Report:
ARCH Histopathology Review: Service Model, Location Options & Funding & Delivery Models

Prepared for:

A Regional Collaboration for Health
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1. Background

This report follows the decision not to progress with a scheme to develop a single, consolidated Pathology building on the Morriston Hospital site. Despite this scheme not receiving the required funding to proceed, the ARCH members still recognise the need to improve its Pathology services, and particularly the Histopathology services, where aging estate is negatively impacting skills retention and putting the service at risk. In recognition of this risk, Lifecycle Consultancy Services (Lifecycle) was appointed in May 2025 to review the current services as well as the work completed as part of the Morriston project business case and propose a sustainable delivery model for Histopathology while also considering the long-term needs of the other Pathology and, in particular, Mortuary services.

Over the past two months, Lifecycle has been working with stakeholders from the central ARCH team as well as Pathology and, more specifically, Histopathology, management to review the service requirements and develop this high-level options paper that:

- Reviews the current service provision and confirms the areas of greatest risk;
- Define a list of possible service delivery models;
- Evaluate a list of possible sites for suitability to accommodate a transformed Histopathology service.

This is the first of two deliverables with a subsequent report that will include the following:

- A summary cost and timeline of the proposed schemes set out in this report;
- Feedback from a market engagement that investigated the feasibility of an outsourcing or partnership solution, either with an external pathology service provider or working with one of the UK's managed service equipment suppliers; and
- A recommendation for the model(s) that are most closely align with the priorities of ARCH.

2. Project Scope & Methodology

In the original scope of work, Lifecycle proposed a four-stage approach for developing and recommending the most suitable Histopathology transformation plan. However, this excluded a review of specific site options and, since some options have since been presented, the work was adapted to include these as part of the review.

Stage 1: Service Scope Definition

The first stage of the project would define a range of possible service models, ranging from a "Do Nothing and "Minimum Viable Service" to the full transformation scope as set out in the 2024 business case

Stage 2: Site Option Analysis

Based o the long list of sites shared with Lifecycle, we will review each option against the Service Scope models from stage 1 to highlight the risks and benefits as well as other operational considerations for each site. This will include working with the two Health Board's Capital Planning teams to estimate the cost of each scheme.

Stage 3: Service Delivery Options (Not included in this report)

Using the scope of service models above, Lifecycle will detail the different delivery model available to ARCH, including implementation approach and funding models options. Working closely with ARCH's internal experts as well as Lifecycle's network of specialists and suppliers, this will include considerations for outsourcing or partnership working as well as a range of funding options.

Stage 4: Recommendations

Once all work has been completed, Lifecycle will compile the information into a report including a recommendation on the proposed delivery model and next steps. An allowance will also be made for support during the board review process, including any adjustments to the reports that might be required.

3. Current Histopathology Service Overview

The first step in developing future options was to understand the configuration, performance, and limitations of the current Histopathology services across the region. This assessment considered physical infrastructure, workforce, activity levels, and productivity.

3.1 Functional Distribution

Services are currently delivered across three main hospital sites: Singleton, Morriston (both SBUHB), and Glangwili (HDUHB). The table below compares the services delivered at each site, excluding shared services and general building services. The Singleton and Glangwili laboratories both offer a comprehensive Histopathology service, including routine sample processing and H&E staining, non-gynae cytology and immunohistochemistry while the Morriston laboratory only deals with the first part of the Histopathology process – sample dissection – as well as the majority of SBUHB's urgent frozen section cases.

Table 1: Laboratory Functional Comparison

Histopathology Functions by Site	Singleton Hospital	Morriston Hospital	Glangwili Hospital
Laboratory			
Specimen reception: histopathology, sorting and request processing area	3	3	1
Lab: Specimen cut up area	4	4	2
Lab: General sorting area	4	1	
Lab: Sluice and clean up area and wet specimen store	6	4	
Lab: High risk/frozen section suite		1	
Lab: Non gynae cytology CAT 2	1		1
Lab: Processing	1		1
Lab: Embedding area	1		1
Lab: Microtomy	1		
Lab: Staining area	1		
Lab: Immunohistochemistry	1		1
Lab: Quality control area 1	2	1	
Stores			
Store: Specimen buckets	2	1	
Store: Slide and block	3	1	
Store: Chemical	1	1	1
Store: Equipment and supplies including storekeeping area	1		
Store: Laboratory consumables	1	1	
Store: Laboratory consumables	1		
Store: Protective clothing Lab coats	1		

Admin & Reporting			
Office: Clinical reporting rooms	9	10	6
Office: Secretaries	1	1	1
Office: Section managers office	5	1	1
Office: Single with meeting space Senior clinical manager	1		
Office: 12 person SpRs / ANPs	1	1	
Meeting & Training Rooms			
Seminar and training room	1		
Training Suite	1		
Group room: meeting 7 places (including 1 wheelchair place)			
Staff Welfare Areas			
Staff rest & mini-kitchen (size based on number of seats)	1		1
WC: ambulant	2		2
Locker bay	7		

From this table, there is significant functional duplication across the three sites. It also shows that the Glangwili laboratory lacks some of the administrative and support functions found at the Singleton. This is as a result of space constraints and is having an impact on the laboratory's ability to operate in line with UKAS ISO15198 standards.

3.2 Comparative Productivity and Estates Utilisation

A comparative review of service data revealed significant variation across sites in terms of space efficiency and staff productivity.

Table 2: Productivity & Space Utilisation

Histopathology productivity and space utilisation	**SBUHB Current (Both Sites)**	**HDUHB Current**	**Benchmark: Tertiary Referral Centre**	**Benchmark: District General Hospital**
Estates (m2)	**1,164**	**352**	**1,841**	**Est. 350**
Workforce	**119**	**30**	**153**	**39**
Substantive: Medical	16	4	48	2
Lab: Advanced Clinical Scientist (ACS)	39	8	66	21
Lab: Healthcare Scientist (HCS)	35	11	30	11
Lab: Admin	9	7	9	5
Demand (Cases):	**59,640**	**29,422**	**80,000**	**38,000**
Productivity (excl. Medical Staff)	719 cases/FTE	1,132 cases/FTE	761 cases/FTE	1,027 cases/FTE
Space Utilisation (excl. Medical Staff)	51 cases/m²	84 cases/m²	43 cases/m²	108 cases/m²

These figures show that while HDUHB operates with higher space and staff efficiency and, when compared to the benchmark District General Hospital, which is very well know to Lifecycle and can be considered as a laboratory with very little waste in terms of workforce and space, the Glangwili laboratory service is not sustainable. This is supported by feedback from the on-site management team as well as Lifecycle's own assessment from a recent site visit.

In contrast, when comparing the productivity of the SBUHB service with a tertiary referral centre that must manage their workload in a similar fragmented estate, it is Lifecycle's view that they have

sufficient staff and space to cope with their workload but that the configuration and excessive movement is having a negative impact on performance.

