Austin·Smith:Lord

Llangatwg Comprehensive School
Design + Access Statement

July 2025

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1.0 Introduction

This RIBA Stage 3 Report has been prepared by Austin-Smith:Lord for Neath Port Talbot County Borough Council to document the proposed concept design stage for the new school building and external works for Llangatwg Community School on the existing site.

Key Project Data;

Site Location: Ysgol Gyfun Cymunedol Llangatwg Community Comprehensive School, Main Rd, Aberdulais, Neath SA10 8DB

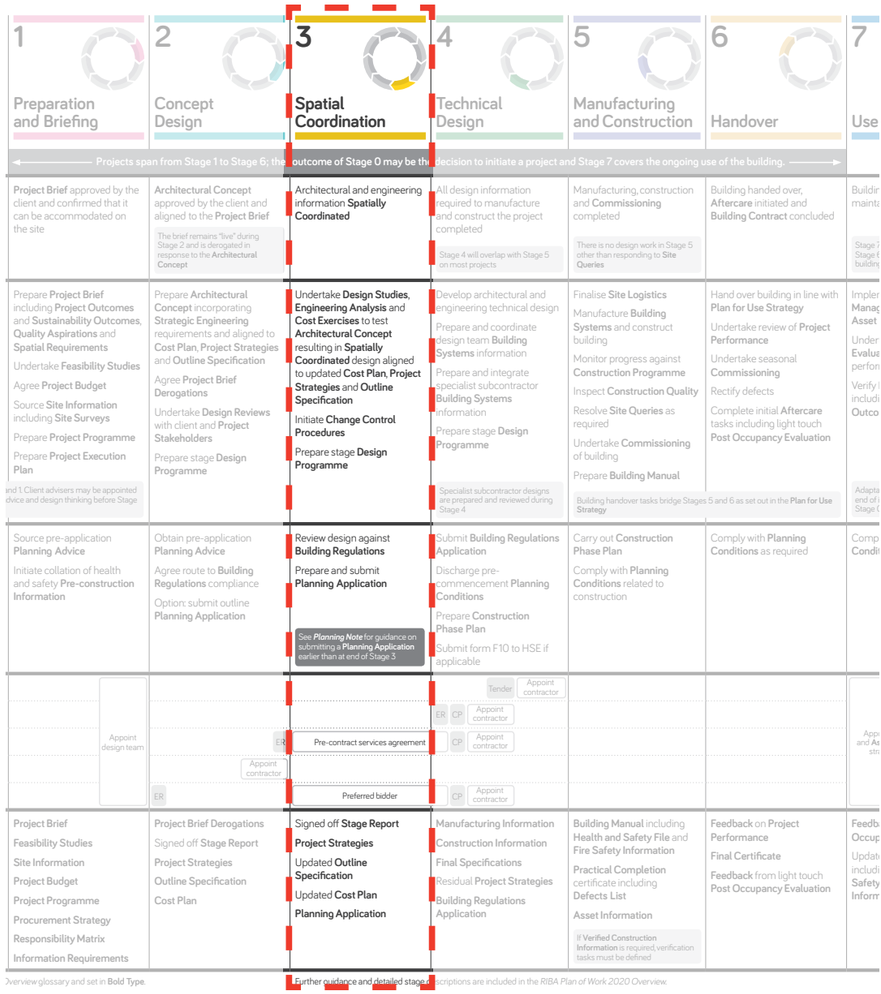
Site Area: 48,941m² approximately

Gross Internal Area: 8712m²

Building Capacity: 850 secondary school pupils (11-16yrs)
Additional 16 place Learning Support Centre for pupils with ALN
(866 total pupil places)
90 Full and Part-time Staff
Total capacity - 956

Project Team

- End User Client: Neath Port Talbot County Borough Council
- Contractor Client: Morgan Sindall
- Project Management / Cost: Neath Port Talbot County Borough Council
- Architect & Interior Design: Austin-Smith:Lord
- Landscape Architect: Austin-Smith:Lord
- Civil & Structural Engineer: Curtins
- MEP Engineer: TB+A
- Principal Designer: Morgan Sindall
- Fire Engineer: Part B
- Acoustics: Formant
- Planning Consultant: Asbri Planning
- BREEAM: Carbon Consult
- NZCiO Consultant: Arda Consulting



2.0

The Brief

2.1 Project Brief

The project concerns the redevelopment of the existing established Llangatwg Community School in Cadoxton, Neath, with the proposed replacement of their current buildings within the existing curtilage of the school site. The school is an English Medium Community School and will include a new 16-place Learning Support Centre on the existing site to provide more local education to students with specific Additional Learning Needs within the local education authority.

The new school development is to be match funded by the Welsh Government and NPTCBC so will be achieve BREEAM “Excellent”, “Secure by Design” and “Carbon Net Zero in operation” Standards. The agreed upon strategy by NPTCBC is that the existing school and community facilities must be kept operational until replacement premises are complete whilst the new school is built.

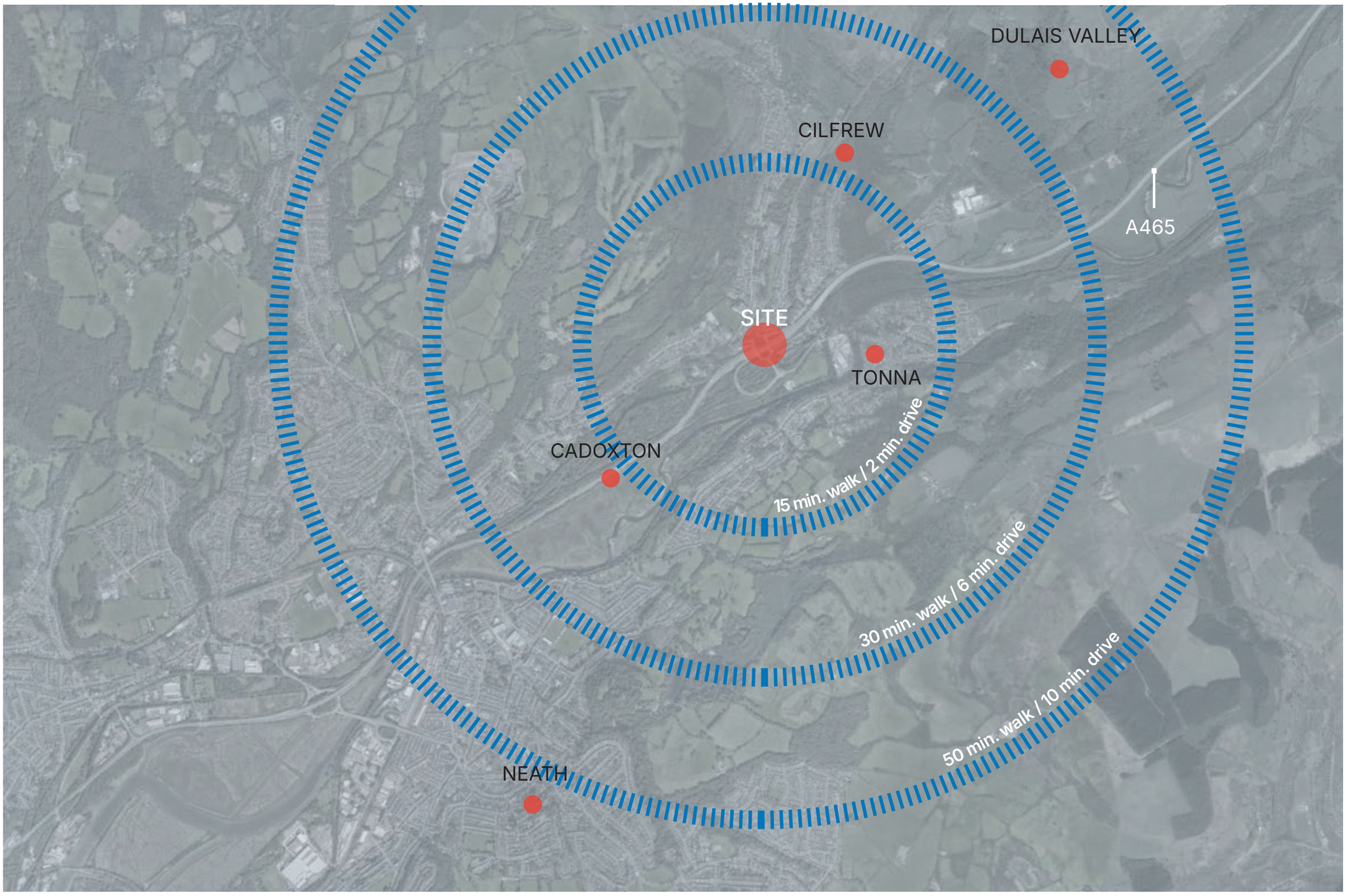
Upon completion of the new school buildings, the contractor shall then demolish the existing School buildings, and complete any outstanding external works to re-provide the external works, sports pitches etc. for the schools use Using the Building Bulletin 98 Space standards for the school as required by Welsh Government the Schedule of Accommodation has been developed as demonstrated in the next section.

The vision for the new development is to provide a modern school building and external facilities which provide an inspiring learning environment with flexible and adaptable facilities to meet the New Curriculum. It is also to provide improved access to better facilities for use by the community out of hours. This will help the school in continuing to improve it’s offer to students and meet its motto; “Inspire, Aspire, Succeed”

Mission Statement
At Llangatwg we support, celebrate and promote learning for all; working together as a community to achieve excellence, enabling learners to be ambitious and capable, enterprising and creative, healthy and confident and ethical and informed citizens.



Current Aerial View from Google Earth of existing Llangatwg Community School
Site shown in red outline


DULAIS VALLEY
CILFREW
A465
SITE
TONNA
CADOXTON
NEATH
15 min. walk / 2 min. drive
30 min. walk / 6 min. drive
50 min. walk / 10 min. drive

2.3 Stakeholder Engagement

An extensive period of stakeholder has been undertaken to ensure the brief, concept and schedule of accommodation (SOA) have been developed to achieve the requirements and ambition of the school and council's education team whilst meeting the required standards.

In addition to testing and refining the SOA, the constraints of the site and phasing requirements have led to a number of massing and plan layout forms to be developed to ensure the best solution could be delivered that meet's the final aspirations and requirements of the client team.

As such a large number of workshops have been conducted through out RIBA Workstages 2 and 3 to do this.

Further engagement sessions have taken place with the client team during this time led by other consultants and Morgan Sindall to cover Net Zero Carbon energy modelling, community use, drainage design, Interior, Landscape and access strategies as well as the Furniture, fixings and equipment required in the new school etc.

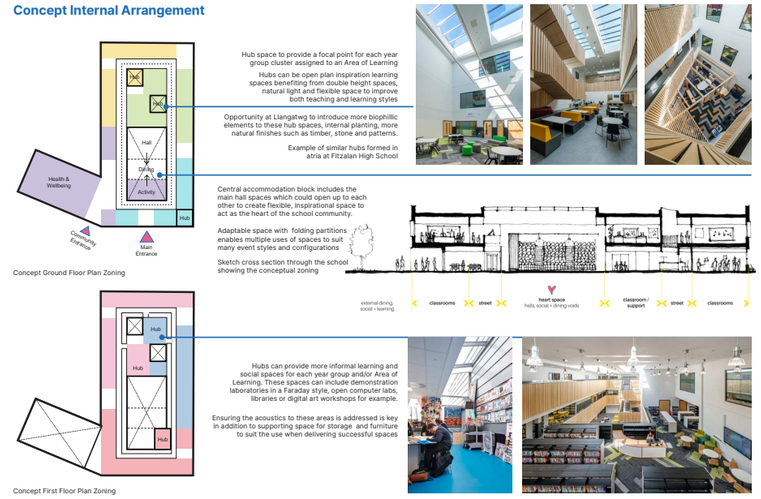
A meeting to consult with the local Designing out Crime Officer as part of the Secure by Design funding requirements has also taken place as well as initial discussions with the local authority building control officer and fire service.

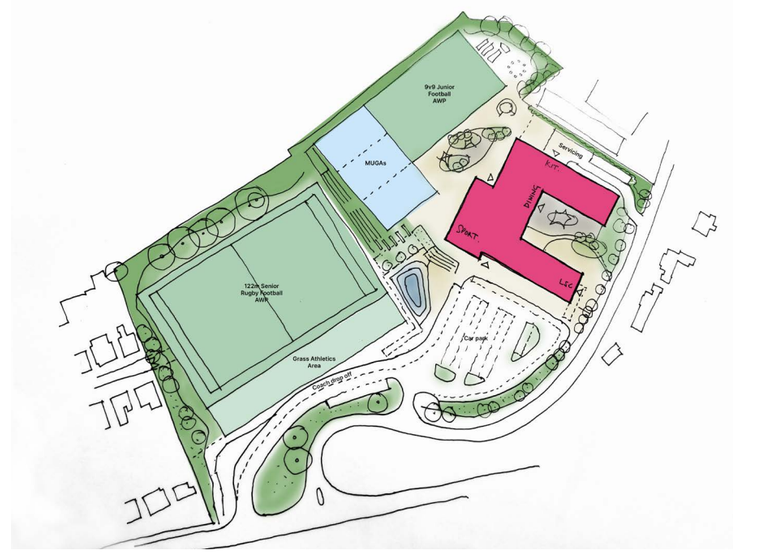
Early engagement with the Local Planning Authority, HIghways and drainage teams has been undertaken with comments and concerns reviewed and addressed as part of the developed design presented here.

