Jon James studio ARCHITECTURE

Tilbury Douglas

RIBA Royal Institute of British Architects

Neath Port Talbot County Borough · Bwrdeistref Sirol Castell-nedd Port Talbot

Design and Access Statement

Project: **Skills Centre & Vocational Hub**

Formerly: Education & Library Resource Centre (ELRS)

Client: **Neath Port Talbot County Borough**

File Name: 100654-JJA-XX-XX-T-A-2000
Number: 1066
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Revision: P02 - Planning updates

McCann and partners · AustinPartnership · MAGNA · theurbanists · ArbTS · David Clements Ecology Ltd · asseticom · Hunter Acoustics · gbms · Tetra Tech · BIMBOX · F.I.R.E. Consultancy Ltd

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This report has been prepared for the sole benefit, use and information of Tilbury Douglas for the purposes set out in the report or instructions commissioning it. This report, together with further reports accompanying this application relate to the present situation and may be subject to supplementary information as discussions progress with the local authority.

Approved **Jon James**

Signature

Date **23.09.2025**

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Revision	Description	Issued by	Date	Checked
A	**Pre app submission**	CD	28.07.2025	JJ
P01	**Planning**	CD	22.09.2025	JJ
P02	**Planning updates**	CD	23.09.2025	JJ

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1.0 Introduction

This Planning **Design and Access Document** has been compiled by Jon James Studio Architecture (JJSA) to support the proposed transformation of the former Education Library and Resource Centre (ELRS) into a new Net Zero Carbon Skills Centre and Vocational Hub. The project is situated at the corner of Reginald Street and Villiers Street, Port Talbot, SA13 1YY, within the Neath Port Talbot County Borough. Although the building is not listed, it holds notable civic, historical, and educational value, having served multiple generations of learners since the late 19th century.

A pre-application was previously submitted for the project.

The document outlines the design development to date, based on the client's brief, technical investigations, and sustainability ambitions. It includes the architectural proposals for the refurbishment of the existing Victorian structure, focusing on spatial reorganisation, façade upgrades, biophilic integration, and passive energy design, aligned with Net Zero Carbon and BREEAM principles. The design has been informed by placemaking strategies, low-carbon materials, and the educational needs of the future user base, which includes pre-16 learners engaged in vocational training across diverse fields such as Hair & Beauty, Construction, Engineering, Catering and also Community use.

The refurbishment of this historic site presents a unique opportunity to deliver a sustainable, inclusive, and future-ready educational environment while celebrating the cultural legacy of the building and its role within the community.

This Planning submission represents a significant milestone in that journey and sets the foundation for continued collaboration through the detailed design stage and construction.

2.0 Design Team

Tilbury Douglas

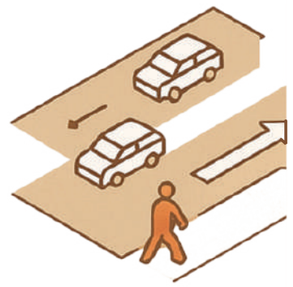
Discipline	Appointed Consultant
Architect	Jon James Studio Architecture
C&S	Austin Partnership
MEP, NZC & BREEAM	McCann & Partners
Planning & Landscape	The Urbanists
Fire	F.I.R.E. Consultancy Ltd
Acoustics	Hunter Acoustics
Principal Designer	Green Build
BIM Champion	BIM Box
Ground Investigation	Tetra Tech
Transport Consultant	Magna
Whole Life Cycle Costing	Asseticom
Ecologist	David Clements Ecology
Arbs	ArbTS

3.0 Scheme Principles

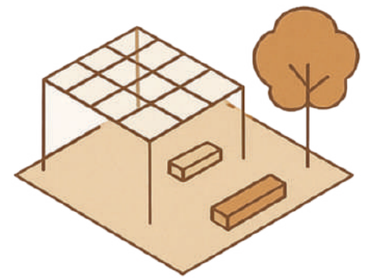
3.1 Placemaking principles

The proposed Skills Centre and Vocational Hub at Reginald Street is guided by the six principles of the Placemaking Wales Charter. Each has been translated into project-specific design responses:

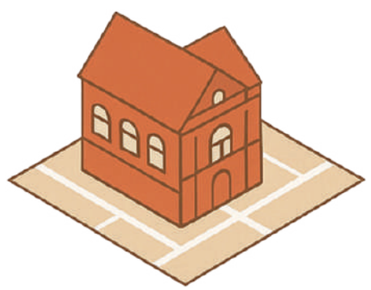
1. People and Community
The refurbishment supports a diverse user base, primarily KS4 learners engaged in vocational training (Hair & Beauty, Construction, Engineering, Catering, Horticulture) alongside community users. Flexible spaces, such as the ETFE-covered courtyard, double as social and event hubs, encouraging everyday interaction and after-hours community use. Consultation with learners, staff, residents and the SBD officer has informed the scheme to ensure safety, inclusivity and civic value.



3. Movement
A clear and legible circulation strategy separates vehicles from pedestrians, with servicing and staff parking pushed to the perimeter. Safe drop-off zones and secure escape routes are integrated without compromising accessibility. Internally, circulation routes converge on the central courtyard, creating intuitive movement and wayfinding.



5. Public Realm
The central courtyard, enclosed by a lightweight ETFE canopy, forms the heart of the project. Enhanced with biophilic landscaping, timber finishes and integrated seating, it creates an all-weather space for dining, informal learning, and events. Externally, SuDS planting, retained mature trees, and horticulture areas provide green infrastructure and opportunities for outdoor teaching.



2. Location
The historic Victorian structure occupies a prominent corner of Reginald Street and Villiers Street. The proposals celebrate this civic presence, reinforcing key frontages while rationalising access. Distinct Skills Hub and Community entrances improve legibility, with new pedestrian links and landscape design tying the building back into its neighbourhood and transport connections.

4. Mix of Uses
The building combines vocational training spaces with community functions, maximising value and adaptability. Specialist workshops (e.g., Hair & Beauty salons, Catering kitchens, Construction and Engineering bays) are balanced with shared facilities such as a café and multipurpose teaching rooms, ensuring day-to-day educational use while enabling evening and weekend community programming.

6. Identity
The design approach balances heritage and innovation. Key Victorian features, high ceilings, large windows, decorative tiling, are preserved and celebrated, while new interventions (ETFE roof, Hellerup stair, sustainable cladding) signal a forward-looking, low-carbon educational environment. Together, they create a recognisable civic landmark that embodies Port Talbot's ambition for a Net Zero Carbon, future-ready learning hub.

3.2 LETI Guidance

The project brief aligns with the **LETI guidance for new schools**, although this scheme involves a **retrofit**.

The space heating demand target has been agreed to be adjusted accordingly to reflect the retrofit context.

Schools

Operational energy

Implement the following indicative design measures:

Fabric U-values (W/m².K)

Walls	0.13 - 0.15
Floor	0.09 - 0.12
Roof	0.10 - 0.12
Windows	1.0 (triple glazing)
Doors	1.2

Fabric efficiency measures

Air tightness	<1 (m³/h. m²@50Pa)
Thermal bridging	0.04 (y-value)
G-value of glass	0.5 - 0.4

Power efficiency measures

Lighting power density	4.5 (W/m² peak NIA)
Lighting out of hours	0.5 (W/m² peak NIA)
Small power out of hours	2 (W/m² peak NIA)

System efficiency measures

MVHR	90% (efficiency)
Heat pump SCoP	≥ 2.8
Central AHU SFP	1.5 - 1.2 W/l.s

Maximise renewables so that 70% of the roof is covered

Window areas guide (% of wall area)

North	15-25%
East	15-25%
South	15-25%
West	15-25%

Balance daylight and overheating

Include external shading

Include openable windows and cross ventilation

Form factor of 1 - 3

Reduce energy consumption to:

65 kWh/m².yr

Energy Use Intensity (EUI) in GIA, excluding renewable energy contribution

Reduce space heating demand to:

~~15~~ kWh/m².yr

50

Heating and hot water

Implement the following measures:

Fuel
Ensure heating and hot water generation is fossil fuel free

Heat
The average carbon content of heat supplied (gCO_2/kWh.yr) should be reported in-use

Heating
Maximum 10 W/m² peak heat loss (including ventilation)

Hot water
Maximum dead leg of 1 litre for hot water pipework

'Green' Euro Water Label should be used for hot water outlets (e.g.: certified 6 L/min shower head – not using flow restrictors).

Demand response

Implement the following measures to smooth energy demand and consumption:

Peak reduction
Reduce heating and hot water peak energy demand

Active demand response measures
Install heating and cooling set point control

Reduce lighting, ventilation and small power energy consumption

Electricity generation and storage
Consider battery storage

Electric vehicle (EV) charging
Electric vehicle turn down

Reverse charging EV technology

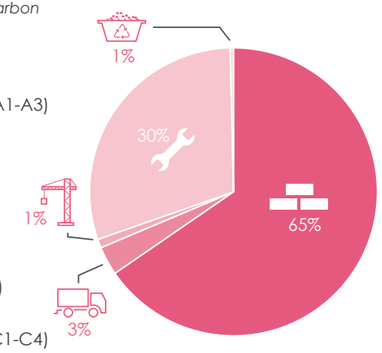
Behaviour change
Incentives to reduce power consumption and peak grid constraints

Encourage responsible occupancy.

Embodied carbon

Focus on reducing embodied carbon for the largest uses:

- Products/materials (A1-A3)
- Transport (A4)
- Construction (A5)
- Maintenance and replacements (B1-B5)
- End of life disposal (C1-C4)



Average split of embodied carbon per building element:

- **30%** - Superstructure
- **21%** - Internal finishes
- **16%** - Substructure
- **16%** - Façade
- **13%** - MEP

Reduce embodied carbon by 40% or to:

<600 $kgCO_2/m^2$

Area in GIA

Data disclosure

Meter and disclose energy consumption as follows:

Metering *(Metering strategy following BBP Better Metering Toolkit guidance)*

1. Record meter data at half hourly intervals
2. Clearly label meters with serial number and end use
3. Submeter renewable energy generation
4. Use a central repository for data that has a minimum of 18 months data storage
5. Provide thorough set of meter schematics and information on maintenance and use of meters
6. Ensure metering commissioning includes validation of manual compared to half hourly readings.

Disclosure

1. Carry out an annual Display Energy Certificate (DEC) and include as part of annual reporting
2. Report energy consumption by fuel type and respective benchmarks from the DEC technical table
3. Upload five years of data to a publicly accessible database such as GLA and/or CarbonBuzz. Include information about the building (do not anonymise).

LONDON ENERGY TRANSFORMATION INITIATIVE

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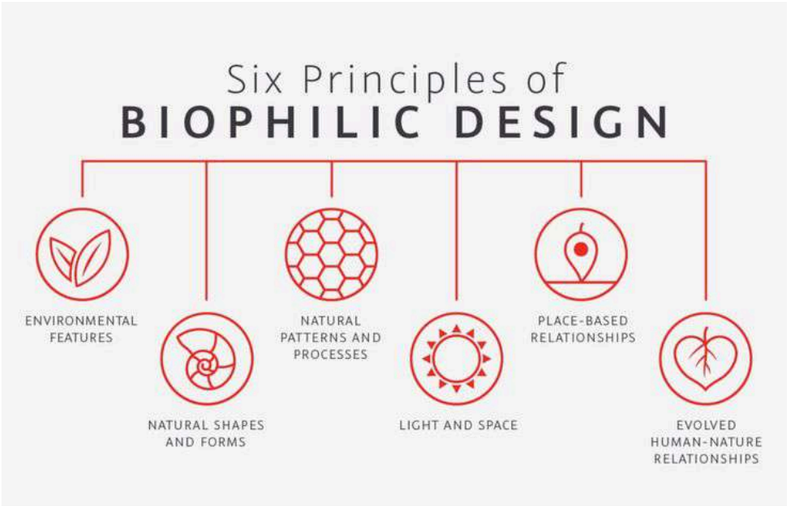
3.3 Biophilic design

With biophilic principles highlighted in the project brief, our design will embrace and celebrate nature by embedding these values into the very fabric of the school, creating an environment that supports physical and mental well being, encourages curiosity, and fosters a strong sense of place for students, community and staff alike.

Principles



Rhosafan Primary School - Arcadis

Precedents

Kingsdale School - dRMM Architects

St Mary's Catholic Voluntary Academy - Hawkins Brown / Tillbury Douglas

Comparison with other standards and guidance	EnerPHit standard	AECB Retrofit standard	LETI Retrofit guidance	Brief targets
Improved fabric performance	Space heat demand limit: ≤ **20**, **25** or **30** kWh/m².a *or circa **20-60** for component approach***	Space heat demand limit: ≤ **50** kWh/m².a *with exemption up to **100***	Space heat demand limit: ≤ **50** kWh/m².a *exemption up to **60** with an exemplar target of ≤ **25***	Space heat demand limit: **50** kWh/m².a
Overall limit on energy demand and emissions	Primary Energy or Primary Energy Renewable limit (equivalent to EUI limit plus storage losses allowance)	No limit for overall energy demand but direct elec. and new gas boilers are not accepted (unless by exception)	• Hot water demand limit • Overall Energy Use Intensity (EUI) limit	• Total operational energy use limit (EUI): ≤ **65** kWh/m².a (excluding renewables); • offset remaining emissions through renewables or verified offsets.
Comfort and health outcomes	• Surface temperature limit • Summer overheating limit • Ventilation rate minimum • Airtightness limit	• Surface temperature limit • Summer overheating limit • Ventilation rate minimum • Airtightness limit • Mould & moisture reduced • Radon evaluated	Airtightness limit*	• Passive design focused on thermal comfort, MVHR • biophilic design • air tightness limit: < **1** m³/h/m²@50Pa.
Closure of energy performance gap	• PHPP modelling, avoidance of thermal bridges and airtightness • Independent QA process	• PHPP modelling, avoidance of thermal bridges and airtightness • Verification by a suitably qualified person	Not addressed*	• Dynamic simulation (TM54) • 100% sub-metering • BMS integration • 3-year post-occupancy monitoring • third-party verification of NZ status at 12 & 18 months

** LETI strongly recommends that a recognised retrofit standard and quality assurance process is used alongside the LETI guidance*

*** The component method has no space heat demand limit. In practice in the UK it delivers within this range; typically projects remain between 30-40 kWh/m².a*

3.5 Brief Highlights

A. Overview

1. Client & Programme: Neath Port Talbot (NPT) Council, part of the Strategic Schools Improvement Programme and aligned with the Council's Net Zero 2030 goals and DARE strategy.
2. Project Vision: Create a Net Zero Carbon/Net Zero Energy Skills Centre and Vocational Hub that supports sustainable learning environments and community well-being across generations.

B. Net Zero Carbon Definition:

1. Construction Phase: Zero/negative emissions through low-carbon materials and on-site renewable energy.
2. Operational Phase: Highly energy-efficient building powered by on-site renewables.
3. Whole Life Asset Management (WLAM): Long-term carbon neutrality over the building's life cycle, though high-level only at this stage.

C. Core Design Objectives:

1. High-performing passive design and fabric-first approach.
2. Integration of biophilic design, flexible learning spaces, and community-accessible areas.
3. Energy-efficient systems with rigorous metering, monitoring, and performance verification.

D. Energy & Carbon Targets:

1. Operational EUI: ≤ 65 kWh/m²/year.
2. Space heating: ≤ 50 kWh/m²/year
3. EPC rating: A+, DEC rating within top quartile (>A).
4. Embodied carbon: 500–800 $kgCO_2e/m^2$ (GIA) at construction stage.
5. On-site renewables to exceed EUI by 5–10% with provision for battery storage.

E. Design & Construction Considerations:

1. Low-carbon materials, off-site modular construction, and circular economy principles.
2. Elimination of fossil fuels (no gas use).
3. Passive solar gains, natural ventilation, air tightness (<1 $m^3/h/m^2$ @ 50Pa), and high insulation values.
4. Integration of EV charging and solar PV with potential for community energy hub.

F. Monitoring & Reporting:

1. Sub-metering across all systems with real-time dashboard.
2. Performance reviews at 12, 24, and 36 months post-occupancy.
3. Annual energy modelling (e.g. TM54) and third-party verification to ensure targets are met.

G. Carbon Offsetting Strategy:

1. Prioritise on-site offsets (e.g. renewable surplus).
2. Secondary use of local offset schemes.
3. Third-party offsets only as a last resort and not via green tariffs.

H. Key Deliverables:

1. Net Zero Carbon design & feasibility reports.
2. Full sub-metering strategy and visual monitoring tools.
3. Life cycle cost analysis and energy/carbon modelling.
4. Post-occupancy optimisation guide and stakeholder training.

