HLM Architects

Ysgol y Deri Expansion - CosmestonDesign and Access Statement

YYDE-HLM-XX-XX-RP-A-00001

Revision: Po8

Suitability: S3 - Suitable for Review and Comment

Date: 07.10.2022



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Job Name: Ysgol y Deri Expansion - Cosmeston

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All designs are subject to change, including but not limited to:

The provision of detailed topographical, utility, services, arboricultural and ecological surveys Subject to review by competent fire, building regulations, and vehicle tracking engineers.

Comments related to the planning process.

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O1 Introduction & Brief

Introduction & Project Background



Introduction

This Ysgol Y Deri Design and Access Statement has been produced by HLM Architects, in collaboration with the Vale of Glamorgan Council and the design team listed overleaf.

The purpose of this document is to develop a solution for a school to provide suitable educational spaces for children with special needs, on this new education campus in Cosmeston.

This project will provide additional places for the for children from across the Vale of Glamorgan with complicated physical, health and educational needs that cannot be accommodated in a mainstream school. Ysgol Y Deri, currently located in Penarth, will remain as a single 3–19 all-through school, but these proposals will allow the school to operate across two sites. The proposed building in Cosmeston will primarily cater for primary-aged children, however the actual split will depend on individual needs as not all facilities will be replicated.

The purpose of this scheme is to ensure the Council is able to meet future demand for special education in the Vale of Glamorgan. The number of children and young people requiring specialist placements has continued to increase and at a faster pace than previously predicted. As a result, £11m has been allocated as part of the Council's 21st Century Schools Programme to increase the number of special education places available in the Vale of Glamorgan.

Ysgol Y Deri is the Council's special school which serves the entire Vale of Glamorgan. Ysgol Y Deri was originally constructed to accommodate 205 pupils but currently has 262 pupils on roll. The number of pupils leaving the school is much lower than the number entering, which is causing significant pressure on capacity. This trend is likely to continue for the foreseeable future. The Council has a statutory duty to provide sufficient school places and meet the needs of learners in the Vale of Glamorgan.

The Council has exhausted all opportunities to expand the school on the existing site and is unable to increase the capacity of the school any further. Without an expansion, the Council would be reliant on costly out of county placements. However, all neighbouring Local Authorities are experiencing similar pressure on demand, which has resulted in a shortage of out of county placements being available as authorities prioritise their own learners to ensure they meet their statutory duties.

The proposal is to expand Ysgol Y Deri to provide an additional 150 places. The expansion would be delivered by constructing a new building on a new site, which would be managed by Ysgol Y Deri as a split site provision. The new school building would primarily accommodate primary-aged pupils. However, the school would operate a needs-based approach to determine the actual split of pupils across the two sites. This would reduce the need to duplicate all facilities currently available at Ysgol Y Deri.



















Vale of Glamorgan Location



The most southerly point of Wales, the Vale of Glamorgan encompasses four towns (Penarth, Cowbridge, Llantwit Major and Barry) and the Glamorgan Heritage Coast.

A county borough established in 1996, the Vale has always been a rich agricultural region, also renowned for its gorgeous beaches. The Glamorgan Heritage Coast extends from Gileston in the east, to Newton Point in the west. Its aim is to conserve and protect the coast, whilst making the area more accessible to its many visitors who walk its coastal paths each year.

The region is well connected, to Swansea in the west, Cardiff in the east and further onwards to England, via rail and bus travel.









Site Location



Site Selection

The Council considered a range of sites to deliver the expansion:

- Expanding the school on the existing site was ruled out as there was insufficient space to accommodate the required expansion without significantly impacting the external space available to pupils at Penarth Learning Community. Any expansion of the existing site would also significantly impact the local infrastructure which already caters to a large number of pupils.
- The Council then reviewed all available sites across the Vale to deliver the scheme. No Council-owned sites were considered suitable so the Council extended the review to include a potential land purchase. The Cosmeston site was identified as the preferred option.

From a management perspective, it was considered essential that the new building was constructed within close proximity to the existing Ysgol Y Deri site. This is to facilitate the movement of staff working across both sites and to ensure effective leadership. Due to the specialist nature of the provision, Ysgol Y Deri has a high staff to pupil ratio.

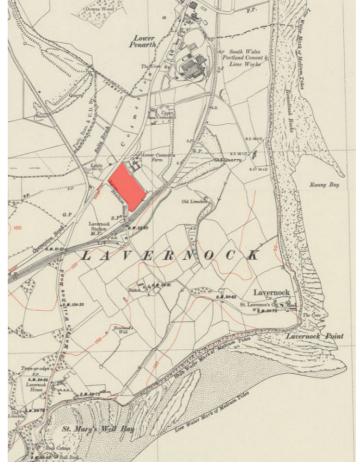


Historic Development











In the late 19th century, the road to the north-west of the site, still followed the medieval route, through what is now the replica Cosmeston Medieval village.

The lane to the south-west, and field boundaries to the other sides of the site are already clearly defined.

Ordnance Survey, Available from https://maps.nls.uk

In the late 1890s, the Cardiff, Penarth and Barry Junction Railway was constructed, and its embankments now form the south-east boundary of the site.

Lavernock station was off the south-west corner of the site. The station closed in the 1960s but some of the buildings still remain.

The road now known as Fort Road, which forms the south-west site boundary, was called Station Road at some point.

The cement works to the north of the map was, aside from the railways, the largest development in the immediate area at this

Ordnance Survey, Available from https://maps.nls.uk

1947

By 1947, Lavernock Road to the north-west, had been straightened, to form what is now the site boundary.

Ordnance Survey, Available from https://maps.nls.uk

Today

Lavernock Road is still the main route through the area. The railway is now decommissioned, and its former route is now an active travel way for walkers and cyclists.

Original Image - Google Maps.

Proposed Ysgol y Deri Site

Adjacent Housing Development Proposals



Adjacent Development

The site has no previous planning history held on record by the Local Planning Authority. However, the adjoining site to the north has been allocated for a mixed-use residential housing scheme in the LDP and an outline planning application is currently under consideration by the Local Planning Authority. Further details are highlighted below:

2020/01170/OUT:

Location - Land at Upper Cosmeston Farm, Lavernock Road, Penarth.

Proposal - Outline application for residential development, a primary school, community space and public open space with all matters reserved other than access. Decision: pending.

Although there is no planning history on the site, the potential development of a mixed residential proposal adjoining the site to the north does change the context in which the development site is considered. The adjoining site to the north is allocated in the LDP and the active planning application demonstrates the likelihood the allocation will come forward. Therefore, although the proposed development site is currently surrounded by open countryside it should be viewed in light of the proposed residential development which would create a more urban environment immediately north of the development site.

Influence on Ysgol Y Deri Site

Although not part of the Ysgol Y Deri site, the knowledge that a mainstream primary school was being proposed on the adjacent land, did influence the location and orientation of the Ysgol Y Deri proposals contained in this document. This offered the opportunity for co-location and potential for shared facilities and integration.

However, since the Ysgol Y Deri master plan was developed, there have been changes to the proposals on the adjacent site, including applications to list some building(s) at the south end.

Therefore, the location and orientation of the Ysgol Y Deri proposals has been adjusted, taking into account the uncertainty of its future context, and responding to the known site constraints.









Approximate Location of Future Primary School

Existing Road Access

Foot / Cycle Path (former railway line)

Underground Pipeline - Approximate Location Mature Trees / Hedges Surrounding Site



Site Analysis



The site is currently an open field, with a gradual slope upwards from front to back, with a steeper gradient towards the back forming the base of the embankment to the former railway line. This back area is heavily covered in trees and bushes.

The boundaries to the main Lavernock Road and Fort Road are lined by hedgerows with intermittent trees. Between the site and the back of Lower Cosmeston Farm, is another mature hedgerow, although there is a large gap in this towards the middle-front of the boundary.

The closest buildings currently, are those on the adjacent farm, which range from 1 to 2 storey with pitched roofs.

Opposite the site is Cosmeston replica Medieval Village, with single storey barns and thatched roofs.

Top Left: Aerial view of the site (top), adjacent pending primary school site (middle, including farm buildings).

Top Right: Aerial view of the north corner of the site (bottom left), Medieval Village (top left) and Lower Cosmeston Farm (bottom right).

Bottom Left: Eye level view from Lavernock Road.

Bottom Right: Eye-level view from the back (south-east) of the site, looking down towards the north corner and adjacent farm.









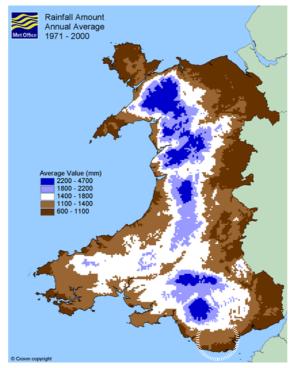


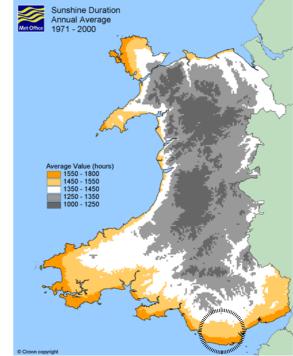
Climate



Considerations

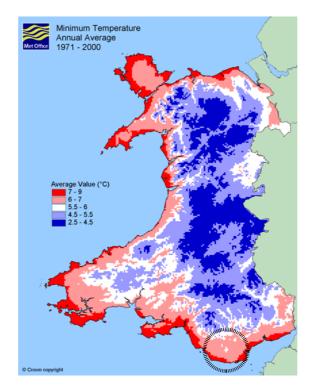
- Temperature remains in the highest band for the region
- Lowest average rainfall for region
- Near-maritime Climate approximately 5 miles inland.
- Maximum Sunlight
- Wind from the West, via the Bristol Channel

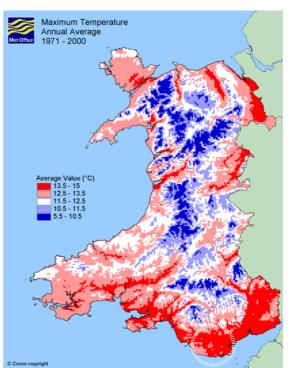


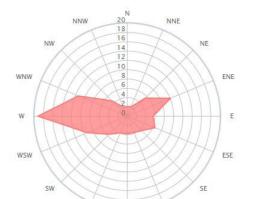


Rainfall Average (Annual)

Sunshine Average (Annual)







Wind direction distribution in %

Flood Risk

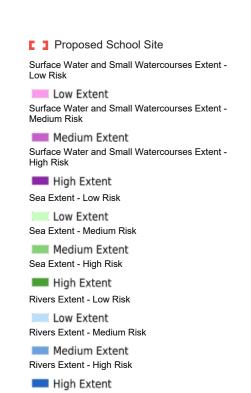


A detailed flood risk assessment will need to be undertaken, however below are some basic observations based on the Natural Resources Wales Flood Hazard Map shown here:

There appears to be little risk of flooding on the site itself, although the road and lane that border 2 sides are at risk of surface flooding, highlighting the likelihood that non-porous hard surfacing is likely to cause issues.