4. Assumptions and Principles for Future Models

When setting out the service model options, Lifecycle based the possible solution on the following assumptions and observations from business case documents as well as the site visit conducted on 20/06/2025:

- Since the Morriston laboratory development is not feasible, the ARCH leadership is willing to consider alternative estates solutions for housing a future Histopathology laboratory service, including retaining current sites, constructing a new laboratory build and renovating or fitting out an existing building.
- Future service configurations should promote consolidation (across sites and departments) but not at the cost of delivering a timely and affordable solution to current Histopathology service pressures.
- Both Histopathology laboratories are not performing to requirements and is the priority for investment / improvement. In both instances, estates are limiting growth (HDUHB) and performance improvement (SBUHB & HDUHB)
- Mortuary services across both Health Boards are facing capacity constraints and will need growth investment. This includes expanding the body store capacity (SBUHB & HDUHB), improving bereavement & viewing facilities (SBUHB only), expanding autopsy space for forensics investigations (SBUHB only) and adding capacity for CT scanning (SBUHB or HDUHB).
- However, beyond the capacity constraints, both mortuaries are housed in relatively modern, fit for purpose facilities that and can be expected to support continued clinical operations for the foreseeable future.
- Mortuary services need to remain on the acute site. However, due to the lack of urgency for normal formalin fixed tissue diagnosis (when compared to Blood Sciences) and developments of digital technologies, the bulk of Histopathology services can be located elsewhere.
- With appropriate logistics (for slides) and the uptake of slide scanning, consultant reporting rooms can be incorporated into an off-site hub laboratory or retained at the current acute sites.
- There will be the need for frozen section and fresh tissue handling facilities to be retained both Morriston and Carmarthen.

5. Service Model Options

What is included in the scope of service?

5.1 Summary of Options

When considering the risks and assumptions above and accounting for those options that should be included as part of any standard 5-case business case, Lifecycle proposes five service model options that should be compared for their ability to address current risks by delivering a timely and affordable solution that will also address the long-term sustainability needs of the region. These are summarised in table 3 below.

Table 4: Service Model Summary

Option	Description	Service Delivery Model
Option 1	**Do Nothing**	• Deliver the Histopathology Service with the current estates. • Retain full-service laboratories at Singleton (SBUHB) and Galngwili (HDUHB) including Frozen Sections, Sample Processing, IHC, NG Cytology and Consultant reporting, without increasing or reconfiguring the current footprint.

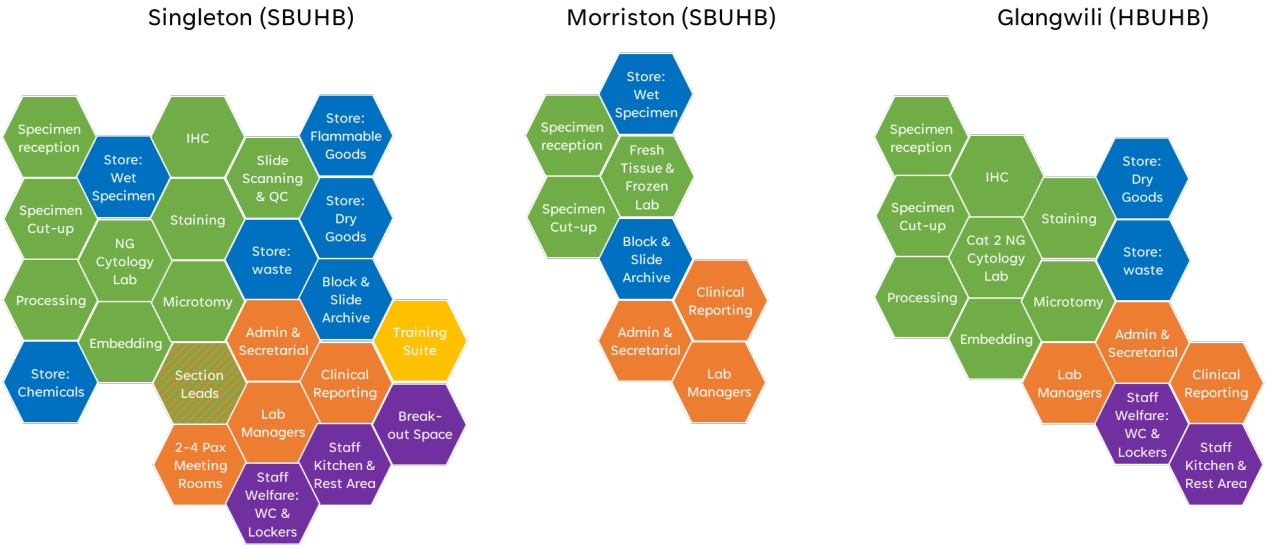
Option 2	**No Minimum**	• Upgrade existing facilities with new equipment, services and technology. Consolidate specialist testing to maximise available space. • Retain full-service laboratories at Singleton (SBUHB) and Galngwili (HDUHB) including Frozen Sections, Sample Processing, NG Cytology and Consultant reporting, without increasing or reconfiguring the current footprint. • HDUH's core laboratory footprint is expanded by consolidating IHC to SBUHB and relocating consultant offices outside of the core laboratory area. • SBUHB is reconfigured to improve sample flow and improve efficiency.
Option 3	**New Hywel Dda Laboratory**	• New stand-alone Hywell Dda laboratory. Additional estates will not require consolidation of specialist services. • 2 full-service laboratories are retained at Singleton and within the HDUHB region, including Frozen Sections, Sample Processing, IHC, NG Cytology and Consultant reporting. • The HDUHB laboratory is relocated to a new, possibly off-site, facility with sufficient space to process current workload under UKAS accreditation standards. • SBUHB is reconfigured to improve sample flow and improve efficiency.
Option 4	**New Hub Laboratory with Consultant Functions at Acute Sites**	• Multi-lab model with multiple consultant cut-up facilities & consolidation of sample processing, microtomy & staining, incl. specialist staining services. • Primary laboratory services for HDUHB and SBUHB are consolidated into a single, off-site laboratory since neither of the current sites can house a consolidated service. • Consultants remain at their current sites with consultant cut-up and frozen section functions retained on the two main hospital sites.
Option 5	**New Hub Laboratory with Consultant Functions at Hub Sites**	• Single hub laboratory housing all laboratory functions as well as reporting space for consultants. Some frozen section facilities to remain at all acute sites as determined by clinical activity. • All laboratory services for HDUHB and SBUHB are consolidated into a single, off-site laboratory since neither of the current sites can house a consolidated service. • Frozen section facilities are retained on the main hospital sites, but these labs are not permanently staffed and only delivered for scheduled surgeries. • Consultant offices form part of the scope of service with no office provision retained on the acute sites.

Paragraphs 5.2 to 5.6 below provide a visual representation of each option and describes the impact that the service model will have on operational factors such as estates, workforce, logistics and equipment options as well as management and governance considerations.

As summary of space requirements, including a comparison with the schedule of accommodation from the 2024 business case is included in paragraph 5.7 below.