I. Reference Frameworks:

1. UKGBC
2. LETI
3. RIBA 2030 Climate Challenge
4. CIBSE TM54
5. Other national sustainability standards

J. Scheme Brief

1. Retrofit of a facility for **KS4 vocational training** with provision for **community use outside school sessions.**

2. Supports part-time learners aged 14–16 (majority) and some post-16 (≈15%).

3. Spaces accommodate vocational areas, offices, and support facilities.

K. Operation

1. Pupil cohorts: 50 per session (max occupancy)

2. Daily sessions: 4 standard sessions + potential 5th late session

3. Daily throughput: Up to 250 pupils/day

4. Session times: 9:15–10:15, 10:15–11:30, 11:45–12:45, 1:30–2:15 (optional 2:15–3:15)

5. Transport: Up to 5 minibuses per cohort

6. Community use: Primarily after school hours; anticipated local attendance

L. Use

1. Vocational Training Areas: Hair & Beauty, Construction, Engineering, Catering, Animal Care, Creative Media, Esports. Travel and Tourism, Retail, Horticulture

2. Offices & Hot-Desking: Skills & Training team, Youth Service

3. Support Facilities: Admin/reception, caretaker, cleaners, shared FSM provision (linked to Hendrefelin)

M. Employees (FTE Equivalent)

1. Pathways to Progression Team: 12 staff

2. Youth Service: 8 staff (equivalent full-time)

3. Skills & Training Team: 14 staff (equivalent full-time)

4. Ancillary Staff: 3 (caretaker, cleaners, reception)

Total equivalent staff: 37 FTE

4.0 Schedule of Accommodation

Schedule of Accomodation

Number	Room Type	Name	Level	Area	Change from RIBA Stage 2
B1-001	Plant	Plant	Level B1	34 m²	No Change.
Level B1: 1				34 m²	
EX-001		External Area	External Site	2683 m²	No Change.
External Site: 1				2683 m²	
00-001	Circulation	Lobby	Level 00	10 m²	ADDITIONAL REQUIREMENT + 10m²
00-002	Circulation	Circulation	Level 00	12 m²	ADDITIONAL REQUIREMENT + 12m²
00-003	Staff and Admin	Community Reception	Level 00	16 m²	-12m²
00-004	Circulation	Stairwell B	Level 00	10 m²	No Change.
00-005	Staff and Admin	Cl Store	Level 00	5 m²	No Change.
00-006	Public	Cafe Circulation	Level 00	43 m²	+10m²
00-007	Basic Teaching	Child Care	Level 00	45 m²	ADDITIONAL REQUIREMENT + 45m²
00-008	Circulation	Circulation	Level 00	44 m²	-22m²
00-009	Circulation	Lift Core	Level 00	6 m²	No Change.
00-010	Animal Care	Animal Care	Level 00	45 m²	No Change.
00-011	Training	CSCS	Level 00	30 m²	-31m²
00-012	Construction	Construction Circulation	Level 00	48 m²	-4m²
00-013	Construction	Engineering	Level 00	82 m²	+44m²
00-014	Plant	Elec Cupd	Level 00	0 m²	ADDITIONAL REQUIREMENT + 1m²
00-015	Construction	Construction	Level 00	46 m²	-44m²
00-016	Staff and Admin	Cl Store	Level 00	4 m²	No Change.
00-017	Circulation	Circulation	Level 00	55 m²	No Change.
00-018	Staff and Admin	Staff Kitchenette	Level 00	8 m²	ADDITIONAL REQUIREMENT + 8m²
00-019	Plant	LV Switchroom	Level 00	24 m²	ADDITIONAL REQUIREMENT + 24m²
00-020	Sanitary	Males WCs	Level 00	16 m²	Changed to single sex.
00-021	Sanitary	Female WCs	Level 00	21 m²	Changed to single sex.
00-022	Training	Flexible Training	Level 00	61 m²	Relocated. +16m²
00-023	Training	Flexible Training	Level 00	61 m²	No Change.
00-024	Plant	MER	Level 00	8 m²	ADDITIONAL REQUIREMENT + 8m²
00-025	Circulation	Lobby	Level 00	29 m²	+16m²
00-026	Circulation	Stairwell A	Level 00	11 m²	No Change.
00-027	Staff and Admin	Cl Store	Level 00	5 m²	No Change.
00-028	Staff and Admin	Interview	Level 00	2 m²	ADDITIONAL REQUIREMENT + 2m²
00-029	Staff and Admin	Reception	Level 00	20 m²	-8m²
00-030	Circulation	Kitchen Circulation	Level 00	22 m²	+3m²
00-031	Kitchen	Staff Acc. WC	Level 00	5 m²	No Change.
00-032	Kitchen	Kitchen	Level 00	64 m²	No Change.
00-033	Staff and Admin	Staff Changing	Level 00	5 m²	-10m²
00-034	Plant	MEP Riser	Level 00	0 m²	ADDITIONAL REQUIREMENT + 1m²
00-035	Public	Servery	Level 00	13 m²	-7m²
00-036	Sanitary	Acc. WC	Level 00	3 m²	ADDITIONAL REQUIREMENT + 3m²
00-037	Sanitary	Acc. WC	Level 00	4 m²	-2m²
00-038	Public	Cafe	Level 00	45 m²	No Change.
00-040	Courtyard	Courtyard	Level 00	114 m²	No Change.
Level 00: 39				1041 m²	

Schedule of Accomodation

Number	Room Type	Name	Level	Area	Change from RIBA Stage 2
01-001	Reflection	Wellbeing	Level 01	28 m²	ADDITIONAL REQUIREMENT + 28m²
01-002	Reflection	Reflection	Level 01	6 m²	ADDITIONAL REQUIREMENT + 6m²
01-003	Circulation	Circulation	Level 01	34 m²	-15m²
01-004	Circulation	Landing B	Level 01	17 m²	No Change.
01-005	Staff and Admin	Office	Level 01	45 m²	No Change.
01-006	Staff and Admin	Careers & Esports	Level 01	45 m²	ADDITIONAL REQUIREMENT + 45m²
01-007	Staff and Admin	Travel & Tourism	Level 01	29 m²	ADDITIONAL REQUIREMENT + 45m²
01-008	Sanitary	Acc. WC	Level 01	6 m²	No Change.
01-009	Circulation	Lift Core	Level 01	6 m²	No Change.
01-010	Creative/ Media	Retail Circulation	Level 01	25 m²	+25m²
01-011	Creative/ Media	Retail	Level 01	45 m²	ADDITIONAL REQUIREMENT + 45m²
01-012	Creative/ Media	Retail Store	Level 01	9 m²	ADDITIONAL REQUIREMENT + 9m²
01-013	Creative/ Media	Media Store	Level 01	9 m²	ADDITIONAL REQUIREMENT + 9m²
01-014	Creative/ Media	Creative/ Media	Level 01	64 m²	-65m²
01-015	Circulation	Circulation	Level 01	25 m²	-26m²
01-016	Sanitary	Acc. WC	Level 01	8 m²	No Change.
01-017	Plant	Mech Heating Plant	Level 01	24 m²	ADDITIONAL REQUIREMENT + 24m²
01-018	Staff and Admin	Cl Store	Level 01	6 m²	-3m²
01-019	Training	Flexible Space	Level 01	61 m²	No Change.
01-020	Training	Flexible Space	Level 01	61 m²	No Change.
01-021	Sanitary	Female WCs	Level 01	10 m²	Relocated & condensed. -17m²
01-022	Sanitary	Male WCs	Level 01	9 m²	Relocated & condensed. -17m²
01-023	Circulation	Landing A	Level 01	17 m²	No Change.
01-024	Staff and Admin	Office (Skills Lead)	Level 01	28 m²	Relocated. + 4m²
01-025	Plant	SER	Level 01	6 m²	ADDITIONAL REQUIREMENT + 6m²
01-026	Circulation	H&B Receptions	Level 01	52 m²	ADDITIONAL REQUIREMENT + 52m²
01-027	Hair and Beauty	Beauty	Level 01	44 m²	No Change.
01-028	Hair and Beauty	Store/ Utility Room	Level 01	15 m²	-4m²
01-029	Hair and Beauty	Hairdressing	Level 01	64 m²	No Change.
01-030	Plant	Kitchen Duct Riser	Level 01	4 m²	ADDITIONAL REQUIREMENT + 4m²
01-031	Creative/ Media	Creative/ Media Circulation	Level 01	26 m²	-25m²
01-032	Plant	MEP Riser	Level 01	1 m²	ADDITIONAL REQUIREMENT + 1m²
01-033	Courtyard	Courtyard	Level 01	174 m²	No Change.
01-034	Circulation	Circulation	Level 01	18 m²	+15m2
01-035	Circulation	Circulation	Level 01	26 m²	+26m²
Level 01: 35				1047 m²	
R2-001		Plant Access	Level R2	4 m²	ADDITIONAL REQUIREMENT + 4m²
Level R2: 1				4 m²	
R3-001		Plant Deck	Level R3	18 m²	ADDITIONAL REQUIREMENT + 18m²
Level R3: 1				18 m²	

Plastering Building Area = 70 m²

Area total (excluding the plastering building) = 2140 m²

Rooms removed from Brief following RIBA Stage 2:

- Acc. WC / Sh (Now Staff Kitchenette)
- Construction Store (Now open storage)
- Engineering Store (Now open storage)
- Low Level Plant (Not Feasible)
- Staff Room
- MEP (Now within Engineering)
- Offices
- First Floor WC's (Relocated & condensed)
- Animal Care Store

5.0 Analysis

5.1 Location & Context

The site is located within a residential area in Port Talbot, bounded by Villiers Street (north), Reginald Street (south), and adjacent to Velindre Community School to the east. The surrounding context consists mainly of terraced housing, with accessible street frontages on north and south, offering excellent pedestrian connectivity and **community integration potential**.

5.2 Existing Use & Historical Significance

The site currently houses a disused Victorian-era school building, now functioning as the Education Library and Resource Centre. Architecturally, the external finish features pebble dash render with red-brick accents, a layout with an internal courtyard and pitched tile roofs, reflecting the Victorian educational typology and heritage value.

5.3 Access & Connectivity

The site is well-connected via local road networks and public transport routes, with multiple pedestrian access points. Existing on-site parking and hard landscaping provide flexibility for future access arrangements and green infrastructure integration.

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5.4 Constraints & Opportunities

Constraints:

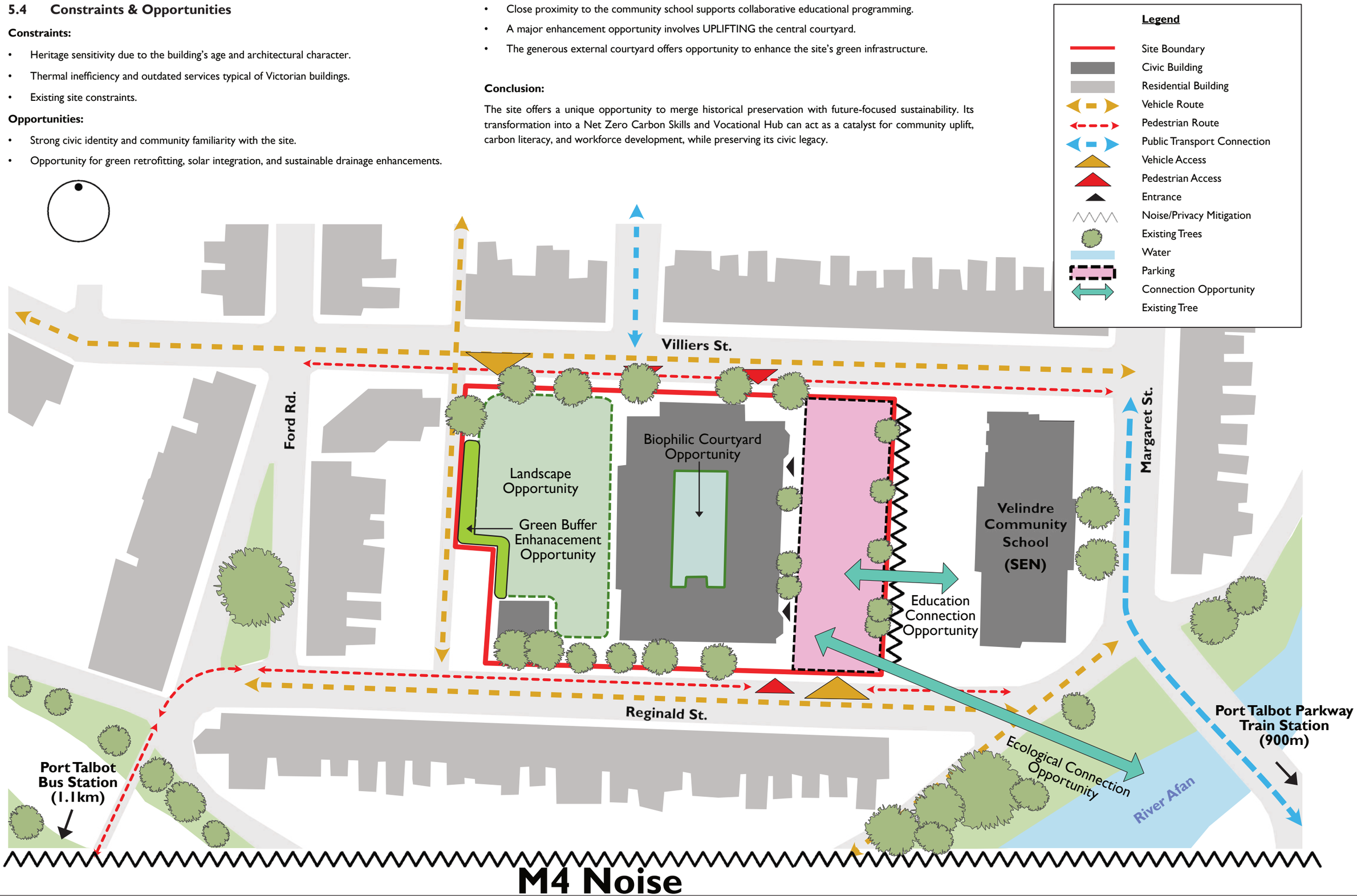
- Heritage sensitivity due to the building's age and architectural character.
- Thermal inefficiency and outdated services typical of Victorian buildings.
- Existing site constraints.

Opportunities:

- Strong civic identity and community familiarity with the site.
- Opportunity for green retrofitting, solar integration, and sustainable drainage enhancements.
- Close proximity to the community school supports collaborative educational programming.
- A major enhancement opportunity involves UPLIFTING the central courtyard.
- The generous external courtyard offers opportunity to enhance the site's green infrastructure.

Conclusion:

The site offers a unique opportunity to merge historical preservation with future-focused sustainability. Its transformation into a Net Zero Carbon Skills and Vocational Hub can act as a catalyst for community uplift, carbon literacy, and workforce development, while preserving its civic legacy.



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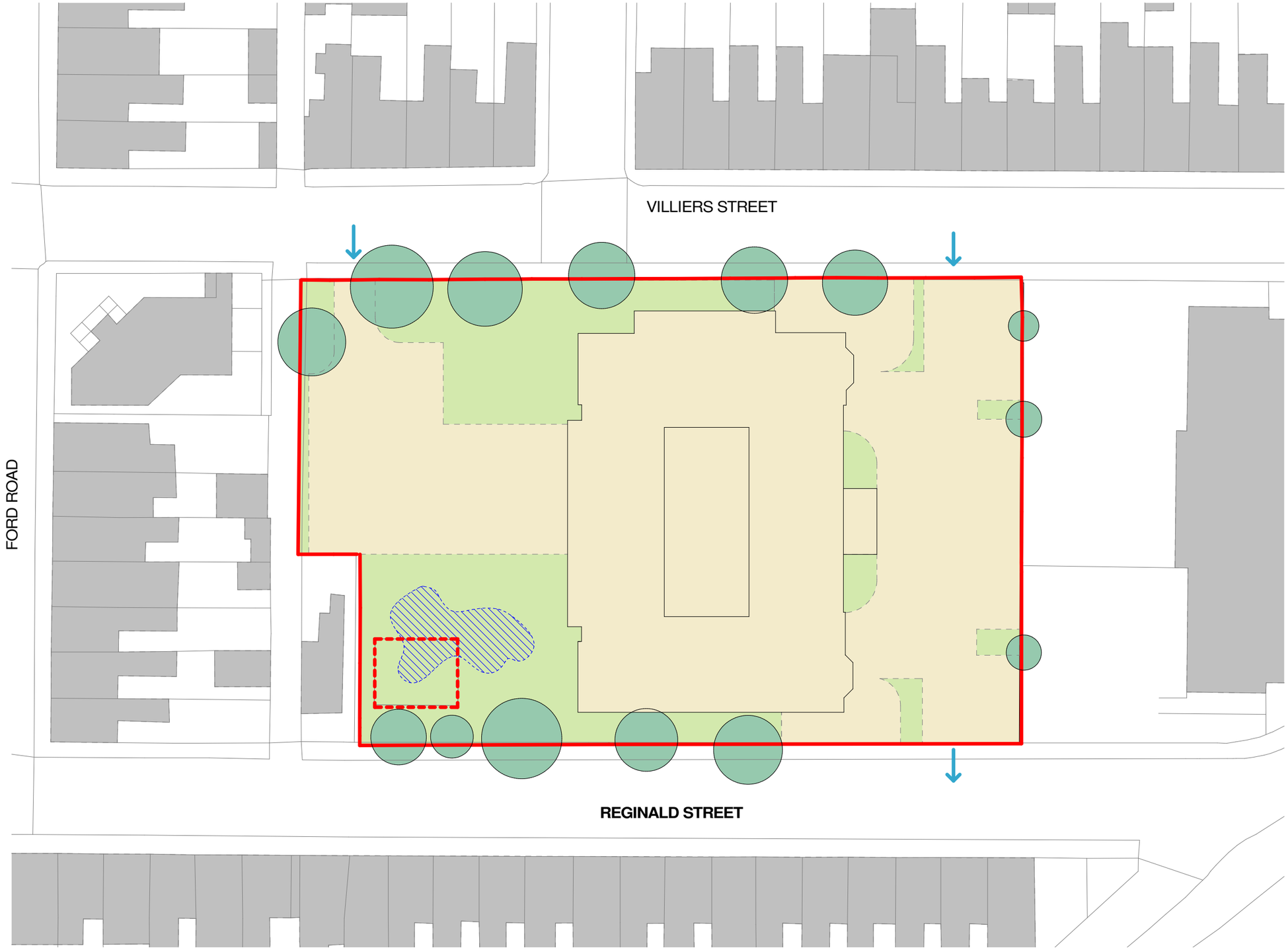
5.5 Parameters Plan



KEY

- Application Boundary (0.4Ha)
- Existing building (0.12Ha)
- Development area (0.17Ha)
- Soft landscaping (0.1Ha)
- SuDS feature (0.01Ha)
- Proposed demolition
- Existing trees
- Vehicle access

Existing Building
2 storeys
H = Max 15 m
W = 32m
L = 45m

Plastering Building
1 storey
H = Min 3m - Max 5m
W = Min 8m - Max 10m
L = Min 8m - Max 10m

ASHP Enclosure
1 storey
H = Min 1.8m - Max 2.5m
W = Min 4m - Max 8m
L = Min 10m - Max 20m

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5.6 Illustrative Biophilic Strategy

3.Biophilic Courtyard Potential

- Provides **view of greenery** for spaces overlooking courtyard.
- **Strategic species mix** for optimised success in micro-climate created by ETFE roof.
- Landscape integrated within building footprint.
- Contained and limited planting for efficient maintenance.