The large area of blue (river flood hazard) correlates with Cosmeston Lakes and surrounding green space.

Any new building or hard surfacing is likely to require a combination of SuDS and other attenuation measures to mitigate flooding risks locally and further afield, which will be discussed in detail with the SAB (SuDS approvals body).





Masterplan Development - Previous Proposals

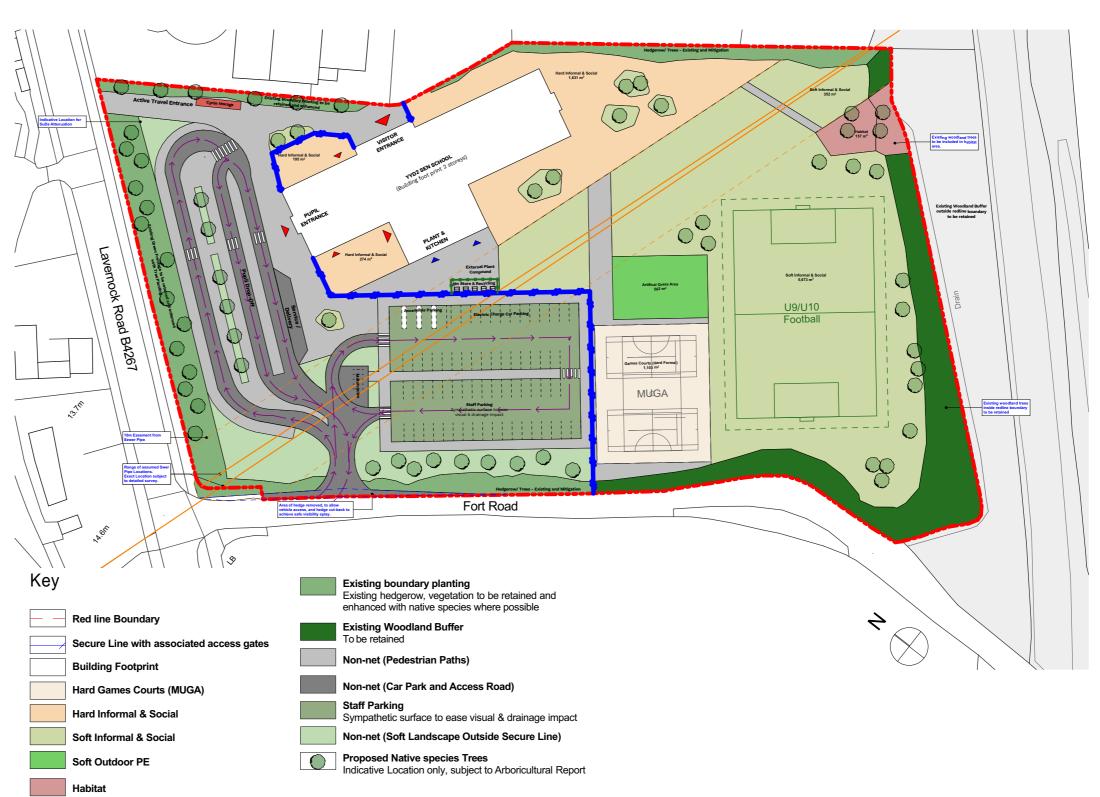


Previous Proposals

For comparison, the initial masterplan on this page indicated the key area requirements for the site. At this stage of the design the overall areas were established, which has been developed throughout the stage 3 process. As the proposals have progressed, the masterplan has been refined and adjusted based on factors including the following:

- Alterations to and delay of proposals on the adjacent site, changing the initially proposed adjacency between both schools.
- Detailed analysis of the site & its constraints, including levels and buried services.
- Highways Department feedback
- The Sustainable Communities for Learning team's refined
- Further Consultation with Ysgol Y Deri school staff.

For the revised proposals, please refer to the next page.



Site Masterplan



Proposed Site Masterplan

The current masterplan has been refined and is now shown here in further detail.

Site Scale

The site area available for pupils' use (net areas) and ancillary (non-net) is governed by guidance in Building Bulletin 104 (BB104) "Area Guidelines for SEND

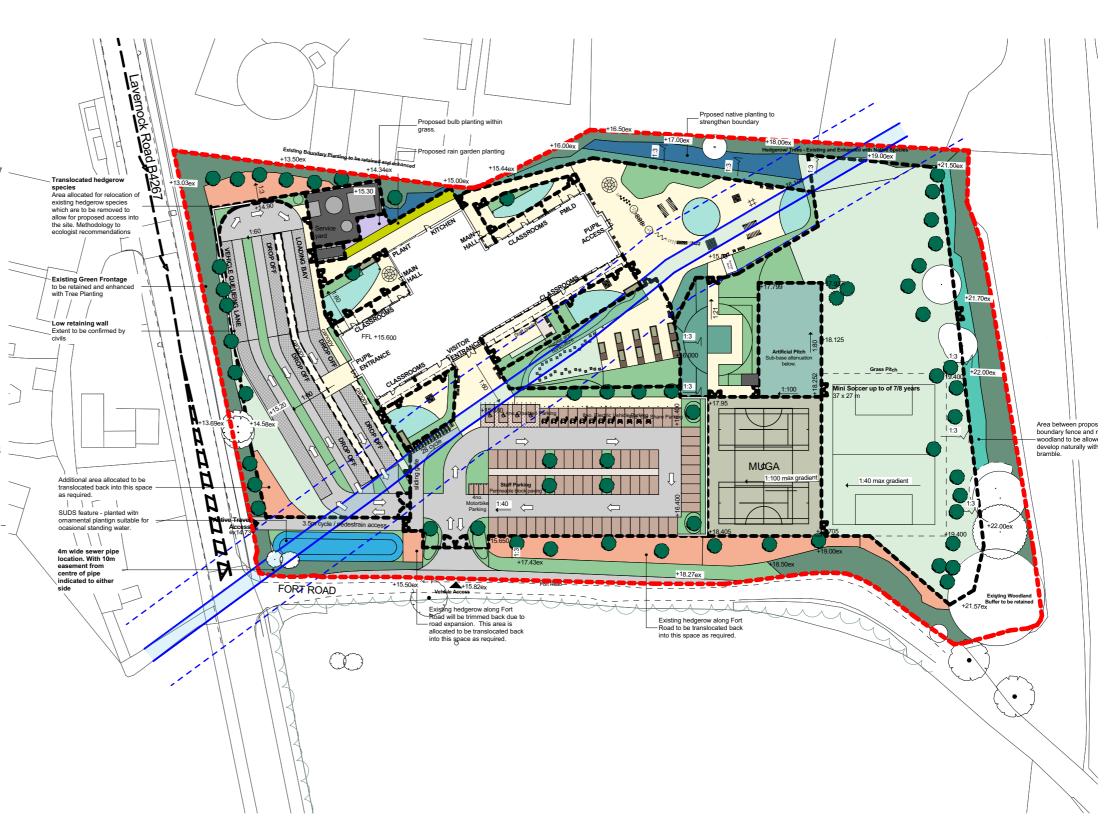
Site levels

A detailed review of the site levels along with the cut and fill analysis has been undertaken to inform the design development. . The finished floor level of the building has been set to +15.800 and the surrounding landscape areas have been reviewed and updated accordingly. A number of low retaining walls will be required around the site subject to further design development.

Site wide sections are shown later in this document.

The figures suggested by BB104 have been refined to suit the requirements of this particular school, and the range of needs of the pupils it accommodates, through discussions with the current Ysgol Y Deri's teaching and management staff.

The site's constraints, including topography, existing plants, underground features, and access points, also govern the nonnet areas such as roads and parking.



Landscape Principles - Access, Circulation and Security



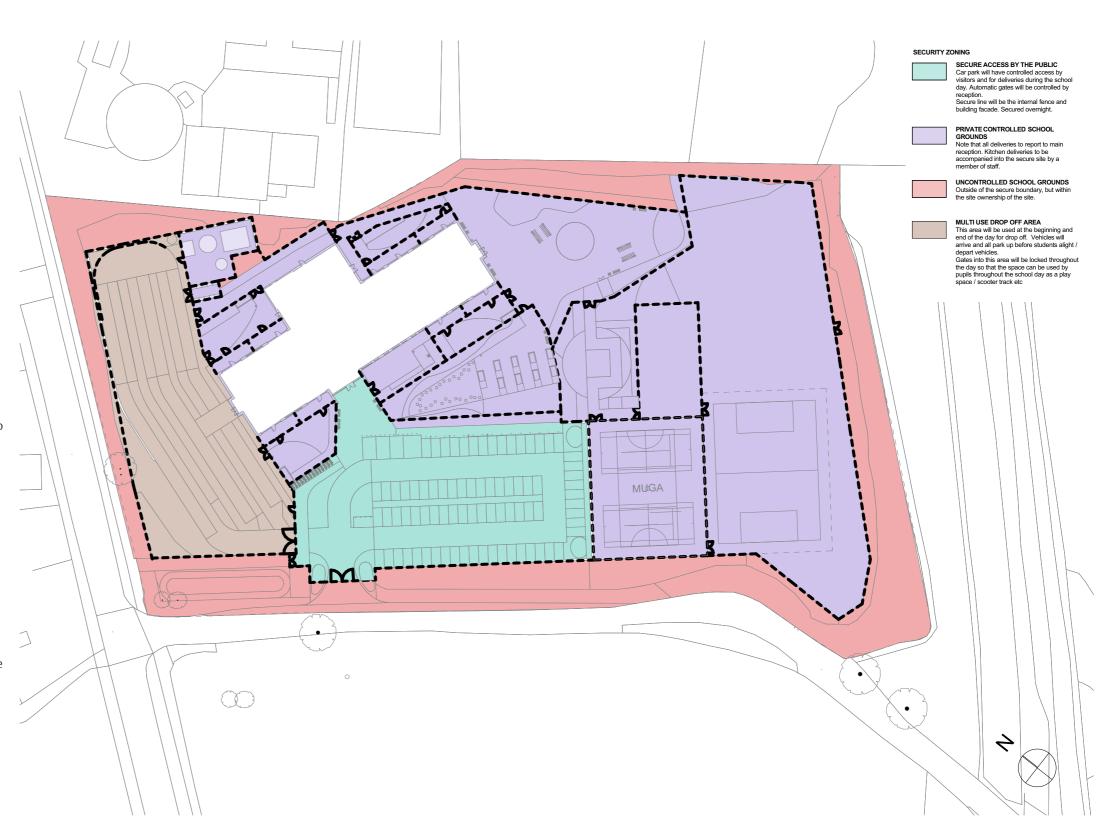
The masterplan has developed since the initial outline planning application, with a focus on the following:

- Access and circulation.
- External play spaces.
- Sports provision.
- Site levels.
- Cycle storage.
- Service yard area requirements.
- Boundary treatments
- Fencing and security strategy

Access and circulation

The site access has been rationalised during Stage 3. The vehicular access into the site remains off Fort Road.

