CURRIE & BROWN

The Value of **Certainty.**

University Hospital Llandough- Facet Surveys

Executive Summary

Prepared for Cardiff & Vale UHB

March 2026

Purpose of This Report

Purpose

This Executive Summary presents the key findings from the 10-year estate condition, risk and lifecycle modelling for University Hospital Llandough.

It has been prepared to:

- Provide a clear, evidence-based view of estate condition and risk
- Identify priority investment needs
- Support Welsh Government funding discussions
- Explain the consequences of continued under-investment compared to targeted intervention

The analysis draws directly from the validated Power BI estate model, using asset-level condition, risk, backlog and lifecycle cost data.

Functional suitability and space utilisation are outside the scope of this summary.

Estate Overview

University of Llandough at a Glance

University Hospital Llandough provides a wide range of NHS services including specialist mental health care, maternity services, outpatient clinics and a Medical Emergency Admissions Unit (MEAU).

The site comprises approximately 60 facilities supporting a diverse range of clinical and operational functions across the Cardiff and Vale University Health Board estate.

Estate modelling indicates a 10-year lifecycle renewal requirement of approximately £235 million, equivalent to an annualised investment requirement of around £23 million.

Maintaining estate resilience and reliable service delivery will require sustained lifecycle investment and targeted renewal of ageing infrastructure.

60

Total Facilities

£235 m

10 Years Renewals

£23 m

Annualised spend

£36.7 m

Total backlog maintenance
***Year 1 Investments*

Model Structure

Estate data inputs and baseline assumptions

The estate model is built from validated, asset-level survey data and structured to allow consistent comparison across the estate.

It combines condition, cost, risk and lifecycle information within a single, coherent dataset that underpins all subsequent analysis.

Core data inputs include:

- Condition grades (A–Dx) for fabric and M&E and assets
- Asset replacement costs aligned to standardised cost libraries
- Remaining service life for each asset
- NHS priority categories (Mandatory, Essential, Desirable, Statutory)
- NHS 1–25 risk scoring inputs (likelihood and consequence)
- Gross internal floor area (m^2) for benchmarking and normalisation

Baseline assumptions:

All costs are normalised to a common base year

- Data is aggregated at both building and site level
- Consistent classification and coding is applied across all assets
- Functional suitability and space utilisation are excluded from this model
- This structure provides a single, coherent dataset that underpins all subsequent analysis.

Modelling Approach

How data is converted into backlog, risk and investment need

Key modelling steps:

The model converts survey data into backlog, risk and investment need through a series of clear steps:

- **Backlog:** the cost to return assets in Condition C–Dx to Condition B
- **Lifecycle:** renewal costs profiled over 10 years based on remaining service life
- **Risk:** costs weighted using NHS 1–25 likelihood and consequence scoring
- **Priority:** works classified as Mandatory, Essential, Statutory or Desirable

This approach allows high-risk, high-cost assets to be identified and enables investment decisions to be prioritised on the basis of risk, cost and impact.

What this enables:

- Identification of high-risk, high-cost assets
- Comparison of alternative investment scenarios
- Clear visibility of how deferred investment escalates risk and cost
- Evidence-based prioritisation of capital and revenue spend

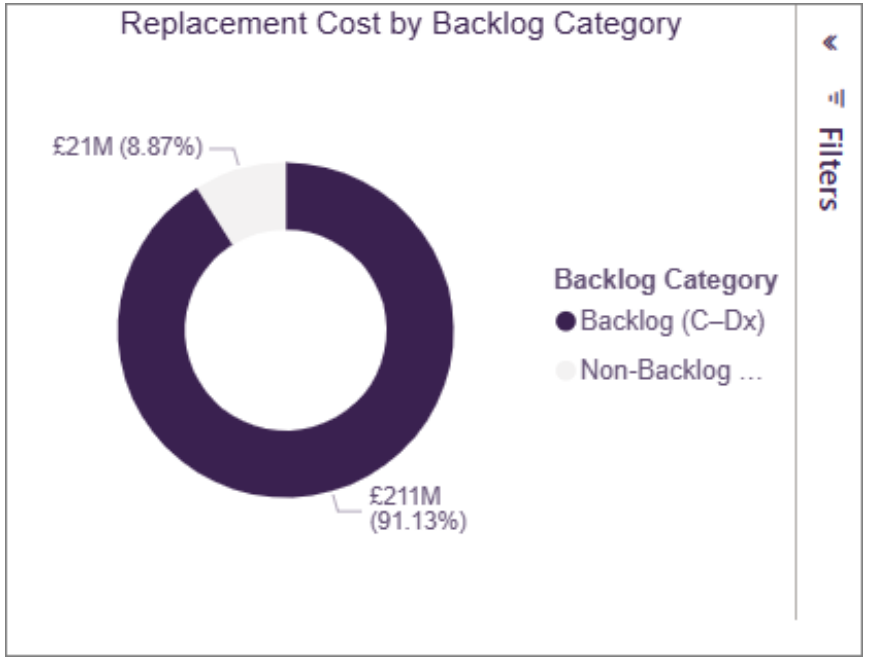
Outputs are presented through site-wide and facility-level dashboards to support decision-making.