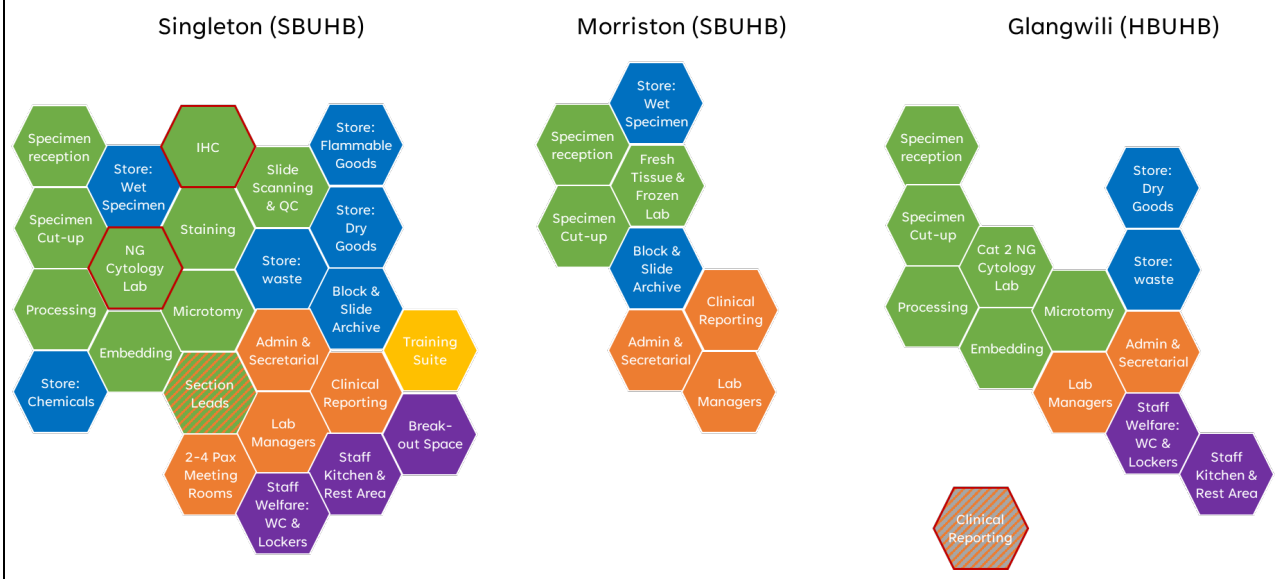
5.2 Option 1: Current State

Table 5: Option 1 – Current State

OPTION 1: DO NOTHING	
	
Estates	• Retain Current Estates. No Change
Workforce	• No change in current workforce.
Equipment	• No change to equipment.
Warehousing & Logistics	• No change to logistics & warehousing services.
Management & Governance	• No change
Clinical Interaction	• No change
Other Pathology Functions	• Does not address the capacity and performance issues in Histopathology. • Does not address the capacity issues in Morriston mortuary. • Does not provide growth space for HDUHB pathology functions.

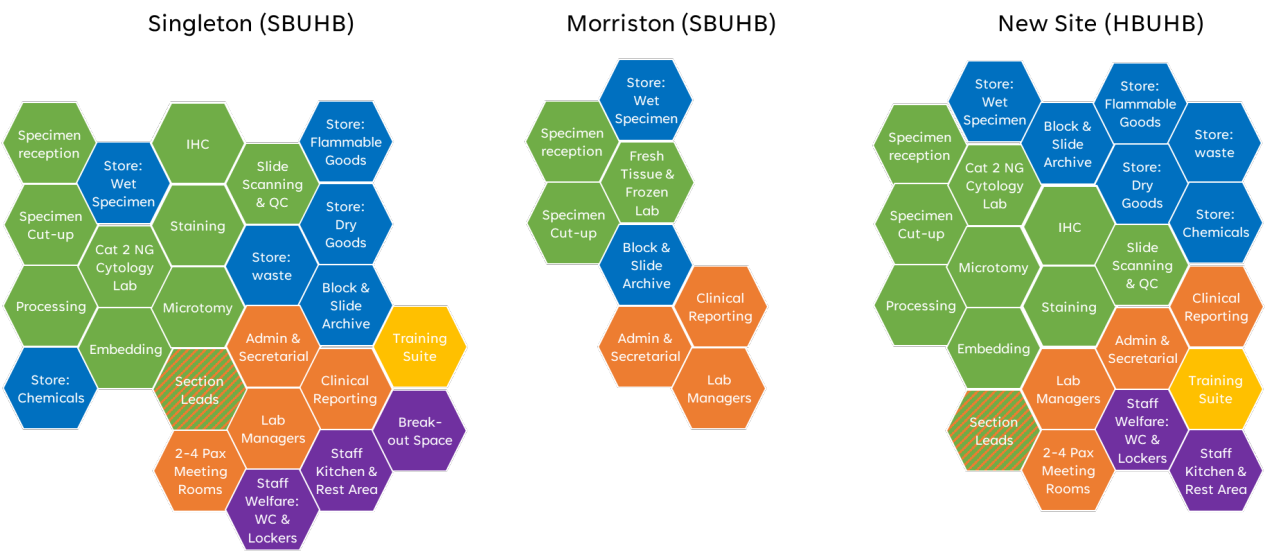
5.3 Option 2: Do Minimum

Table 6: Option 2 – Do Minimum

OPTION 2: DO MINIMUM	
	
Estates	• Relocate IHC and to Singleton, creating more routine laboratory space at Carmarthen (25m²) • Identify space elsewhere in the Carmarthen hospital for consultant reporting, freeing up space for laboratory functions (48m²) • Total increase in Carmarthen routine laboratory space: 73m²
Workforce	• HDUHB laboratory can appoint additional staff to support current demand. Estimated increase: 6-8 FTEs • No change at SBUHB.
Equipment	• Additional space should allow for new, automated processing equipment to align with SBUHB.
Warehousing & Logistics	• Increased logistics cost to consolidate ICH and NG Cytology testing into Singleton laboratory. • Slides should be scanned and reported digitally to avoid transport delays.
Management & Governance	• Change in ownership of specialist functions. Can be managed through an ARCH partnership agreement or, more simply, an outsourcing SLA.
Clinical Interaction	• No change. • HDUHB can still report NG Cyto & IHC. Ideally digitally.
Other Pathology Functions	• Addresses capacity issues within HDUHB Histopathology. • Does not address capacity & performance issues within SBUHB. • Does not address the capacity issues in Morriston mortuary. • Does not provide growth space for HDUHB pathology functions. • Pathology remains within each HB with some efficiency gains.