- Staff and visitor parking is provided directly in front of the main visitor entrance, ensuring quick and efficient access to the main entrance.
- A separate, secure area is provided for mini bus drop of and pick up. Exact numbers and capacity of the drop off area is to be confirmed. This area will be access by mini buses at the beginning and end of the day only, with managed refuse collection and deliveries to the kitchen, controlled by reception. For the majority of the school day this drop off area can be used as an additional play area for the children to cycle / run around within. This dual purpose area ensures the site is working well to provide maximum benefits to the students.
- Cycle and pedestrian access is provided from Lavernock Road directly to the visitor entrance. Sheltered cycle storage is provided for staff and visitors along this route and it is overlooked by the school building to ensure natural surveillance of this area.
- Fire tender access will be possible throughout the vehicular access roads within the site. Fire consultant to confirm extent of building required to be accessible.



Boundary Treatments

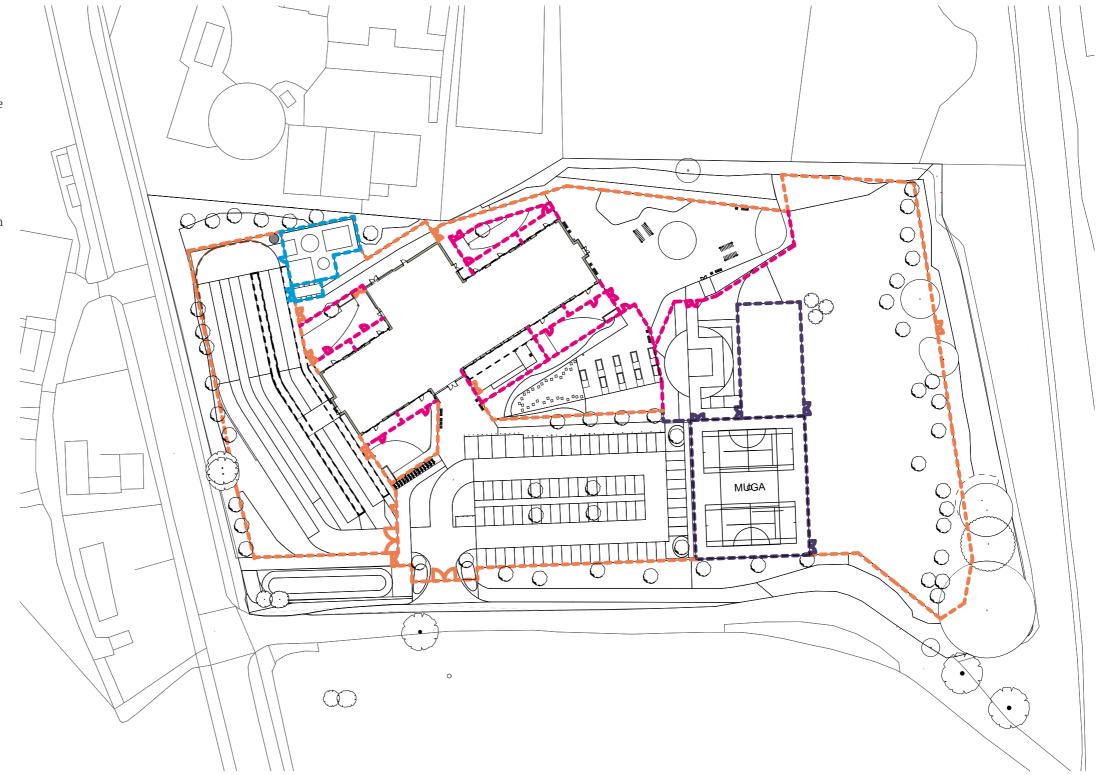


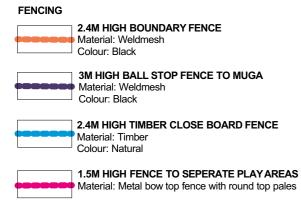
Boundary Treatments

Existing hedgerows have been retained and enhanced where feasible. An updated review of the soft landscape strategy has been undertaken . Sections of the existing hedgerow will be removed in order to provide access into the site. These plants will be translocated within the site in order to retain the ecology heritage and value of the site.

Fencing and site security

A fencing and site security strategy has been developed which is subject to further review with the school as the design progressed. A 2.4m security fence has been proposed around the site to ensure site security. This fencing will be offset from the existing boundary hedgerows to ensure these ecological features are retained and protected.

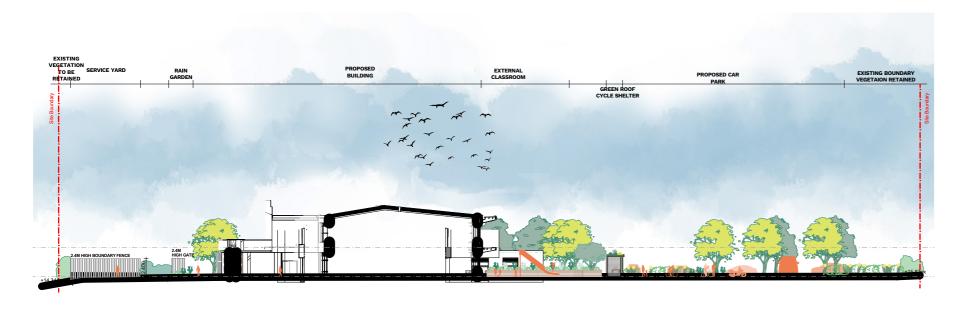


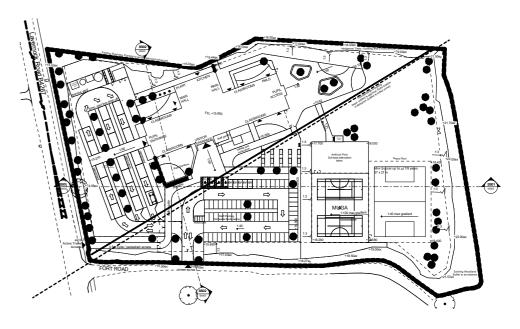




1:2000







Site Section 2 1:500 SIte Wide Section Key

Soft Landscape



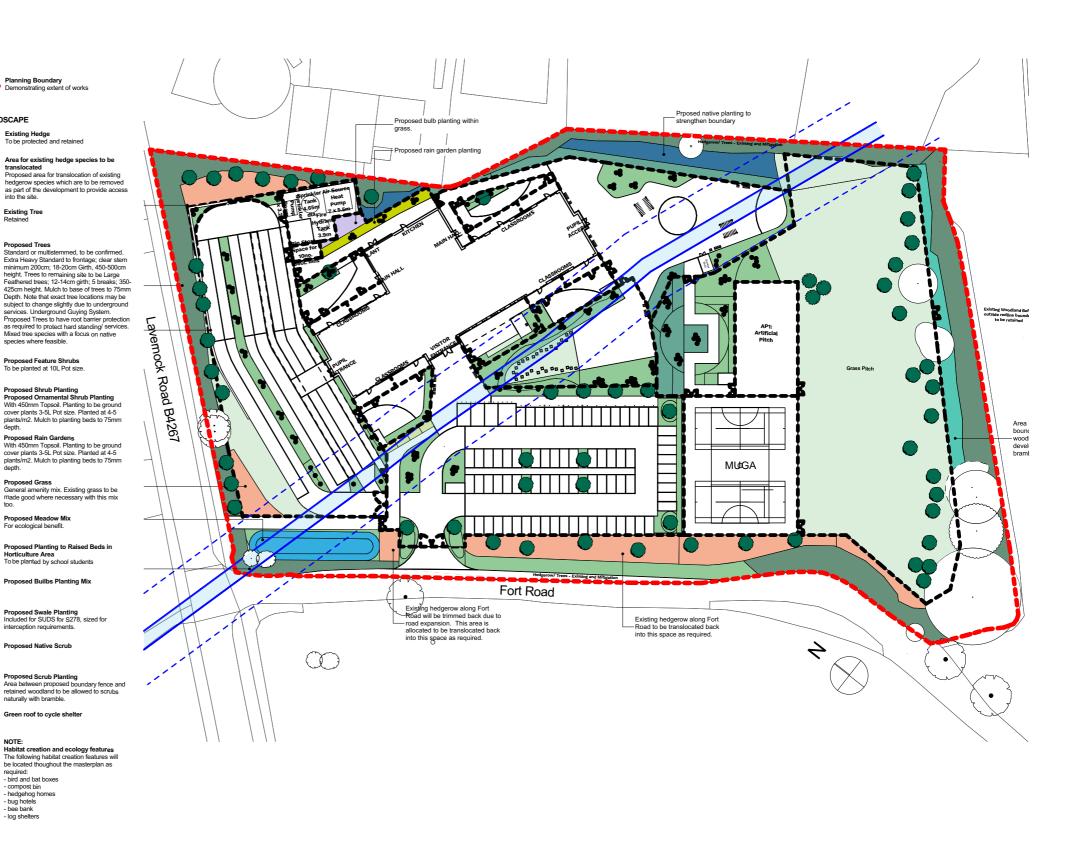
The soft landscape strategy will create a framework to connect the new school building with the surrounding context, and to create a cohesive landscape character within the site, which will aid the biodiversity of the site and define a range of external spaces for the student, and staff alike.