“Backlog accounts for 91.1% of estate liability, mainly due to extensive deterioration instead of individual failures.”

Condition Distribution

Grade split

- Grade A / B: ~9% – Generally serviceable
- **Grade C: ~81% – Deterioration evident**
- **Grade D / Dx: ~10% – Significant risk / failure**



Escalating Risk from Deferred Investment

While part of the estate remains serviceable, most lifecycle liability sits within **Grade C assets**.

This indicates **widespread deterioration across the estate rather than isolated failures**, which is the primary driver of backlog growth.

Without targeted lifecycle investment, these assets will progressively deteriorate into higher risk categories, increasing operational and financial risk.

UHW is **remarkably similar structurally to Llandough**.

The key difference is:

Slightly fewer A/B assets at Llandough

Slightly more C assets

Backlog Maintenance

Backlog Overview

The backlog reflects ageing infrastructure and historic under-investment in lifecycle renewal.

- Ageing fabric and engineering infrastructure
- Increasing compliance and resilience requirements
- Growing operational demand

While total backlog at Llandough (**£211m**) is lower than **UHW (£417m)**, backlog intensity per m² is comparable (**£2,032 vs £2,086**), indicating similar levels of estate deterioration.

Note: Backlog = cost to return Condition C–Dx assets to Condition B.

£211 m

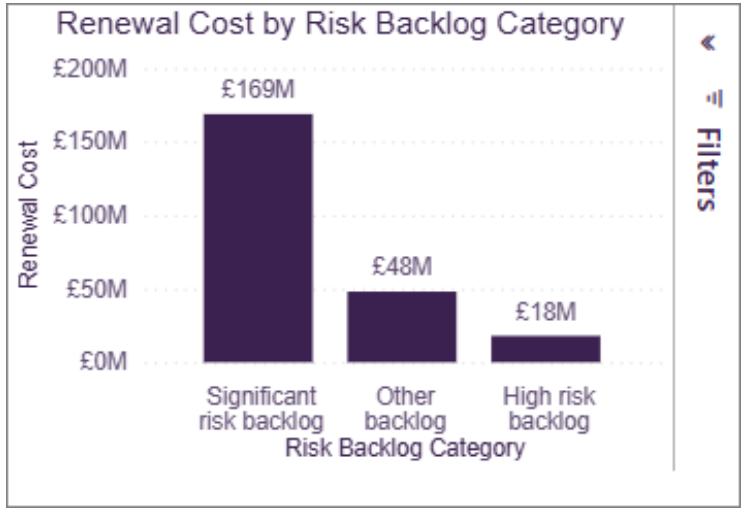
Total Backlog

£169 m

High / Significant backlog

£2,032

Backlog per m2



“National Benchmarking Confirms Severe Backlog Position”

Backlog - National Context

How Llandough compares nationally

A comparison against the **2023–24 ERIC returns** shows that the backlog intensity at **University Hospital Llandough** is significantly above the NHS England average.

£2,032 per m² performs poorly against the NHS England benchmark of **£662 per m²**.

- Backlog at **Llandough is £2,032 per m²**, compared with an NHS England average of **£662 per m² – more than three times the national benchmark**.
- This indicates that the estate backlog intensity at Llandough is **substantially higher than the typical NHS estate**.
- While this benchmarking provides context, ERIC comparisons should be interpreted with caution due to differences in estate type, service mix and reporting approaches.

Note: ERIC benchmarking is indicative and intended for high-level comparison only.