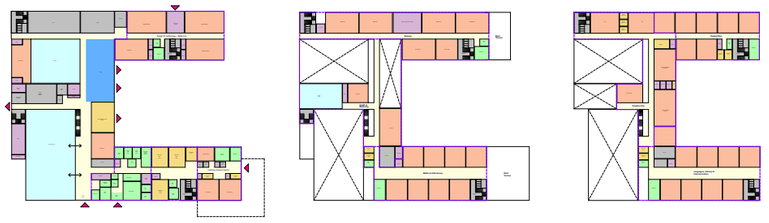
Further to the initial engagement sessions a series of case study building visits were undertaken. The first of which was Fitzalan High School, recently opened in 2023, designed by ourselves at Austin-Smith:Lord, then another three secondary schools all recently developed by NPTCBC of similar scale to Llangatwg. These provided great references to understand what does and doesn't work well in each, lessons learned to carry on to Llangtwg.

As part of finalising the design for a planning submission; wider stakeholder engagement will be undertaken to ensure that the local community, councillors, pupils, governors and staff can have input into the proposals - this will be undertaken during this PAC process with responses to be considered in the developed design before submitting the final planning application.

A selection of development images from the CEMs are shown to the right highlighting the extensive plan and form iterations thorugh out the Stage 2 process.







2.4 Schedule of Accommodation

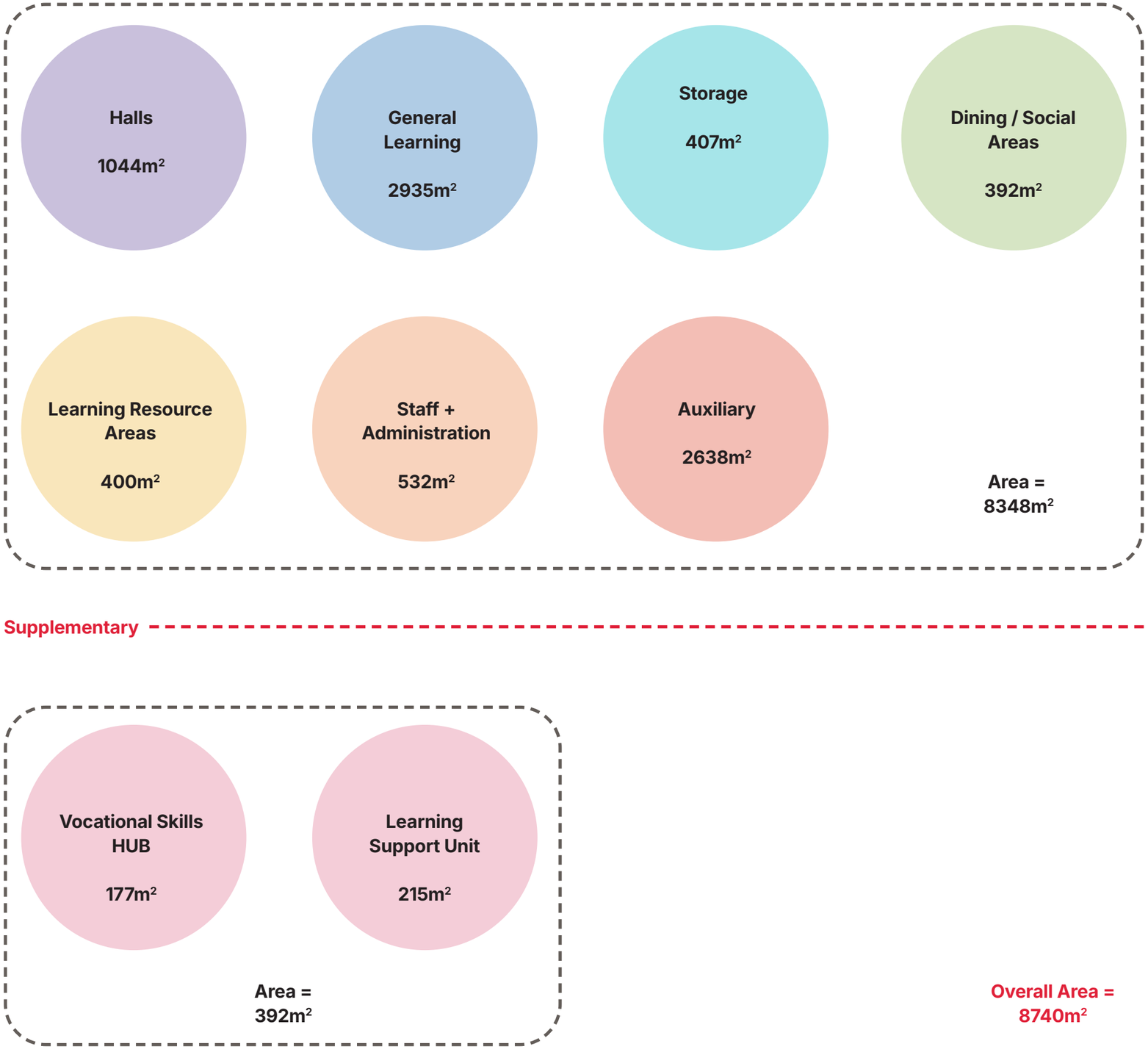
The schedule of accommodation has been developed and refined with the client team over an extensive number of workshops as set out in the earlier stakeholder engagement section of the report.

Following BB98 recommendations for the number and size of internal accommodation for the main school 850 pupil cohort there are some areas which have been adapted to suit the school requirements. These focus mainly on the Pupil Support Centre created from the Learning Support Area allowances.

Some areas have reduced in area to allow increases in others and a timetabling review by the school has refined the required teaching spaces into the current SOA.

The main kitchen area allowance has been increased as it is deemed to be undersized based on previous schemes within the county. The dining area is always a pinch point which is deemed under area - the current concept looks to maximize this space and allow for flexible use of the main hall to increase dining capacity when required.

Additional supplementary areas have been added at the request of NPTCBC Education team to create a 16 place Learning support centre and 2 additional vocational skills workshops for hairdressing and bricklaying which will act as hubs for other schools to use.



Mathematics & Numeracy

56 m²
26 m² Staff Room
8 m² Office HOY
7 m² Gen St
4 m² Acc.WC
9 m² small group room

Languages, Literacy & Communication

56 m²
9 m² small group room
7 m² practice / group room
26 m² Staff Room
8 m² Office HOY
7 m² Gen St
4 m² Acc.WC

Humanities

56 m²
18 m² Staff Room
8 m² Office HOY
7 m² Gen St
4 m² Acc.WC

Science & Technology

60 m² Flexible studio
26 m² Staff Room
8 m² Office SLT
78 m² Science Prep Rm and Chemical St

Science Labs

91 m² Specialist Lab
Multi-use Lab
6 m² Prac. St
Specialist Lab
Multi-use Lab
Specialist Lab

Design & Technology

91 m² Electronics
18 m² Staff Room
6 m² Prac. St
6 m² Prac. St
112 m² Resistant Materials
112 m² Resistant Materials
50 m² Design Tech Prep Rm
6 m² Prac. St
6 m² Prac. St
8 m² Office SLT
4 m² Acc.WC
6 m² Prac. St

IT

77 m² IT Classroom
77 m² IT Classroom

Skills Hub

97 m² Vocational Workshop
6 m² Prac. St
6 m² Prac. St
65 m² Hair Salon
6 m² Prac. St

Expressive Arts

91 m² Flexible studio with some textiles space
105 m² Fixed Art Studio with ceramics
6 m² Prac. St
6 m² Prac. St
4 m² Kiln
6 m² Prac. St
6 m² Prac. St

Music

70 m²
84 m²
7 m² practice / group room
20 m² ensemble room
6 m² Prac. St
6 m² Prac. St
7 m² Inst. St

Drama / Immersion

90 m² Drama Studio
77 m² Immersion Room
6 m² Prac. St
18 m² Staff Room
8 m² Office HOY
300 m² Main Hall
13 m² Control Room
17 m² Chair St
4 m² Acc.WC

Central Areas and Support

91 m² Learning Resource Library / Careers
24 m² Conference/ Meeting Room + Head's PA
10 m² Staff Room (Teapoint)
13 m² Head's Office
8 m² Office SLT
8 m² Office SLT
8 m² Office IT / Data
8 m² Community
8 m² Office - other?
12 m² Deputy Head's Office
12 m² Deputy Head's Office
12 m² Caretaker / FM
11 m² Main Entrance
11 m² Pupil Entrance
8 m² Office Careers / Librarian
14 m² Central Stock
13 m² Central St
8 m² Exam St
8 m² Exam / Community St
8 m² Exam / Community St
43 m² General Office
18 m² Reprographics
7 m² Interview Rm
5 m² Sick Bay
235 m² Dining
95 m² Kitchen
156 m² Pupil Toilets
4 m² Acc.WC
4 m² Acc.WC
20 m² Server Rm
146 m² Plant incl IT Hubs

Health & Wellbeing

105 m² Food Tech
50 m² fitness studio
12 m² Food Prep
112 m² Pupil changing & Showers
150 m² Activity Studio
18 m² Staff Room
8 m² Office HOY
4 m² Lockers
12 m² PE St
16 m² Staff Change & Showers
15 m² Hygiene Rm
4 m² Acc.WC
4 m² Acc.WC
594 m² 4 court Sports Hall
54 m² PE St
8 m² Community St
10 m² External PE St

Pupil Support Centre within main school

45 m² Large Group Room
45 m² Large Group Room
45 m² Large Group Room
20 m² SEN resource base
18 m² SEN therapy / MI room
14 m² SENco office
8 m² Office SLT
14 m² Small group room
14 m² Small group room
14 m² Small group room
6 m² SEN St
15 m² Hygiene Rm
4 m² Acc.WC
15 m² Medium group room
15 m² Medium group room

Extra storage required? Or happy classrooms are big enough for storage?

Learning Support Centre - supplementary area

60 m² LSC Classroom
60 m² LSC Classroom
16 m² Therapy / MI room
16 m² Staff office
4 m² Acc.WC
4 m² Acc.WC
4 m² Staff WC
3 m² St
3 m² St
3 m² St
3 m² St
18 m² LSC Group Room
8 m² LSC calm room
8 m² LSC calm room

3.0

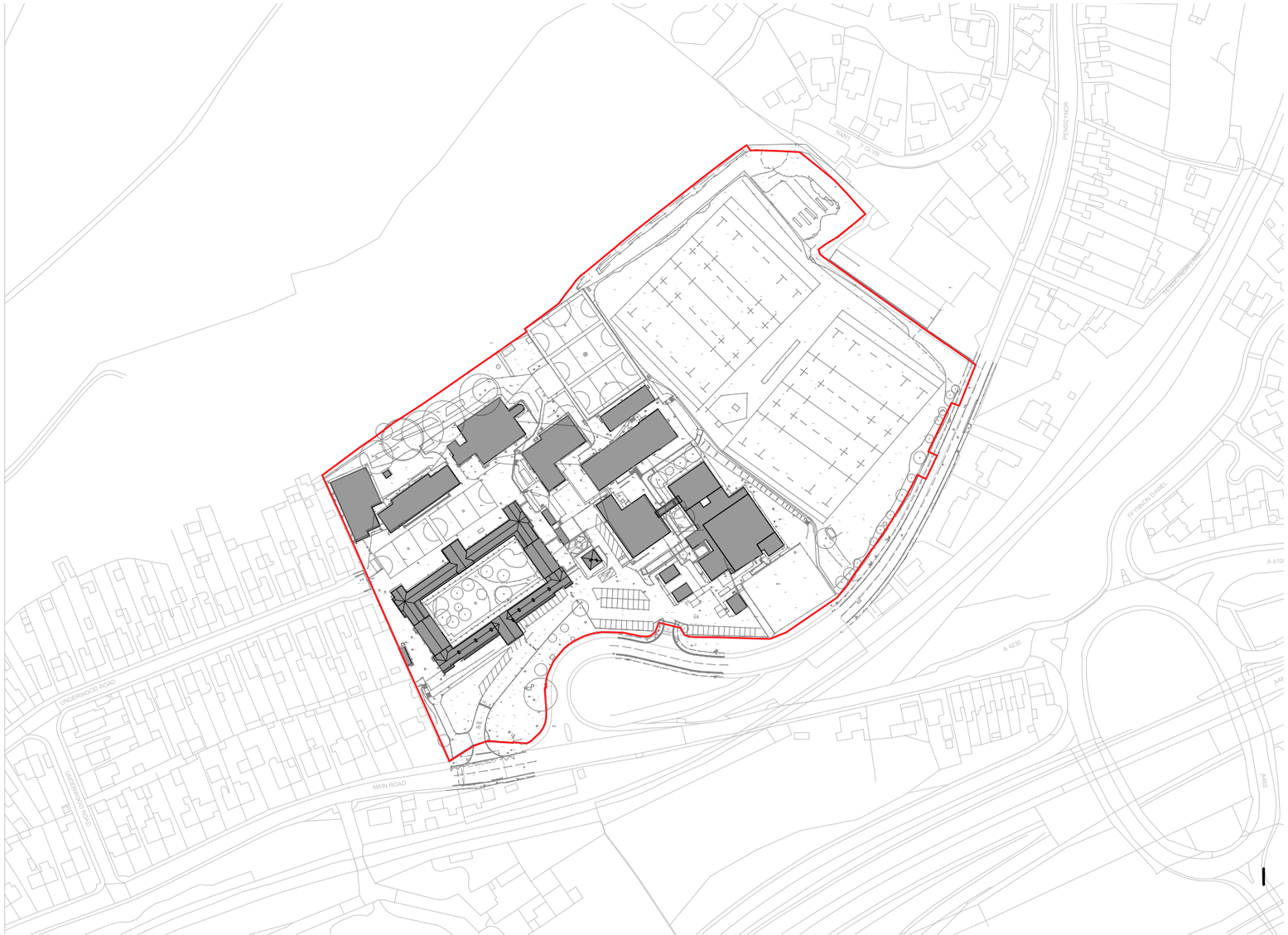
Site + Context Analysis

3.1 Existing Site Plan

The Existing site is bounded by a residential area to the West, mature woodland with a dramatic hillside to the North, a few residential properties and industrial Coach Works unit to the East and Penscynor road to the South.