Planting provides seasonal and sensory diversity with chosen species providing visual interest, through form, colour, texture and movement. Tree and shrub planting could provide shelter from the weather and create a sense of enclosure. Planting areas can be used to subdivide areas of surfacing and tree planting may be sited in planting beds to enable access to adequate air and water and reduce reliance on artificial irrigation. Existing trees will be retained where possible, and new planting species will be selected to diversify existing species on-site and encourage wildlife such as birds, bees, and other insects.

As part of the iterative design process the landscape strategy for the site has been carefully co-ordinates applying the mitigation recommendations within the Landscape and Visual Appraisal (LVA), in order to mitigate the impact of the built form on the surrounding landscape.

The soft landscape for the school will provide opportunities for play, exploration, and study, increase the biodiversity of the site and provide:

- Place for relaxation and calm with seating and shelter from the elements;
- Areas of tree and shrub planting for shelter, seasonal interest and biodiversity;
- Habitat areas using natural materials such as logs, boulders and landform;
- Wildflower meadow planting to reduce maintenance and encourage wildlife;
- Raised beds for growing plants by students;
- A safe, accessible, and stimulating environment with fencing where appropriate;
- A high-quality attention to design and materials choice.



required: - bird and bat boxes - compost bin - hedgehog homes - bug hotels - bee bank - log shelters

Hard Landscape



The landscape will aim to incorporate the a range of hard surface finishes, secure boundaries, and soft landscape features that will be appropriate for the site uses and its context.

There will be opportunities for:

- · As part of the iterative design process applying the mitigation referenced in the Landscape and Visual Appraisal;
- Hard & Soft Informal & Social space to allow for a range of play and learning activities including: raised bed for food growing, tree & shrub planting that will provide shelter and look to enhance biodiversity, line markings for formal;
- Hard surfacing will be appropriate for the external space it applies to;
- A secure boundary strategy with appropriate sensitive site zoning; and
- Opportunity for new tree & shrub planting along the boundary.

External Play

A dedicated external play space is provided for each pair of classrooms on the ground floor. Each area has it's own play equipment (exact type to be confirmed), rubber crumb safety surface, thermoplastic line markings to tarmac areas, seating, a canopy, soft landscape and raised planters for interaction with nature.

A wider general play area is provided for all students to the east of the school building. This contains a series of seating opportunities, planting, play equipment, thermoplastic playground markings and rubber crumb safely surfacing.

A dedicated habitat space with opportunities for horticulture has been relocated closer to the school building to allow students direct access to this facility. Raised planters provide educational opportunities for students to learn how to grow plants and interact directly with the soft landscape.

Sports Provision

The sports offer has been reviewed and adjusted slightly to accommodate the topographical survey data and boundary

levels. The porous MUGA remains fundamental, and has been located on a plateau higher than the adjacent car park to ensure it sits within the existing levels more comfortably. Another plateaux has been created above this to accommodate a slightly smaller grass playing area for natural grass sports. Both areas of sports facilities are accessed by level paths of 1:21 or less. An external storage shed has also been provided adjacent to the sports areas to ensure easy storage and access to equipment.

Cycle storage

Cycle storage has been relocated closer to the main visitor entrance to ensure good natural surveillance. The numbers have been reviewed in line with statutory requirements and updated accordingly on the plans.

Service Yard

Throughout Stage 3 the area requirements of the service yard have been established in principle. A dedicated service yard has consequently been provided adjacent to the plant and kitchen

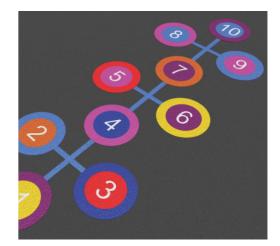














Hard Landscape



The external landscape will aim to function as an extension to the school buildings by offering teaching and study spaces as well as areas for sport, play, socialising, relaxation and reflection. These external spaces will incorporate entrance points providing access to the buildings, circulatory spaces across the site and areas for congregation during break times. The areas will have to cater for groups of children whilst providing a variety of scales of space and types of activity.

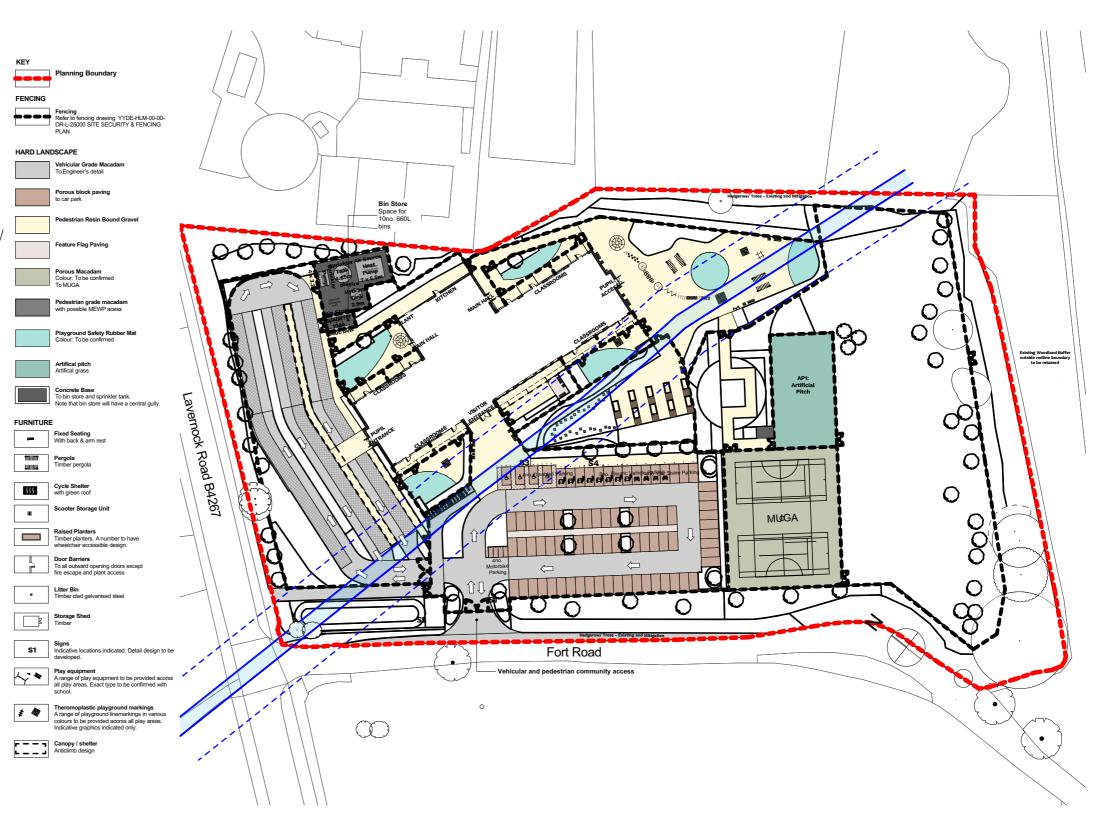
The external school environment has the potential to include:

- A safe, secure, and inclusive environment;
- A range of scales of space allowing for informal activity and/ or social areas including seating for varying sizes of group;
- Opportunities for children to be calm and quiet and where they may be able to interact with others;
- A variety of provision available to cater for a range of ages;
- Areas of hard surfacing subdivided by planting to provide interest, shelter, and seasonal change; and
- Proposed Multi-Use Games Areas to ensure playable surfaces for sport throughout the year.

Further design development

The following areas will require further review as the project develops:

- External play areas to be reviewed by the school and designs to be evolved to suit.
- Play equipment from existing site to be reviewed and items to be relocated to this site are to be agreed. New play equipment to be agreed within the site. Areas of safety rubber crumb surface will be required in accordance with the play equipment requirements and fall heights.
- Community use of MUGA and site to be confirmed.



Building Layout, Scale and Appearance



© Image copyright

Building Scale

The school's indoor areas are based on Building Bulletin 104.

These have been arranged over a 2-storey building, for the most efficient building shape, whilst keeping the footprint compact to retain as much external space as possible.

These spaces and adjacencies have been refined through workshops with the school's experienced staff.

Entrance

On approaching the building, visitors are greeted with the prominent visitor entrance, which houses the main reception, and welcoming visitor areas.

Heart Space

Behind this is the main hall; a multi-purpose space used for dining, assemblies, and physical activity. This space may also be used as a welcoming gathering space in the mornings, for pupils to transition from arrival, to their individual classrooms.

To one side of the hall is a classroom-sized space where food can be prepared by staff or pupils, enabling them to practise valuable life skills, as well as offering a quieter dining area for pupils who find a busier dining hall overwhelming.

Class Hubs

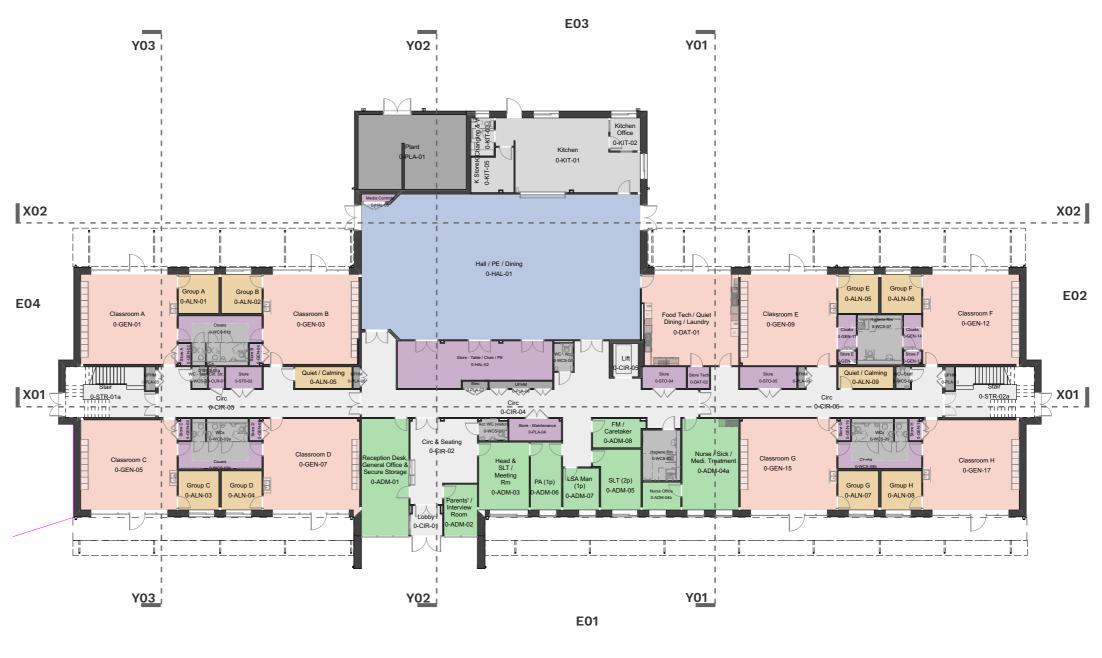
Each wing houses classrooms, which are grouped in pairs, and all ground floor classrooms have direct external access.