4.Landscape driven circulation

- External paths **celebrate existing trees**
- Organic routes provide **moments or sanctuary for sensory experiences and connection to the landscape.**
- Opportunity for **outdoor learning/ classes.**

5.Ecological Habitat Connection

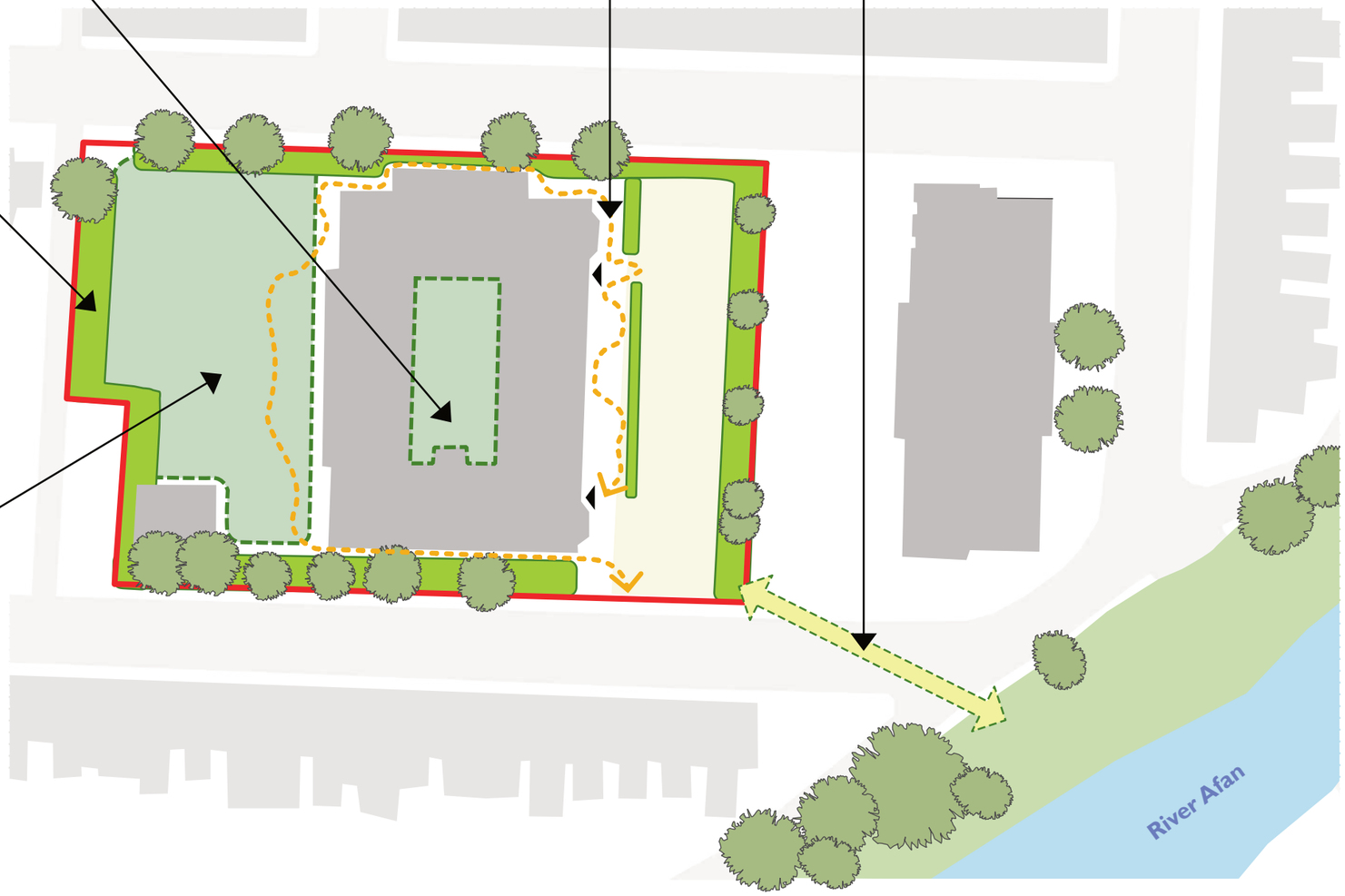
- Provides **connection with local nature and green infrastructure.**
- Boosts biodiversity
- Supports local wildlife.

2.Strengthening green buffer

- Creates **protective landscape** for students with a feeling of sanctuary.
- **Blocks noise** and air pollution from M4 motorway to the south.
- Tree planting **contributing to Net Zero**

1.Biodiverse landscaping with Integrated SuDs

- Native biodiverse planting to achieve **Biodiversity Net Gain (BNG) requirements.**
- Purposeful spaces that can meet the operational needs of the building
- SuDs features are celebrated and provide **learning opportunity within landscape**
- Variety of planting and materials provide **sensory experience** and opportunities for **play** and **sanctuary**.



Tilbury Douglas Jon James studio ARCHITECTURE

5.7 Historic Background and Site Evolution

5.7.1 Origins as a 19th Century Industrial School

The building currently known as the Education Library & Resource Centre (ELRS), located on Reginald Street in Port Talbot, has a deeply rooted connection to the region's educational and industrial history. It was originally constructed in the 19th century as the **Margam Copper Works School**, a facility established to serve the children of workers employed in the local heavy industries, particularly copper and ironworks.

During this period, the area was undergoing rapid industrialisation, with Port Talbot's copper smelting industry driving population growth and the need for formal education. The school's founding exemplifies early philanthropic and industrial-era educational models where employers or industrial trusts supported the schooling of workers' families. The building's placement—within a dense urban grid tied to local industry—underlines its foundational role in the civic and educational framework of Taibach and wider Port Talbot.

5.7.2 Early 20th Century – Renaming to Port Talbot Eastern School

In 1902, the building was renamed **Port Talbot Eastern School,** aligning with regional developments in county educational management. This marked a shift from purely industrial-sponsored education to a broader, publicly administered school system.

The Eastern School became one of the principal schools in the area, offering both primary and secondary education. It remained a prominent institution for several decades.

5.7.3 Mid to Late 20th Century – From School to Community Education

By the 1960s, the original use of the building as a mainstream school had ceased, consistent with wider educational reforms and school consolidation strategies undertaken by Glamorgan and later West Glamorgan County Councils. The building subsequently transitioned into a community learning and adult education hub, variously referred to as:

- **Taibach Community Education Centre**
- **Eastern Education Centre**
- **Eastern School (Community Use)**

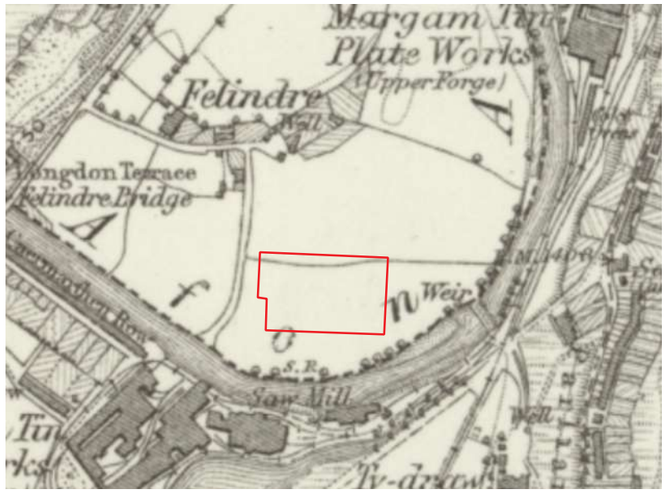
During this phase, the site hosted a variety of educational, civic, and training functions, contributing to life-long learning and community engagement across the Taibach and Margam wards.

5.7.4 Recent Use – Education Library & Resource Centre (ELRS)

In the early 2000s, the building was repurposed as the **Education Library & Resource Centre**, functioning as a depot and outreach hub for Neath Port Talbot's Education Library & Resource Service (ELRS). It supports schools across the county by loaning books, museum objects, artefacts, and learning materials. At its peak, the service managed over 150,000 books and thousands of educational aids, serving both primary and secondary education sectors.

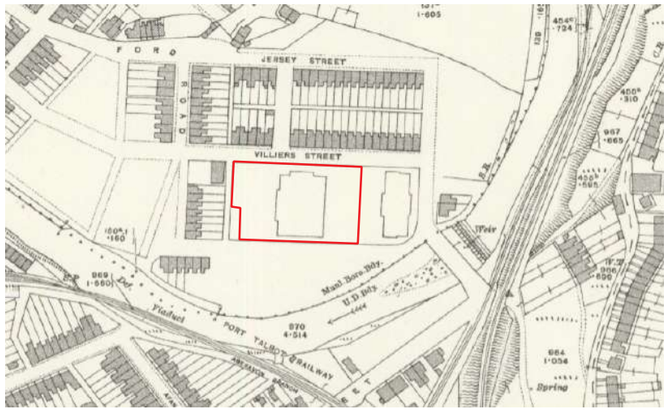
The ELRS building has stopped being used in recent years. Though modest in external appearance, its cultural, historical, and functional significance as a long-serving educational building is considerable.

5.7.5 Historic Mapping Analysis



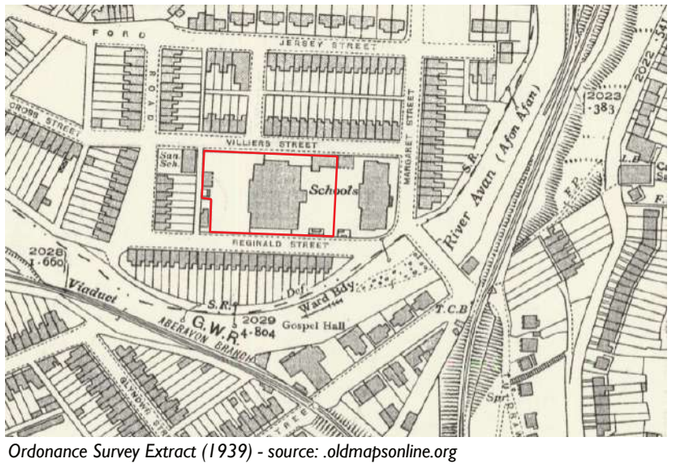
Historic map extract Glamorganshire (1867-1878) - source: Historic Wales

- **1867–78:** The site appears undeveloped, located just south of Margam Tin Plate Works. Its proximity to heavy industry reflects the growing need for worker-related infrastructure.



Ordonance Survey Extract (1914) - source: .oldmapsonline.org

- By **1914**: The main school buildings are clearly established, forming part of the Port Talbot Eastern School. The layout includes twin blocks fronting Reginald Street, consistent with typical early 20th-century school planning. A yard or playground space is also visible to the rear.



Ordonance Survey Extract (1939) - source: .oldmapsonline.org

- **1939:** The school footprint has expanded slightly, and the site sits within a fully developed urban grid. It continues to serve a prominent educational and civic function, surrounded by dense housing and community uses.

These maps confirm over a century of consistent educational and public use, with the current building closely matching its early 20th-century footprint. The refurbishment proposals are therefore rooted in a clear continuity of purpose, supporting the building's historic and civic significance within the Taibach community.

5.7.6 Historic Visual Assets

Archival photographs from Peoples Collection Wales show external features of the Boys and Infants Schools from the 1920s–30s. These images provide critical understanding of original fenestration patterns, entry locations, and material detailing.

Primary archival sources, located at the West Glamorgan Archive Service (ref E/PT 13), Preserve marked-altered plans, and periodic inspector reports. Similarly, the Port Talbot Historical Society collection (D/D PTH) is expected to contain early prints valuable for façade restoration proposals.

These resources form an evidence-led foundation for the refurbishment, informing façade repair, window replacement, and interior layout restoration to better align with original design, while introducing contemporary performance upgrades.

In conclusion, this building is of local historic interest due to:

- Its association with the industrial heritage of Port Talbot.
- Its educational legacy stretching back over 120 years.
- Its contribution to community education and learning post-1960s.

The proposed refurbishment of the building seeks to enhance and preserve this layered history, maintaining its public educational function while adapting the structure to contemporary accessibility, safety, and energy efficiency standards.

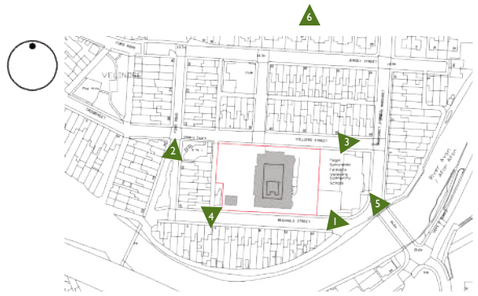
5.8 Existing Photographic Study

The following images document the existing context surrounding the New Skills Hub, capturing views from key approach roads and adjacent streets. The top left image shows the school building from Reginald Street, illustrating its relationship to the surrounding built form and topography.

Adjacent views from Ford Road and Julius Street demonstrate the residential character of the area and the site's urban setting.

Additional images provide context from neighbouring lanes and the nearby bridge, while the final image is reserved for a panoramic view of the school's roofscape and its backdrop of surrounding hills.

These photographs help inform the refurbishment strategy and highlight the school's prominent position within the local landscape.