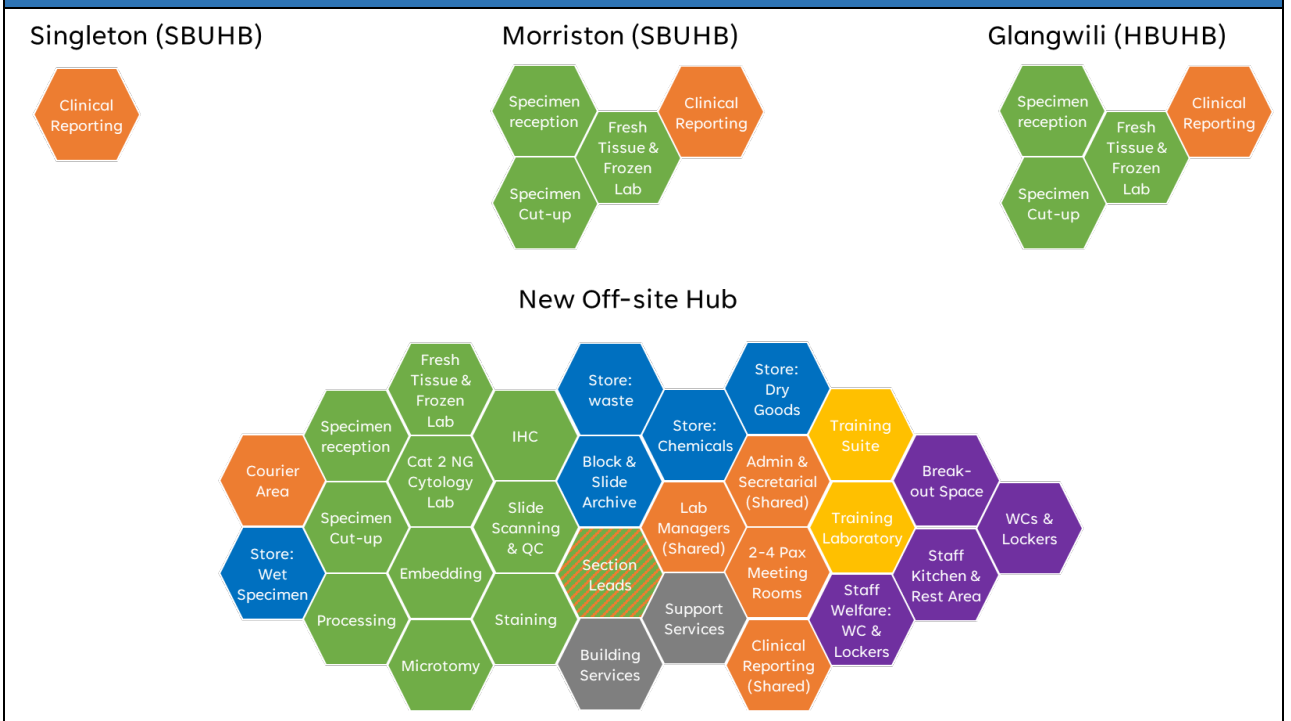
5.4 Option 3: New Hywel Dda Laboratory No Consolidation

Table 7: Option 3 – New HDUHB Laboratory

OPTION 3: NEW HYWEL DDA LABORATORY NO CONSOLIDATION	
	
Estates	• Construct a new off-site HDUHB Histology Laboratory. • Estimated requirement: 800m² • 2024 OBC estimate: 1,021m²
Workforce	• HDUHB laboratory can appoint additional staff to support current demand. Staff required to support acute site testing. Estimated increase: 8-10 FTEs • No change at SBUHB.
Equipment	• Additional space should allow for new, automated processing equipment to align with SBUHB.
Warehousing & Logistics	• Increased logistics cost to transport samples to off-site laboratory. • Slides should be scanned and reported digitally to avoid transport delays. • Increase warehousing cost since functions can't be shared between Pathology functions.
Management & Governance	• No change.
Clinical Interaction	• No change. • HDUHB consultants should ideally report digitally.
Other Pathology Functions	• Addresses capacity issues within HDUHB Histopathology. • Does not address capacity & performance issues within SBUHB. • Does not address the capacity issues in Morriston mortuary. • Does not provide growth space for Carmarthen pathology functions. • Loss of HDUHB Pathology colocation benefits.

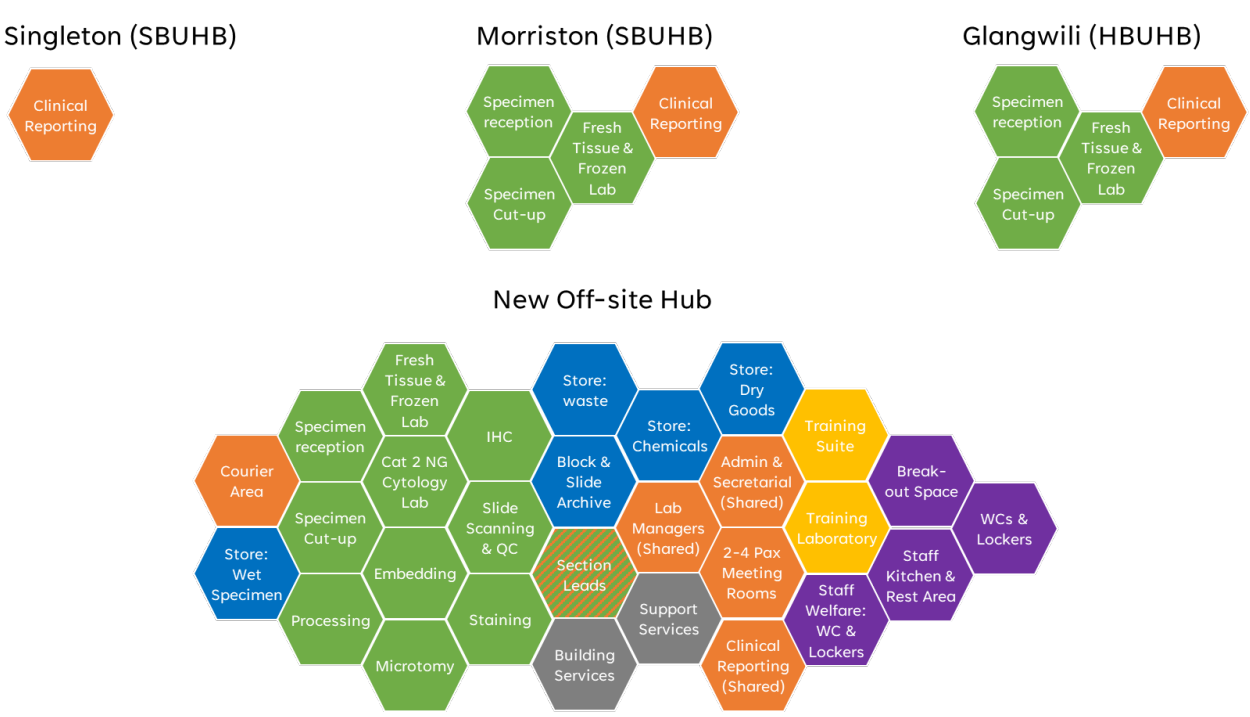
5.5 *Option 4: New Hub Laboratory with Consultant Functions on All Acute Sites*