Each pair of classrooms has breakout rooms for smaller groups or 1 to 1 sessions, direct access to storage, and adjacent WCs or a hygiene room. The exact sanitary facilities required for each cluster will be detailed alongside school staff at a later stage.

This cluster is repeated throughout the school, providing familiarity for pupils as the progress through their school years, and for staff who work between multiple classes on a daily bases.

Ancillary

A central strip to one side of the corridor provides storage space and additional sanitary facilities.



Storage

Sanitary, Kitchen & Plant

Basic Teaching

Halls & Dining

Learning Resources

Staff & Administration

04 Building Layout, Scale and Appearance

First Floor Plan



© Image copyright

Class Hubs

The first floor classroom areas echo those below, providing continuity and flexibility.

Shared Therapies

Much of the upper right wing houses a multitude of spaces for various therapies, alongside offices for school-based and visiting therapists.

Staff

The main staff room is central, and easily accessed from the rest of the building. Alongside this are staff workspaces and offices.

Ancillary

As with the ground floor, a central strip houses storage space and additional sanitary facilities, as well as some sensory spaces with controlled lighting.



04 Building Layout, Scale and Appearance

Roof Plan

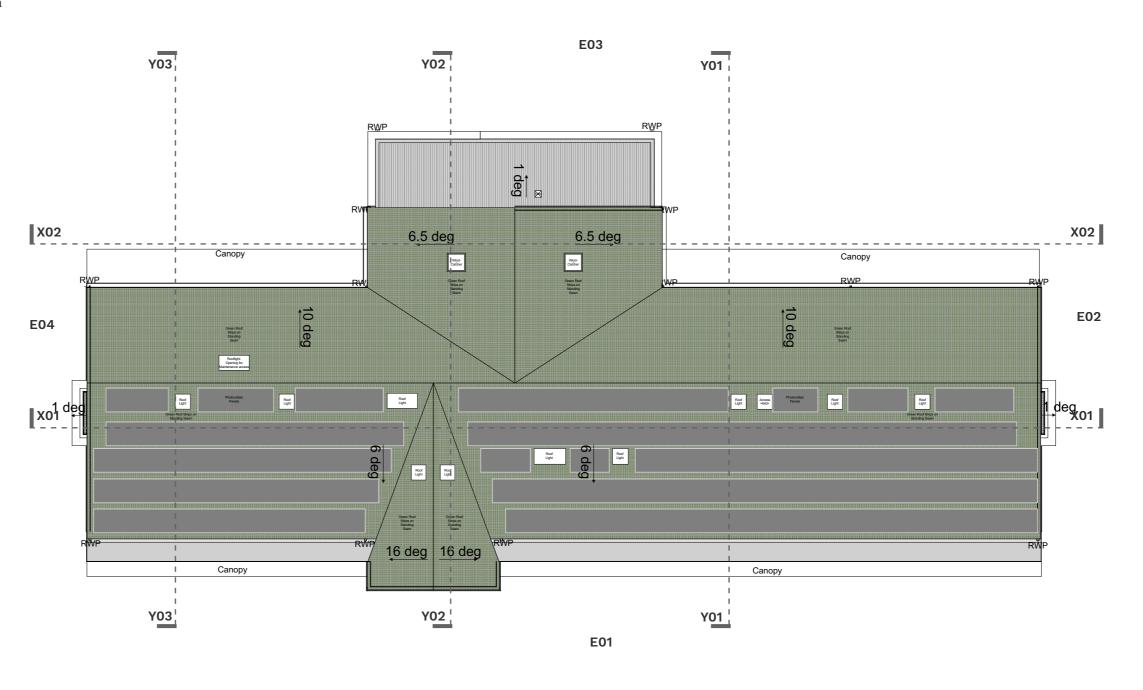


© Image copyright

The roof's simple pitch with accentuated entrance offer a welcoming, domestic feel, while the gable ends reflect the local agricultural buildings. The roof is predomenantly green to assist with rainwater attenuation and bio-diversity.

Roof-lights are strategically placed to bring additional daylight into some of the central spaces.

Photovoltaic panels generate electricity form the sunlight. The location and overall size of these is currently shown indicatively, and will be calculated by a specialist to provide the maximum energy returns.



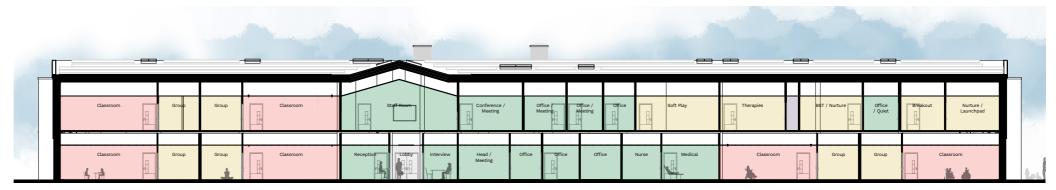
04 Building Layout, Scale and Appearance Sections



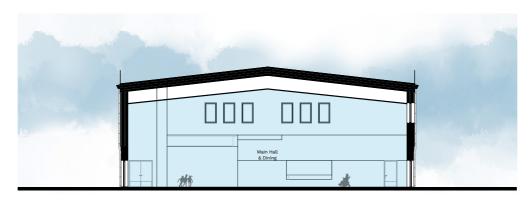
The building's shape is revealed through these section cuts.

The simplified stacking of classroom clusters, around the central shared spaces, is evident here.

The roof pitch is kept low to offer a domestic feel, without the building becoming unnecessarily tall.



X01 Long Section



X02 Section through Hall



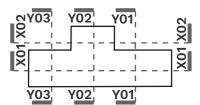
Section through Specialist Facilities



Y02 Section through Hall & Entrance



Section through Classrooms



04 Building Layout, Scale and Appearance Elevations



The enhanced surround to the visitor entrance is a welcoming entrance area, which offers a recognisable point on the linear building.

The palette of a small number of distinct materials is used to further break up the linear facade. Each of the entrances is highlighted and softened with a planted 'living wall'.

The window proportions are designed to offer maximum natural daylight and ventilation, as well as connecting views between the indoor and outdoor learning and play spaces.