The site area is under area for the recommended BB98 recommendations however as the school is existing with no real change in school cohort size (just under a full 6FE size) the site is deemed acceptable.

The site masterplan has been though many iterations to ensure the site area is maximized to improve sports pitch and external playing areas for pupils which is demonstrated in the design development section.



3.1 Existing Site Photos

1. View of the current forest schools area of the school grounds located above the canteen block near well established trees to the Northern boundary to the hillside.

2. View from the main hard-standing playground area from Underwood Road.

3. View of the current open watercourse though the site looking towards the main entrance building ahead. The entrance and sense of arrival is under whelming currently - quite difficult to find your way to the entrance.

4. View of the grass playing fields looking East towards the Coach Works.

5. View of the cloistered courtyard of the main school courtyard block with landscaped area and some original doors to classrooms.

6. View along Eastern boundary showing Coach Works building, scrub vegetation and poorly draining playing field surfaces, looking South views to hills, farm and woodland.

7. View of exisiting open watercourse and the 1970s teaching blocks - circulation space externally is quite constrained in some areas with level changes also to contend with.















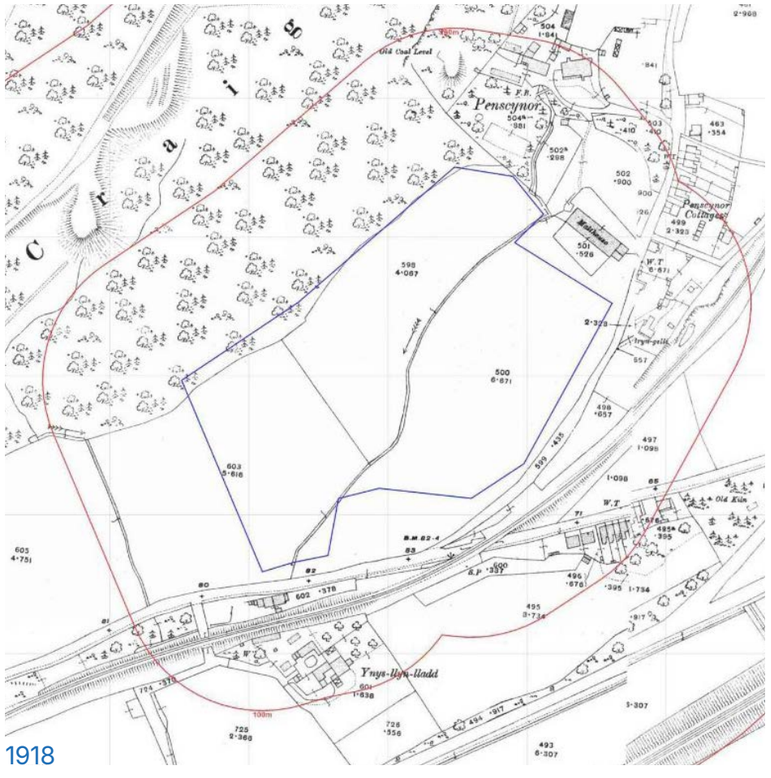
3.2 Historical Development

The School site was previously farmland and the earliest maps here show it to the South of the Penscynor Estate. Mining works tot eh Hillside to the North and visible through the dates shown until they were stipped and the area given back fully to woodland now.

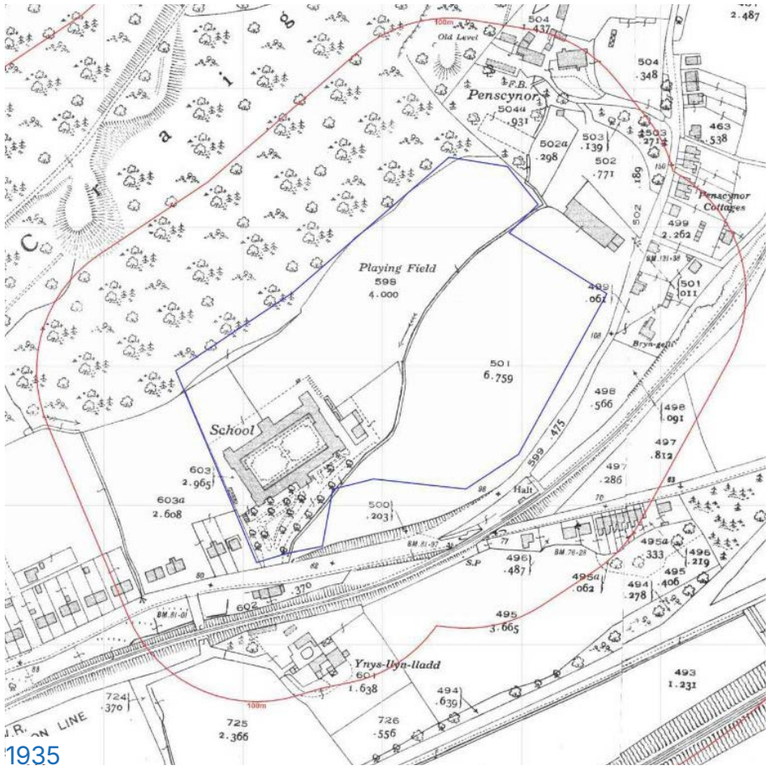
The coachworks to the North East Boundary is developed on the site of an old Malthouse and was redeveloped into its current form after 1935.

The school buildings started to appear after 1918 and before 1935 with the distinctive courtyrad block and caretaker/ schoolmasters house the first to be developed. The School gym hall building is of a similar age and still remains.

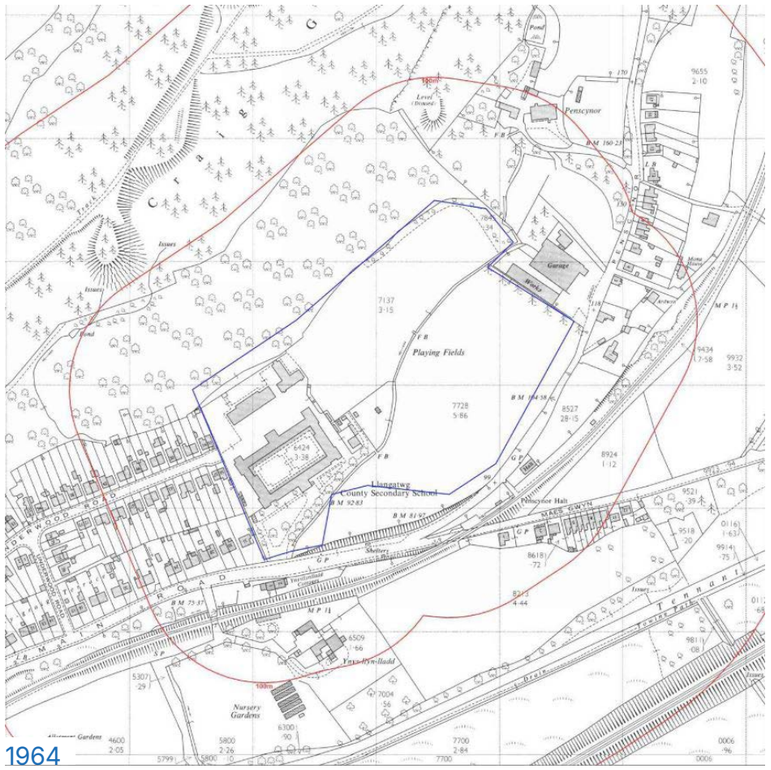
On the school site itself the stream is clearly visible cutting the site from North East to South West and follows a similar route to it's now culverted route which was done between 1964-78. This ties intot eh more modern swimming pool, hall and science, technology blocks being developed on the site to increase the school's capacity and provide bigger spaces for the changing curriculumn. Since then a few buildings have been added to the Northern boundary for catering and general classrooms with more piecemeal demountable blocks spread throughout the site to cater for the changing demands of the school since the 1990s.



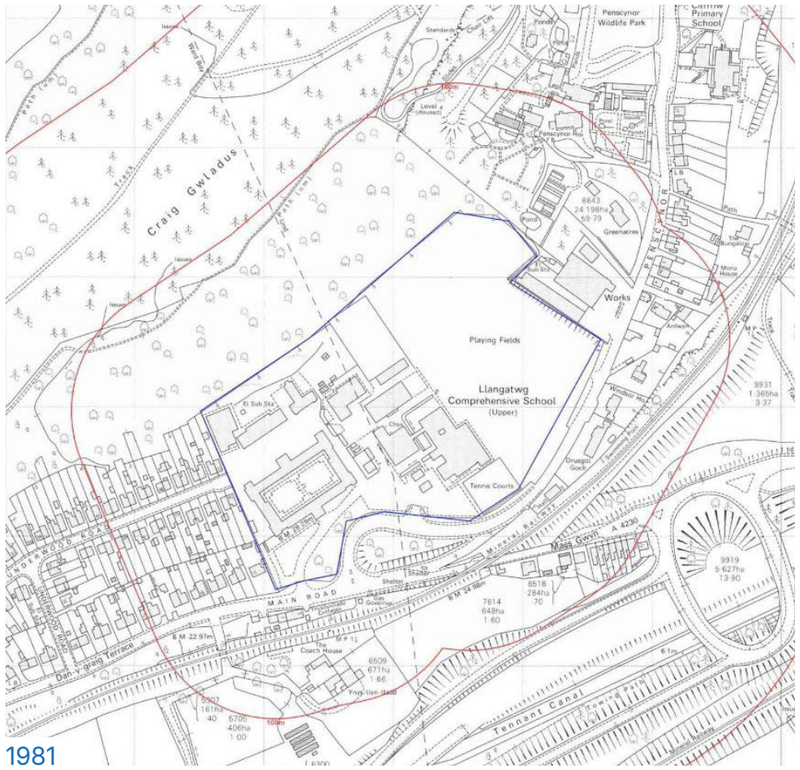
1918



1935



1964



1981



Austin·Smith:Lord


Oppotunities
Open Culvert
Views Out
Service Zone
Natural Buffer
New Use for Entrances
WOODLAND
FOREST SCHOOL
RESIDENTIAL
COACH WORKS
SERVICE ZONE
OPEN CULVERT
VIEWS
SERVICE/ DELIVERY ENTRANCE
ASD OR MAINTENANCE ENTRANCE?
RESIDENTIAL
Google

Planning Policy

Introduction
The planning policy framework for the determination of this application is provided by the content and scope of National Planning Policy, which is contained within the twelfth edition of Planning Policy Wales (PPW) and its associated Technical Advice Notes (TANs), together with the Local Planning Policy and its supplementary planning guidance.

The planning policy context for this application is provided in detail in the Planning Statement that accompanies this application. For a full review of pertinent policies please refer to the Planning Statement.

Planning Policy Wales
National planning policy is contained within the twelfth edition of Planning Policy Wales (PPW), published by the Welsh Government in February 2024. PPW is supported by 19 topic-based Technical Advice Notes (TANs), which are also relevant. PPW is the Welsh Government's principal planning policy document, setting out the context for sustainable land use planning policy, within which Development Plans are prepared and development.

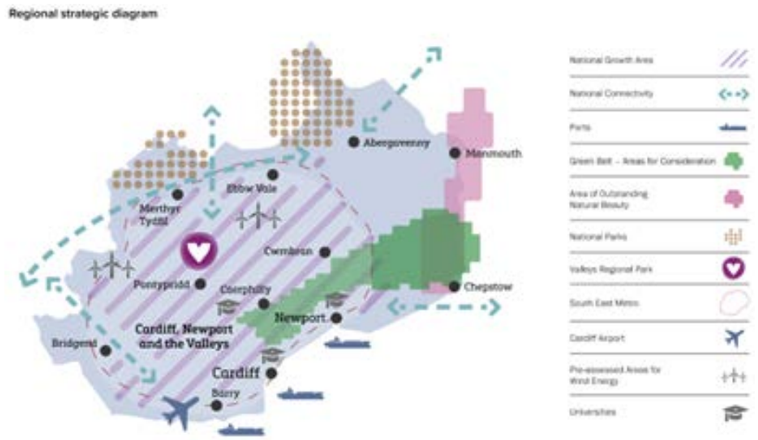
Section 3.17 of PPW relates to design and access statements (DAS) discussing that a DAS should communicate what development is proposed, demonstrate the design process that has been undertaken and explains how the objectives of good design and placemaking have been considered from the outset of the development process.

Well-being of Future Generations Act (2015)
The Well-being of Future Generations (Wales) Act came into force in 2015 and seeks to improve the social, economic, environmental and cultural well-being of Wales. The Act puts in place seven well-being goals in order to make sure that everyone works towards the same vision. The well-being goals are set out in the Planning Statement.





Future Wales: The National Plan 2040
Future Wales – the National Plan 2040 is our national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate resilience, developing strong ecosystems and improving the health and well-being of our communities.



Technical Advice Notes
The following technical advice notes are considered relevant to the proposal:

- TAN 5 Nature Conservation and Planning
- TAN 11 Noise
- TAN 12 Design
- TAN 15 Development, Flooding and Coastal Erosion
- TAN 16 Sport, Recreation and Open Space
- TAN 18 Transport

Planning Policy

Design and Access Statements in Wales (April 2017)
This guidance document sets out the requirements for a DAS, the benefits of preparing a DAS and some of the pitfalls that should be avoided when preparing the document. Section 5 of this document provides guidance on what to include in a DAS and how to communicate the proposals.