Table 8: Option 4 – New Hub Laboratory excl. Medical Staff

OPTION 4: NEW HUB LABORATORY, CONSULTANT FUNCTIONS ON ACUTE SITES	
	
Estates	• Construct a new consolidated off-site Histology Laboratory. • Estimated requirement: 1,606m² • 2024 OBC estimate: 1,896m² • ~300m² less admin space than 2024 OBC
Workforce	• A consolidated laboratory will deliver efficiencies, allowing service delivery to meet current demands with 0 additional FTEs.
Equipment	• Consolidated laboratory will require additional automated processing equipment.
Warehousing & Logistics	• Increased logistics cost to transport samples to off-site laboratory. • Slides should be scanned and reported digitally to avoid transport delays. • Increase warehousing cost since functions can't be shared between Pathology functions.
Management & Governance	• Consolidated service will require an ARCH partnership agreement of full-service SLA. • Clinical staff can be excluded if complex cut-up retained at acute sites.
Clinical Interaction	• No change. • Consultants should ideally report digitally.
Other Pathology Functions	• Addresses capacity issues within HDUHB & SBUHB. • Limited impact on Morriston mortuary if Histo services not scaled back. • Provides growth space for Carmarthen pathology functions. • Loss of Pathology colocation benefits likely mitigated by improvement in Histopathology efficiencies.

5.6 *Option 5: New Hub Laboratory with Consultant Functions at Hub*

Table 9: Option 5 – New Hub Laboratory incl. Medical Staff

OPTION 5: NEW HUB LABORATORY, CONSULTANT FUNCTIONS AT HUB	
	
Estates	• Construct a new consolidated off-site Histology Laboratory. • Estimated requirement: 1,966m² • 2024 OBC estimate: 1,896m² • ~70m² more lab space
Workforce	• Consolidating laboratory and clinical functions, including permanently staffed acute sites, can result in an estimated 6 fewer FTEs.
Equipment	• Consolidated laboratory will require additional automated processing equipment.
Warehousing & Logistics	• Increased logistics cost to transport samples to off-site laboratory. • Increased staff travel cost to provide frozen sections service. • Increase warehousing cost since functions can't be shared between Pathology functions.
Management & Governance	• Consolidated service will require an ARCH partnership agreement or full-service SLA. • Clinical staff should form part of patronship agreement.
Clinical Interaction	• Should be a fully consolidated services with honorary contracts and working across health boards.
Other Pathology Functions	• Addresses capacity issues within HDUHB & SBUHB. • Reduction in Morriston Histo allows expansion of Morriston mortuary space. • Provides growth space for Carmarthen pathology functions. • Loss of Pathology colocation benefits likely mitigated by improvement in Histopathology efficiencies.

5.7 Estates Requirement Comparison

The table below provides a breakdown of the new site options 3-5 above. For comparison, it also includes current space within each health board as well as the requirements calculated in the 2024 OBC. A key difference between the 2024 OBC values and the Lifecycle estimates is a reduction in the need for administrative and reporting space but an increase in overall laboratory and training space. In our experience, this aligns with the demand growth and technology developments in Histology with laboratories coming under increased pressure from the sharp rise in cancer diagnosis requests while consultant reporting practices with change with the adoption of digital pathology, increasing remote working and needed fewer individual reporting rooms close to the laboratory.

Table 10: Estates Requirement

Cell Path Schedule of Accommodation	SBUHB Current	HD Current	HD 2024 Business Case	Lifecycle HD Proposed Option 3	Regional 2024 Business Case	Lifecycle Regional Option 4	Lifecycle Regional Option 5
Function	m²	m²	m²	m²	m²	m²	m²
Laboratory	198	153	336	249	479	501	541
Stores	121	8	77	71	175	169	169
Admin & Reporting	367	80	221	156	549	258	486
Meeting & Training Rooms	101	-	15	30	61	120	120
Staff Welfare Areas	40	11	27	27	56	56	56
Building Services	3	10	46	46	58	58	58
Courier Lobby	-	-	6	6	6	6	6
External Services	36	8	10	10	28	28	28
Net allowance	**866**	**270**	**738**	**595**	**1,411**	**1,195**	**1,463**
5% planning allowance	43	13	37	30	71	60	713
Total	909	283	775	625	1,482	1,255	1,536
3% engineering allowance	27	9	23	19	44	38	456
25% circulation allowance	227	71	194	156	370	314	384
TOTAL ALLOWANCE	**1,164**	**363**	**992**	**800**	**1,896**	**1,606**	**1,966**

5.8 Alternative: Phase Implementation – Option 3 to 5

During the option review process, a phase option was also suggested that would aim to construct a single, regional laboratory immediately but only relocate the HDUHB services (Option 4) as a first phase. Then, once the laboratory has aligned their practices to the SBUHB laboratory ISO standards, the two laboratories can merge (Option 4). Consultant services can then migrate into the new hub laboratory as digital adoption improves. Table 11 below sets out the progression of the phases in more detail.

Table 11: Phased Delivery Model

PHASE 1	PHASE 2	PHASE 3
Option 3: New Hywel Dda Laboratory	**Option 4: New Hub Laboratory with Consultant Functions on All Acute Sites**	**Option 5: Single Fully Centralised Histopathology Laboratory**
New stand-alone Hywell Dda laboratory. Additional estates will not require consolidation of specialist services. Establish new laboratory with sufficient space for a full regional consolidation but only relocate HDUHB services • Requires additional upfront capital investment without any immediate return. • Addresses most critical capacity risk. • Allows time for SOP, technology and contract alignment. • Allows time for HDHUB service to regain UKAS accreditation.	**Multi-lab model with multiple consultant cut-up facilities & consolidation of sample processing, microtomy & staining, incl. specialist staining services.** Once the HDUHB service is established and has regained its UKAS accreditation, the SBUHB service can relocate from Singleton to the new hub laboratory. • Phased transition mitigates risk by keeping one service fully operational at all times. • Does not put SBUHB accreditation at risk. • Delays the efficiency gains that can be achieved through consolidation.	**Single hub laboratory housing all laboratory functions as well as reporting space for consultants. Some frozen section facilities to remain at all acute sites as determined by clinical activity.** Once bath services are operational, consultant services can start to transition into new hub laboratory. To limit disruptions and for clinical teams to establish new ways of working, this can also be phased. • Low risk approach to service transformation. • Can delay expansion of Morriston mortuary services if on-site Histo is not reduced immediately.

6. Site Option Analysis

Where can the new laboratory be built?

The Welsh government's central estates services have provided ARCH with several options that could be suitable as future Histopathology Hub laboratories. After adding a few options based on local knowledge and ongoing local development schemes, the ARCH team shared the list with Lifecycle.

Following an initial review for suitability, four sites options were selected as being representative of the sites that should be considered by ARCH as possible solutions. These are detailed in the paragraphs below, also stating the specific service delivery model that can be accommodated in the site provided.