1. View from the east side of Reginald Street

2. View from Ford Road towards M4

3. View from the east side Villiers Street

4. View of service road and old Ground keeper's house from Reginald Street

5. View from Margate Street over river Afan

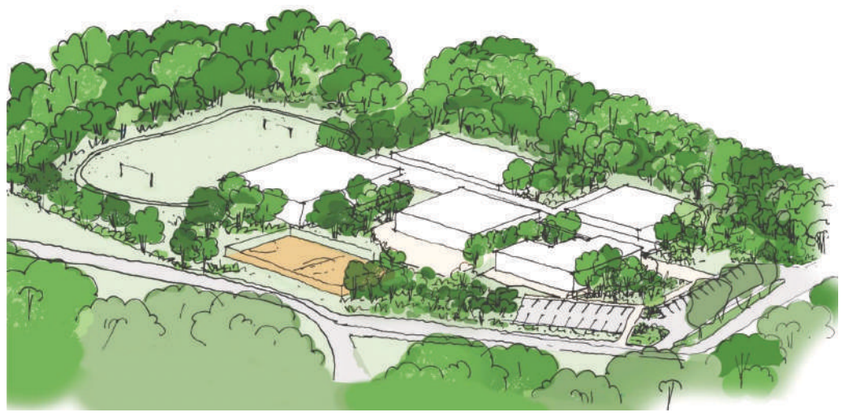
6. View from the Uplands

6.0 Precedents

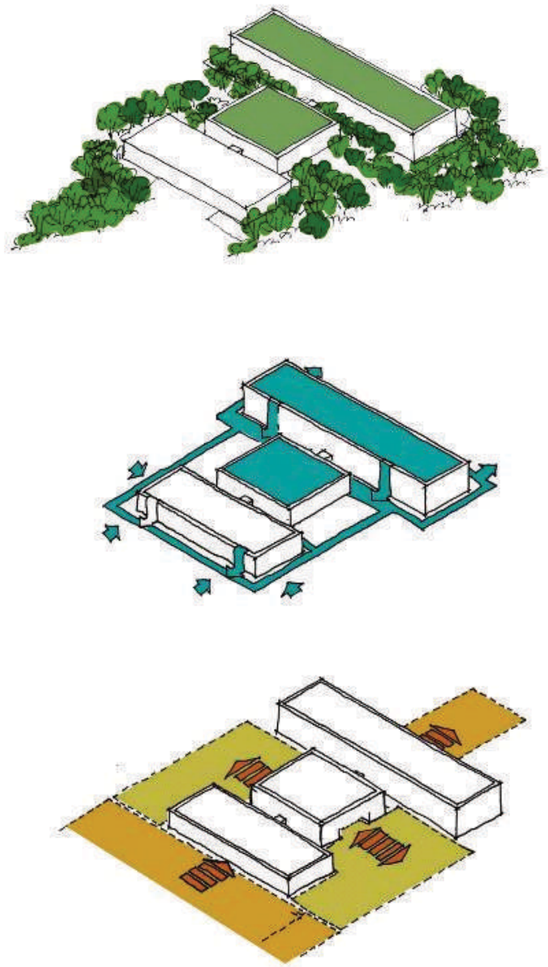
6.1 Biophilic Design Exemplar: *St Mary's Catholic Voluntary Academy - Hawkins Brown / Tilbury Douglas*

Image Credit: Hawkins Brown

Biophilic Principles Diagram



Birdseye View Concept Sketch - 'Green landscape flows through the building'



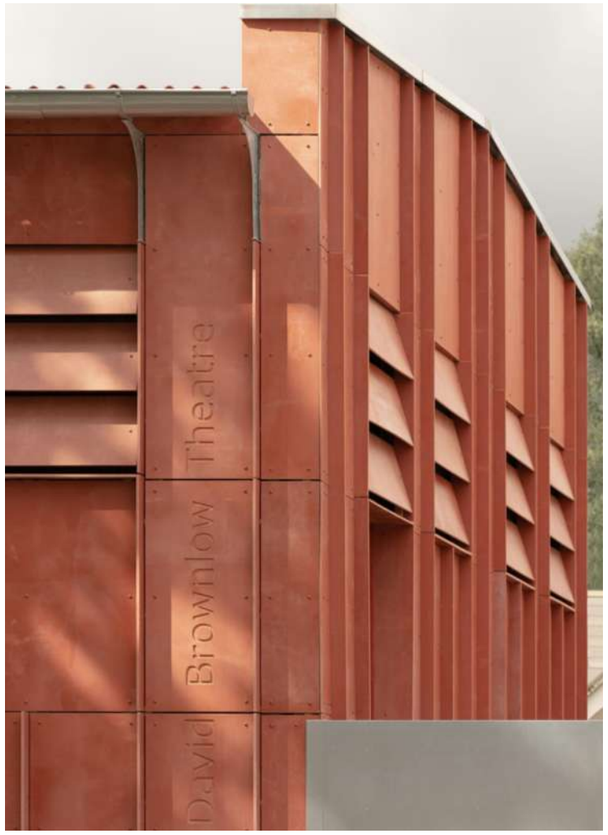
Axonometric Diagrams

Courtyard Photography

Birdseye View Photography

6.2 Facade Cladding Design Exemplar: *Horris Hill Theatre - Tuckey Studio Design*

Image Credit: Jim Stephenson



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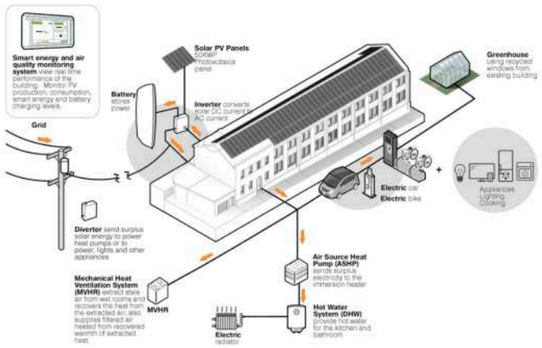
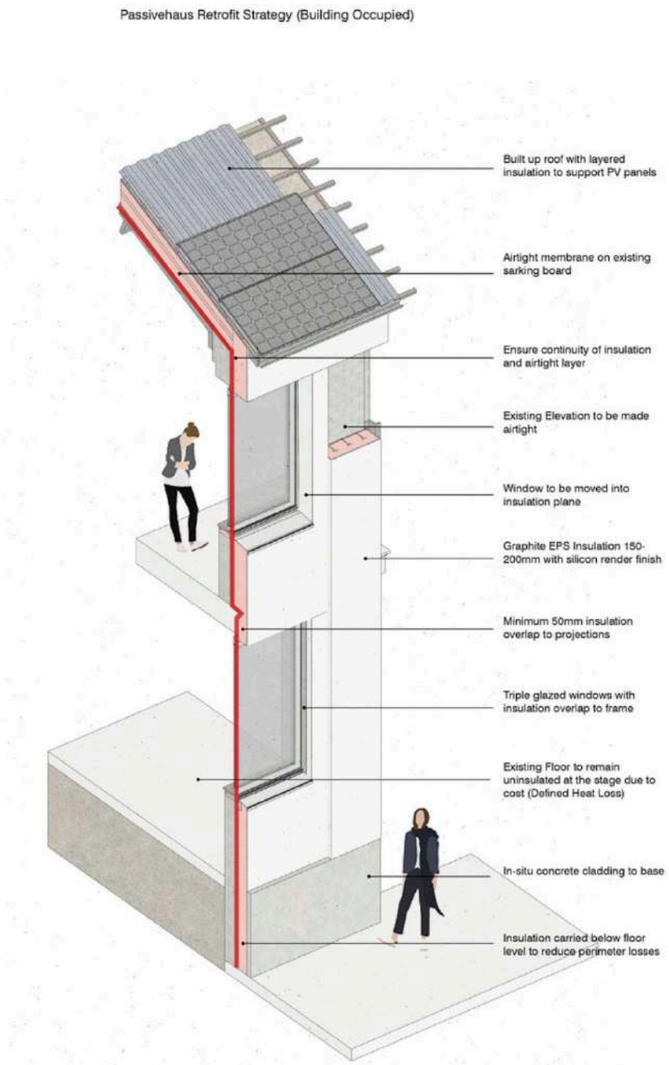
6.3 Retrofit Exemplar 1 : *Civic House - Collective Architecture*

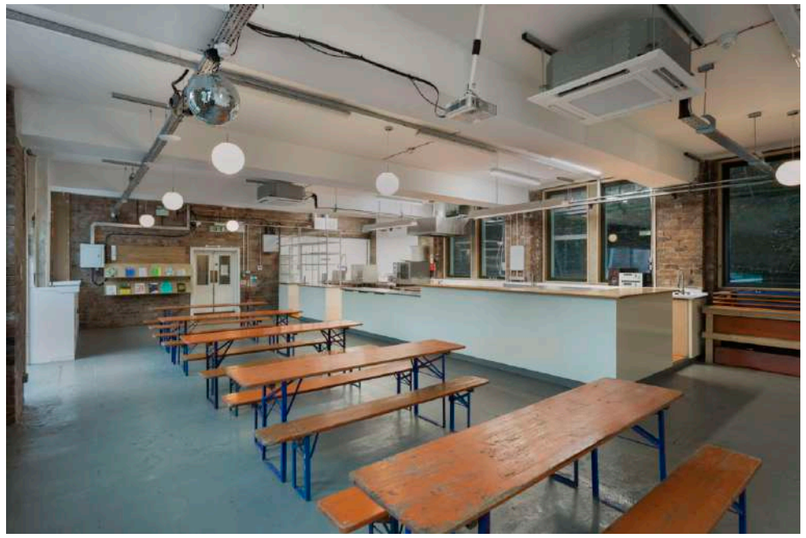
Image Credit: Collective Architecture

Refurbished by Collective Architecture in 2022, this 1920s former printworks was transformed into a low-energy, mixed-use civic hub for Agile City. Designed to EnerPHit (retrofit Passivhaus) standards, the building underwent a fabric-first retrofit including external insulation, triple-glazed windows, an insulated roof, MVHR, ASHP, and a rooftop solar PV array. The result is an energy-positive building that now generates more energy than it consumes. Civic House blends workspace, events, and cultural activity in a flexible layout that supports both sustainability and community enterprise. Its phased delivery and performance-led design approach demonstrate how historic structures can be adapted to meet future-ready standards without compromising character or function. This project has been widely recognised for its innovative approach, including awards for sustainability and retrofit excellence.

View of the Civic House in 1980's







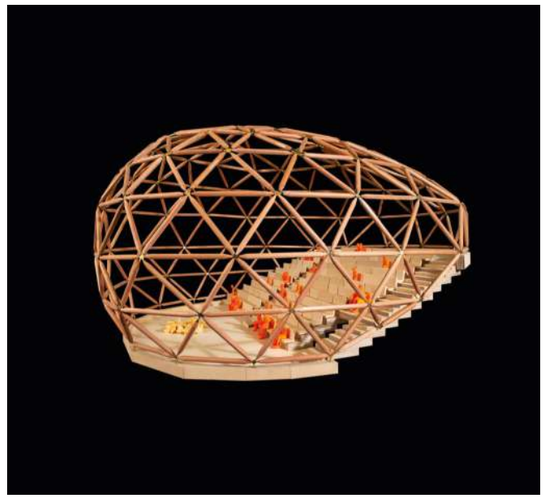
Tilbury Douglas Jon James studio ARCHITECTURE

6.4 Retrofit Exemplar 2 : *The Kingsdale School - dRMM Architects*

The Kingsdale School retrofit by dRMM Architects is a landmark example of sustainable and participatory school transformation. Originally built in the 1950s, the school had fallen into disrepair by the 1990s and was placed under special measures. dRMM's intervention, part of the SchoolWorks initiative, reimagined the site through a phased, cost-effective programme that kept the school operational throughout construction.

Key Features of the Retrofit

- **Participatory Design:** dRMM engaged students and staff in a six-month consultation process, ensuring the design reflected the needs and aspirations of its users.
- **ETFE Roof:** A translucent, inflatable ETFE roof was installed over the central courtyard, creating a multi-purpose space for assemblies, dining, exhibitions, and social interaction. This roof not only enhances natural lighting but also contributes to passive heating and ventilation.
- **Geodesic Auditorium:** An egg-shaped auditorium, constructed from Scottish larch poles and birch plywood, serves as a central feature. Its innovative design provides a 300-seat performance space with the school library situated beneath.
- **Artistic Ventilation:** Artist Atelier van Lieshout designed sculptural ventilation ducts within the auditorium, combining functionality with artistic expression.
- **Sustainable Materials**: The project marked the UK's first use of cross-laminated timber (CLT) for wide-span structures in a school setting, demonstrating a commitment to low-carbon construction methods.

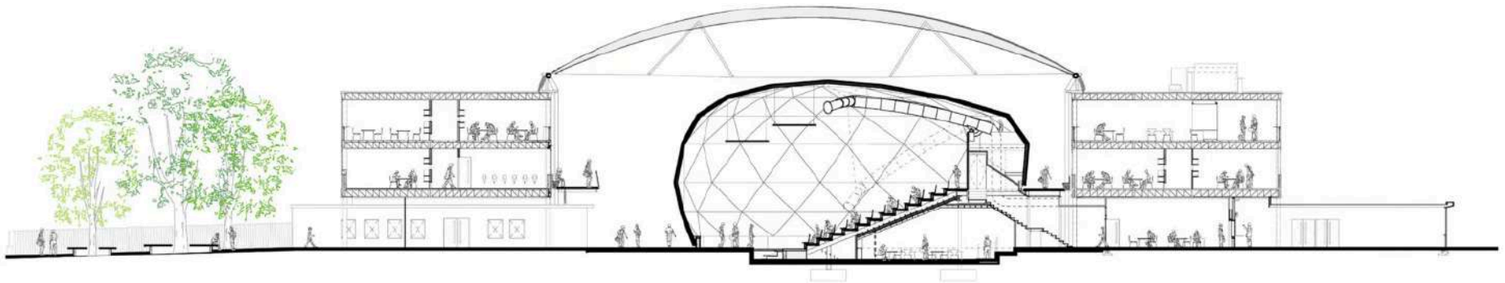


Outcomes and Recognition

- The retrofit transformed Kingsdale School into a vibrant, flexible learning environment, leading to increased student enrollment and numerous accolades, including:
- 2004 Wood Awards (Auditorium)
- 2005 Royal Fine Art Commission 'Building of the Year'
- 2009 British Council for School Environments 'Inspiring Design' (Highly Commended)

This project serves as a model for sustainable school retrofits, demonstrating how thoughtful design and community engagement can revitalise educational spaces.

Images courtesy of dRMM Architects



7.0 Design Development

7.1 Bid Submission Design

During pre-bid design reviews, the courtyard was identified as the key opportunity to uplift the whole building if treated as a year-round space. By covering it, the courtyard becomes the social heart used at different times by both primary user groups: the community and students.

The space could be used as everyday spill-out from the café, informal study and breakout. It could also host flexible events including talks, screenings, presentations and small performances.

A lightweight ETFE roof is proposed to admit generous daylight and span the courtyard with minimal structure, keeping the space bright and usable in poor weather.

A Hellerup stair is introduced as seating, stage and meeting point. It supports informal lectures during the day and community events in the evening.

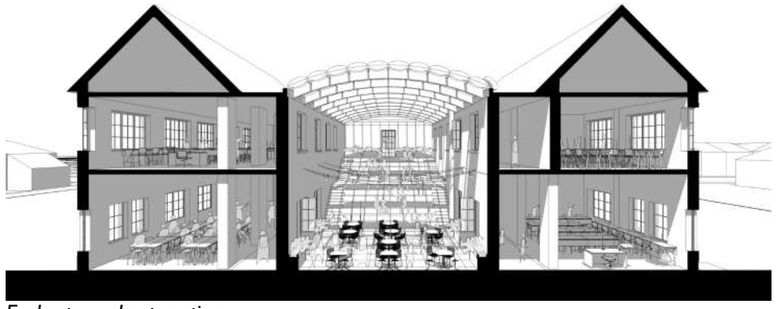
The key benefist of this proposal are:

- Year-round activation of the campus heart.
- Improved legibility and a welcoming first impression.
- Greater value from existing floorspace through flexible, multi-purpose use.

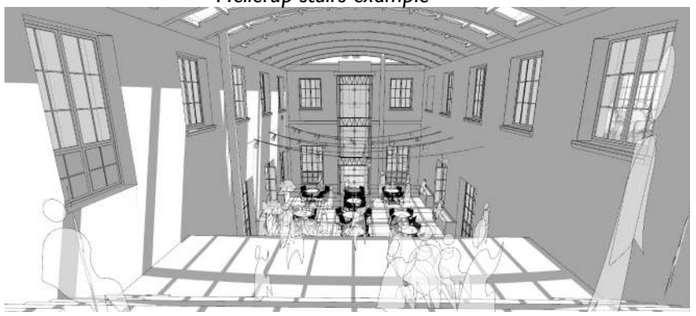
EFTE Roof Example

Hellerup stairs example

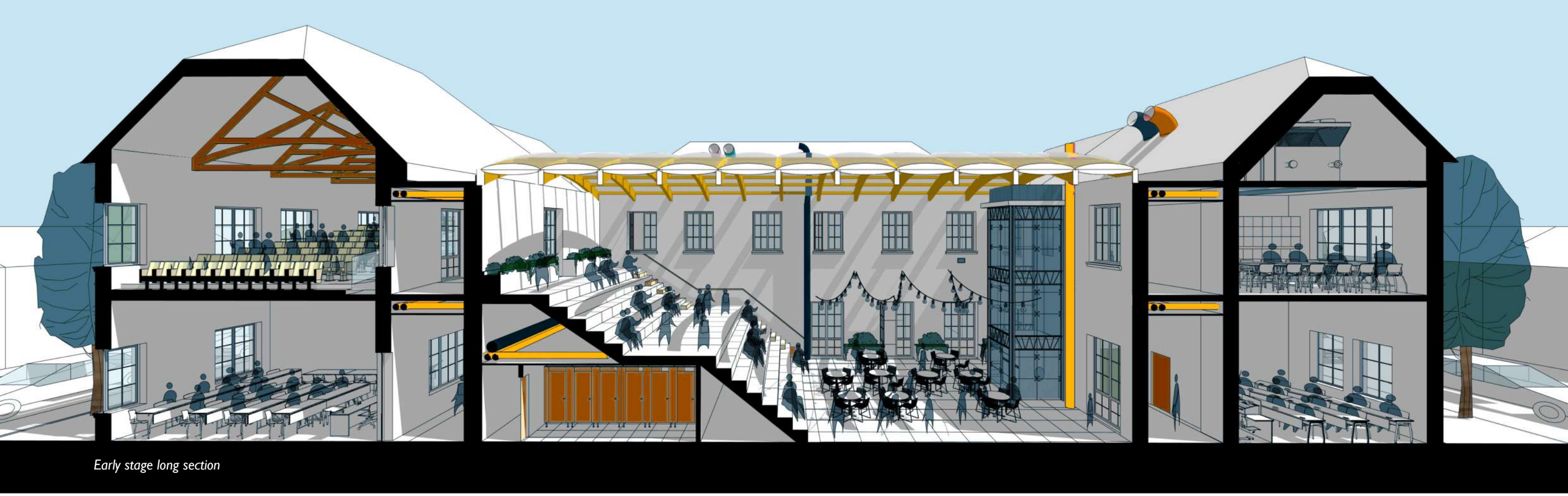
Early stage courtyard ground floor internal view



Early stage short section



Early stage courtyard first floor internal view



Early stage long section

7.2 Stage 2 Facade Design Development

During Stage 2 we explored a wide spectrum of elevation treatments with the client and met the planning officer to agree a direction. Options ranged from contemporary, highly contrasted proposals to sympathetic modern interpretations of the existing composition. The process used sketches, material examples, photomontages, and bay studies to test proportion, depth, and buildability (see image).