£2,032 v £662

Backlog per m² – University Hospital Llandough vs NHS England Average

Top 10 Trusts - Backlog M2

Trust Name	M2 Backlog
AIREDALE NHS FOUNDATION TRUST	£4,379
IMPERIAL COLLEGE HEALTHCARE NHS TRUST	£3,353
ESSEX PARTNERSHIP UNIVERSITY NHS FOUNDATION TRUST	£2,485
BARTS HEALTH NHS TRUST	£2,331
THE HILLINGDON HOSPITALS NHS FOUNDATION TRUST	£2,293
UNIVERSITY HOSPITAL WALES	£2,086
THE QUEEN ELIZABETH HOSPITAL KING'S LYNN NHS FOUNDATION TRUST	£1,907
CLATTERBRIDGE CANCER CENTRE NHS FOUNDATION TRUST	£1,832
UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST	£1,627
LONDON NORTH WEST UNIVERSITY HEALTHCARE NHS TRUST	£1,605

Filters

"Around 40% of total estate risk is concentrated in just ten buildings."

Risk Profile (NHS 1–25)

Top 10 Sites - Total Risk Exposure

Site Name	Building Name	Total Risk Exposure (Avg x Count)	Renewal Cost	% of Total Risk
University Hospital Llandough	32 - Academic Centre	6000	£15,208,300	15.00%
University Hospital Llandough	17 - Estate Maintenance	5197	£29,208,122	12.99%
University Hospital Llandough	05 - Theatre Block	4766	£36,291,190	11.91%
University Hospital Llandough	18 - Catering & Admin Block	4414	£20,043,151	11.03%
University Hospital Llandough	41 - MHSOP T3 - Rehab Day Hosp / East 18 / MHSOP Offices	4079	£18,215,063	10.19%
University Hospital Llandough	28 - Cystic Fibrosis Centre	4028	£18,484,710	10.07%
University Hospital Llandough	52 - Hafan y Coed E - Maple / Elm	3931	£7,631,707	9.83%
University Hospital Llandough	49 - Hafan y Coed C2 - Oak / Elder	3798	£9,186,599	9.49%
University Hospital Llandough	39 - Main Outpatients / East 10&12 / CFU	3765	£18,530,456	9.41%
University Hospital Llandough	29 - Wards East 7&8	3747	£13,179,902	9.36%

Filters

Drivers of Escalating Estate Risk

Risk is not evenly distributed across the estate. **Around 38% of total estate risk is concentrated within just ten buildings**, primarily key clinical and operational facilities.

This concentration indicates that a relatively small number of buildings drive a significant proportion of estate risk exposure.

Targeted, risk-led investment within these buildings would deliver a **disproportionate reduction in overall estate risk across the site.**

C, CX, D, DX – CONDITION CODES

COST PROFILE

The tables illustrate the **renewal cost profile of assets currently within Condition C–Dx**, representing the main drivers of lifecycle investment across the Llandough estate.

In **Year 1**, investment demand is concentrated within building fabric, fire safety infrastructure and ventilation systems.

Across **Years 1–3**, the profile expands to include major engineering systems such as **ventilation systems, boilers, heating infrastructure and water systems**, reflecting ageing building services across the estate.

Bringing forward some of this critical systems should be considered to avoid the risk of failure

YEAR 1

Asset Group	ReplacementCost
Boilers and Calorifiers	£146,000
Chimneys	£13,032
Drainage and Water Mains	£103,636
Electrical System	£1,825,000
External Fabric	£2,541,836
Fire Safety	£15,252,070
Grounds & Gardens	£61,520
Health & Safety	£690,772
Heating System	£3,650
Hot & Cold Water Systems	£14,600
Internal Fabric	£7,081,356
Internal Fixtures & Fittings	£82,052
Roof	£3,323,968
Structure	£2,612,647
Ventilation System	£2,945,094
Total	**£36,697,232**

Filters

YEAR 1 – 3 COMBINED

Asset Group	ReplacementCost
Alarms and Detection	£1,548,109
BMS	£712,612
Boilers and Calorifiers	£18,669,750
Chimneys	£14,229
Drainage and Water Mains	£103,636
Electrical System	£5,093,971
External Fabric	£5,630,759
Fire Safety	£15,500,887
Fixed Elec Plant and Equipment	£11,801,618
Fixed Mech Plant and Equipment	£93,075
Grounds & Gardens	£79,932
Health & Safety	£893,826
Heating System	£22,255,920
Hot & Cold Water Systems	£18,828,828
Internal Fabric	£13,844,394
Internal Fixtures & Fittings	£450,771
Lifts and Hoists	£3,525,008
Lighting	£981,994
Medical Gases	£1,091,460
Roof	£5,358,566
Structure	£2,665,448
Total	**£204,232,653**

Filters

What Investment Buys You

Translating investment into measurable risk reduction

Targeted, risk-led investment delivers far greater benefit than spreading funding evenly across the estate.