6.1 Modular Building

Table 12: Modular Building Option Review

Building Type:	Modular building using our Portakabin Ultima range
Building Details:	Based on the Darwin Group Hire Budget Proposal. Darwin Group, part of Portakabin, is a specialist healthcare business providing flexible building solutions creating an adaptable estate across the NHS and independent sector.
Images:	DarwinGroup 
Floor Area:	874m² as proposed
Service Delivery Model:	Option 3, based on proposed scheme. Modular buildings are built to client specification and dependent on plot size. Can be expanded to provide sufficient space for any scheme.
Funding Option:	Rental, 5 year term
Costs Estimate:	£2,863,300 (excl. VAT, incl. site preparation & delivery)
Benefits:	• Depending on site, modular buildings can be designed to meet exact specifications. • Can be constructed on a hospital site, but this will likely then need to comply with “Design for Life” requirements, possibly increasing scheme cost. • Modular construction allows for shorted lead times. • If there is space on the site, it can allow for future expansion to include other disciplines.
Risks:	• Require many of the same planning and approval processes as a new build. • Given the commercial space already available in the region, this is not the most sustainable solution. • Likely to still cost more than an existing building.

6.2 Existing Light Industrial Unit

Table 13: Light Industrial Unit Option Review

Building Type:	Light Industrial Renovation
Building Details:	Dafen Unit 2a, Llanelli Light industrial unit currently providing 1,700m of usable floor space. Currently used by HDUHB for phlebotomy unit, but previously part of covid testing/vaccination etc. Will need significant improvements to make it suitable for long term use as Histopathology laboratory. Current configuration does not allow for consolidation of all ARCH histopathology services.
Images:	  
Location:	Llanelli (SA14 8QW), 10 mi from Morriston, 23 mi from Glangwili
Floor Area:	1,742m² available
Service Delivery Model:	Option 3 Might be possible to increase usable space by expanding mezzanine level.
Funding Option:	TBC – Purchase / Rental / Lease
Costs Estimate:	To be confirmed by Capital Planning Dept.
Benefits:	• Existing HDUHB facility near Prince Phillip Hospital • Mostly empty shell that can be converted into laboratory space. • 2x the space required for Option 3. Allows for expansion to include supporting functions, ex. a regional body store. • With addition of mezzanine floor, it might be possible to expand the building to accommodate a consolidated laboratory. • Easy access and ample parking
Risks:	• Currently not enough space to consolidate all ARCH histopathology functions unless an additional floor can be added into the warehouse space. • Would need significant HVAC & electrical upgrade to house a laboratory, likely increasing the cost. • No easy access to staff welfare facilities.

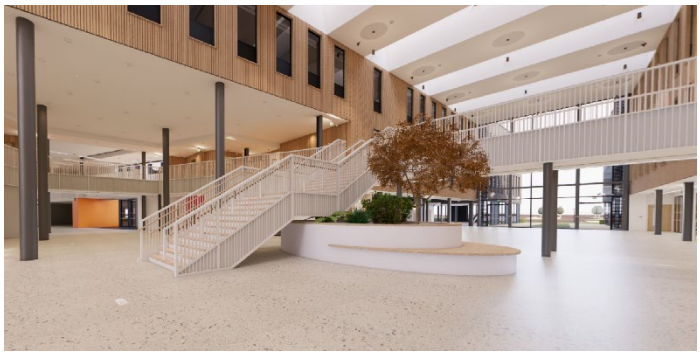
6.3 Existing Commercial Office Building

Table 14: Commercial Office Option Review

Building Type:	Commercial Office Renovation
Building Details:	3 Sandringham, Swansea Enterprise Park Vacant office building previously used as call centre within Swansea Enterprise Park, which provides a further 335 acres of mixed-use commercial, residential and leisure facilities. Adjacent to current Health Records building (#5 below)
Images:	
Location:	Swansea (SA6 8AJ), 3 mi from Morriston, 23 mi from Glangwili
Floor Area:	3,000m² available
Service Delivery Model:	Option 3, 4 & 5
Funding Option:	TBC – Purchase / Rental / Lease
Costs Estimate:	To be confirmed by Capital Planning Dept.
Benefits:	• Near Morriston Hospital • Empty office that can be converted into laboratory space. • More space than what is required for regional Histopathology hub laboratory. Allows for expansion to include supporting functions, ex. consultant reporting rooms, regional PHW laboratory, body store. • Easy access and ample parking. • Good access to retail and staff welfare facilities.
Risks:	• Would likely need significant HVAC & electrical upgrade to house a laboratory, likely increasing the cost. • No space immediately available in adjacent units to consolidate other Pathology functions.

6.4 New Facility, Shell & Core Fit-out

Table 14: Shell & Core Fit-out Option Review

Building Type:	New Building, Shell & Core Fit-out
Building Details:	Canolfan Pentre Awel, Llanelli Newly developed mixed-use development by Carmarthenshire County Council. Includes HBUHB and Swansea University as tenants. 330m² already earmarked for laboratories with expansion possibilities.
Images:	  
Location:	Llanelli (SA15 2EZ), 12 ml from Morriston, 19 ml from Glangwili
Floor Area:	Up to 5,000m² available. 2,600m² currently available on 2nd floor.
Service Delivery Model:	Option 3, 4 & 5
Funding Option:	Rental
Costs Estimate:	To be confirmed by Capital Planning Dept.
Benefits:	• New building built to high specification with services to house laboratories. • Shell & Core options might reduce construction time. • Staff welfare facilities available on-site • ARCH partners also named partners in this development. Might reduce contracting time.
Risks:	• No single floor plate with sufficient space for Histopathology; however, 2nd floor can accommodate all functions across 2 wings on the same floor. Alternatively, admin functions can be housed on lower floors. • No space to consolidate other Pathology functions. • Longer distance from Morriston than other sites. • No ownership option. • Not close to any of the ARCH hospital sites. • Sample logistics can prove challenging. • Not suitable for use as a body store facility. Will need to develop a solution elsewhere.

6.5 Alternative Schemes:

6.5.1 Cross Hands Community Health and Wellbeing Centre

Another potential site that has been mentioned for Histopathology is the proposed Cross Hands Community Health and Wellbeing Centre in Carmarthen. An architect's drawing of the scheme is shown in the figure below. This development, which has yet to commence construction, is modelled on the Newport East Health and Wellbeing Centre in Ringland. It aims to bring together a range of health and social care services—including GP practices, dental services, community services, social care, and third-sector partners—within a single integrated community hub.

According to available information, the Cross Hands development has a total planned footprint of 4,715m², of which only approximately 700m² remains unallocated. Given the scale of the overall scheme, the limited remaining space, and the fact that construction has not yet started, the other site options reviewed in this report are considered more suitable for accommodating a consolidated ARCH Histopathology service.

Proposed Cross Hands Community Health and Wellbeing Centre

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6.5.2 Aseptic Production Unit

The Welsh Government is also in the early stages of developing a South Wales Aseptic Production Unit, which may include other unrelated clinical support services. However, there is currently no clarity regarding the proposed scope, location, timing, or scale of the development. Given the high level of uncertainty and the importance of timely delivery for the Histopathology service, this scheme is unlikely to provide a viable or timely solution for ARCH's requirements.

7. Service Funding & Delivery Model Options

How can the service transformation be funded and delivered?