The agreed approach is a sympathetic modern reinterpretation that retains the building's rhythm and scale while delivering a full thermal upgrade.

Key moves

Overcladding for performance: new insulated build-up that improves U-values and airtightness while protecting the original fabric.

Existing composition respected: pilasters, cornice lines, curved gable and bay spacing are kept legible to preserve the civic character.

Recast base and openings: the former brick base and dressings become a red panel cladding (e.g., Viroc) set on a concrete plinth; traditional brick heads are replaced by chamfered window heads and deep reveals to control shadow and water.

Windows: high-performance composite triple-glazed units with slender frames.

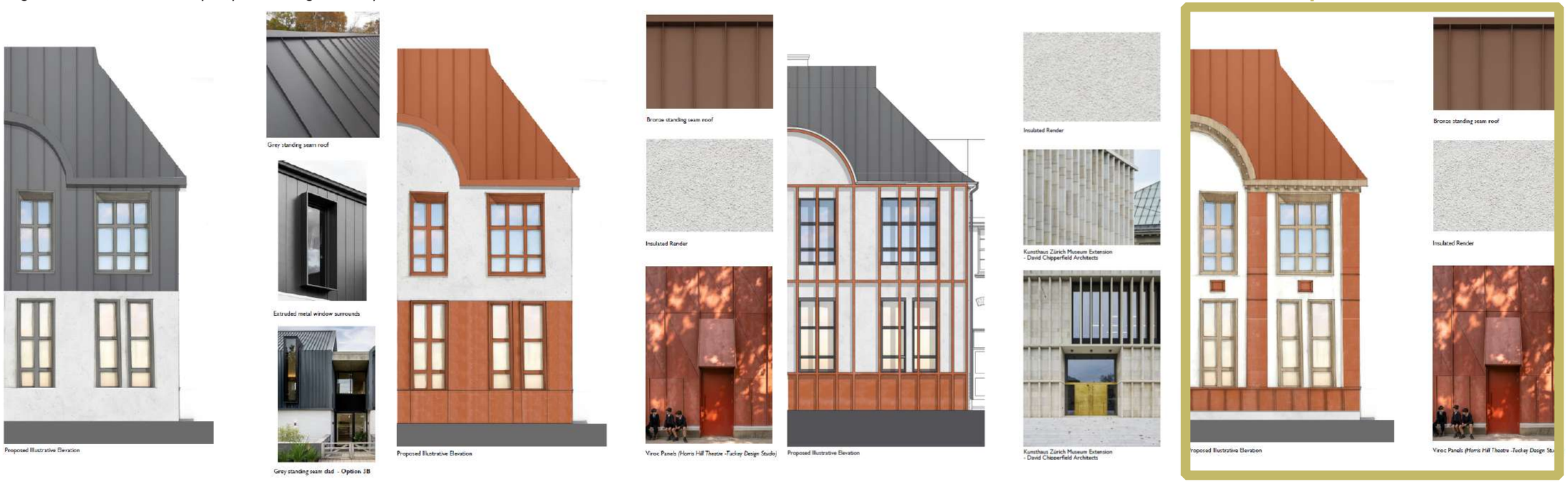
Roofscape: we transitioned from a standing-seam metal roofing in a warm grey/bronze tone that sits comfortably with the historic context to a clay tile in the same tone.

Palette: light insulated render to principal wall planes, red panel accents to the base and verticals, and finely detailed reveals and cills to express depth.

This option balances heritage sensitivity with modern performance, creating a coherent façade language that is durable, maintainable, and aligned with planning feedback.

Stage 2 Sketches, material examples, photomontages and bay studies

Preferred Option



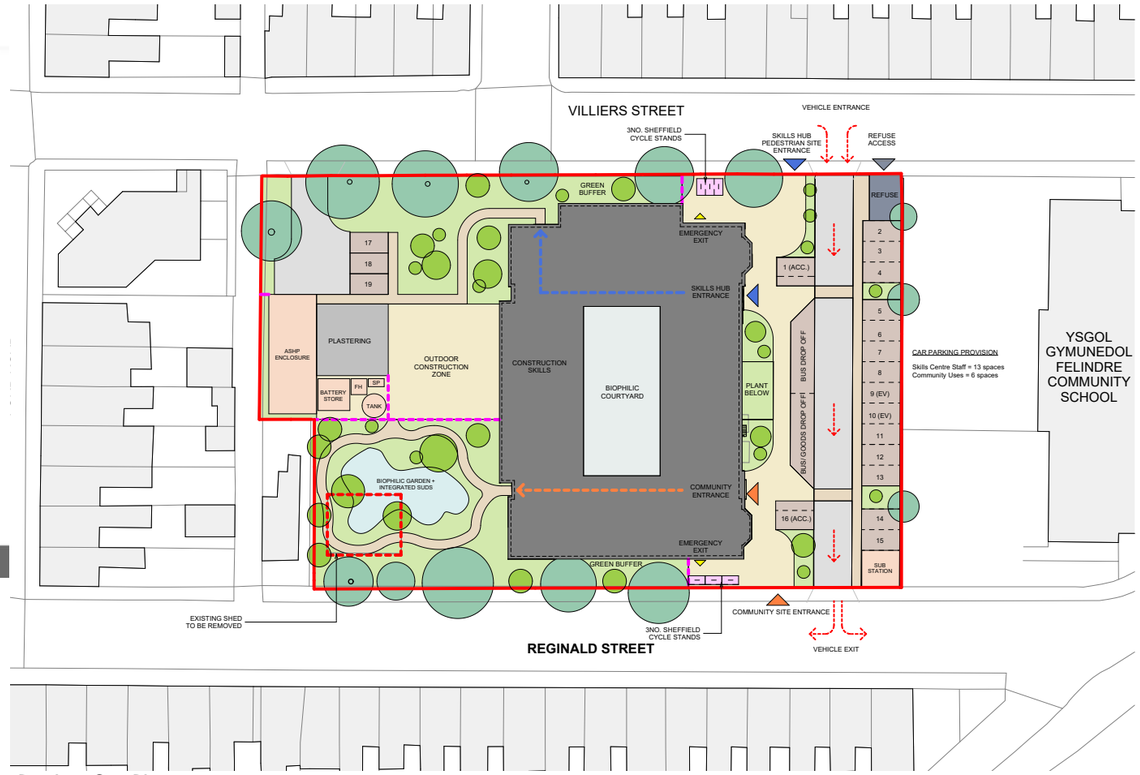
Stage 2 Bay Studies

7.3 Pre App Submission

The proposal at that stage seeks to transform the existing Victorian building through a careful balance of retention and renewal. Elevational treatments are designed to respect the proportions and rhythm of the original façades, while introducing a fabric-first thermal upgrade strategy that discreetly enhances performance without eroding character. A palette of low-carbon, durable materials has been considered to ensure that new cladding elements complement the historic fabric, and opportunities for subtle detailing will help reinforce the civic identity of the building within its residential setting. Window replacements and façade repairs will be carried out in a manner that strengthens the building's presence on Reginald Street and Villiers Street, ensuring that it continues to contribute positively to the local townscape.

At site level, the plan has been reorganised to provide clarity, accessibility, and legibility. The arrangement separates skills-focused learning areas from community functions, with distinct entrances that allow both secure daily use by learners and welcoming access for wider public engagement. Vehicular access, staff parking, and servicing have been rationalised to the site edges, freeing the centre of the plot for people-focused activity. The revitalised central courtyard acts as a unifying space, enclosed by new biophilic landscaping and enhanced with an ETFE roof to allow all-year use. Green infrastructure, including SuDS and ecological planting, is integrated throughout the site plan to provide environmental benefits and support the project's Net Zero Carbon ambitions. Overall, the organisation of the building and site creates a coherent, legible framework that celebrates the historic structure while delivering a sustainable, inclusive Skills Hub for the community.

Pre App Bay Elevation



Pre App Site Plan

Pre App North Elevation

Pre App East Elevation

Pre App Perspective Sketch

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7.4 Client Engagement Meeting 01 – Case Studies Trip

On 15th July 2025, representatives from Neath Port Talbot Council's Education & Development team, Tilbury Douglas, and JJSA (Jon James and Isaac Shepherd) visited two Tilbury Douglas projects: Merthyr Learning Quarter (new build) and Coleg Y Cymoedd, Rhondda (refurbishment), to capture lessons learned and test ideas for the New Skills Hub. The visit was formally minuted and is being used as a key precedent informing the Stage 3 design.

Key observations shaping the design

- Prioritise flexible, practice-first vocational spaces with movable furniture/equipment and easily reconfigurable power provision; theory to occur in separate classrooms.
- Hair & Beauty: prefer separate styling chairs and backwash sinks; include a reception desk if space allows; consider adjustable/more compact treatment beds.
- Construction: split area to accommodate electrical/mechanical/plumbing; secure, caged tool storage.
- Catering: stainless-steel equipment with movable workstations (training-kitchen model).
- Acoustics: exposed services with acoustic rafts/woodwool panels supported by users; adopt suspended acoustic treatments where helpful.
- Shared elements: provision for laptop lockers (Lapsafe); SALTO access control; digital public noticeboard suited to the café entrance; picture-rail display in corridors.
- Stairs & circulation: include Hellerup stair after Stage 2, noting comfort limits (~30 minutes) and potential softening;
- Landscape: allocate a portion of landscaping for horticulture teaching/maintenance.

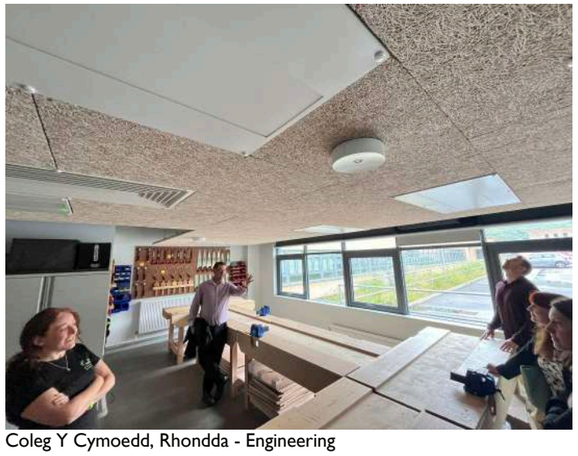
These precedents have been captured in the Stage 3 proposals and continued to steer the SoA/FF&E development and client engagement through CEM workshops.

Merthyr Learning Quarter - Atrium

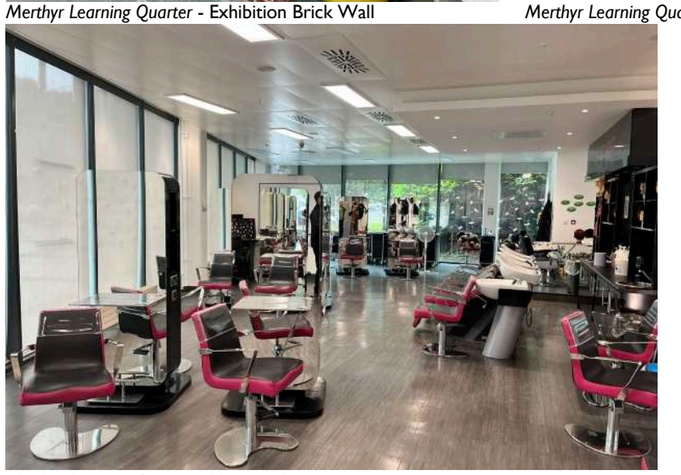
Merthyr Learning Quarter - Exhibition Brick Wall

Merthyr Learning Quarter - Plastering Space

Coleg Y Cymoedd, Rhondda - Cafe Servery

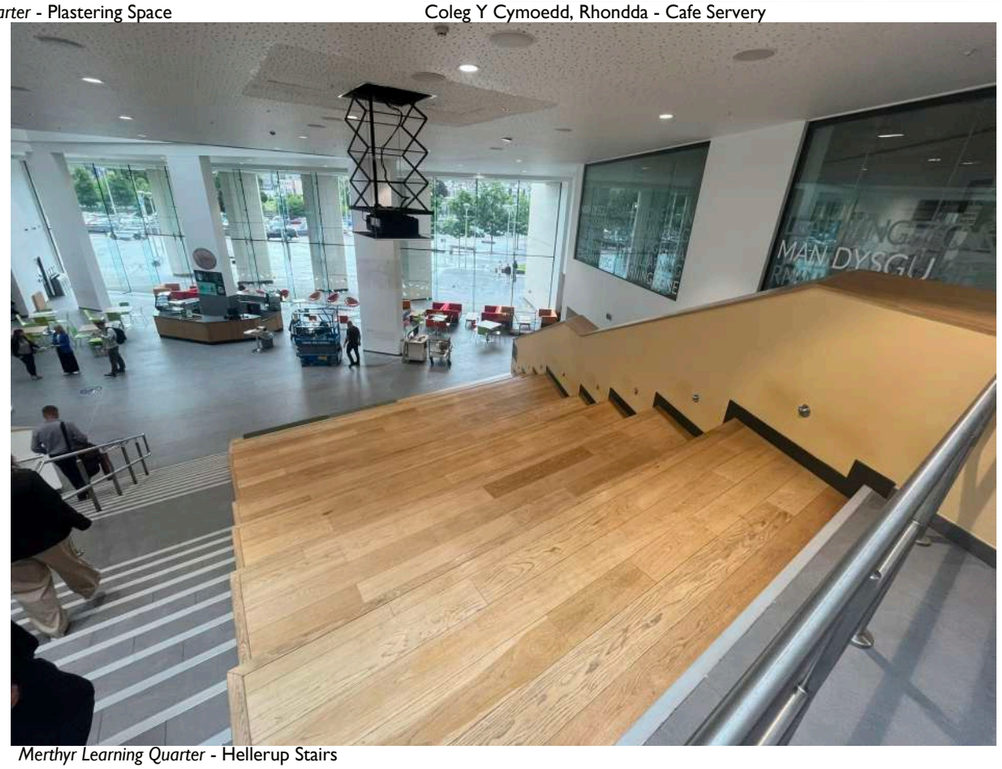


Coleg Y Cymoedd, Rhondda - Engineering



Merthyr Learning Quarter - Hair and Beauty

Merthyr Learning Quarter - Wall stencil



Merthyr Learning Quarter - Hellerup Stairs

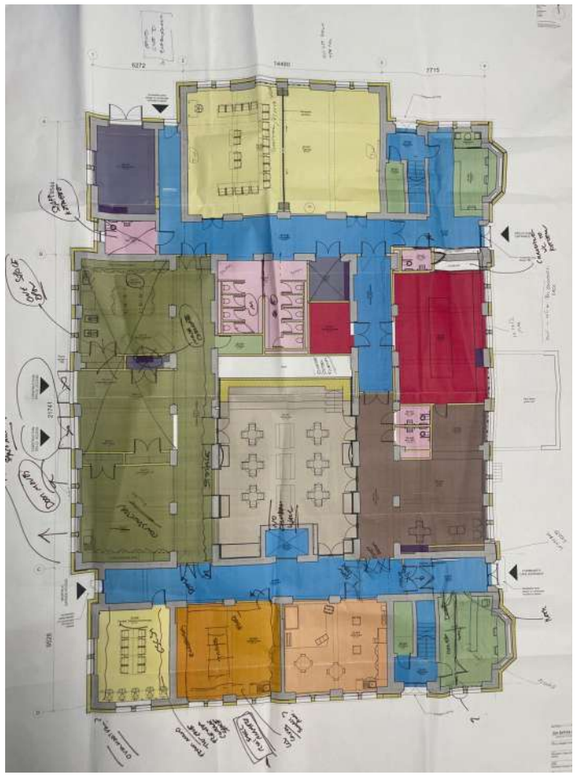
7.5 Client Engagement Meeting 03 & 04

Structured client engagement meetings were held to confirm the Stage 3 brief, layouts, FF&E and technical requirements with NPTCBC Education, Neath Port Talbot Council, Tilbury Douglas, JJSA, McCann & Partners and Advanced Furniture.