Focused intervention enables:

- **Meaningful risk reduction** – addressing a small number of high-risk facilities removes a disproportionately large share of total estate risk
- **Protection of core clinical services** – prioritising Mandatory and Essential works reduces immediate safety, statutory and operational exposure
- **Better value for money** – early intervention avoids escalation into reactive maintenance, emergency replacement and unplanned disruption
- **Greater certainty over future investment** – tackling front-loaded lifecycle demand stabilises longer-term funding requirements

"Over 79% of the £211m 10-year renewal requirement is driven by Mandatory and Essential works, demonstrating that the estate's investment need is primarily to sustain safe clinical operation rather than discretionary estate improvement."

Priority Categorisation

10-Year Priority Spend Profile

Investment requirements over the 10-year period are categorised in line with NHS priority definitions:

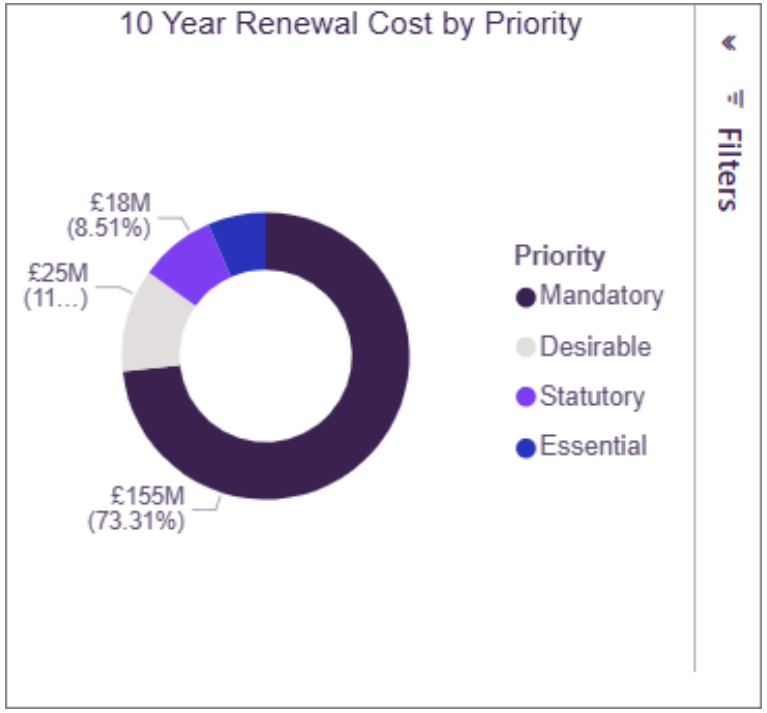
Mandatory: £155m (73.3%)
Works essential to maintain safe and continuous clinical operation, where failure would result in service disruption or unacceptable operational risk.

Essential: £18m (6.5%)
Works required to prevent further deterioration and escalating risk, protecting asset integrity and avoiding higher future costs.

Desirable: £56m (11%)
Longer-term lifecycle and optimisation works that support estate performance but do not present immediate safety or operational risk.

Statutory: £18m (8.5%)
Works required to meet existing legal or regulatory obligations, including life safety, fire safety and statutory compliance.

Priority categories defined in line with NHS Estates guidance.



"A relatively small number of high-cost facilities drive a significant proportion of the estate's long-term maintenance liability, reinforcing the need for prioritised, risk-led capital investment."