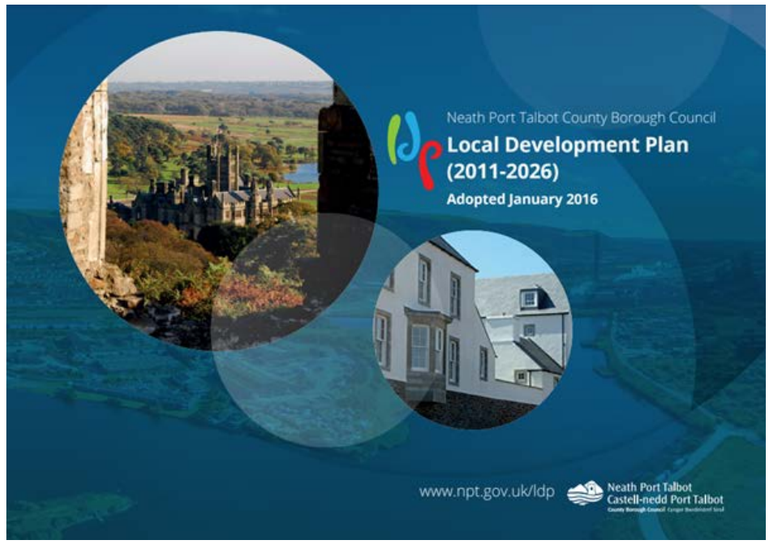
Neath Port Talbot County Borough Council Local Development Plan (2011-2026)
Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that planning application decision should be made in accordance with the authority's adopted development plan, unless material considerations indicate otherwise. In this instance, the statutory development plan for this application site is provided in the Neath Port Talbot County Borough Council Local Development Plan, adopted in January 2016. A review of Neath Port Talbot Council's LDP Proposals Map shows that the site lies within the settlement boundary, where development is considered acceptable in principle, subject to compliance with all other material planning considerations. From the map, the site is not subject to any ecological or environmental constraints or designations.

The following LDP policies are considered relevant in the context of the proposed development:

Policy reference	Relating to
SP1	Climate Change
SP2	Health
SP3	Sustainable Communities
SP4	Infrastructure
SP15	Biodiversity and Geodiversity
SP16	Environmental Protection
SP18	Renewable and Low Carbon Energy
SP19	Waste Management
SP20	Transport Network
SP21	Built Environment and Historic Heritage
SC1	Settlement Limits
I1	Infrastructure Requirements
EN6	Important Biodiversity and Geodiversity Sites
EN7	Important Natural Features
EN8	Pollution and Land Stability
M2	Surface Coal Operations
RE2	Renewable and Low Carbon Energy in New Development
W3	Waste Management in New Development
TR2	Design and Access of New Development
BE1	Design

Supplementary Planning Guidance
The following supplementary planning guidance is considered relevant to the proposal:

- SPG: Biodiversity and Geodiversity
- SPG: Pollution
- SPG: Renewable & Low Carbon Energy
- SPG: Parking Standards
- SPG: Design



4.0

Design Development

4.1 Site Masterplan Development

Our initial design for the school was done as part of the bid submission for the project with little information on the site and the brief.

The client brief set out the desire to deliver the projeect through phasing and avoid the cost and time requirements in re-using some of the existing buildings on the site.

We reviewed a number of options on how to achieve this on the site by placing the new school building on the existing playing fields to allow no disruption to the current school whilst construction os underway.

Our scheme looked at a superblock form to achieve this with 2-3 storeys of accommodation and a projecting sports wing to the north.

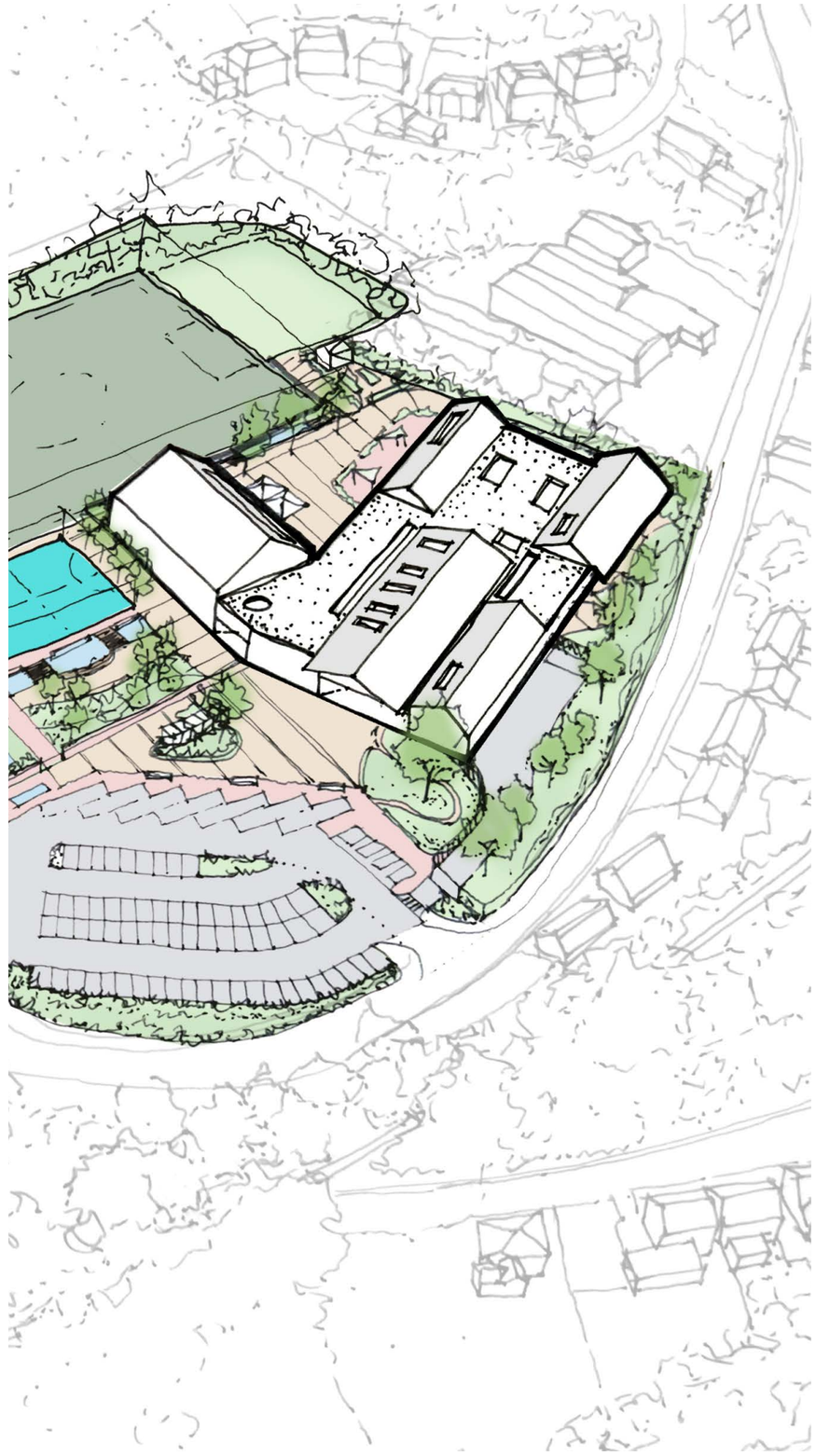
We also looked whether the old caretakers house could be retained as it is currently vacant and would therefore not create any issues with phasing. However the building would be very isolated from the new school and create a management issue potentially. On closer inspection the space also did not provide large enough areas for the creation of a dedicated Pupil Support Centre so the design team decided to not progress with it.

The other options we investigated are shown in the next few pages.









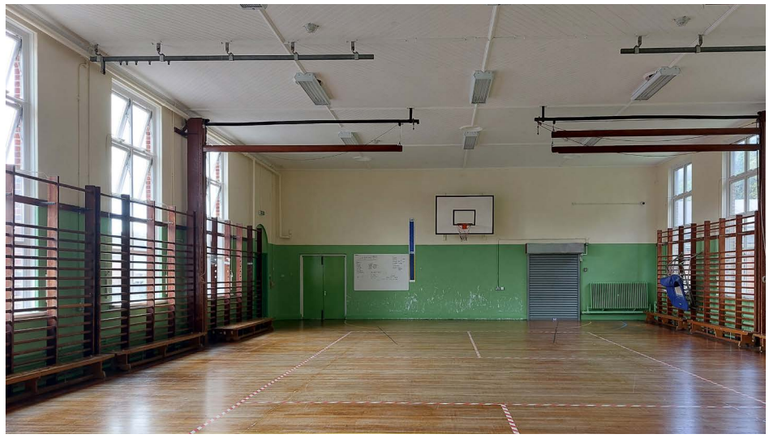
4.1 Review of Site Development Strategy

Three of the original school buildings are of good architectural design whilst the rest of the building stock compromises much lower value disparate accommodation in a variety of styles and in a variety of condition, inefficiently spread out across the site. However, the main courtyard school building (photos 1, 4 & 6), the schoolmasters/ caretakers house (2 & 5) and the later school gym hall (3 & 7). These buildings are all faced in a mix of red bricks with some stone detailing to courtyard and gym buildings. All feature prominent chimney details and pitched roofs tiled in slate originally. None of the buildings are listed within the school grounds.

Within NPTCBC Education and Property teams following review the decision was made that it was their preference to propose the demolition of all the existing school buildings and proceed with a new school building on the existing playing fields in a phased development. The reasons for this are as follows.

- Current room areas within these existing structures are non-compliant with BB98 areas for comfortable use. For example, classrooms in the courtyard block are nearly all 44m² which is far below the target area of 56m² required in BB98 to comfortably hold a class of 30 which therefore creates either uncomfortable environments for school pupils and staff or limits the group sizes to far below that recommended leading to inefficient timetables and multiple classes and teachers required.
- The current gym hall is significantly under area against recommendations at 259m² as opposed to the recommended 594m² 4-court sports hall standard required for all new secondary schools – this severely limits the educational use of the hall with the occupancy, range of sports and equipment able to be offered by staff to pupils and the wider community use.
- There is a lack of flexibility to alter the existing building layouts/adapt to create full size classrooms within the courtyard block (eg. position of load bearing walls, original window and doors and their positions which hold most of the character value in these buildings would need to be altered)
- There is also difficulty in upgrading thermal performance to achieve low energy targets without eroding the architectural features which give the buildings character
- In the courtyard block and caretakers house there are also issues with accessibility to the upper floors with no current lift provision allowing for equal access for the – will lose further floor space for multiple lifts due to isolated small areas at first floor
- The site is extremely constrained overall resulting in it being extremely challenging to safely keep the school operational whilst renovating the characterful buildings. It is also inefficient to have multiple buildings spread out over the site to achieve this – longer phasing, cost of temporary buildings to accommodate pupils is extremely expensive whilst renovation underway etc.
- Cost effectiveness of renovating the buildings given current fabric condition, meeting energy targets and balancing this against trying to retain the architectural character of the buildings
- School preference to have as few buildings spread out as possible as this is causing issues with efficient management of pupils and truancy issues









The following review from the MEP Engineer's TB+A also supported the decision not to refurbish the buildings;

In order for the school to achieve operational Net Zero Carbon it is anticipated the following MEP strategies / systems would need to be incorporated;

The building fabric performance is critical in minimising the energy consumption of the building throughout the year. Given the age of the building, it's anticipated the existing fabric is insufficient to achieve net zero, regardless of any active measures as described below. The existing façade would need to be completely refurbished and upgraded to improve the envelope performance of each building. This would be a significant cost and potentially a refurbishment of the vast majority of external facades and roofs.

The heating for the entirety of the school will be provided by air source heat pumps combined with radiators and underfloor heating systems. The ASHPs have a much higher COP than that of boilers which, when combined with a lower fuel factor (when compared to gas), will provide a significant carbon saving. This saving is anticipated to increase over time as the national gird is further de-carbonised. Retrofitting ASHPs to an existing heating system would require that the existing pipework and terminal units (e.g. radiators, underfloor heating etc.) are appropriately sized for the distribution temperatures. It is therefore very unlikely that the existing heating system operating conditions would be appropriate for an ASHP system and would require complete replacement.

In similar fashion, the domestic hot water generation would also need to be provided via high-temperature air source heat pumps. As with the above heating system, the existing system (if instantaneous) would require replacement with little spatial availability for installing a cylinder. Alternatively, if a cylinder is already installed it unlikely the capacity (and equivalent recovery time) would suit that of an ASHP. In both instances a new system and / or additional plantroom space required.
Ventilation across the majority of teaching spaces, WC blocks and internal corridors will be provided by mechanical ventilation heat recovery (MVHR) units. The MVHR units will provide sufficient levels of air turnover within a winter setting, whilst also recovering heat from the exhaust air and so reducing the required energy consumption of the heating system(s). During the summer the classrooms will operate in a hybrid manner, relying predominantly on opportunities for natural ventilation via windows or otherwise. The MVHR units will be operated only when necessary to mitigate the risk of overheating. The ceiling voids across the existing school are insufficient for housing MVHR units and would require the ceiling level to be lowered. This in turn would impede on headroom within each room and therefore would be a viable option.