E01 Front Elevation

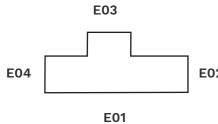


E02 Rear Elevation

Side Elevation



E04 Side Elevation

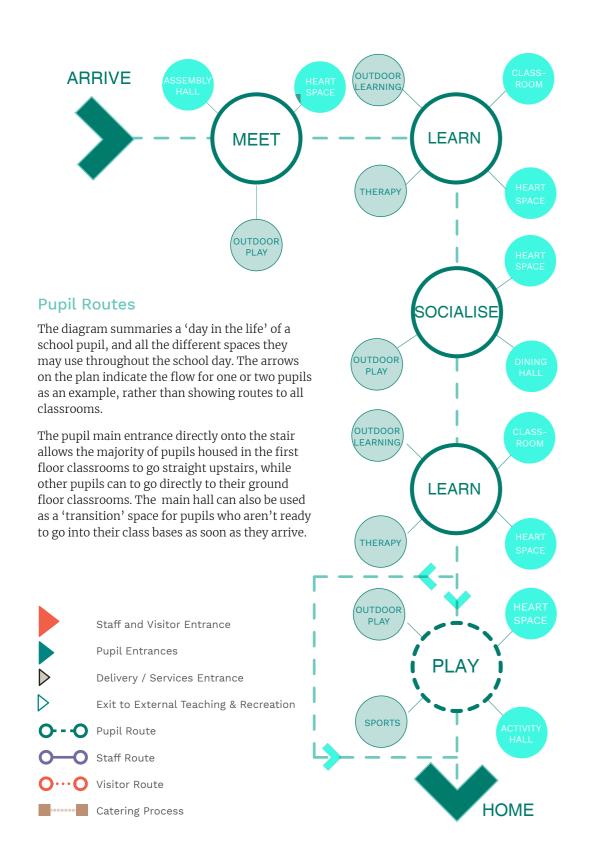


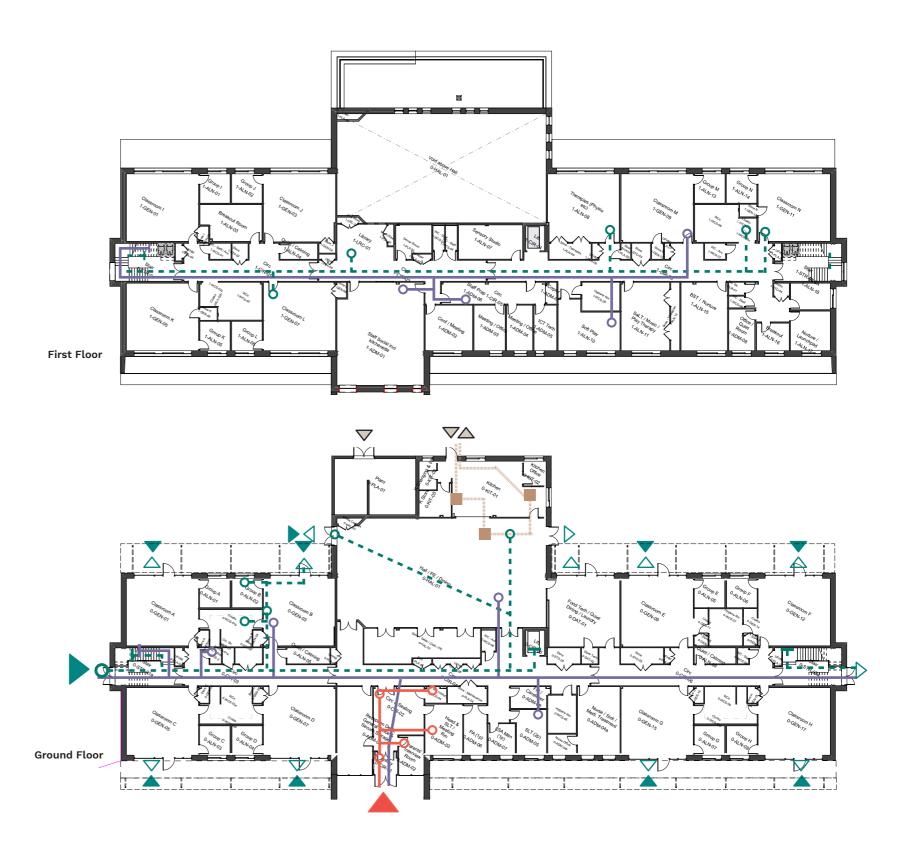


Room Name	Qty	Total Area		Room Name	Qty	Total Area	Room Name	Qty	Total Area	
1, Basic Teaching			Group	К	1	10	Media Controls	1	1	Kitch
Classroom A	1	55	Group	L	1	10	Store	5	25	
Classroom B	1	54	Group	М	1	10	Store - Maintenance	1	7	13, Non-Net
Classroom C	1	55	Group	N	1	10	Store - Table / Chair / PE	1	41	Elec
Classroom D	1	56	Library	1	1	21	Store - Therapies	2	14	Elec
Classroom E	1	55	Nurtur	e / Launchpad	1	18	Store A	1	2	Mech
Classroom F	1	55	Quiet /	Calming	3	22	Store B	1	2	Plant
Classroom G	1	55		Music / Play	1	37	Store C	1	2	Rise
Classroom H	1	55	Therap	y ry Studio	1	24	Store D	1	2	Roof
Classroom I	1	55	Soft Pl	-	1	30	Store E	1	1	Serve
Classroom J	1	55		ay ies (Physio etc)	1	54	Store F	1	1	UFHI
Classroom K	1	55	Therap	nes (Physio etc)	1	94 427 m²	Store G	1	2	_
Classroom L	1	55				42 <i>1</i> m-	Store H	1	2	14, Non-Net
Classroom M	1	55	04, Staff and A				Store I	1	1	Circ
Classroom N	1	55	Conf /	Meeting	1	24	Store J	1	2	Circ
Food Tech / Quiet Dining	1	55	Copier		1	2	Store K	1	2	Lift
/ Laundry		825 m²	FM / C	aretaker	1	9	Store L	1	2	Lobb
2, Hall, PE, Dining & Social			Head 8	& SLT / Meeting Rm	1	22	Store M	1	2	Stair
Hall / PE / Dining	1	251	ICT Te	ch	1	12	Store N	1	2	Stair
Hatt / FL / Dilling	'	251 m ²	LSA Ma	an (1p)	1	9	Store Tech	1	3	
				g / Office	2	29	Stores	1	2	
3, Learning Resource / Therapy			Treatm	/ Sick / Medi. nent	1	33			157 m²	
Breakout	1	10	Nurse	Office	1	7	10, Non-Net - Toilets and Changin	a		
Breakout Room	1	24	Office	/ Quiet Room	1	12	Acc WC (visitor)	9 1	4	
BST / Nurture	1	35	PA (1p)		1	13	Hygiene Rm	3	38	
ELSA	1	12	Parent	s' / Interview Room	n 1	11	WC - Acc	2	7	
Group A	1	10		tion Desk, General	1	35	WC - Staff	5	12	
Group B	1	10		& Secure Storage	4	10	WC - Staff / Acc	1	4	
Group C	1	10	SLT (2)		1	16	WCs Starry Acc	3	-	
Group D	1	10	Staff P	rep ocial incl	1	16	WCs	2	36	
Group E	1	10	kitche		1	98	WCS	2	146 m²	
Group F	1	10				348 m²			140 1112	
Group G	1	10	05 Storage				11, Non-Net - Kitchen			
Group H	1	10	05, Storage	·	2		K Changing & WC	1		
Group I	1	10	Cln. St Cloaks		7	4 33	K Store	1	11	
<u>'</u>							Kitchen		55	

	Room Name	Qty	Total Area
	Kitchen Office	1	6
			78 m²
13, No	on-Net - Plant		
	Elec	1	1
	Elec Riser	1	1
	Mech Riser	1	1
	Plant	1	51
	Riser	1	2
	Roof Access	1	2
	Server Room	1	12
	UFHM	10	12
			82 m²
14, No	on-Net - Circulation		
	Circ	9	405
	Circ & Seating	1	31
	Lift	2	10
	Lobby	1	6
	Stair	4	105
			557 m²
			2,871 m ²
	GIFA (Gross In		
	0 Ground Floo	or	1,69
	1 First Floor		1,32







04 Building Layout, Scale and Appearance

Access Strategy - Out of Hours



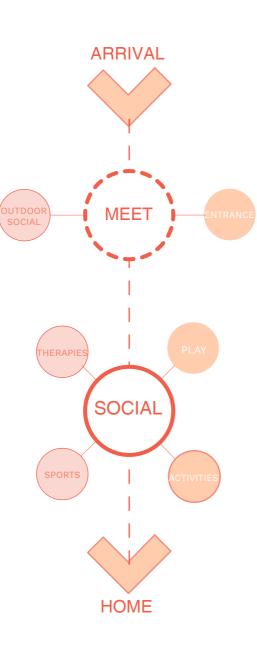
Community Use

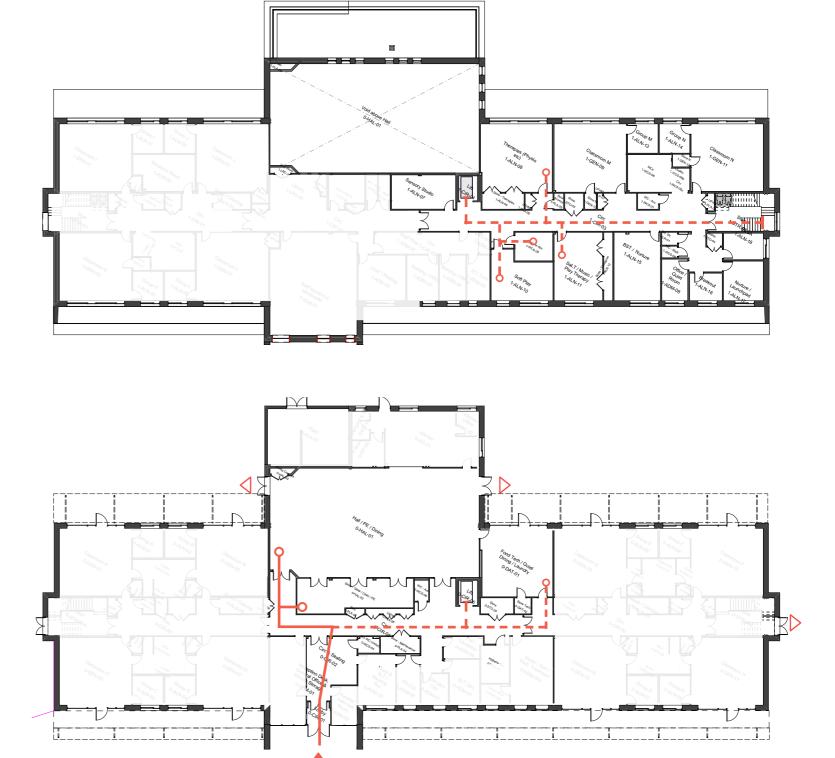
The main hall could serve as a useful facility for community hire during evenings, weekends and school holidays, providing a valuable asset to the existing local community, and new houses proposed nearby.

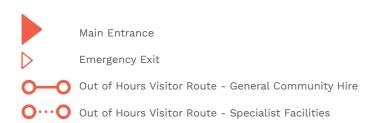
The hall can be accessed via the main entrance, enabling the majority of the school to be locked down via internal doors for security. There are a number of WCs within this central area too, for use alongside the hall.

Specialist Facilities

Locating all of the specialist therapy and play facilities in one wing of the school, means that there is also the opportunity for these specialist facilities to be used outside of school hours, to enable the pupils and their families to use them. This could be managed by the school, Vale of Glamorgan council, or other organisation as required.







Appearance - Local Context



External Materials

The design proposals feature a mainly brick volume, with a contrasting material on the upper floor, and large areas of classroom windows allowing natural daylight and ventilation, supplemented by punched windows to smaller areas.

The predominant facade materials in the locality are various colours of brick and stone, used predominantly in the residential areas close to the site, and as detailing on many nearby farm buildings.

The following pages are to be used as reference to help visualise the build up of materials as they could appear across the various façades.

The palette of materials has been selected for a number of key

- Complement and have a relationship with the surrounding
- High quality and robust scheme that is affordable.
- Consider product maintenance requirements.
- Consider sustainability credentials of products.

Robustness is essential to the building typology, which receives weathering daily from its surrounding environments, including the local climate, and building users.

Brick

Brick requires little maintenance compared to other materials, and has high impact resistance, therefore should be the chief material used where it could be subject to impact, such as on the ground floor.

Brick is available in a variety of colours, and the design team will explore multiple combinations to achieve an overall finish that suits the local character.

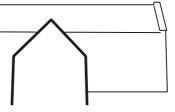
Timber

The brick base will be supplemented by other materials, such as metal cladding for the roof and timber for the upper floors.

Charred timber is pre-treated to protect it from the weather, and provide a subtle natural variation across the building, and also reflect many farm buildings in the locality.



A rich palette of natural colours and textures will inform those used to finish the proposals outside and in, allowing it to echo its surroundings, whilst being welcoming to all, and standing up to its day to day uses.



Entrance Portico

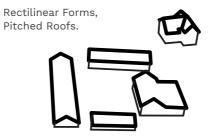


Large Ground Floor Openings, Prominent Gable End





Pronounced Eaves













Heritage and modern buildings from across the wider Vale of Glamorgan area help inspire the overall form of the proposals. The chosen form echoes the spectrum of community, domestic and agricultural buildings.

Ysgol y Deri Expansion - Cosmeston - Design and Access Statement



Precedents

The images to the right are examples of new buildings of a similar scale and shape, showing how the high quality materials discussed here may look, when applied to the proposed school.

Bay Studies

The studies below indicate examples explored of how the colours and materials from the local palette opposite could have been reflected in the school building.

The facade offers opportunity for areas of bold or subtle colour, inspired by the local palette.