Key outcomes informing the Stage 3 design

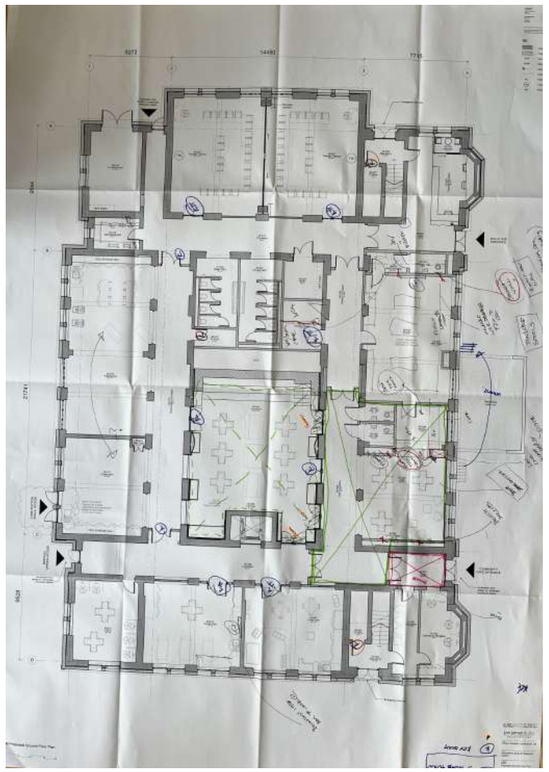
- Layouts & SoA: Refined ground-floor circulation and secure access strategy to public, pupil and courtyard doors; kitchen staff WC/changing added; construction/engineering rooms rationalised (with external link to plastering/brickwork); lift strategy to retain/upgrade the existing shaft where feasible.
- Teaching & learner environments: Teaching walls confirmed across vocational and flexible rooms; detailed briefs set for Animal Care, Childcare, Hair & Beauty and Flexible Training; e-sports/careers room configuration agreed .
- FF&E direction: Movable stainless tables and stackable stools in the training kitchen; café booth seating and servery details (till, drop-down, trolleys); breakfast bars where noted; lockers relocated to new changing area.
- MEP/IT, access & security: Low-surface-temperature heating where practicable; external Wi-Fi; hard-wired access control with fob strategy (including lifts) and defined CCTV coverage (classrooms/circulation, not offices); induction loop and visually-impaired provisions to be designed in.
- Finishes & planning: Retain polished concrete/parquet where viable ; kitchen to be all-electric with coved vinyl floor corner and hygienic wall finishes; ongoing planning/community engagement.

Actions and responsibilities were assigned to the design team and client to incorporate these decisions into the coordinated Stage 3 drawings, specifications and FF&E schedules.

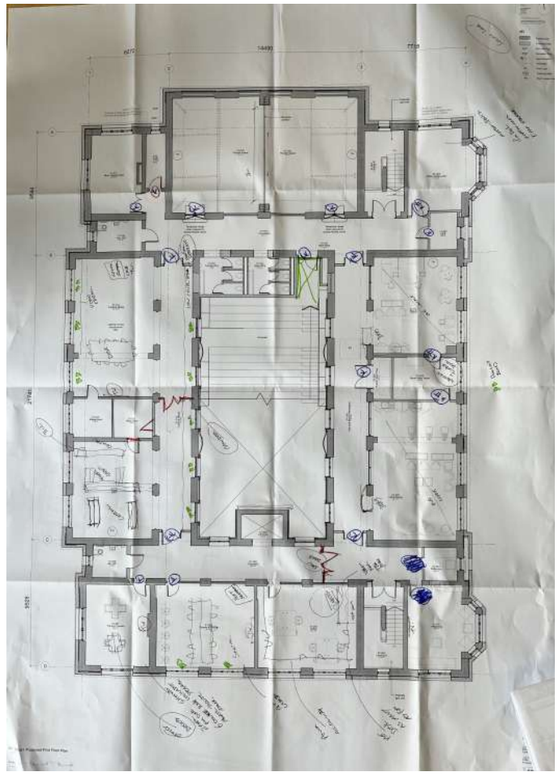


CEM 1 - Ground Floor Plan Markups

CEM 1 - First Floor Plan Markups



CEM 3 - Ground Floor Plan Markups



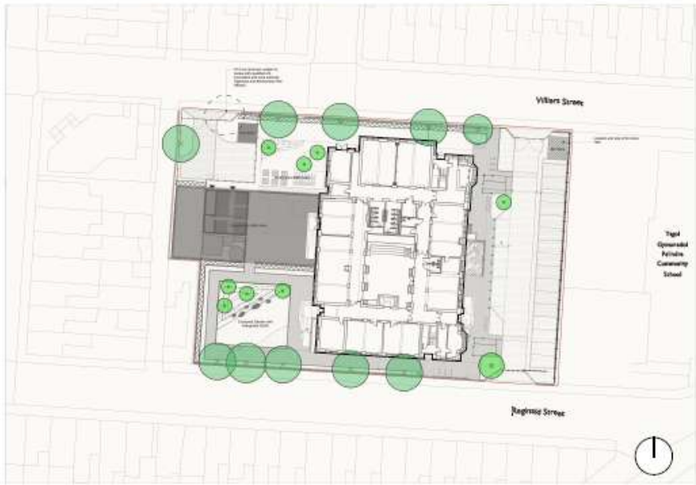
CEM 3 - First Floor Plan Markups

7.6 Community Public Consultation – Residents' Evening

A residents' consultation evening was held on 25 September 2025 at the Port Talbot Ynys Bowling Club to present the proposals for the Port Talbot Skills Hub and to gather feedback from the local community. The session provided an opportunity for residents to view the emerging plans, ask questions, and share their views on how the project could best serve local needs.

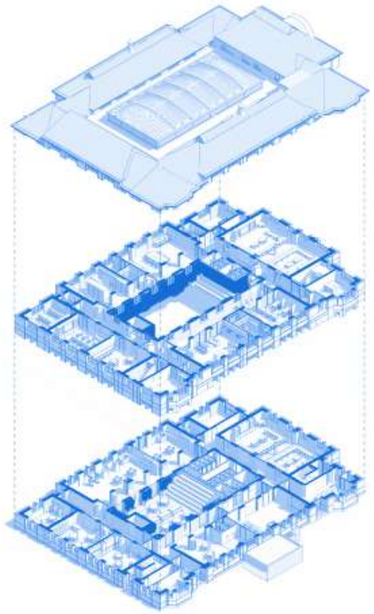
The event was well attended and initial discussions were constructive, with a range of comments and ideas shared. Outcomes were positive and will be considered as the proposals continue to develop.

Feedback gathered will help shape the ongoing design process, ensuring that the Skills Hub responds to the needs and aspirations of the community it is intended to serve.



Neath Port Talbot Castell-nedd Port Talbot Jon James studio ARCHITECTURE theurbanists Tilbury Douglas

Community engagement - board 1



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Community engagement - board 2

7.7 Physical Model

Physical modelling was used throughout Stages 2 and 3 as a rapid design-exploration and communication tool. The site/context model makes the building form, courtyard, entrances, routes and landscape structure immediately legible, allowing the team and client to test options together at the table. It also doubles as a presentation piece for client sign-off and community engagement sessions explaining the project in a clear, accessible way.

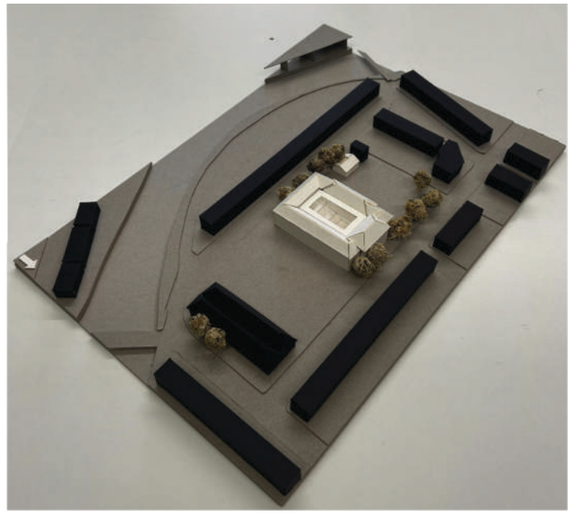
What we tested and refined with the model

- Massing & placement of the Hub within the campus, including relationships to neighbouring blocks and key sightlines.
- Courtyard proportions and the role of the Hellerup stair as a social heart .
- Roofscape & canopy strategy over the courtyard, helping to discuss daylight, ventilation and drainage principles before fixing details.

Engagement & deliverables

- Used at CEM presentations to ground decisions on circulation, security strategy and landscape changes.
- Forms part of the project's consultation toolkit for councillor briefings and public exhibitions, supporting plain-language conversations about scale, use and access.

By turning drawings into a tactile, shared reference, the physical model has aligned stakeholders, and provided a confident basis for the next stage.



7.8 Design Coordination

Stage 3 progressed through focused coordination workshops and live model reviews. Sessions covered FF&E design, kitchen specialist input, landscape, Building Control, Secured by Design (DOCO), transport and highways, MEP engineering, ETFE roof specialist input, woodfibre insulation advice, and BIM coordination. Each meeting closed with recorded decisions, actions, and named owners.

FF&E development

The FF&E consultant refined layouts in close collaboration with the architect and specialist teams, then tested proposals with users during client engagement meetings. Outcomes include standardised teaching walls, right-sized storage, and clear circulation, all aligned with the Schedule of Accommodation and room data.

Coordination outcomes

Kitchen specialist: coordinated equipment schedule, service points, ventilation strategy, and hygienic finishes with MEP, architecture and end user.

Landscape: planting, external learning areas, and arrivals aligned with access and security requirements.

Building Control: thermal performance of various elements.

Secured by Design / DOCO: access control, CCTV coverage and boundary treatments agreed in principle.

Transport: drop-off, parking, cycle parking, and servicing routes confirmed.

MEP: containment routes, plant sizing and locations.

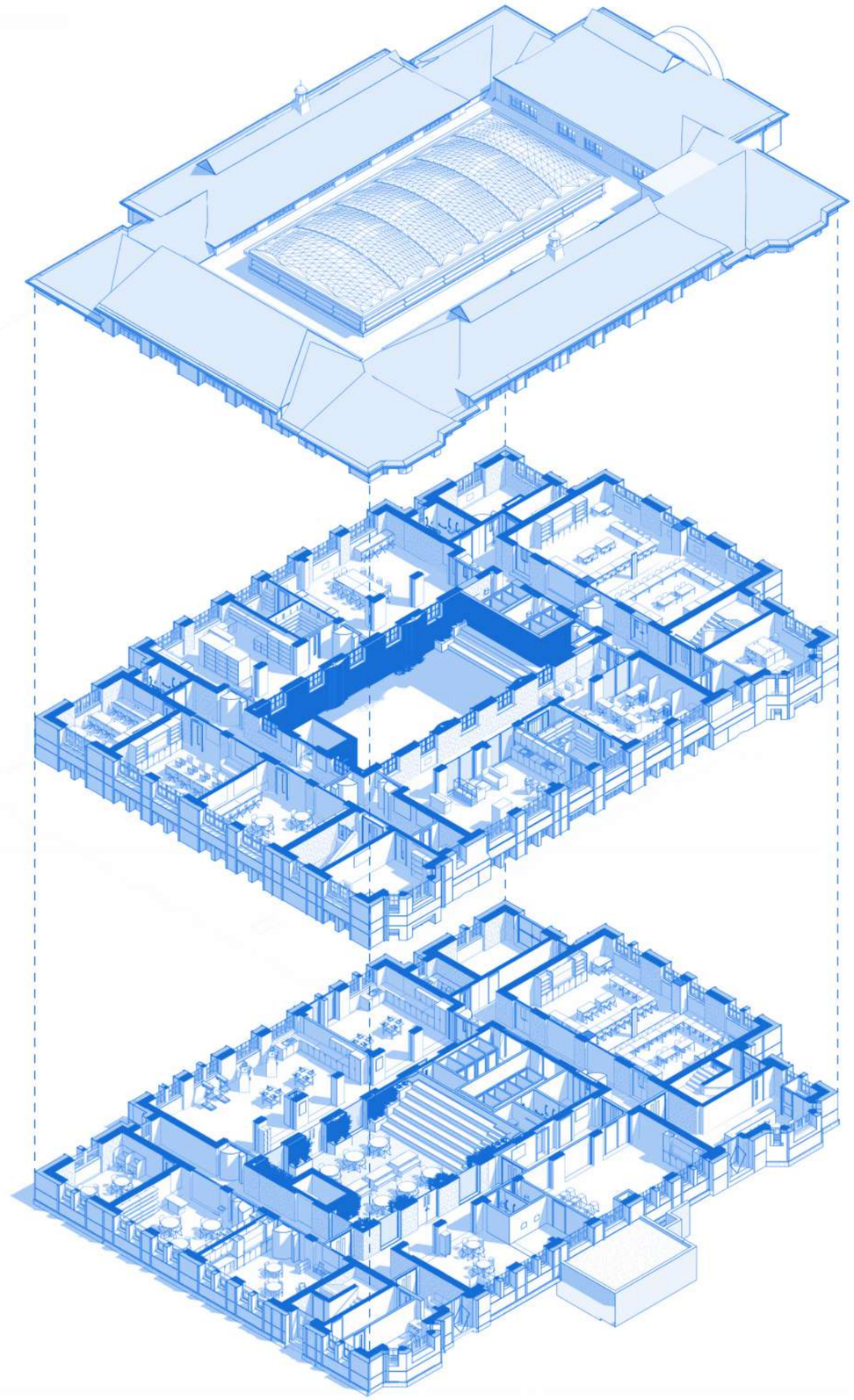
ETFE roof specialist: canopy geometry, drainage, louvre operation, and maintenance access defined.

Woodfibre specialist: build-ups, fixings, and vapour control principles agreed for relevant envelope zones.

BIM

Regular model health checks were carried out with BIM Box. Naming, worksets, coordinates, and file sizes followed the BIM Execution Plan (BEP). Clash detection by BIM Box ran at set intervals.

This resulted in a coordinated Stage 3 package of information.



8.0 Design and Access

8.1 Design Statement

The refurbishment of the Education Library & Resource Centre aims to transform the existing Victorian structure into a highly sustainable, inspiring, and user-focused facility. The vision is targeting net-zero carbon through low-embodied carbon materials, efficient thermal performance, and maximised natural light and ventilation.

Key Design Features & Opportunities:

Sustainability: Use of LETI and NZCB targets to guide retrofit strategies, with a focus on thermal modeling, minimising thermal bridging, and achieving a low-carbon footprint (500–800 $kgCO_2/m^2$ GIA annually).

Courtyard Enclosure: A major enhancement opportunity involves enclosing the central courtyard with a lightweight ETFE roof, creating a flexible, all-year usable 'heart' space for dining, meetings, or informal learning. This would improve spatial efficiency, thermal performance, and daylight quality.

Façade Strategy: We have had engagement with planning authorities to determine how thermal upgrades can be externally applied while respecting the character of the existing building. Although not listed, the structure has architectural value.

Materials & Detailing: Preference for sustainably sourced cladding with durable, low-maintenance detailing. Thermal upgrades and materials will be assessed using Environmental Product Declarations (EPDs).

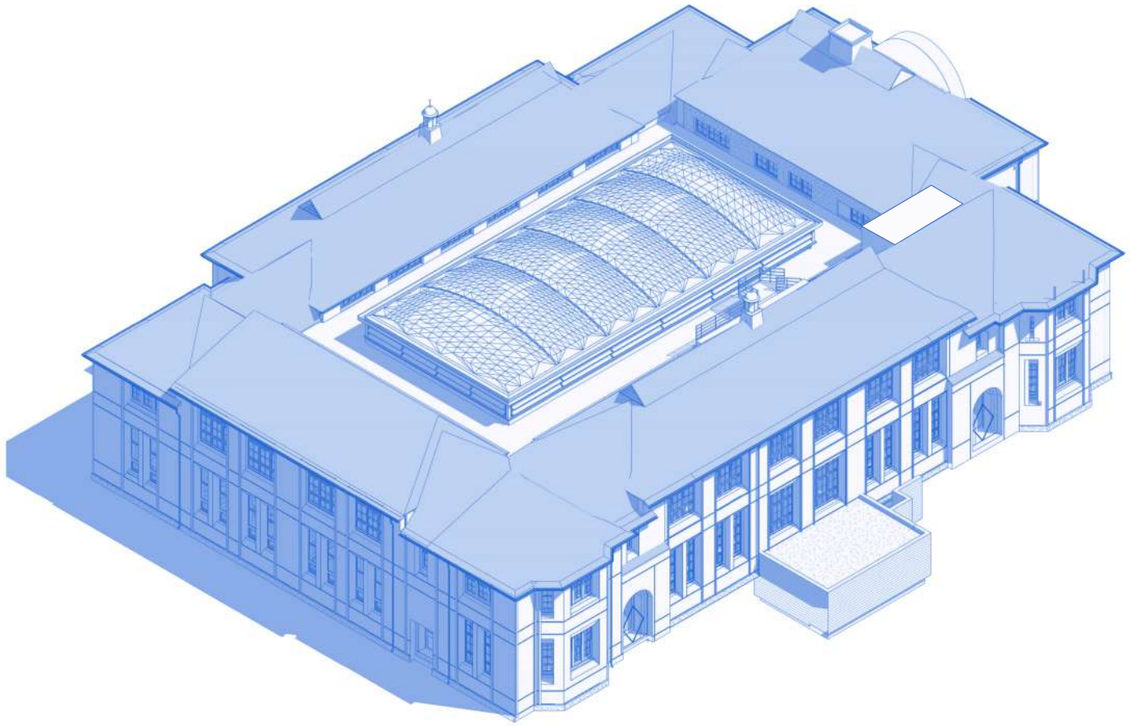
Heritage & Retention: Key Victorian features such as high ceilings, large windows, and internal details, will be preserved and celebrated. Cladding externally allows us to keep and enhance the existing internal features (decorative wall tiling, window details)

Landscape & Accessibility: Improved integration with the surrounding landscape, enhancing connectivity, views, and accessibility, especially at entrance points. Mature trees and hard/soft landscaping will be sensitively addressed.