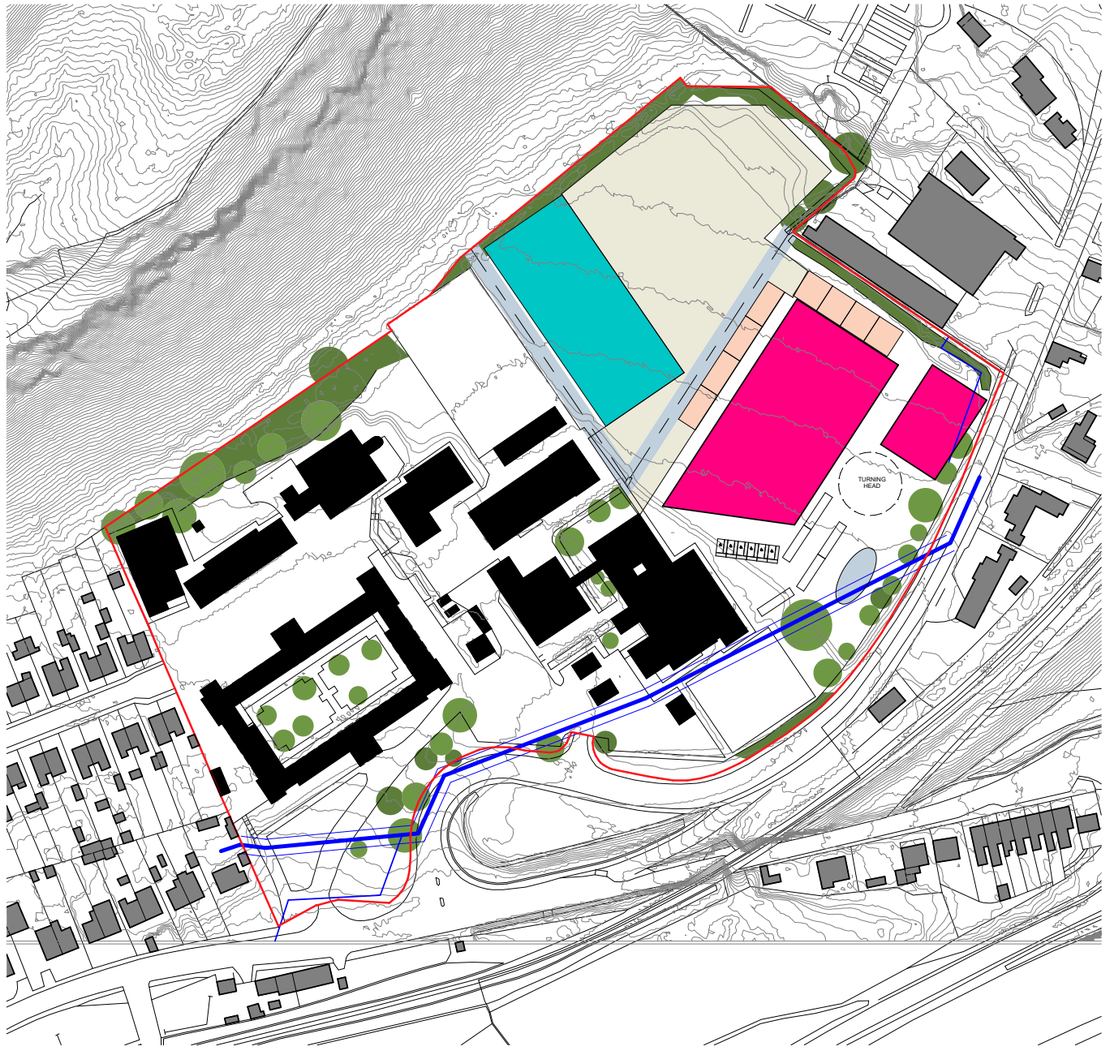
Any existing halls and the main kitchen would need to be ventilated via air handling units (AHUs). The AHUs will incorporate heat recovery sections to recover heat energy from the exhaust air, and so reduce the energy consumption of the heating systems. There is no space or opportunity to install the AHU's on the site without significant structural, architectural and access changes to the existing buildings.

PV arrays will be installed on the school roof(s), offsetting the total electrical energy consumption for the school. A number of the existing school buildings are pitched or tiered therefore causing overshadowing and limiting the output from any proposed arrays. It is unlikely that the arrays would be sufficient to offset the energy demand of the school sufficiently. Additional PV arrays would be required in the form of car ports or otherwise. Note the amount of existing car parking is limited and so there is little opportunity for the installing of additional PV.

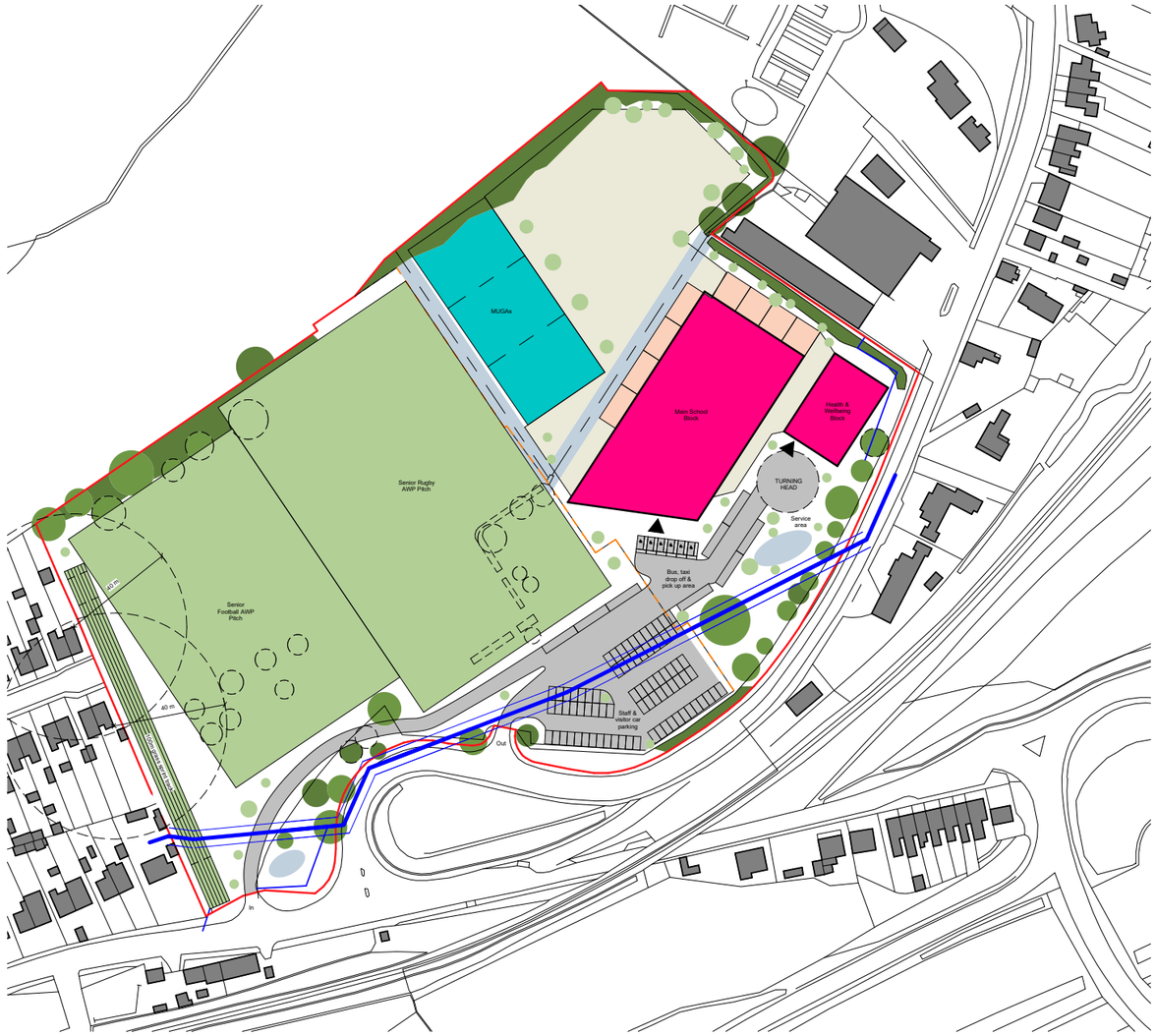








1 1 : 1000 - Site Option A



2 1 : 1000 - Site Option A Second Phase

Key

- Site Boundary. Area approx: 49718m²
- Approximate Culvert location with 3m easement
- Approximate sewer location with 3m easement
- Open stream/SUDs areas
- Existing School Buildings
- Proposed School Buildings
- Social External Space - mix of hard and soft
- Outdoor Classroom and Hard Social External Space
- Soft Pitches
- Hard Court MUGAs
- Parking / Servicing Access areas
- Trees / Dense Vegetation
- Removed trees / stream
- Phasing line for main construction phase

Pitches:
Rugby pitch 3G - 10400m² x 2 = 20800m²
Football pitch 3G (reduced floodlighting?) 7420m² x 2 = 14840m
Running track 100m 6 lane - grass or artifical? = 975m²
Total = 36,615m²

Shortfall - 42,000-36,615 = **5,685m²**

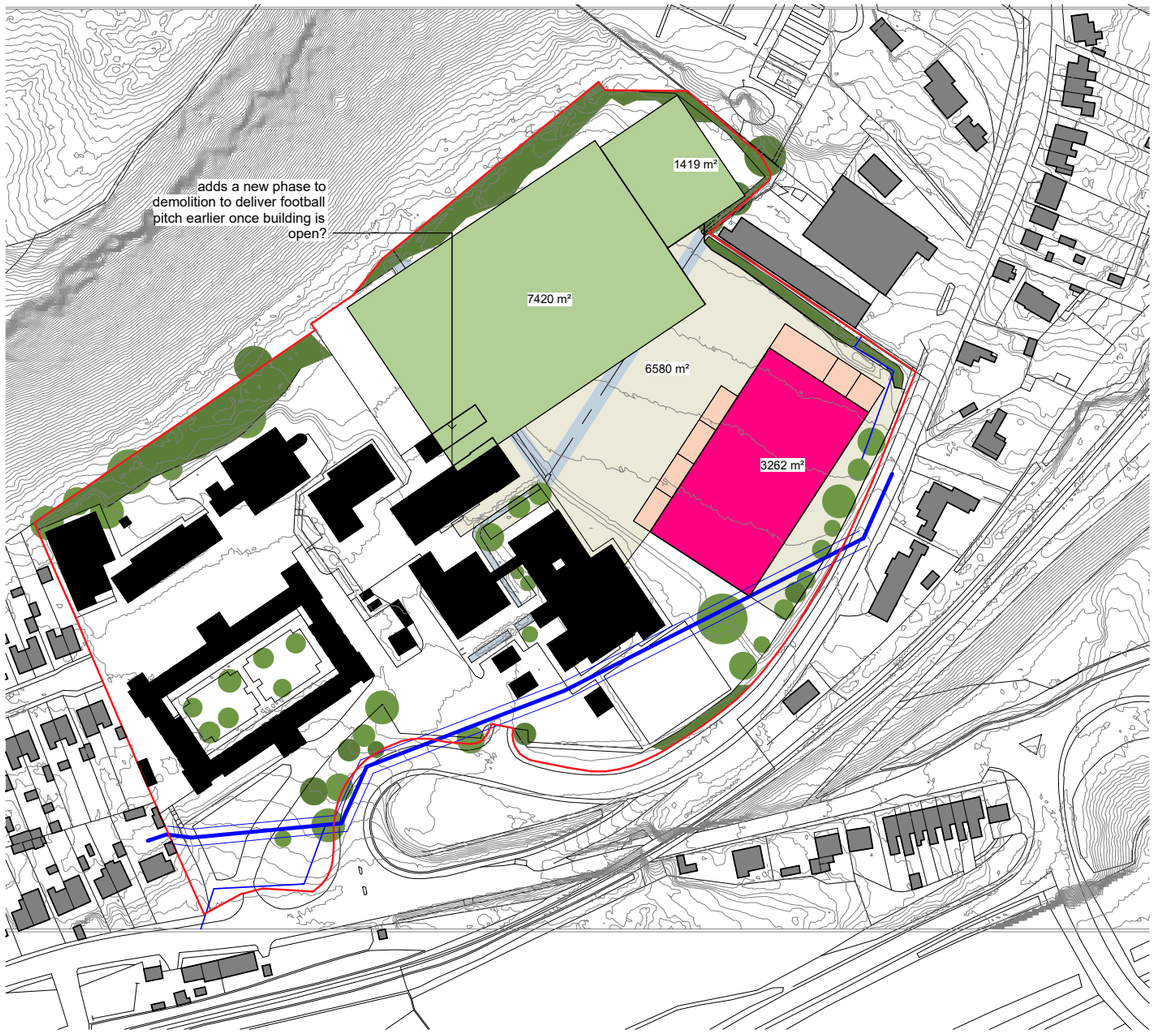
Approximate form factor:

Main Block;
GIFA = 6650m²
Area of envelope = 3323+3323+1848.4 = 8494.4m²
Form factor: 1.27
Health & Wellbeing Block;
GIFA = 893m²
Area of envelope = 2,429.5m²
Form factor: 2.72