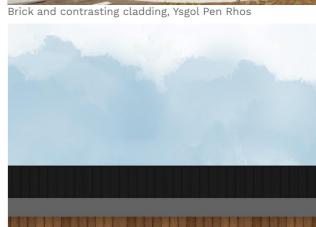
Local agricultural building form & colour.



















04 Building Layout, Scale and Appearance

Wall Sections



Windows Heights

The window designs have been developed to maximise daylight and view out for all users, from the youngest nursery pupil, through to all staff members.

Integrated louvres sit above all windows, which help with the assisted natural ventilation strategy, keeping classrooms quiet and well ventilated. Where not required to be louvres, these will replaced by solid panels to achieve a uniform overall opening size.

Pupil areas - Classrooms, breakout and therapy rooms:

Low enough for the youngest 3-year old pupils to see out of when sitting, yet high enough to accommodate a junior desk for the eldest pupils below it.

As the school accommodates children with a wide range of needs, some of them are in classes based on their abilities and needs, rather than by age. Some of the children are also likely to have specialist wheelchairs or other posture equipment at varying heights. Therefore, all classrooms should be suitable for a variety of children, regardless of their location within the school.

Staff-only areas - Offices, Staff Room:

Low enough to offer a view out for adults, while accommodating an adult-height desk and trunking above.

Kitchen:

Above worktop height, allowing for sockets above.

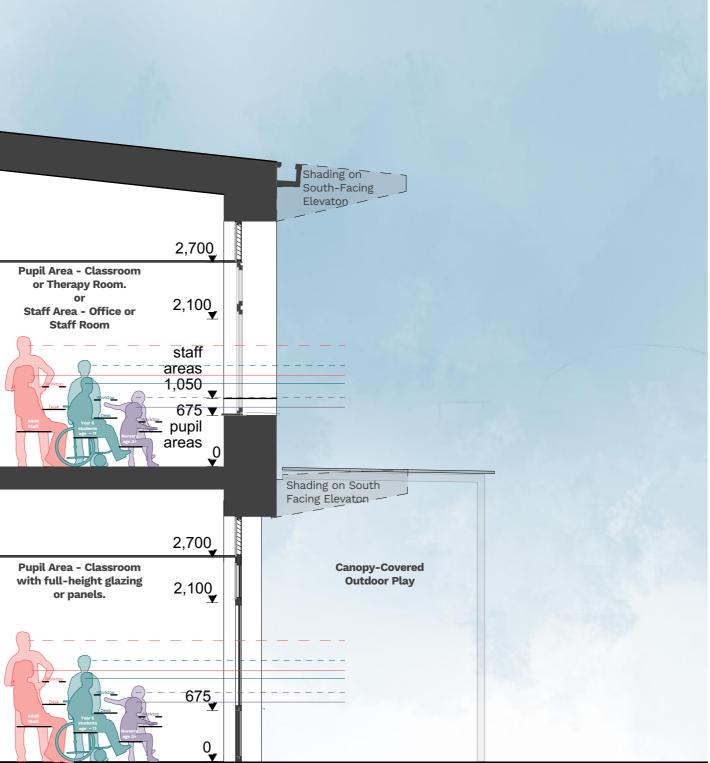
The kitchen is in a separate single-storey area, so the windows do not need to align with others.

Shading & Canopies

Canopies outside all ground floor classrooms provide essential covered outdoor areas, for pupils to be protected from the weather during outdoor play, learning and taking breaks, with immediate access off their classrooms.

On the south-facing elevation, shading will be incorporated to reduce direct sunlight and overheating, whilst still allowing in adequate indirect daylight. This design is shown indicatively, and the final detail of this shading will develop as the project progresses.





04 Building Layout, Scale and Appearance

Massing and Materials



The external facade of the building is divided into several key areas, each with their own character, which make up a coherent whole. The following pages explore their materials further.

The diagrams on this page are a key to highlight each area, and the colours here in no way relate to the proposed building colour. Please refer to the following pages for colour & finish.

Ground Floor

Adjacent to all pupil outdoor classrooms.

Must be robust to impact

First Floor

Contrast to ground floor, to break up height of building.

Can be less robust to impact.

Should reflect local agricultural context.

First Floor Recessed Area

Contrasting texture to the main first floor.

Visitor Entrance Portico

Contrasting, to highlight visitor entrance.

Welcoming - visible, tactile.

Visitor Entrance Upper

Welcoming - visible.

Out of reach, so can have a lower impact-resistance.

Pupil Entrance and Access Stairs

Welcoming, contrasting, tactile.

High-traffic area - west stair as pupil entrance at start / end of day, and east stair for access to grounds throughout the day.

Roof

Visible from a distance, large surface area.







Facade Location

Ground Floor

Pupil Entrance Stairs

Properties of Brick

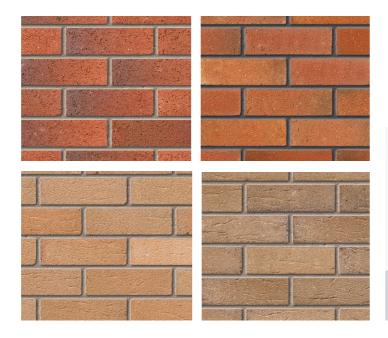
Brick requires little maintenance compared to other materials, and has high impact resistance, therefore it will be the chief material used where it could be subject to impact, such as on the ground floor outside the classrooms and pupil entrances.

Brick and mortar are available in a variety of colours, and the design team will continue to explore multiple combinations to achieve an overall finish that suits the local character.











Metal Rainscreen



Facade Location

First Floor

First Floor Recessed Area

Properties of Metal Cladding

Roof and guttering colour/finish can match.

Robust to weathering.

Deep formed textures provide a visible variation in light and shadow along the building.

The exact colour and finish options are being studied. A dark grey/black option, with a near-matt finish are currently proposed.















Timber Rainscreen



Locations

Visitor Entrance

Properties of Timber

Timber is a natural material, with varying colour and texture, which adds interest and variety to the building.

Timber is less processed than manufactured panels.

Pre-treatments and finishes will be selected based on longevity, maintenance, colour, and texture.

The proposed colours, taking into account any change over time, will be selected in conjunction with the colour of brick and other cladding.

The images on this page show just some of the examples that are currently being considered, including a variety of natural colours, or a protective charred finish.























Facade Locations

Visitor Entrance Upper

Pupil Access Stairs

Properties of Living Walls

A welcoming, inviting visual cue to the entrances.

An ever-changing colour and texture

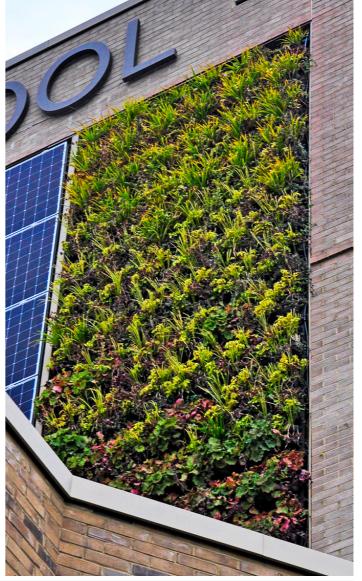
More visible than a green-roof.

Breaks up the building, helping it blend into the surrounding landscape.

Provides habitats, increase biodiversity and ecological value to mitigate loss of existing grassland.



























O5 Interior Design and Access Opportunities

05 Interior Design and Access Opportunities

Interior Design Principles



Our Approach

Our interior design strategy aims to meet the needs of school children, primarily of primary school age, with additional needs from across the Vale of Glamorgan. These children have complicated physical, health and educational needs that cannot be accommodated in a mainstream school.

The interior design strategy utilises colour, material and textural variants to provide appropriate visual and tactile stimulus, thus creating an environment in which pupils are able to learn safely and coherently.

A Pupils Journey to School

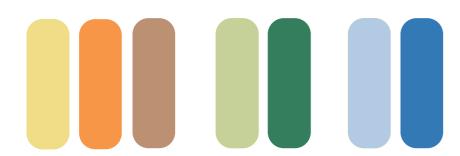
The images to the right capture the colour, landscape and wildlife of the surrounding area. The concept design scheme focuses on the journey of a pupil on their way to Ysgol Y Deri in Cosmeston, and how this experience would impact their senses.

Sight Touch



Colour Response to Surrounding Landscape

Based on the imagery, a potential colour palette was complied:



















05 Interior Design and Access Opportunities

Interior Design Principles



Biophilia

Biophilia (meaning love of nature) refers to the innate human connection to nature. As humans we are naturally hardwired to connect to nature and biophillic design looks to nurture this connection within an urban or manmade environment.

The materials to be used the interior scheme for the school not only look to reflect the external architectural response but also derive from or are inspired by natural elements.

Colour Theory & Zoning

Colour plays an integral part in the way a user experiences a space. Colour psychology refers specially to:

The effects certain colours could have on people and the emotions or feelings they evoke. Ie warm colours vs. cool colours.

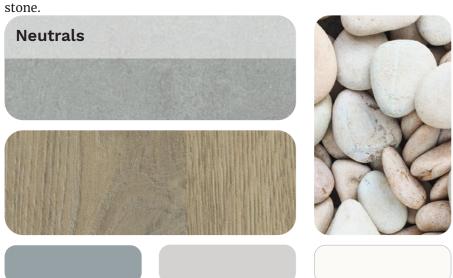
Research shows that duller colours with white and grey undertones have a calming effect on children on the autism spectrum. Cool colours such as blue and green also have a **calming** and **soothing** effect. However for children that tend to be more introverted there are advantages to the use of colours such as yellow, orange and purple that can improve energy levels and attention and enhance learning.

We would where possible prefer to avoid bright white walls, as this can lead to higher levels of anxiety, as they appear cold and hard to some children that are more hyperactive. In addition the excessive extent of white walls could have affiliations to a more sterile, clinical environment, especially areas where glare would be a concern.

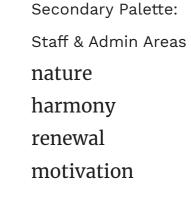
At Ysgol Y Deri, specific areas within the school have been zoned based on the kind of environment required for pupils and staff, explained in the images to the right.

Base Palette:

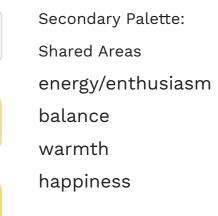
Neutral tones to create a back drop to muted accent colours and natural finishes e.g. timber,













Secondary Palette: General Teaching Spaces peace trust stability calm

05 Interior Design and Access Opportunities Interior Design Principles



Interior Floors and Walls

The finishes palette adjacent offers some potential materials, tones and finishes that could be applied to the interior fabric of the building. These will be specified to ensure suitability for each given space and associated function within the school.