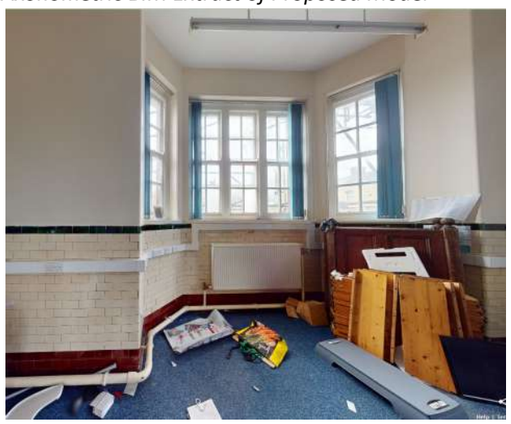
Flexible Internal Design: Includes FFE reviews, sliding partitions for adaptable spaces, ICT strategy considerations.

Community Use & Future Proofing: Spaces will be designed for flexible, long-term use, including adult learning and community engagement beyond school hours.

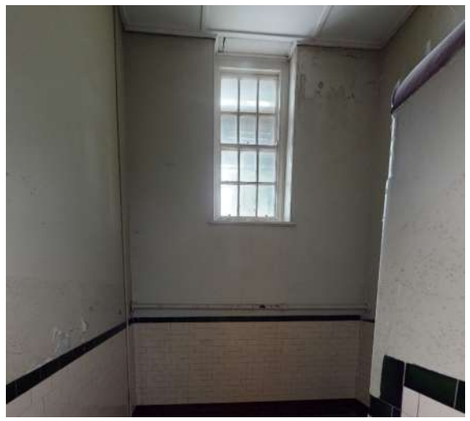
Conclusion: The project has the potential to become a landmark, low-carbon educational facility. The overarching goal is to deliver a healthy, inclusive, and sustainable environment for students and the broader community.



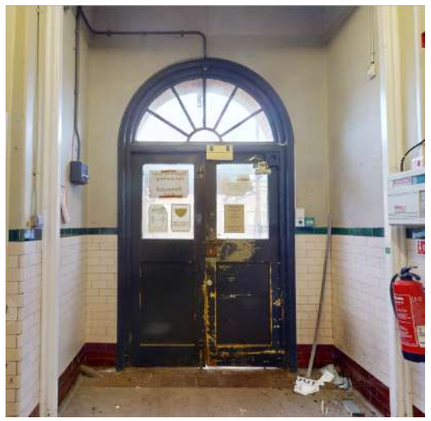
Axonometric BIM Extract of Proposed Model



View of internal bay window - Matterport survey extract



View of stair landing wall - Matterport survey extract



View of entrance door wall - Matterport survey extract

8.2 Site access and movement

The layout organises safe, legible movement for learners, staff, visitors and service vehicles while reinforcing the project's public, semi-public and private zones.

MAGNA Transport consulting have conducted a transport assessment to ensure the proposal is compliant with relevant legislation and accommodates for active travel.

Two principal arrivals on the east frontage: a Skills Hub entrance (north-east) and a Community entrance (south-east).

A clearly marked drop-off bay sits beside the Skills Hub entrance for short-stay set-down.

A one-way loop enters at the north-east and exits at the south to minimise conflict with pedestrians.

Refuse and plant/maintenance movements are routed away from main doors, using dedicated access points on the perimeter.

Construction vehicle access is identified separately to protect day-to-day operations.

Direct, step-free pedestrian approaches lead to both main entrances.

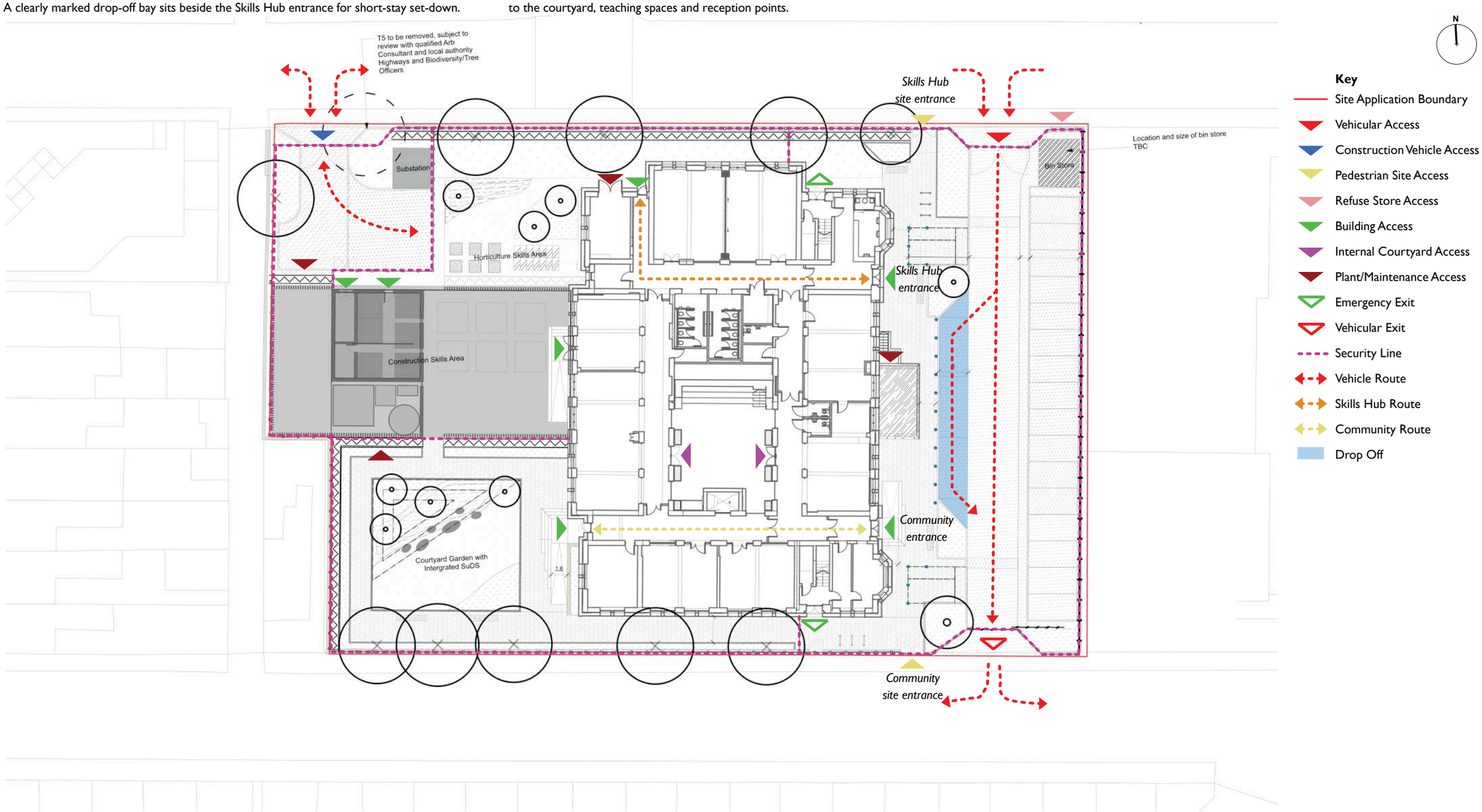
Internal wayfinding distinguishes the Skills Hub route and Community route, guiding users to the courtyard, teaching spaces and reception points.

A defined security line encloses the site.

The internal courtyard is accessible via controlled doors, supporting the building's public / semi-public / private strategy.

Multiple emergency exits discharge to safe external areas around the perimeter.

This access strategy creates a welcoming, legible campus with separated vehicle and pedestrian flows, robust servicing, and secure yet permeable connections to the courtyard and teaching wings.



Tilbury Douglas Jon James studio ARCHITECTURE

8.5 Security Areas

During Stage 3, Tilbury Douglas ran a dedicated security workshop with the NPTCBC Education team and met the Designing Out Crime Officer (DOCO) to agree the boundary approach and access philosophy. The scheme is organised into three security zones: public, semi-public, and private, with hard-wired access control, targeted CCTV and "secure by design" perimeter treatments informing each zone.

Public area

Covers the Community and Skills Hub main entrances, drop-off, car park and cycle parking. Community and pupil entrances are normally locked with fob access + intercom to the community reception; access control is hard-wired. External lighting is provided on the car-park side; no vehicle barriers are required. A glazed screen to the community reception supports passive supervision.

Semi-public area

The internal courtyard, Hellerup stair and Courtyard SUDS Garden are accessible to the community but not 24/7. All courtyard doors operate on secure access; a lockdown bell is linked to the access-control system. The door at the top of the Hellerup stair is locked. CCTV is provided to circulation areas (not offices).

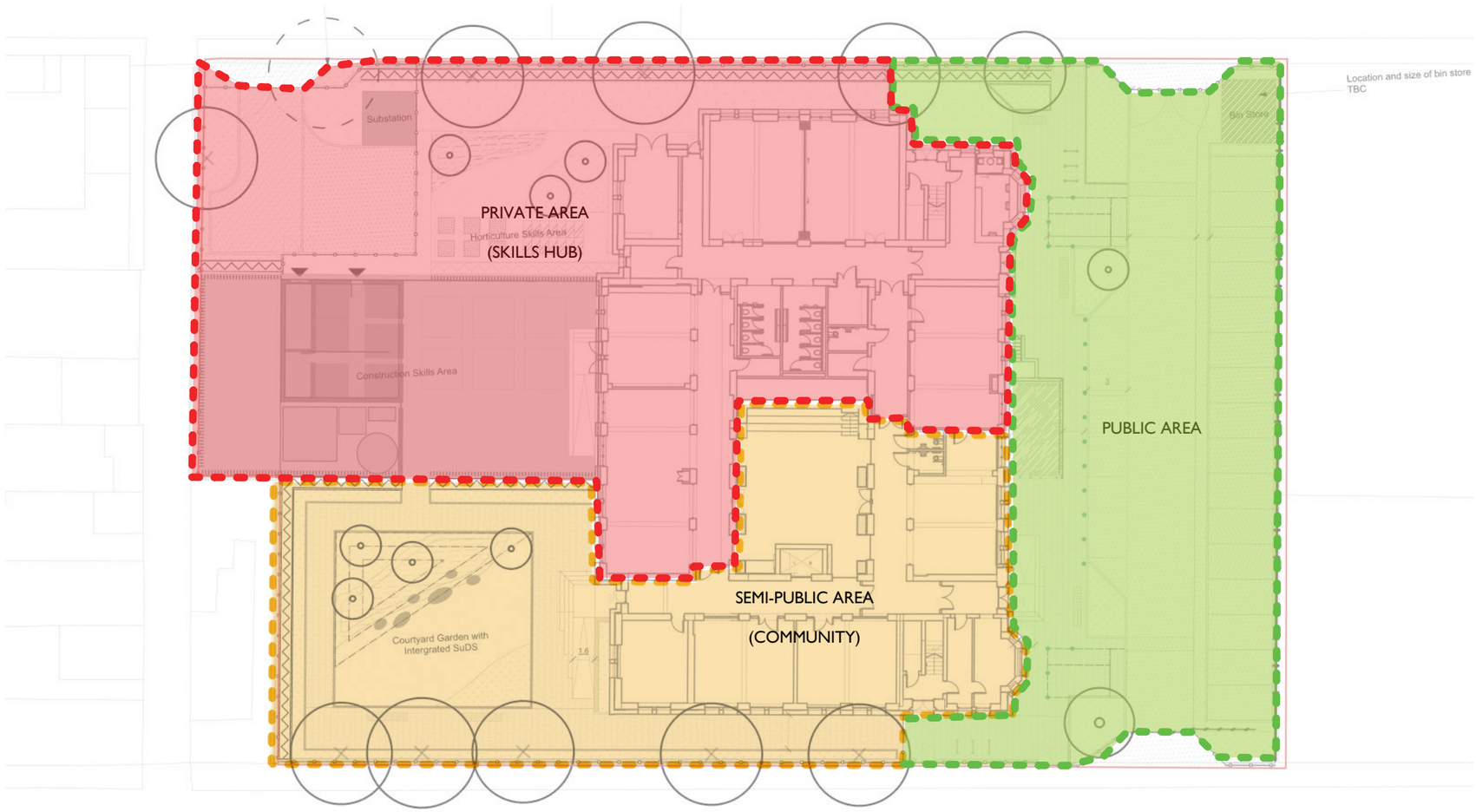
Private realm — learners & staff areas (GF/FF)

Teaching and staff spaces are protected by layered controls: fob-controlled lift, selected internal doors on fob, and key-suited teaching rooms (with half-cylinder inside) and lock-suited plant/cleaner rooms. Vision panels are provided to reflection/wellbeing rooms (not lockable). CCTV covers all classrooms; monitoring is routed to skills lead office.

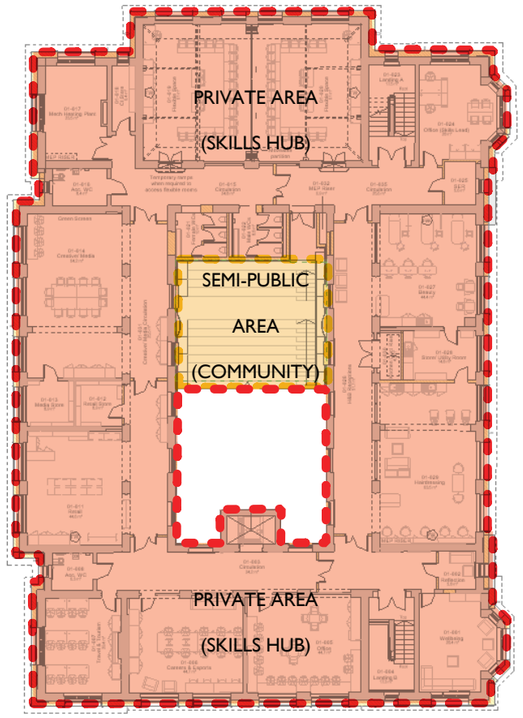
Perimeter & boundary treatment

The boundary adopts a "secure by design" strategy, including a robust, non-vision fence to the neighbouring school and closure of the disused inter-school gate. The SBD officer has been consulted at an early stage to ensure the proposals are both safe and compliant. Externally, three vehicle gates are padlocked; fences secure the north/south escape-walkways and define interfaces (e.g., SUDS–Plastering and parking–Horticulture). Internal fences ~1.8 m high are used where required, with extended fence heights provided in locations specified by Hunter Acoustics.

These measures deliver clear public/semi-public/private zoning with appropriate access control, surveillance and defensible boundaries, aligned with client, DOCO and Stage 3 workshop outcomes.



Site/Ground Floor Security Areas



First Floor Security Areas

8.6 Plastering + Construction Zone

The brief of the Plastering Space is covered external space to accommodate a maximum of 12No. students at an introductory level of plastering. The space's connection to adjacent construction and brickwork teaching spaces is key.

The plastering and construction zone has been designed as both a functional teaching space and a live exemplar of construction techniques.

The plastering building features exposed timber battens with a polycarbonate roof, providing generous levels of natural light throughout the year. The exposed battens assist with summer overheating control, while air gaps at the eaves enable natural cross-ventilation, creating a robust yet comfortable environment for practical training. Exposed timber trusses are intentionally left visible, serving as an exemplar construction detail for students to study and reference in practice.

On the external side, facing the bricklaying courtyard, the external wall incorporates a display of varied brick bonds and construction techniques, turning the building fabric into an active learning resource. This approach embeds teaching directly into the architecture, ensuring the zone is both didactic and durable, while reflecting the wider pedagogical ethos of the Skills Hub.

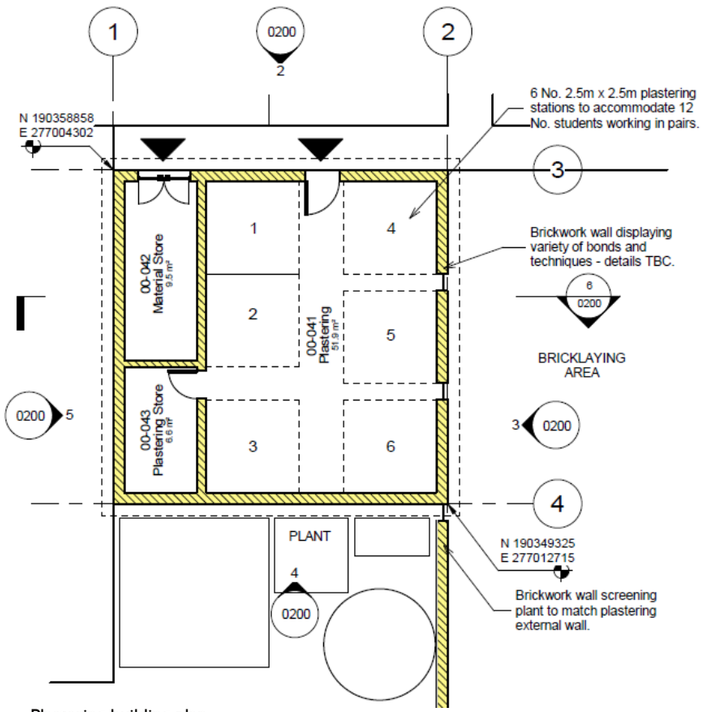
Together, the plastering and construction areas provide a hands-on, demonstrative environment where building elements are showcased as teaching tools—reinforcing the Hub's vocational focus.