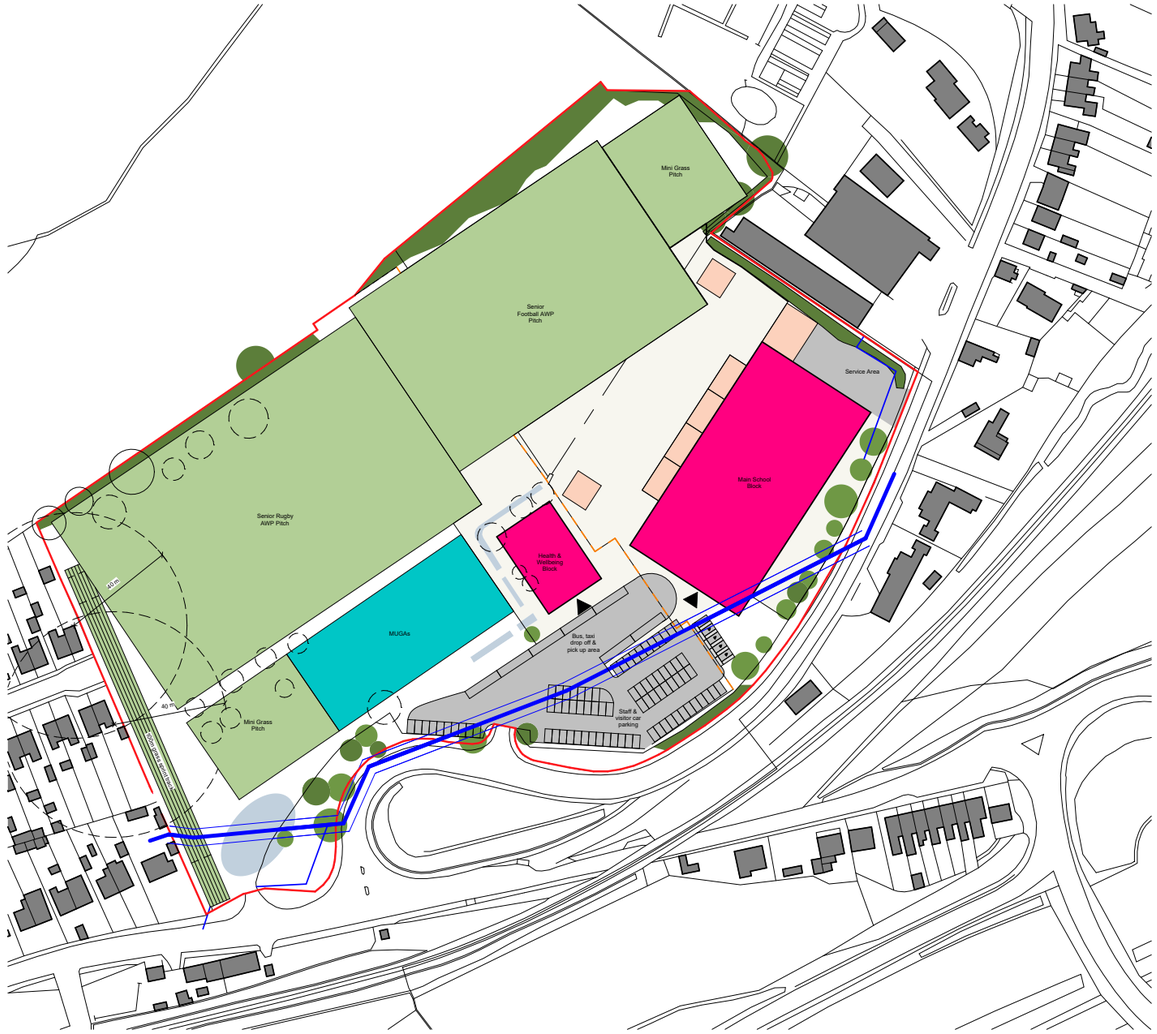
Target total GIFA = 7550m²
2 storey building

Advantages:
- Phasing allows current school buildings to be kept in use
- Delivers new MUGAs early to maintain school and community sport provision during phasing
- Maintains current highways access in final scheme
- Seperate Health & Wellbeing block provides safe and easy to manage access for community out of hours
- Large social external area available for easy management of pupil groups
- Pedestrian safe conflict free bus drop-off/pick-up design
- Potential to open up culverts for ecological and biophillic benefits and as a learning habitiat
- No conflict with known easements

Disadvantages:
- Seperate buildings creates a less efficent form interms of energy, cost and management of pupil movements - can affect pupil truancy
- Carparking and bus drop off will need multiple phases to be delivered
- Topography will be challenging to deliver pitches in this arrangement
- Pitch configuration under area from BB98 SoA
- Lose current open stream portion from culverts
- Proximity to Coachmakers to the North will be a noise and visual pollution source
- Not optimal orientation and forms for connecting to the landscape and exploiting sun path for lighting and heating demands
- New building not very prominently positioned as a marker of investment in the school and wider community to improve aspirations and inspire the school cohort to success



1 : 1000 - Site Option B



1 : 1000 - Site Option B Second Phase

Key

- Site Boundary. Area approx: 49718m²
- Approximate Culvert location with 3m easement
- Approximate sewer location with 3m easement
- Open stream/SUDs areas
- Existing School Buildings
- Proposed School Buildings
- Social External Space - mix of hard and soft
- Outdoor Classroom and Hard Social External Space
- Soft Pitches
- Hard Court MUGAs
- Parking / Servicing Access areas
- Trees / Dense Vegetation
- Removed trees / stream
- Phasing line for main construction phase

Pitches:
Rugby pitch 3G - 10400m² x 2 = 20800m²
Football pitch 3G (reduced floodlighting?) 7420m² x 2 = 14840m²
Running track 100m 6 lane - grass or artifical? = 975m²
Mini Football Grass Pitches = 1419m² x 2 = 2838m²
Total = 39,455m²

Shortfall - 42,000-39,455 = **2,545m²**

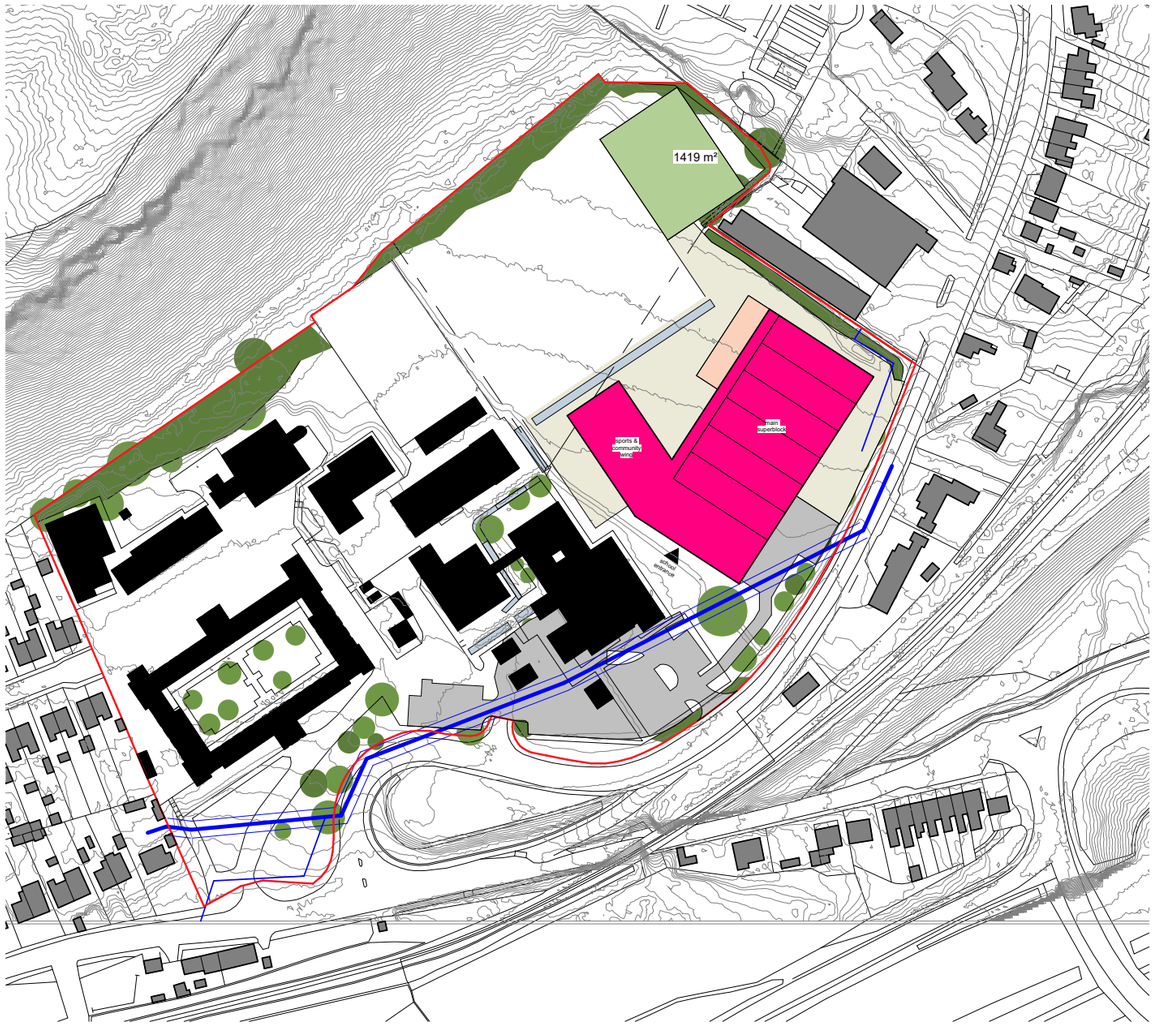
Approximate form factor:

Main Block;
GIFA = 6657m²
Area of envelope = 3956+3956+1980 = 9,892m²
Form factor: 1.48
Health & Wellbeing Block;
GIFA = 893m²
Area of envelope = 2,429.5m²
Form factor: 2.72

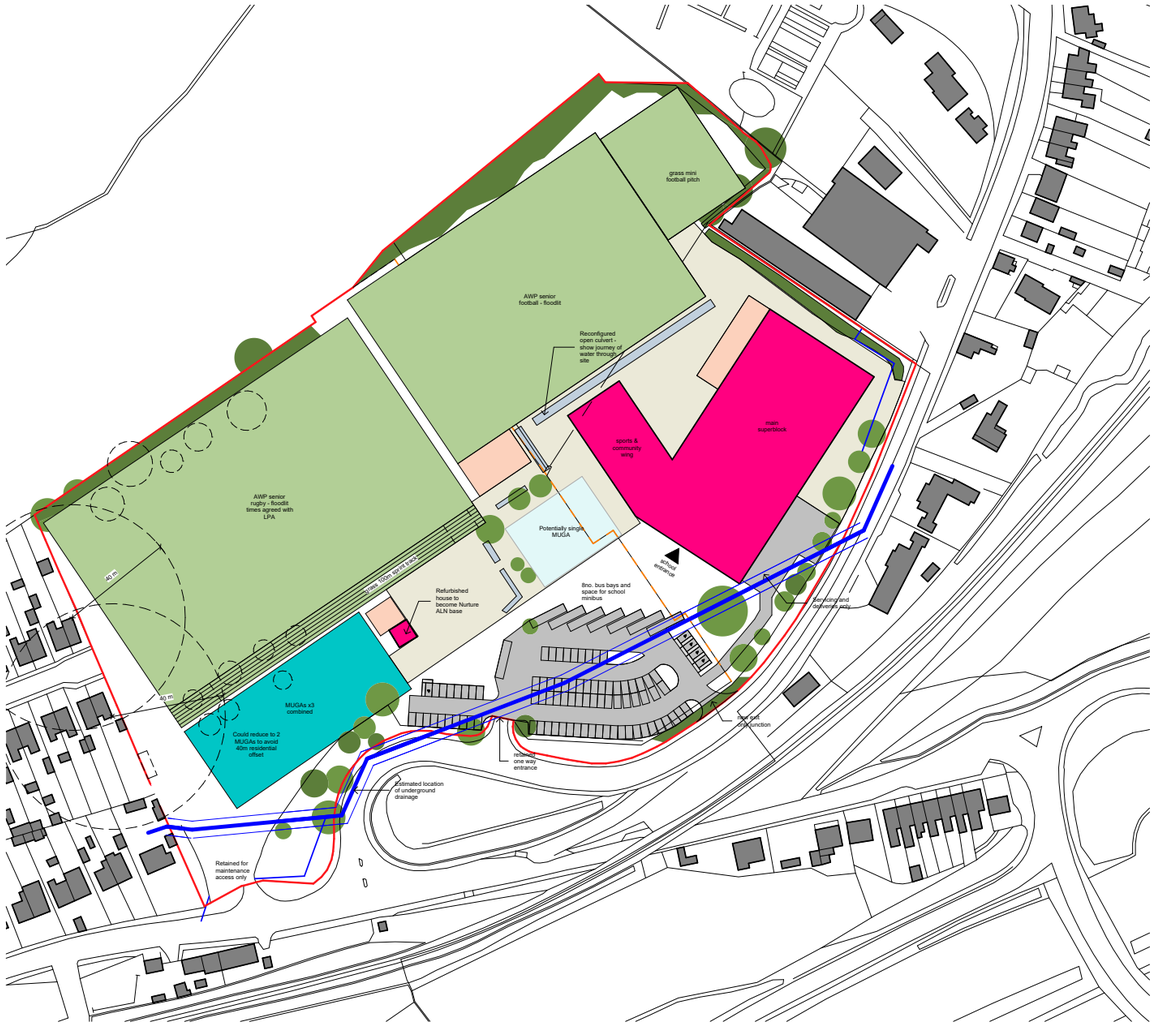
Target total GIFA = 7550m²
2 storey buildings not accounting for pitched roofs

Advantages:
- New building prominently positioned to view of the community as a marker of investment in the school to improve aspirations and inspire the school cohort and its wider community users to success
- Phasing could allow current school buildings to be kept in use and stagger the new buildings to deliver gradual change
- Potential to deliver pitches earlier to maintain school and community sport provision during phasing
- Seperate Health & Wellbeing block provides safe and easy to manage access for community out of hours
- Large social external area available for easy management of pupil groups
- Pedestrian safe conflict free bus drop-off/pick-up design
- Retains existing open streams for ecological and biophillic benefits and as a learning habitiat
- Less challenging pitch arrangement in terms of topography and cut & fill required
- Best pitches area figure which is close to BB98 SoA

Disadvantages:
- Seperate buildings creates a less efficent form interms of energy, cost and management of pupil movements - can affect pupil truancy
- Carparking and bus drop off will need multiple phases to be delivered
- Topography will be challenging to deliver running track in this arrangement
- Pitch configuration under area from BB98 SoA
- Lose current open stream portion from culverts
- Proximity to Coachmakers to the North will be a noise and visual pollution source
- Not optimal orientation and forms for connecting to the landscape and exploiting sun path for lighting and heating demands
- Main School Building has conflict with drainage easement
- Loss of main mature tree and others on the site