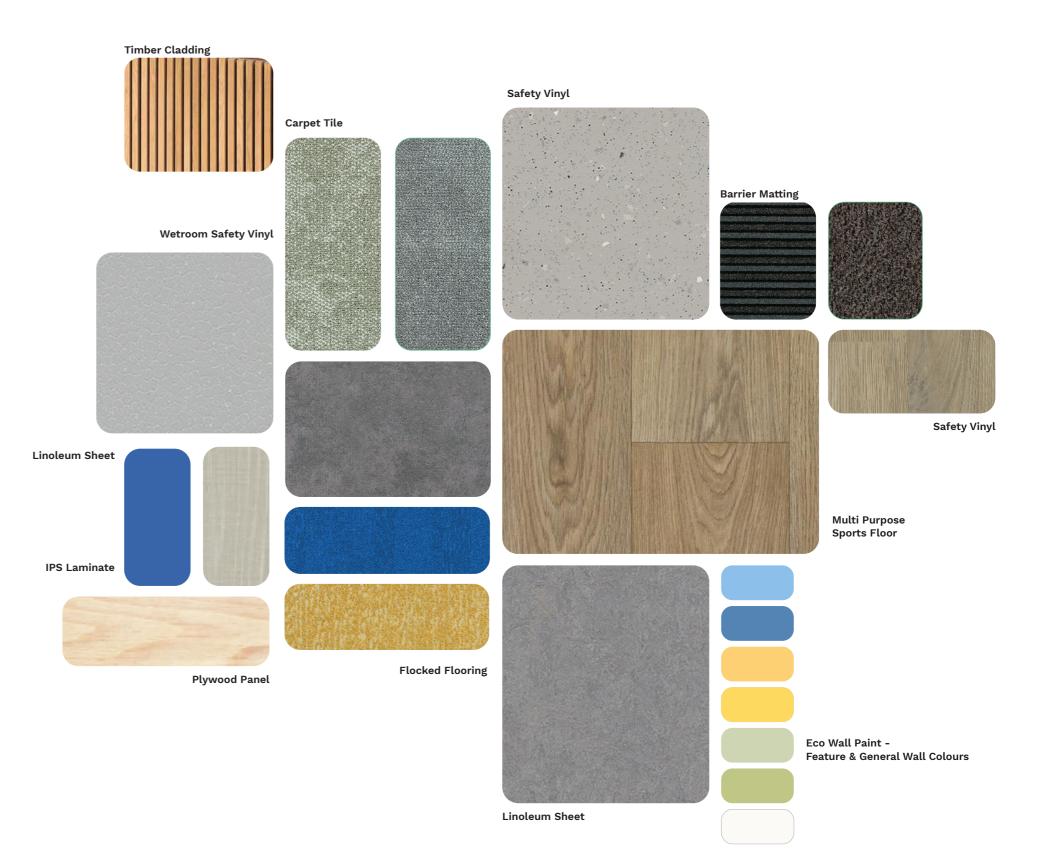
Essentially there are 13 different flooring finishes within the school, as we begin to focus upon each.

Initially we are proposing a mid grey marmoleum lino sheet to run predominantly through the main circulation of the building, with an oak effect vinyl sheet floor in shared spaces such as the main hall and adjoining laundry/food prep room.

General classroom finishes will be chosen to allow easy-clean opportunities for any messy play and spillages, complemented with softer areas with a subtle texture in feature zone colours.

Within the classrooms and shared group spaces, the chosen 'zone' colour can be applied via a feature wall paint application and within the floor finishes.

Plywood panels are used throughout the main circulation spaces to create movement of an abstract landscape terrain through the space, offer protection against bumps, scrapes and general school life, whilst also being sustainable material with interesting texture to stimulate a pupil's sensory experience.



05 Interior Design and Access Opportunities

Access and Security



The Principles of Inclusive Design (CABE 2006)

Inclusive Design is a process that delivers an environment where everyone can access and benefit from the full range of opportunities available to members of society. It aims to remove barriers that create undue effort, separation or special treatment, and enables everyone regardless of ability, age or gender to participate equally, confidently and independently in mainstream activities with choice and dignity.

The adoption of inclusive design principles will ensure the development is:

- Inclusive so everyone can use it safely, easily and with dignity
- Responsive taking account of what people say they need and want
- Flexible so different people can use it in different ways
- Convenient so everyone can use it without too much effort or separation
- Accommodating for all people, regardless of their age, gender, mobility, ethnicity or circumstances
- Welcoming with no disabling barriers that might exclude some people
- Realistic offering more than one solution to help balance everyone's needs and recognising that one solution may not work for all.

Regulations and Needs

The Vale of Glamorgan Council's Policy is to embrace inclusively all who visit their premises and all its employees working within the schools. We will address this Policy through improving the key issues of entrance, circulation, way finding and all necessary sanitary provisions. Our proposals will comply with the recommendations of BS8300 and the current Approved Documents in Part M of the Building Regulations. Any variations from these documents will be as agreed with the appointed Building Control Inspector.

As this school is designed specifically to cater for those with additional learning needs, and those with severe physical disabilities, it will go further than the standard part M requirements, which only offer a basic level of accessibility, in order to truly provide to their needs, and enhance their day to day lives.

Circulation

Vertical circulation will include stairs with risers and treads that complying with Part K and Part M of the Building Regulations, as well as the school design guidance within Building Bulletins 99, 102 and 104. A lift will also be installed in the centre of the school to provide for those with long term disabilities, or short term illnesses or injuries that leave them unable to use the stairs. In the event of fire there will be easy access to all refuge points within the escape stair areas. This ensures compliance with Part B of the Building Regulations.

Given the potential for a high proportion of the building's users to have physical disabilities, the plans allow for a higher number of refuge points. The full plans are continually under review by a competent fire engineer, alongside the school, to formulate a bespoke evacuation plan.

Public realm and parking

The topography of the sites is varying, so access within each the site will need to be carefully considered, and level access or ramps provided for those unable to use steps.

New Build

The decision to re-create the primary school as all new build provides the opportunity to implement the latest standards. regulations and approaches for the entire school, tailored to the range of ages and abilities of the young people in this school. All internal learning spaces will be well lit with natural light, a daylight factor of at least 2 or 3% will be achieved to ensure visual acuity is maximised both within the classrooms and the corridors.

Wayfinding

The aim should be to provide only the essential signs to create a less visually confusing means of way finding. Glare must be considered when locating these signs and when specifying the proposed surface finish. A multi-sensory approach to the design must be developed – ensuring each identifiable location in the school has distinctly different visual stimuli.

Sanitary provision

A range of different changing and shower facilities throughout the school help maintain the dignity of pupils, staff and visitors alike.

As with other aspects, the sanitary provision in this school goes beyond part M, and caters to the additional needs of pupils, and the differing roles of staff within a school of this type.

Community Use

Community use has been recognised and, alongside school curricular and therapy access, ensures a wider community access to educational and social facilities throughout the day and evening.

Facilities of this specialist nature, such as some of the therapy and adapted play spaces, are not generally available in other areas of the community. The potential to access some of these outside school hours, offers a valuable opportunity for children and adults with disabilities, to use these alongside their families and friends.

Security

It is in the interest of the building's owners, users, and the wider community, for construction projects to follow the principles of the Secured by Design scheme, to provide a safe school and community environment.

This project has not yet been discussed in detail with South Wales Police's Designing Out Crime Officers (DOCO), however below are their recommendations for all schools, which will be adopted in terms of community safety and crime prevention.

- Security surveillance CCTV cameras should be installed on the façade of the building covering the full site and building, including the car park and internal areas such as entrance foyer and corridors. The recording system should be able to store images for up to 30 days. Signage must be displayed that CCTV is present.
- Secure perimeter fence where required. Gates should be constructed to the same height as the fence ensuring there are no climbing aids. Sports facilities will be required to be protected with lockable gates.
- External areas should be well lit and comply with CCTV use.
- Building lines should reduce recesses or hiding places.
- Access should be denied to any low flat roofs by installing non-climbable drainage pipes or installing internal drainage pipes.
- Ground floor windows and doors should comply with PAS 24 2016. Curtain walling to comply with PAS 24 2016 or equivalent. All glazing should be internally beaded.
- Areas of the school should be locked down during out of hours to prevent unauthorised access by community users.
- Intruder alarm should be monitored by an alarm company and zoned to allow for after-hours use.
- Cycle storage should be placed in an area which can be clearly seen from the office and or reception area.
- Bin storage areas should be secure to prevent using bins as climbing aids.
- All furniture such as benches and litter bins should be securely fixed to the floor.

06 Supporting Documents

List of Supporting Documents

Document Number	Title	Revision
HLM Architects		
YYDE-HLM-01-00-DR-A-00101	Ground Floor Plan - Presentation	P15
YYDE-HLM-01-01-DR-A-00101	First Floor Plan - Presentation	P15
YYDE-HLM-01-R1-DR-A-00101	Roof Plan - Presentation	P13
YYDE-HLM-01-XX-DR-A-00201	Sections - Presentation	P15
YYDE-HLM-01-XX-DR-A-00301	Elevations - Presentation	P15
YYDE-HLM-00-00-DR-L-00001	Site Location Plan	P05
YYDE-HLM-00-00-DR-L-00002	Existing Site Layout	P05
YYDE-HLM-00-01-DR-L-00005	Proposed Site Layout - Facing Fort Road	P12
YYDE-HLM-00-00-DR-L-00006	Site Wide Sections	P04
YYDE-HLM-00-00-DR-L-00008	Site Access and Circulation	P04
YYDE-HLM-00-00-DR-L-25001	Proposed Boundary Treatments	P10
YYDE-HLM-00-00-DR-L-30001	Hard Landscape and External Furniture	P09
YYDE-HLM-00-00-DR-L-45002	Soft Landscape Planting Plan - Sheet 1 of 3	P04
YYDE-HLM-00-00-DR-L-45003	Soft Landscape Planting Plan - Sheet 2 of 3	P04
YYDE-HLM-00-00-DR-L-45004	Soft Landscape Planting Plan - Sheet 3 of 3	P04
YYDE-HLM-ZZ-XX-RP-L-00001	Landscape and Visual Appraisal	P04



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