Facility-Level Cost Concentration

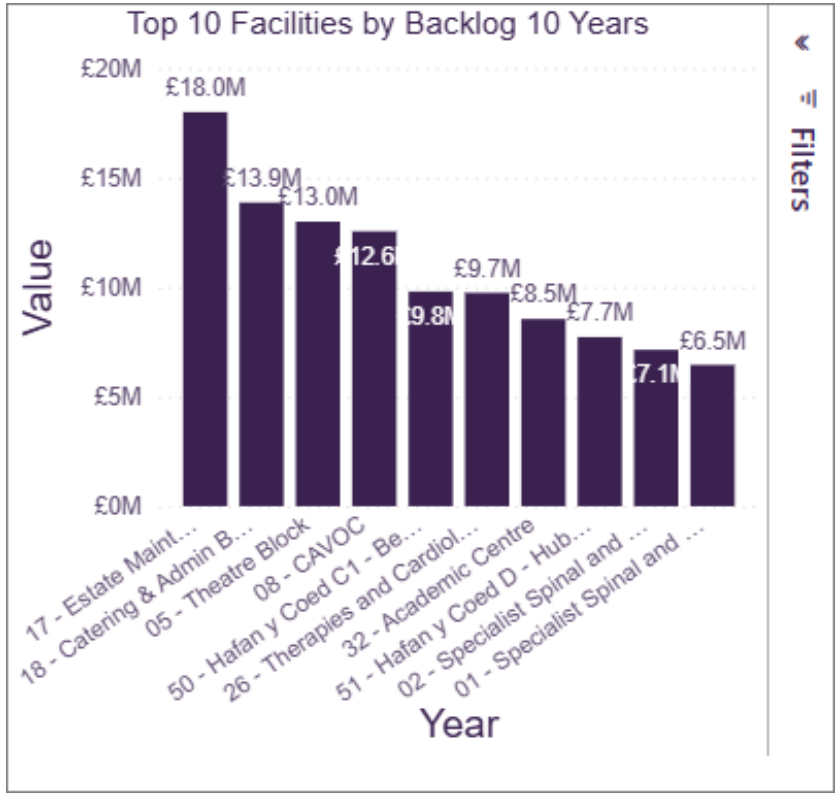
Backlog Cost Concentration

Backlog maintenance costs are **concentrated within a relatively small number of facilities rather than evenly distributed across the estate.**

The **top ten facilities account for approximately £110m — around half of the total 10-year renewal requirement.**

These facilities include several key clinical and operational buildings, where ageing infrastructure and building services drive a significant share of lifecycle renewal demand.

This concentration provides a clear opportunity to prioritise investment where it will deliver the greatest reduction in estate risk and improvement in service resilience.



"A relatively small number of high-cost facilities drive a significant proportion of the estate's long-term maintenance liability, reinforcing the need for prioritised, risk-led capital investment."

"The profile reflects a structural lifecycle challenge rather than discretionary investment need."

10-Year Renewal Profile

Lifecycle Demand Over Time

The **10-year lifecycle profile shows that renewal demand is heavily front-loaded**, driven by ageing building fabric and engineering assets reaching the end of their service life within a similar timeframe.

Approximately £204m of lifecycle renewal investment is required over the next 10 years, with a significant concentration of expenditure in the early years of the programme.

A pronounced **peak of approximately £167m occurs in Year 3**, reflecting the convergence of multiple asset replacements reaching end-of-life at the same time.

The apparent reduction in later years **does not indicate reduced risk**, but rather highlights that delaying intervention would likely lead to asset failure, service disruption, or emergency replacement costs.

Renewal investment is strongly front-loaded, with a significant concentration of lifecycle expenditure required within the first five years of the programme.

Consequences of Under-Investment

What Happens If Investment Is Deferred

Without targeted intervention, the estate will experience:

- Escalating clinical and operational risk
- Increased statutory and safety exposure
- Greater reliance on reactive maintenance
- Poorer value for money and higher whole-life cost

These impacts affect both patient safety and the reliability of clinical services.

Conclusions & Recommendations

Strategic Implications for Investment

The 10-year condition, risk and lifecycle model demonstrates that:

1. Estate risk and cost are highly concentrated, not evenly distributed
2. Investment need is driven by Mandatory and Essential requirements
3. Renewal demand is front-loaded and unavoidable
4. Targeted investment will deliver disproportionate risk reduction

Recommendations next steps

- Prioritise funding toward highest-risk, highest-cost facilities
- Focus early investment on Mandatory and Essential works
- Use the model as a live decision-support tool for capital planning
- Deploy outputs to support Welsh Government funding discussions

This report provides a clear, evidence-based platform to support informed decisions on capital prioritisation, risk management and long-term estate planning.

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