Students bricklaying

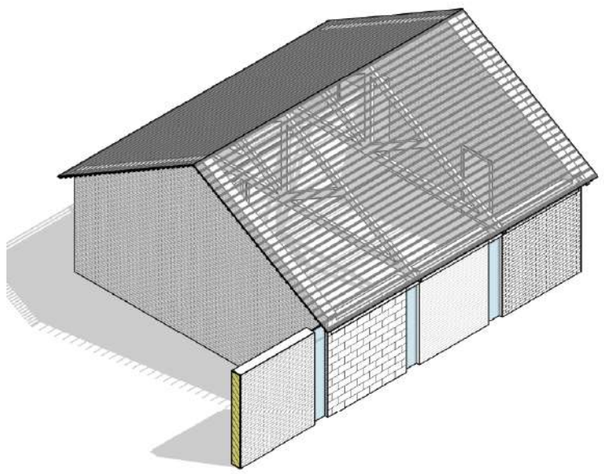
Bricklaying wall exemplar

Students bricklaying

Polycarbonate roof + exposed battens precedent

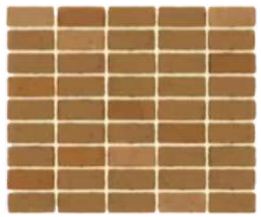


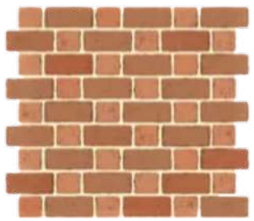
Plastering building plan

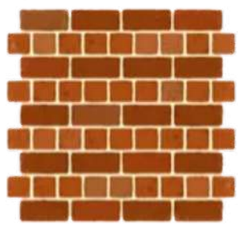

Plastering building axonometric

Polycarbonate architecture precedent

Stack Bond


Flemish Bond


English Cross or Dutch Bond


Bricklaying bond techniques

8.7 Ancillary Buildings

Bin store enclosure

Located in the north-west corner for direct collection and minimal visual impact. The enclosure is a galvanised steel frame with vertical timber cladding to match the site palette, with secure double gates, a durable concrete pad with falls to a drain, and vermin-resistant detailing. Low planting is proposed around the street-facing sides to soften views while keeping access clear for refuse vehicles.

Substation enclosure

A 4 m × 4 m substation is positioned near the north-west boundary. An off-the-shelf green GRP kiosk is proposed for a robust, low-maintenance solution. It sits on a concrete plinth with guarding bollards where required, has integral louvres for ventilation, and provides 24/7 DNO maintenance access from the service route. The muted colour reduces visual prominence in the landscape.

ASHP compound acoustic screening

In line with the Stage 3 acoustic advice, the ASHP compound will be enclosed by a minimum 2.5 m high solid, imperforate fence with a mass ≥ 10 kg/m² for the lifetime of the product and an acoustic absorbent inner lining. Gates will meet the same specification and all joints will be sealed to avoid flanking gaps. A suitable system is Gramm NATURALSoundBlok Absorptive. The screen is arranged to break line-of-sight to receptors while maintaining safe service access and airflow to the plant.

These ancillary elements are functional, durable, and visually coherent with the campus materials, while meeting servicing, security, and acoustic requirements.

ASHP compound Acoustic Screening Gramm NATURALSoundBlok Absorptive

GRP Substation Enclosure

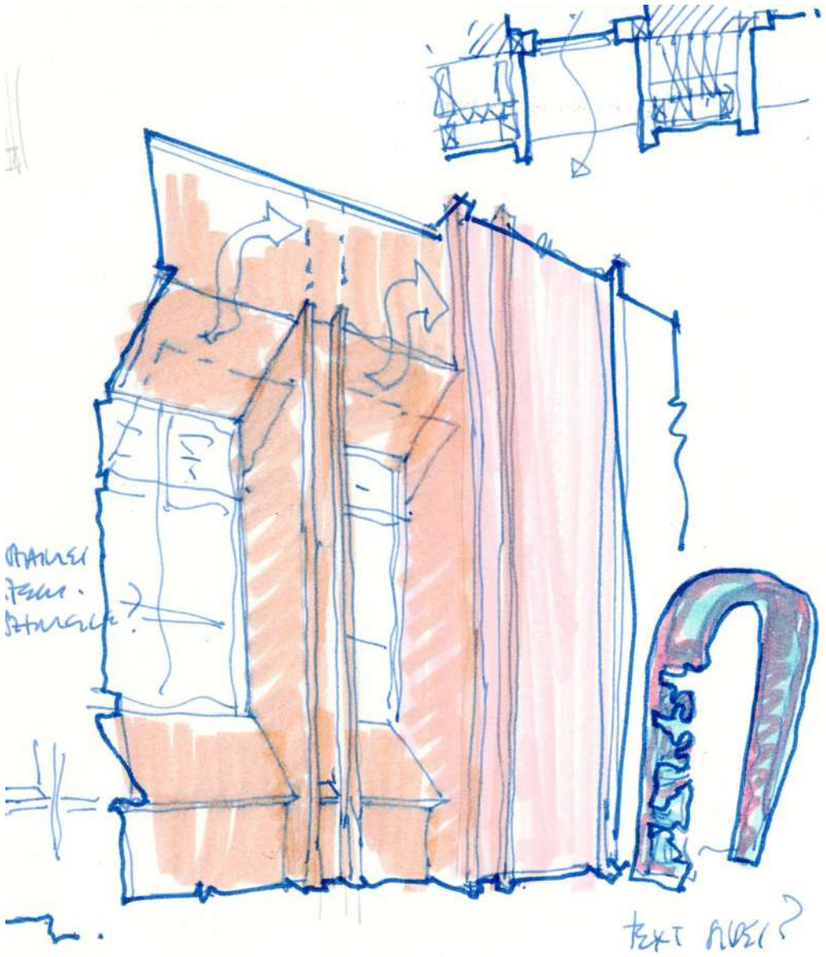
Bin Store Enclosure

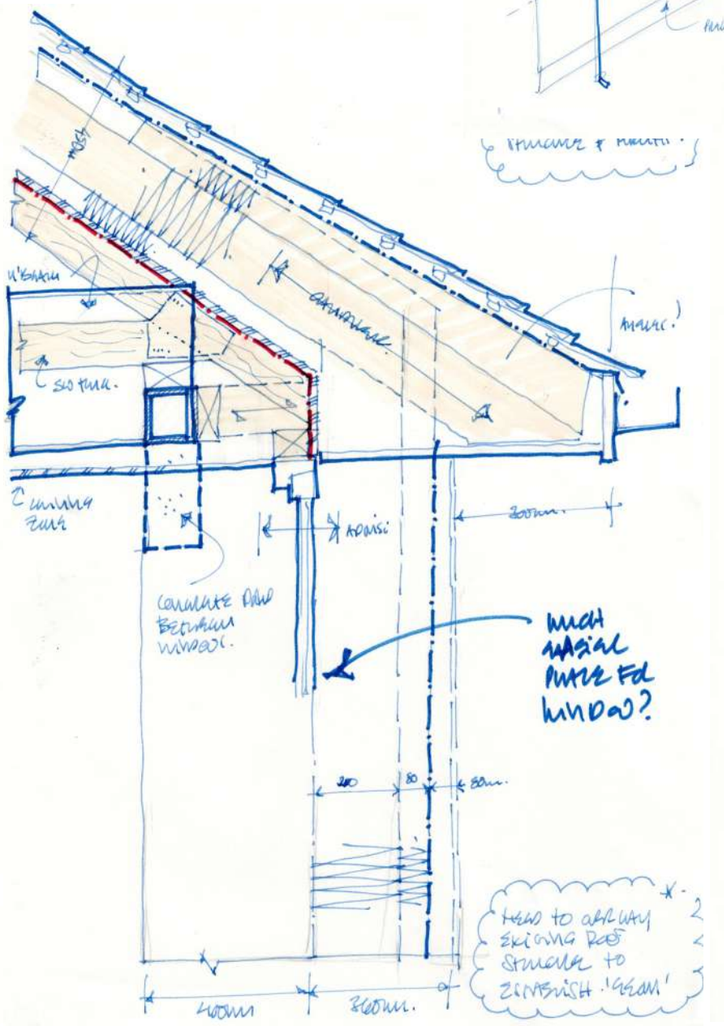
8.8 Facade Detail Investigation

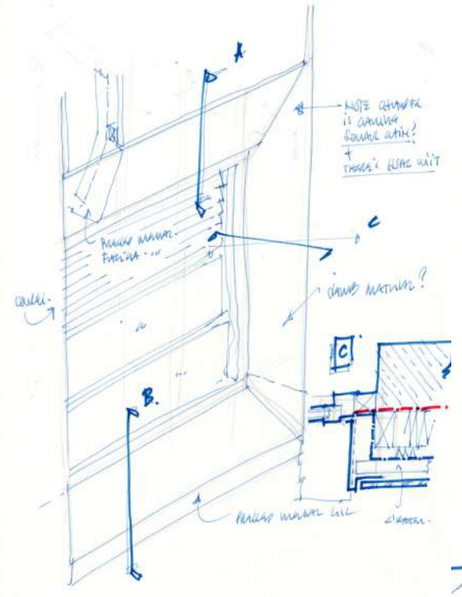
As part of Stage 3, we ran internal sketch workshops and 3D studies to refine the architectural elevations and resolve a set of bespoke junctions and components. The work focused on three priority areas and fed directly into the coordinated drawings issued at the design freeze.

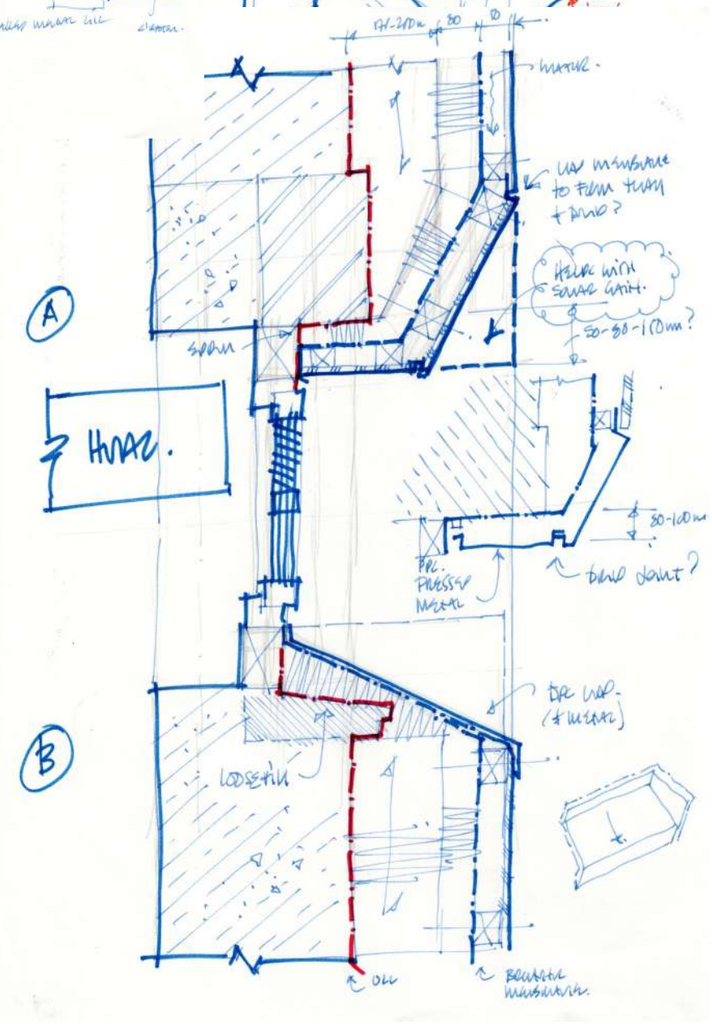
- Window chamfered reveals. Developed to admit light while discouraging dust build-up, responding to client feedback on sloped cills from precedent reviews.
- Entrance apparatus. Iterations tested a clear, robust arrival sequence, glazed screening to maintain passive supervision and detailed thresholds with integrated entrance mats, now carried into the Stage 3 package.
- Roof eaves/verge: ventilation strategy, soffit/drip geometry, gutter interface and access for maintenance; confirmation of insulation continuity and air-tightness line.
- Window head & cill: chamfered-reveal geometry, flashings, cavity closers and weeps to manage water and improve durability.

These investigations establish the design intent and construction approach.









8.9 Elevation Materials

The façade palette balances heritage character with modern performance. Warm terracotta tones and light panels complement the existing red brick piers while delivering durable, low-maintenance surfaces.

Wall overcladding to thermally improve the with new infill areas use Viroc cement-bonded panels with a concrete plinth for robustness and a crisp datum.

Openings use protruding and chamfered reveals to control shadow, shed water and express depth.

Composite triple-glazed units provide high thermal performance with slender sightlines and improved comfort.

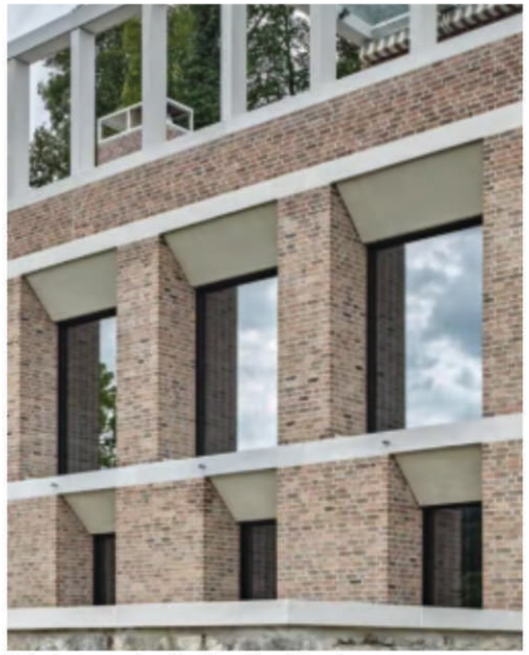
Primary roofs finished in Marley clay plain tiles (Heather Blend) to echo the historic context. Sun-facing slopes integrate red PV solar tiles or integrated panels allowing on-site generation without bolt-on arrays.

Junctions are simplified for longevity: durable cills, and clear drip edges.

The palette supports improved airtightness and easy maintenance while reinforcing the building's civic presence.

This material strategy delivers a coherent, resilient elevation that respects the existing architecture and introduces net-zero-aligned upgrades through high-performance glazing and integrated solar tiles.

Protruded openings reveals



Window reveals with chamfered head

Marley Clay Roof Tile - Heather Blend

PV Red solar tiles

Proposed Elevation - stage 2 bay study

Viroc panels and concrete plinth

Viroc white panels

Composite triple glazed windows

8.10 Covered Courtyard

The canopy concept originated during the pre-bid site visit, where the team identified the opportunity to semi-enclose the courtyard as a non-heated, semi-external space usable in all seasons. Treating the courtyard as a tempered environment also allows the internal courtyard façades to be finished differently from the external elevations that require full thermal upgrades.

Key benefits

- Year-round usability of the courtyard for ELRS and the community, with weather protection and a tempered micro-climate.
- Hellerup stair enables informal lectures, evening performances and everyday social use by learners and local community groups.
- Rationalised upgrades to the courtyard elevations: windows will be improved to double glazed timber not triple glazed coposite as per the external elevations), while wall treatments can prioritise cleanability and durable finishes over heavy thermal build-ups thanks to the canopy's thermal contribution.
- Better building utilisation and longevity, turning the courtyard into a flexible, high-value space at the centre of the site.

Environmental strategy (ETFE canopy)

A lightweight ETFE roof spans the courtyard. Perimeter translucent louvres admit daylight and can be opened in warmer months to promote cross-ventilation and relieve heat build-up.

A solar-control manifestation on the ETFE pillows reduces glare and mitigates summertime gains.

The MEP team is undertaking thermal modelling to confirm louvre sizing, ventilation rates and any additional measures needed to manage peak conditions.

Envelope, acoustics & performance

Although the covered courtyard walls may not require full thermal insulation (subject to building control approval), acoustic linings will be incorporated to improve speech clarity for events and deliver incidental thermal benefits.

Façade details and drainage at the canopy edge are coordinated to ensure robust junctions and maintainability.

Materiality and character

The space adopts a light timber palette: locally sourced timber battens (e.g., larch) for wall cladding, with solid-timber window/door reveals to match.

The Hellerup stair receives a matching solid-timber finish for visual continuity and durability.

Planters are positioned to introduce greenery and improve air quality without compromising circulation or event layouts.

The canopy transforms the courtyard into **the social heart of the building**, a flexible, legible and welcoming space shared by all user groups, while simplifying thermal interventions to the internal façades and supporting sustainable, long-term use.

Proposed Section (above)

Courtyard Perspective (image courtesy of Studionesh - right)

8.11 Perspective Section

This cutaway visualisation explains the project at a glance. It shows the ETFE-covered courtyard and Hellerup stair as the social heart, the refurbished wings on either side, daylighting to key spaces, routes and level changes, and the intended timber material palette and planting.

Illustrative Building Section (image courtesy of Studionesh)

8.12 External View

External Perspective (image courtesy of Studionesh)

Tilbury Douglas Jon James studio ARCHITECTURE

Tilbury Douglas

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