included in the Non Works approval were instructed as Compensation Events and so, to ensure, appropriate comparison, all costs have been included with the exception of those stated.

C Project Pro-Formas

Project Manager: Project Time Predictability

Project time predictability

Adeiladu GIG i Gymru
NHS Building for Wales

Assessor details		Project details:	
Partner role	Project Manager	LHB/Trust	Swansea Bay University Health Board
Co. name	Mace Ltd	Project no.	R012
Indiv. name	Scott Matthews/Ashley Hollingto	Project name	Singleton Front Façade Cladding Replacement
Date	19/09/2024	Project type	refurbishment
		Project stage	handover

Time Predictability

Performance summary		Data	Perform %	Star Rating
PM	Planned date of handover at OBC	29/08/23		
	Planned duration to handover at OBC (weeks)	138		
	Agreed extensions (weeks)	17		
	Actual date of handover	26/02/24		
	Performance (ex extensions)		18.74	
	Performance (inc extensions)		6.42	*
SCP	Planned date of handover at OBC	29/08/23		
	Planned construction at OBC (weeks)	138		
	Agreed extensions (weeks)	17		
	Actual date of handover	26/02/24		
	Performance (ex extensions)		18.74	
	Performance (inc extensions)		6.42	*
Comments				

Supply Chain Partner: Waste Generation

Waste Generation

Adeiladu GIG i Gymru
NHS Building for Wales

Assessor details		Project details:	
Partner role	SCP	LHB/Trust	ABMU
Co. name	Kier Construction	Project no.	10007003
Indiv. name	Dean Williams	Project name	Singleton Recladding
Date	03/04/2024	Project type	refurbishment
		Project stage	handover

Waste generation during Stage 4: Design Completion & Construction

Volume (m3)		Weight (T) generated	GIFA (m²)	Comments	Score
1	Concrete	0	4039.8	Area applicable to envelope area ra	0.00
2	Brick	0	4039.8		0.00
3	Glass	0	4039.8		0.00
4	Timber	0.62	4039.8		0.02
5	Slate	0	4039.8		0.00
6	All metals	2.05	4039.8		0.05
7	Intact Architectural features	0	4039.8		0.00
	Totals	2.67			

Performance summary	Comments	Score
Overall Performance		0.01
Star Performance		*****

Notes

Target ≤ 13 tonnes / 100m³ gross internal floor area

Conditional formatting set at green >= 85%, red <85%

Comments

C Project Pro-Formas

Supply Chain Partner: Waste Recycling & Recovery

Waste Recycling & Recovery

Assessor details		Project details:	
Partner role	SCP	LHB/Trust	ABMU
Co. name	Kier Construction	Project no.	10007003
Indiv. name	Dean Williams	Project name	Singleton Recladding
Date	03/04/2024	Project type	refurbishment
		Project stage	handover

% recycling/recovery of waste by weight

Volume (m3)		Total Weight	Weight recycled	SCP 4 Comments	Score	Score
1	Excavation	8.63	8.19		94.90%	
2	Demolition	n/a	n/a		0.00%	
3	Construction	225.9	212.346		94.00%	***
4	Refurbishment / strip out	592.8	1	Asbestos containing	0.17%	
	Totals	827.33	221.536			

Performance summary		Comments	Score
	Overall % of Recycled / Recovered Material	26.78%	
	Star Rating		**

Notes

Target for Excavation (non-hazardous material) ≥ 95%

Target for Demolition ≥ 85%

Target for Construction ≥ 80%

Target for Refurbishment / Strip out ≥ 70%

Comments

Supply Chain Partner: Use of recycled Materials

Use of recycled materials

Assessor details		Project details:	
Partner role	SCP	LHB/Trust	ABMU
Co. name	Kier Construction	Project no.	10007003
Indiv. name	Dean Williams	Project name	Singleton Recladding
Date	03/04/2024	Project type	refurbishment
		Project stage	handover

Value of recycled content as % of total material value

% recycled (from NetWaste toolkit)		Comments	Score
1	Substructure	N/A	
2	Superstructure	steel, cladding, windows	34%
3	Walls, floors, ceilings	Plasterboard, decorating	57%
4	IT FF&E	N/A	
5	Services	M&E	20%
6	Site works	All above	37%

Performance summary		Comments	Score
	Overall Performance		37%
	Star Rating		*****

Notes

Conditional formatting set at 15% or more = green, <15% = red

Comments

C Project Pro-Formas

Supply Chain Partner: Local labour/ suppliers

Local labour / suppliers

Adeiladu GIG i Gymru
NHS Building for Wales

Assessor details		Project details:	
Partner role	SCP	LHB/Trust	ABMU
Co. name	Kier Construction	Project no.	10007003
Indiv. name	Dean Williams	Project name	Singleton Recladding
Date	03/04/2024	Project type	refurbishment
		Project stage	handover

Local labour - distance travelled

Distance travelled to work	No of employees	Performance	Star Rating
0-20 miles	183	33%	
21-50 miles	306	56%	
50+ miles (but within Wales)	19	3%	
Other	39	7%	
Total employees within Wales	508	93%	
Overall total employees	547	100%	*****

Local suppliers - % of value let to Welsh companies

Contract Expenditure	Performance	Star Rating
Contract value that relates to goods, services & OHs.	£10,382,267	
Expenditure within above value with businesses based in Wales providing goods, services, or OHs.	£10,349,583	
Percentage spent on businesses based in Wales.	100%	*****

Comments

Supply Chain Partner: Safety

Safety

Adeiladu GIG i Gymru
NHS Building for Wales

Assessor details		Project details:	
Partner role	SCP	LHB/Trust	ABMU
Co. name	Kier Construction	Project no.	10007003
Indiv. name	Dean Williams	Project name	Singleton Recladding
Date	03/04/2024	Project type	refurbishment
		Project stage	handover

Safety

Performance data			Performance	Star Rating
SCP9	No RIDDOR accidents	0		
	No hours worked (own labour)	15,895		
	No hours worked (sub)	133,796		
	Average No of employees (own labour)	6		
	Average No of employees (sub)	20		
	AFR		0.00	*****
	AIR		0.00	

Comments

D Awards


CIOB
Awards
Gold Winner in 2025 | Healthcare
Dean Williams
Kier Construction
All Finalists
Kier Construction
Singleton Hospital Façade Replacement
Taking over this project two-thirds of the way through, Dean Williams brought a fresh approach to the phased facade replacement. Firmly focused on project delivery, budget and quality, he applied the lessons learnt on previous phases while maintaining the design aesthetic.
About the Project
The sheer size of the facade required a complex and repetitive process of ward relocations before asbestos could be removed, the original facade demolished and the replacement cladding and windows installed. With the project in delay by over two weeks, Dean resequenced the external works, synchronising the scaffolding and hoist dismantling with the ongoing permanent works, to get back on track.
By challenging the sequencing and methodology of work for a neonatal ward, he captured a sizeable cost improvement. He made time savings by replacing a brise soleil with specialised window film that was more effective in reducing solar heat gain and glare and also improved end-user privacy.
Collaborative and proactive, Dean completed on time. His calm leadership style brought an increased sense of urgency to day-to-day tasks. He re-energised the site team and focused attention on quality and delivery without compromise. The ongoing quality issues with previous phases were eliminated by his introduction of a simple inspection and snagging protocol to allow a no-defect handover to the client