In addition to the service model and site options previously described, ARCH must also consider a range of delivery and funding models. These models were defined as part of an industry engagement and differ significantly in the level of capital required, the degree of control retained by ARCH, and the extent to which operational risk is transferred to external providers.

Each model discussed in §7.2 to §7.7 below offers a different balance of opportunity and risk and may be more or less suited depending on the urgency of implementation, the availability of capital, and the desire to retain operational control of services.

7.1 Supplier Engagement to Inform Funding and Delivery Models

To help inform the range of viable funding and delivery models for the future ARCH Histopathology service, Lifecycle engaged with a selection of organisations who may be able to support ARCH with aspects of capital investment, equipment provision, or outsourced service delivery. These suppliers fall into three broad categories:

- **Full-Service Pathology Providers:** e.g. Health Services Laboratories (HSL)
- **Histopathology Outsourcing and Referral Providers:** e.g. Source Bioscience, CPS, Diagnexia
- **Original Equipment Manufacturers (OEMs):** e.g. Leica Biosystems, Roche Diagnostics

Of these, HSL, Source Bioscience, and Leica Biosystems agreed to meet with the team to discuss their potential interest in supporting ARCH. A summary of these discussions is provided below.

Health Services Laboratories (HSL)

HSL specialises in large-scale pathology outsourcing contracts, typically involving the provision of new or upgraded laboratory facilities, installation of equipment and IT systems, staff transfer, and logistics management. Their operating model usually spans all major pathology disciplines and is underpinned by long-term contracts.

Feedback from HSL indicated that the scale and scope of the ARCH Histopathology requirement would likely fall below the threshold of what they consider commercially viable. As such, they confirmed that they would be unlikely to pursue the opportunity under either a full outsourcing arrangement (Model 5) or a partnership model (Model 4).

Source Bioscience

Source Bioscience provides histopathology testing and reporting services to a range of NHS organisations across the UK. Their primary offering focuses on supporting laboratories with additional reporting capacity, particularly to manage demand peaks or reduce backlog. They do not currently deliver full-service, end-to-end histopathology on behalf of any clients.

Although full outsourcing is not part of their core business model, Source Bioscience expressed some interest in exploring a wider service offer if sufficient scale and long-term commitment could be demonstrated. More immediately, they indicated that they would be open to discussions about providing additional reporting capacity to support the service (Model 3).

Leica Biosystems

Leica is the existing Managed Equipment Service (MES) provider for Hywel Dda UHB, supplying equipment and consumables under a contract that excludes estates or infrastructure investment. MES models of this kind are more typical in Blood Sciences, where high reagent volumes support greater contract values and help justify broader supplier investment.

Leica confirmed that such investment-led MES arrangements are less common in Histopathology due to the lower consumables spend. However, they indicated a willingness to explore a broader investment offer (Model 2) if the contract scope, term, and overall value were sufficient to support such an approach.

7.2 Model 1: In-House (Full Public Capital)

Description:

This model involves the full internal delivery of the Histopathology service. The facility is developed and operated by ARCH, using capital funding from public sources (e.g. central NHS capital programmes). All operational responsibilities, including estates, workforce, and governance, remain within the NHS.

Considerations:

- **Ownership:** Full ownership and operational control remain with ARCH and its member Health Boards.
- **Funding Route:** Funded entirely through public capital.
- **Capital Requirement:** High – includes full cost of construction and full scope and scale of service.
- **Payment Method:** Fixed annual budget allocation or cost-per-test funding options.
- **Risk Management:** All delivery, financial and operational risks—including construction, procurement delays, performance shortfalls and technology obsolescence—remain with ARCH.
- **Delivery Timeline:** 1.5–2 years, assuming prompt capital allocation and adequate estates resources.

Opportunities:

- Full control over service configuration, governance, and investment priorities remain with ARCH (or it's member HBs). Consequently, there will be no restrictions on future service changes such as further consolidation within Pathology or greater national collaboration.
- Any future improvements in efficiency and/or quality, particularly those resulting from technology improvements, will be for the Health Board's benefit.
- Self-funding / Government funding will be best suited for a phased delivery model as described in §5.8 above, allowing HDUHB to address the immediate capacity risk in the shortest possible time.

Risks:

- Availability of public capital remains uncertain and highly competitive across Wales and the wider NHS, making delivery timescales difficult to predict.
- Project progress is reliant on internal NHS estates and capital planning teams, which are often resource constrained.
- ARCH retains all delivery, financial and operational risks, including delays, cost overruns, equipment obsolescence, and any shortfall in service performance.

7.3 Model 2: In-House with Managed Equipment Services (MES)

Description:

Under this model, the Histopathology service is delivered and managed by ARCH or its member Health Boards, but the capital cost of both laboratory equipment and a portion of the facility fit-out is provided by a MES provider. In return, the Health Boards commit to a long-term agreement—typically 10+10 years—and to using the MES provider's specified equipment and consumables under a bundled contract.

Considerations:

- **Ownership:** Full ownership of service delivery retained by ARCH; MES provider owns equipment and charges for fit-out through a CPT mechanism.
- **Funding Route:** Government capital with equipment and partial estates fit-out via the MES contract.
- **Capital Requirement:** Moderate – initial capital requirement is reduced.
- **Payment Method:** Equipment and reagents as well as a portion of the capital cost will be paid through a CPT mechanism.
- **Risk Management:** Responsibility for equipment and possibly parts of infrastructure rests with the MES provider. Operational and activity risks remain with ARCH.
- **Delivery Timeline:** 2–3 years, depending on MES procurement cycle and readiness.

Opportunities:

- Reduces the immediate capital burden on Health Boards by leveraging private sector investment.
- MES provider offers lifecycle support including maintenance, refresh cycles, training, improvement and integration. Both HBs already benefit from these benefits under their current MES contracts.

- Compatible with phased delivery as described in §5.8.

Risks:

- Current MES contracts are not aligned and may delay this option by several years.
- Requires a long-term contractual commitment (typically 10+10 years) which may reduce flexibility in responding to future clinical or technological changes, limit the ability to independently select best-in-class solutions or adapt to national standardisation initiatives.
- The procurement process will be more complex and likely take more time than previous MES procurements.
- Bundled pricing structures may limit cost transparency and result in higher overall costs if demand grows beyond expectations.
- Contract variations (e.g. due to shifts in testing volumes or service scope) can be difficult and expensive to implement, potentially locking the service into a fixed configuration for the duration of the agreement.

7.4 Model 3: Hybrid Outsourcing (Routine Overflow Tests)

Description:

This model proposes a smaller, in-house laboratory designed for base-case activity levels, with overflow routine work outsourced to an external provider. This reduces the footprint and capital cost of the new facility, while still retaining control of the core Histopathology service and workforce.

Considerations:

- **Ownership:** ARCH retains ownership of the facility and workforce for base-case capacity. Additional capacity will be processed under an outsourcing contract.
- **Funding Route:** Core laboratory funded through public capital; overflow tests via CPT-style contract.
- **Capital Requirement:** Low to Moderate, depending on the retained capacity.
- **Payment Method:** Fixed cost or CPR funding for in-house activity; volume-based CPT payments for outsourced tests.
- **Risk Management:** ARCH retains in-house risks; demand growth risk partially transferred to external partner.
- **Delivery Timeline:** 1.5–2 years for internal build; outsourced provision can be mobilised in parallel or at a later stage as and when needed.

Opportunities:

- Enables the development of a more affordable facility with a smaller footprint, accelerating the delivery of urgent improvements at a lower cost.
- Flexibly manages short-term demand peaks or long-term growth without requiring immediate additional capital investment.
- Allows Health Boards to retain core staff, service governance and reporting functions in-house, supporting local workforce development and quality control.
- Potential to develop a competitive market for excess volumes, using commercial providers to manage cost and turnaround times.

Risks:

- Long-term reliance on outsourcing partners for capacity can create future financial pressure if demand increases faster than anticipated.
- Without sufficient internal capacity and clear boundaries or service-level management, there is a risk that dependency on third parties expands over time, reducing internal resilience.

- The service will be exposed to market pricing at a time when most services are struggling for capacity, leading to unexpected cost increases over time.

7.5 Model 4: Public/Private Partnership (Joint Venture)

Description:

In this model, ARCH partners with a private-sector organisation that co-invests in infrastructure and service delivery. ARCH may retain partial ownership or governance rights, but, based on similar schemes delivered elsewhere in the UK, day-to-day operations and most operational risk will typically lie with the private partner. JVs are typically chosen where a potential for growth into other regions or Health Boards are a possibility.

Considerations:

- **Ownership:** Shared between ARCH and the private-sector partner, aligned with proportional investment in the scheme.
- **Funding Route:** Capital build and core infrastructure jointly funded by both partners; ARCH pays the joint venture for ongoing services on a cost-per-test (CPT) basis.
- **Capital Requirement:** Moderate – requires investment from ARCH, but less than a fully NHS-funded model.
- **Payment Method:** Payments made on a CPT basis, with annual profit share distributed according to ownership share.
- **Risk Management:** In line with comparable UK joint venture models, operational risk is transferred to the JV entity, while capital risk is retained by both parties in proportion to their investment.
- **Delivery Timeline:** 4–5 years, due to the complexity of establishing and procuring a compliant partnership arrangement.

Opportunities:

- Significantly reduces the need for direct capital investment by ARCH, making it suitable when public funding is limited.
- Private partners may offer faster delivery times, established build-operate models, and access to specialist skills and technology.
- Retaining partial ownership or board-level influence can ensure strategic alignment and protect public interests over the life of the contract, especially with regards to retaining services in the region and protecting jobs.

Risks:

- Complex procurement and approval process, including regulatory scrutiny and extensive legal input, which can delay mobilisation.
- Most operational decisions and technology choices are led by the provider, which may reduce ARCH's influence over clinical or quality decisions.
- Workforce transfer to the private provider. This may impact staff morale, training opportunities, and long-term recruitment into the NHS.

7.6 Model 5: Full Outsourcing

Description:

Under this model, the entire Histopathology service is delivered by an external provider. ARCH commissions the service under a CPT contract. No NHS staff or facilities are involved in operational delivery.

Considerations:

- **Ownership:** 100% of infrastructure, staffing, and service delivery lies with the external provider. ARCH is a commissioning body only.
- **Funding Route:** Entirely revenue-funded via service-level contract. No NHS capital required.
- **Capital Requirement:** None for ARCH – all infrastructure, staffing and operational costs are borne by the provider.
- **Payment Method:** CPT model that typically includes incentives for test volume management but may also increase exposure to cost variability. Some models include a fixed fee for baseline activity and CPT for marginal volumes.
- **Risk Management:** Full delivery risk is transferred to the provider, including performance, staffing, estates, and equipment. However, ARCH retains reputational and service continuity risk in the event of contract failure.
- **Delivery Timeline:** 3–4 years, allowing for full procurement and mobilisation of outsourced service.

Opportunities:

- Eliminates the need for any capital investment or long-term estate planning by ARCH, making it the lowest-cost option from a public sector funding perspective.
- Full risk transfer provides protection against delivery failure, cost overrun, technology risk, and equipment obsolescence.
- Can provide a economies of scale benefit due to outsource providers scale and buying power. However, since Histopathology has limited reagents and consumables, the impact of this is likely limited.

Risks:

- Long-term contracts can limit flexibility and lock ARCH into commercial arrangements that may not adapt well to future changes in service demand, technology, or national policy.
- Loss of operational control, with limited ability to influence decisions about staffing, training, equipment choice, or service innovation once outsourced.
- Repatriation of services in the future would be complex and costly, particularly due to TUPE implications, loss of in-house capacity, and contractual exit penalties.
- Risk of disruption if provider performance falls short, especially where there are limited alternative providers or switching options mid-contract.
- Workforce transfer to the private provider. This may impact staff morale, training opportunities, and long-term recruitment into the NHS.

8. Proposed Way Forward

This report has outlined a comprehensive matrix of potential solutions for the future delivery of Histopathology services across the ARCH region. This matrix is composed of three interdependent elements:

- **Service model options** (Section 5) – including consolidation scope and functional configuration
- **Site options** (Section 6) – including existing buildings, new developments and modular solutions
- **Funding and delivery models** (Section 7) – ranging from fully NHS-funded to full outsourcing

In total, these elements represent a wide range of possible configurations, each with varying implications for capital cost, delivery timescale, operational control and long-term sustainability. The next step for ARCH is to narrow down this longlist by agreeing the decision-making priorities that will guide the selection of a preferred option.

A structured approach is recommended to enable this prioritisation process. This involves defining a hierarchy of key decision drivers and using these to progressively reduce the number of viable combinations within the matrix. An example of how this could be approached is outlined below:

Step 1 – Funding Constraints

The first step should be to confirm the level and source of funding that is likely to be available. This may include public capital allocations, managed service contracts, or private sector partnerships. If funding is the primary constraint, some models (such as Model 1: Fully NHS-Funded) may be excluded early due to their high up-front capital requirements.

Step 2 – Timeline Requirements

Given the operational pressures facing existing Histopathology services, speed of delivery will be a critical factor. This may further narrow the field by removing options with extended lead times (e.g. MES funding, Public/Private Partnerships or Full Outsourcing).

Step 3 – Quality-Based Evaluation

Once funding and timeline constraints have been used to eliminate unfeasible options, the remaining combinations can be subject to a more detailed evaluation using a quality-based business case assessment. This will allow ARCH to compare shortlisted options across dimensions such as service resilience, clinical quality, workforce sustainability, and alignment with long-term strategic objectives. A weighted scoring model may be used to transparently identify the preferred solution.

This stepwise process will support the development of a business case in line with HMT Green Book standards, ensuring that the final recommendation is evidence-based, deliverable within known constraints, and aligned with ARCH's long-term vision for integrated diagnostic services.