2 1 : 1000 - Site Option C



1 1 : 1000 - Site Option C Phase 2B

Key

- Site Boundary. Area approx: 49718m²
- Approximate Culvert location with 3m easement
- Approximate sewer location with 3m easement
- Open stream/SUDs areas
- Existing School Buildings
- Proposed School Buildings
- Social External Space - mix of hard and soft
- Outdoor Classroom and Hard Social External Space
- Soft Pitches
- Hard Court MUGAs
- Parking / Servicing Access areas
- Trees / Dense Vegetation
- Removed trees / stream
- Phasing line for main construction phase

Pitches:
Rugby pitch 3G(reduced floodlighting?) - 10400m² x 2 = 20800m²
Football pitch 3G - 7420m² x 2 = 14840m²
Running track 100m 6 lane - grass or artifical? = 975m²
Mini Football Grass Pitches = 1419m²
Total = 38,034m²

Shortfall - 42,000-38,034 = **3,966m²**

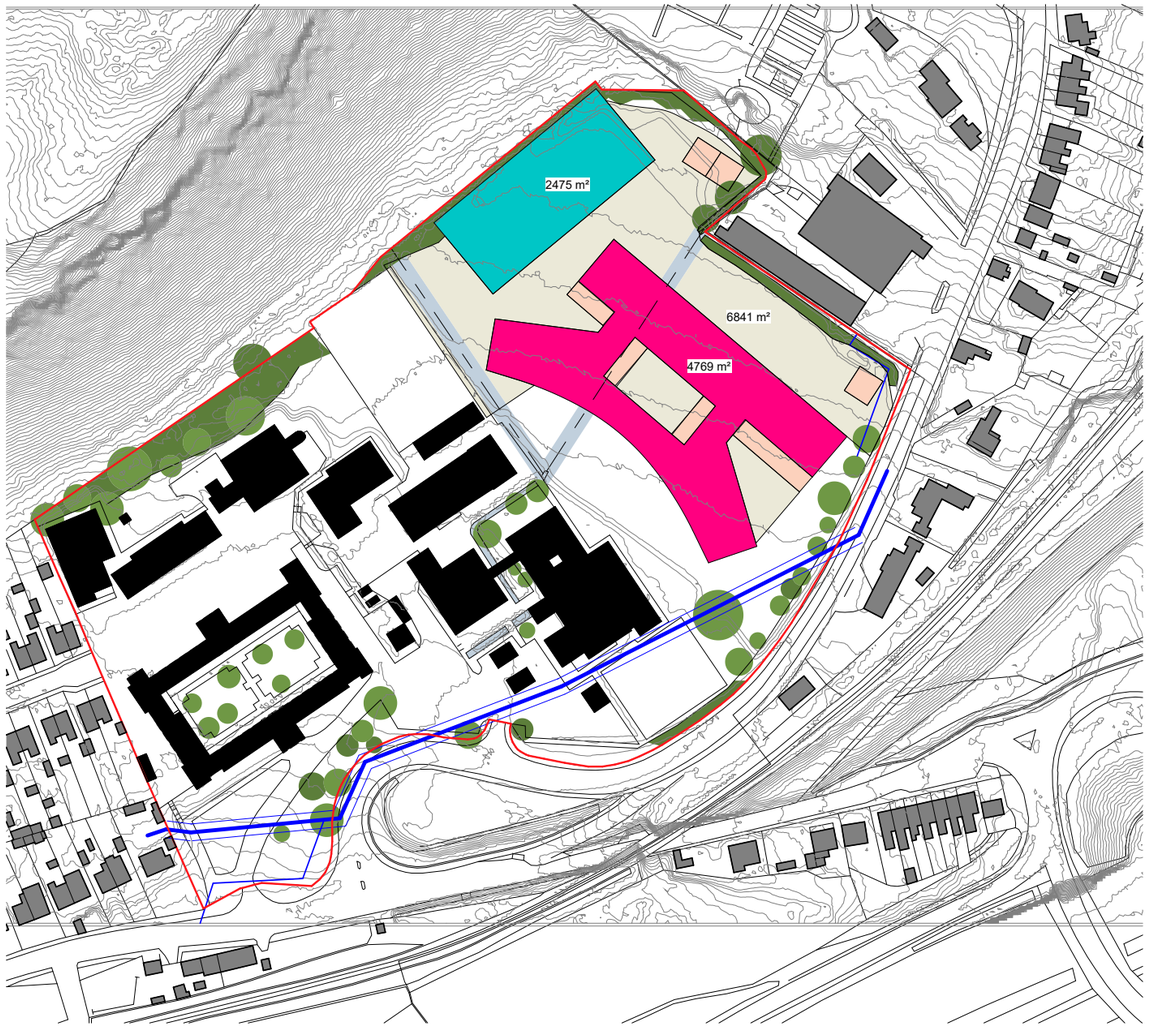
Approximate form factor:

GIFA = 7550m²
Area of envelope = 4693+4693+2702 = 12,088m²
Form factor: 1.6

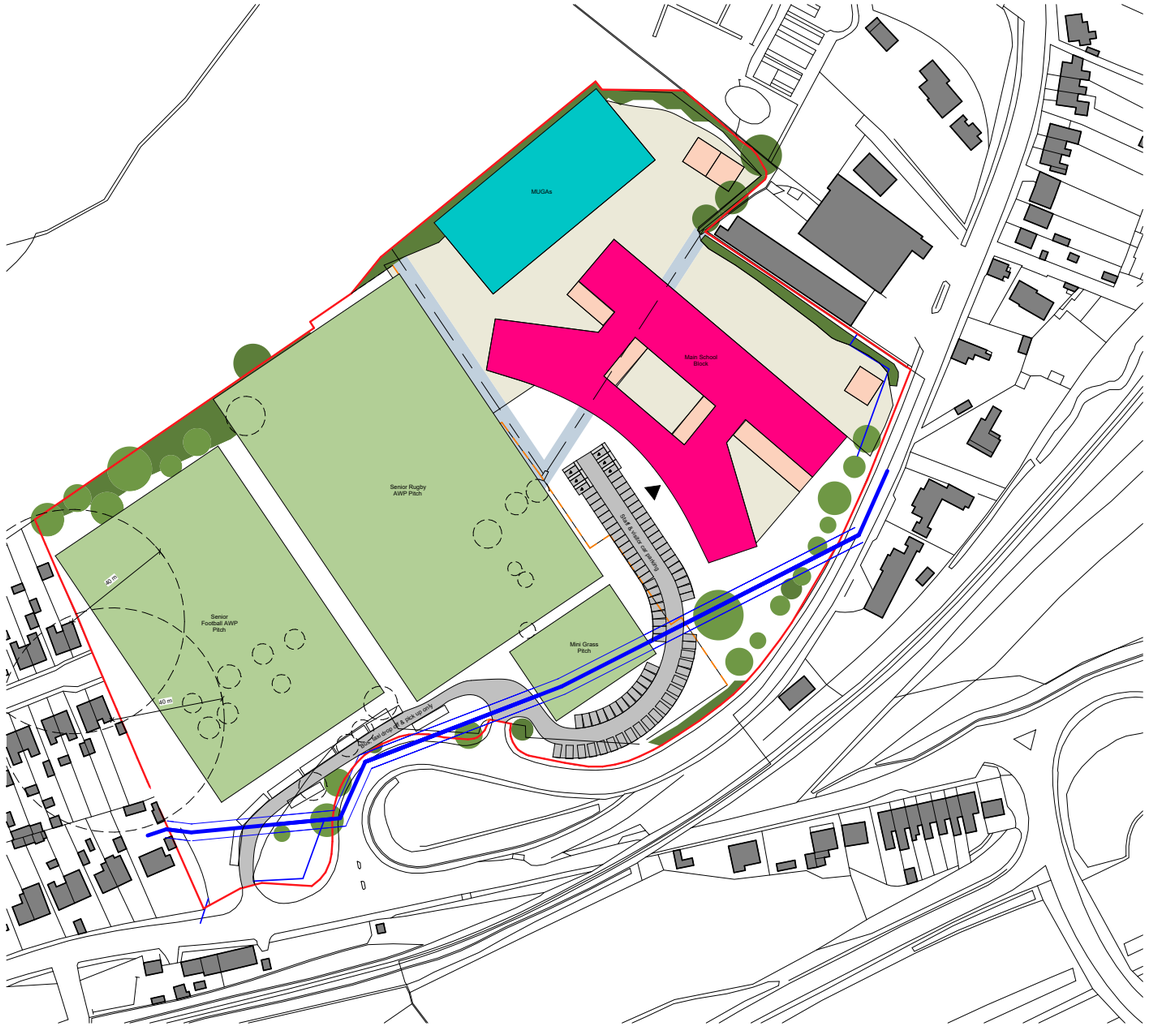
Target total GIFA = 7550m²
2 storey building not accounting for roof pitches

Advantages:
- New building prominently positioned to view of the community as a marker of investment in the school to improve aspirations and inspire the school cohort and its wider community users to success
- Superblock typology is extremely efficent in terms of form factor and materials used - can also deliver inspiring internal atria to form year group hubs around to break the school down to pupils and provide smaller groups
- Much easier to manage pupils and provide a safe environment with clear internal circulation in a superblock form
- Phasing would allow current school buildings to be kept in use during build to reduce cost and transistion disruption
- Potential to deliver two pitches earlier to maintain school and community sport provision during phasing
- Refurbished Victorian House to provide a domestic scale Nurture facility for those with ALN and those needing emotional support. Retains architectural character and sense of place and identity for the school and community
- Pedestrian safe conflict free bus drop-off/pick-up design
- Retains existing open streams for ecological and biophillic benefits and as a learning habitiat and potential to add to those by opening more of the culvert
- Less challenging pitch arrangement in terms of topography and cut & fill required
- Retains more existing mature trees

Disadvantages:
- Carparking and bus drop off will need multiple phases to be delivered
- Pitch configuration under area from BB98 SoA but closer than other options
- Proximity to Coachmakers to the North will be a noise and visual pollution source
- Not optimal orientation and forms for connecting to the landscape and exploiting sun path for lighting and heating demands
- New highways access required to provide a safer oneway system for parking
- MUGAs encroach on distance required from residential properties to limit noise and light pollution and reduce operating hours - could be mitigated by splitting the MUGAs or by not retaing old caretakers house



2 1 : 1000 - Site Option D



1 1 : 1000 - Site Option D Second Phase

Key

- Site Boundary. Area approx: 49718m²
- Approximate Culvert location with 3m easement
- Approximate sewer location with 3m easement
- Open stream/SUDs areas
- Existing School Buildings
- Proposed School Buildings
- Social External Space - mix of hard and soft
- Outdoor Classroom and Hard Social External Space
- Soft Pitches
- Hard Court MUGAs
- Parking / Servicing Access areas
- Trees / Dense Vegetation
- Removed trees / stream
- Phasing line for main construction phase

Pitches:
Rugby pitch 3G - 10400m² x 2 = 20800m²
Football pitch 3G (reduced floodlighting?) 7420m² x 2 = 14840m²
Mini Football 3G Pitch = 1419m² x 2 = 2838m²
Total = 38,478m²

Shortfall - 42,000-38,478 = **3,522m²**

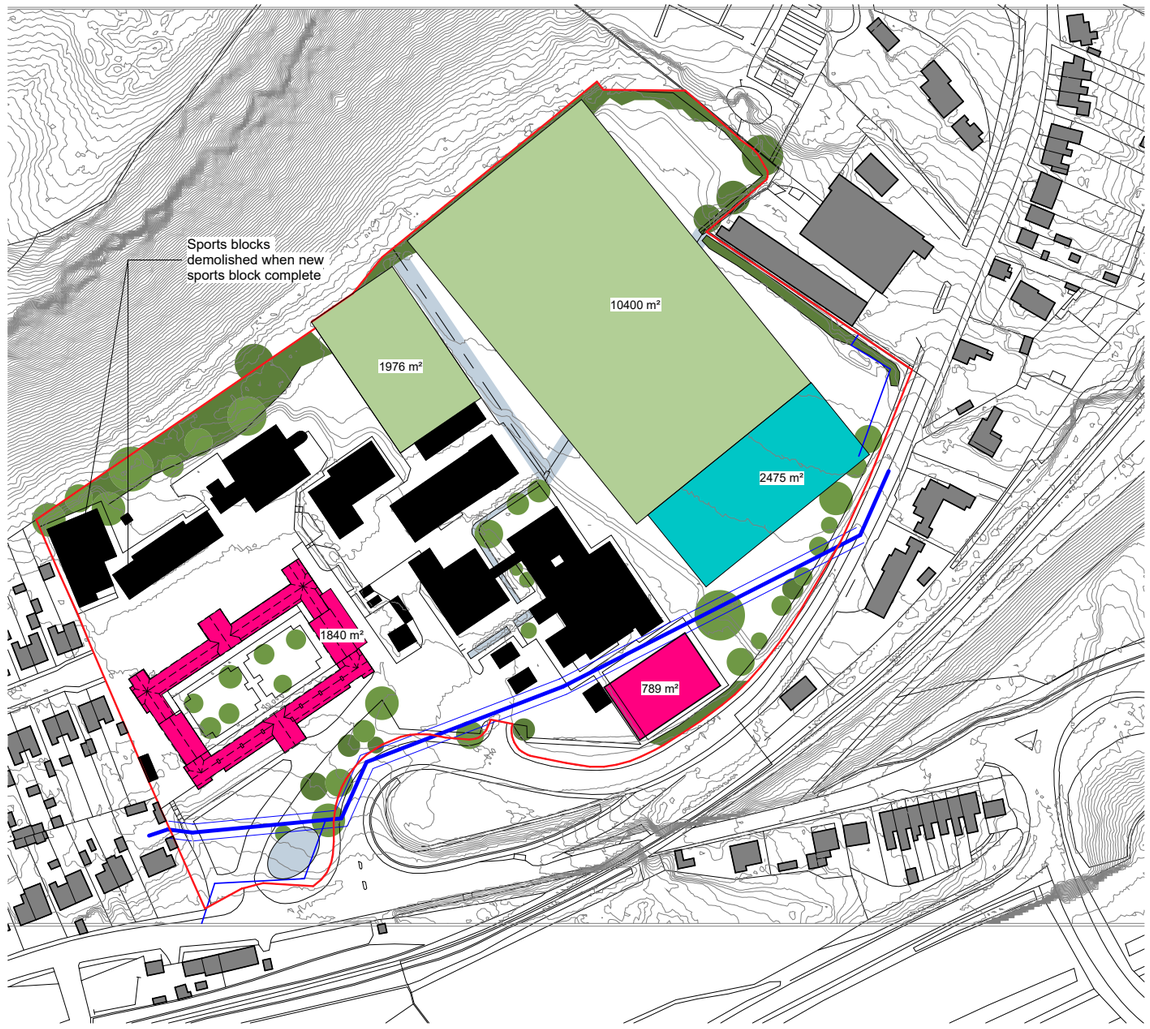
Approximate form factor:

GIFA = 7550m²
Area of envelope = 4769+4769+ 4384 = 13,922 m²
Form factor: 2

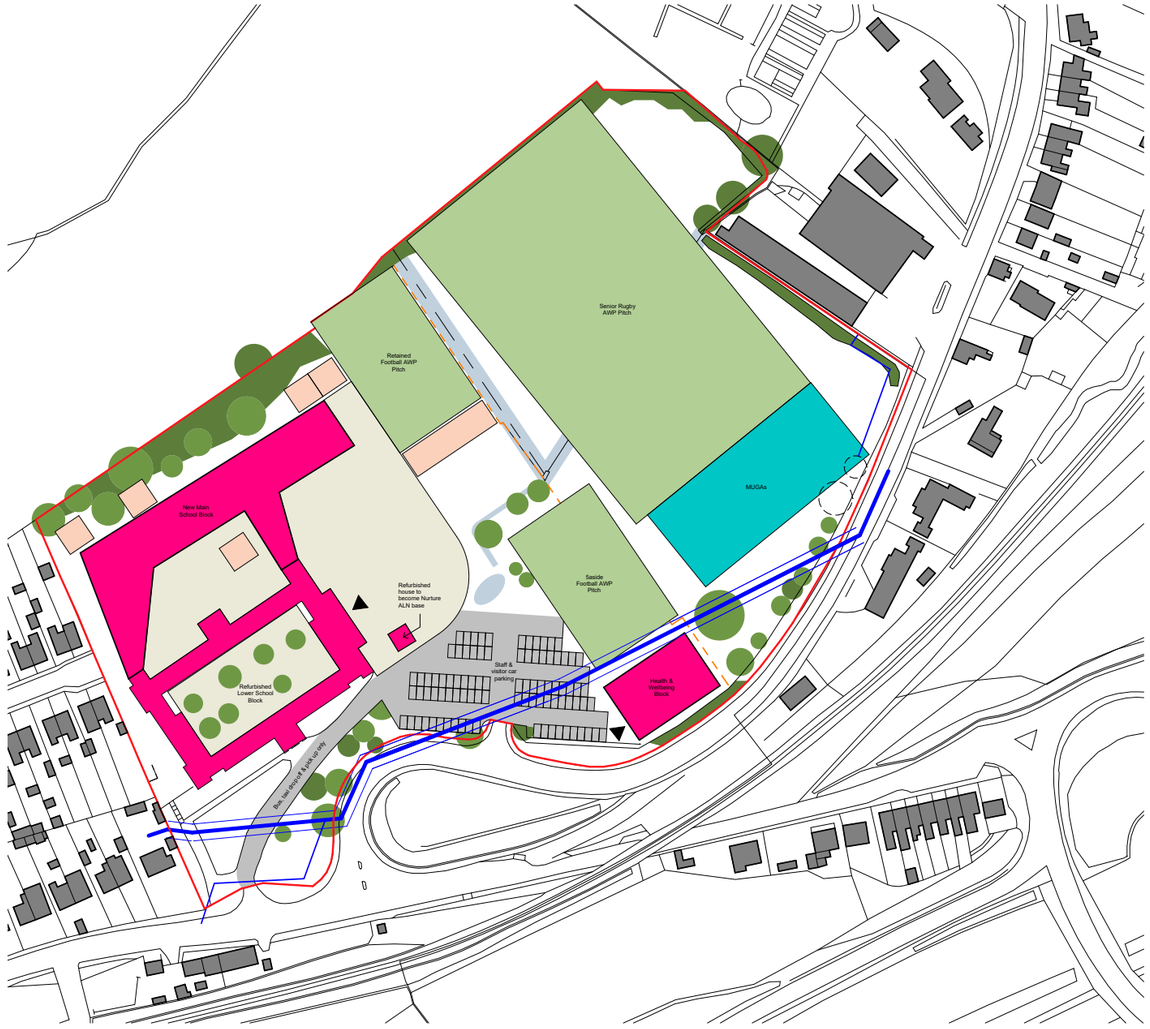
Target total GIFA = 7550m²
2 storey building not accounting for roof pitches

Advantages:
- Finger and courtyard typology is still efficent in terms of delivering services in one building - can also deliver inspiring internal wings of building to form year group hubs, to break the school down to pupils and provide smaller groups
- Internal courtyard delivers more direct access to light, air and views to more classrooms
- Phasing would allow current school buildings to be kept in use during build to reduce cost and tranisition disruption
- Potential to deliver MUGAs earlier to maintain school and community sport provision during phasing
- Pedestrian safe conflict free bus drop-off/pick-up design retains existing highways access

Disadvantages:
- Large amount of elevation area will be an increase in costs and less efficent form factor
- Carparking and bus drop off will need multiple phases to be delivered
- Culverts and streams built over
- A large number of trees would be lost
- Topography will be challenging to deliver pitches in this arrangement
- Pitch configuration under area from BB98 SoA
- Not optimal orientation for exploiting sun path for lighting and heating demands
- MUGAs may encroach on distance required from residential properties to limit noise and light pollution and reduce operating hours



2 1 : 1000 - Site Option E



1 1 : 1000 - Site Option E Second Phase

Key

- Site Boundary. Area approx: 49718m²
- Approximate Culvert location with 3m easement
- Approximate sewer location with 3m easement
- Open stream/SUDs areas
- Existing School Buildings
- Proposed School Buildings
- Social External Space - mix of hard and soft
- Outdoor Classroom and Hard Social External Space
- Soft Pitches
- Hard Court MUGAs
- Parking / Servicing Access areas
- Trees / Dense Vegetation
- Removed trees / stream
- Phasing line for main construction phase

Pitches:
Rugby pitch 3G - 10400m² x 2 = 20800m²
Football pitch 3G 1976m² x 2 = 3952m²
Total = 24,752m²

Shortfall - 42,000-39,455 = **17,248m²**

Approximate form factor:

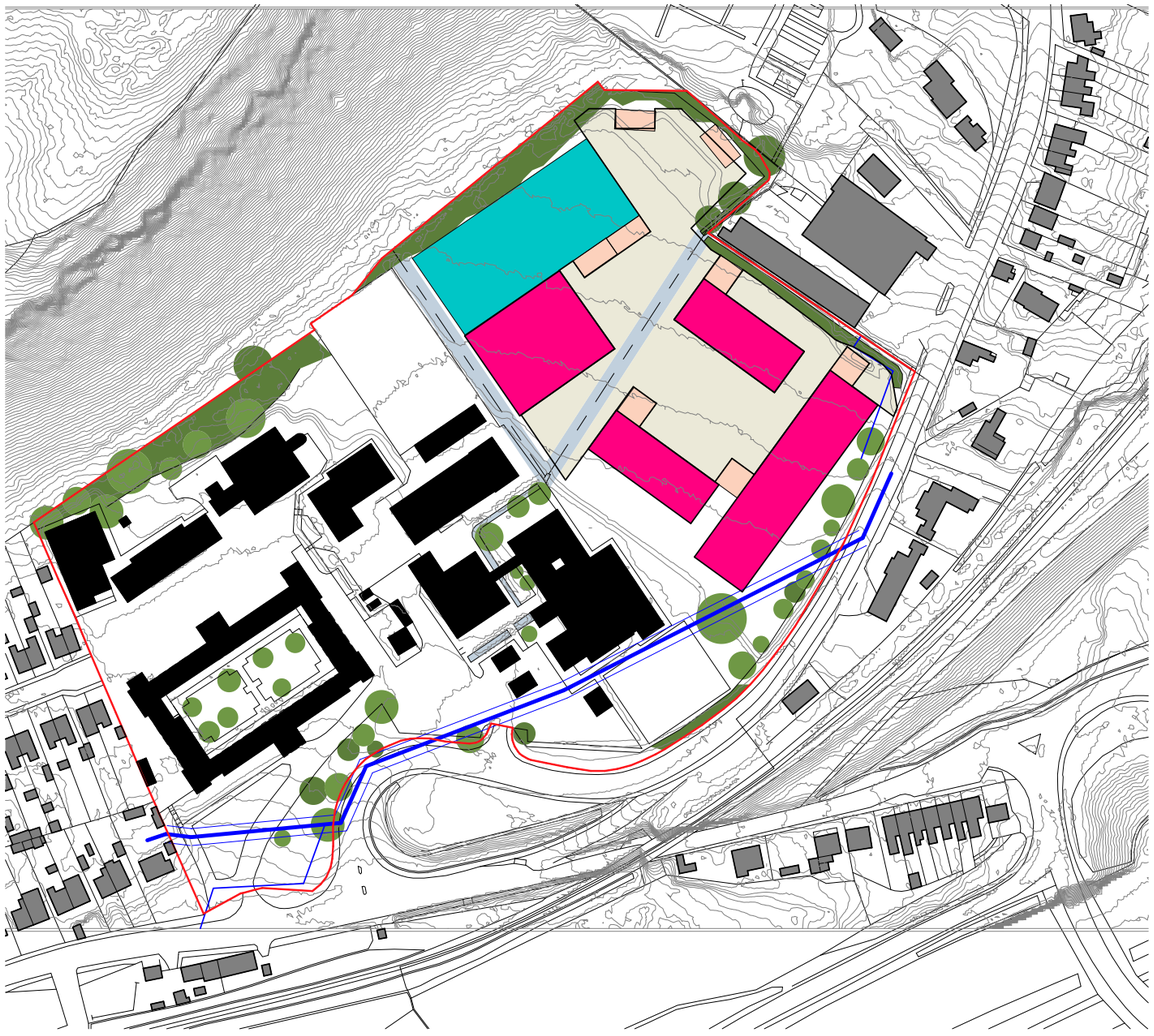
Main Block;
GIFA = 4,485m²
Area of envelope = 2635+2635+2650 = 7,920m²
Form factor: 1.8

Health & Wellbeing Block;
GIFA = 893m²
Area of envelope = 2,429.5m²
Form factor: 2.72

Target total GIFA = 7550m² new build
2 storey building not accounting for roof pitches
Form Factor of refurbished buildings not included GIFA 2172m²

Advantages:
- Retains the main school Victorian building, keeping the identity and sense of place for the community
- Reduces embodied carbon by reusing existing buildings
- Internal courtyards deliver direct access to light, air and views to more classrooms
- Year groups can be easily clustered in wings and have seperate external spaces to ease transition for pupils from primary school or those with ALN who struggle with large groups of people
- Health and Wellbeing Block delivers community faciities in an easy to manage seperate block with eas of access to sports facilities
- Retains mature trees and open stream on the site
- Least impact on topography of the site and reduced cost and carbon on altering levels to create new pitches - retain existing Astroturf pitch through out to reduce cost and keep facility open

Disadvantages:
-
- Will require temporary school accomodation to be delivered - cost and time impact
- Large amount of elevation area will be an increase in costs and less efficent form factor
- Carparking and bus drop off development of exisiting solutio, long way for pupils to walk to buses and may have conflict with cars
- Pitch configuration achieveable is very under area from BB98 SoA - less variety of sports can be played
- Refurbished building will have higher running costs and energy demands in-use compared to new build
- May have some compromised spaces from ideal SoA
- MUGAs may encroach on distance required from residential properties to limit noise and light pollution and reduce operating hours



2 1 : 1000 - Site Option F



1 1 : 1000 - Site Option F Second Phase

Key

- Site Boundary. Area approx: 49718m²
- Approximate Culvert location with 3m easement
- Approximate sewer location with 3m easement
- Open stream/SUDs areas
- Existing School Buildings
- Proposed School Buildings
- Social External Space - mix of hard and soft
- Outdoor Classroom and Hard Social External Space
- Soft Pitches
- Hard Court MUGAs
- Parking / Servicing Access areas
- Trees / Dense Vegetation
- Removed trees / stream
- Phasing line for main construction phase

Pitches:
Rugby pitch 3G - 10400m² x 2 = 20800m²
Football pitch 3G (reduced floodlighting?) 7420m² x 2 = 14840m²
Running track 100m 6 lane - grass or artifical? = 975m²
Total = 36,615m²

Shortfall - 42,000-36,615 = **5,385m²**

4no. seperate blocks;
GIFA = 7550m²
Area of envelope = 4677+4677+4825.6 = 14,179.6m²
Form factor: 1.9

2 storey building not accounting for roof pitches

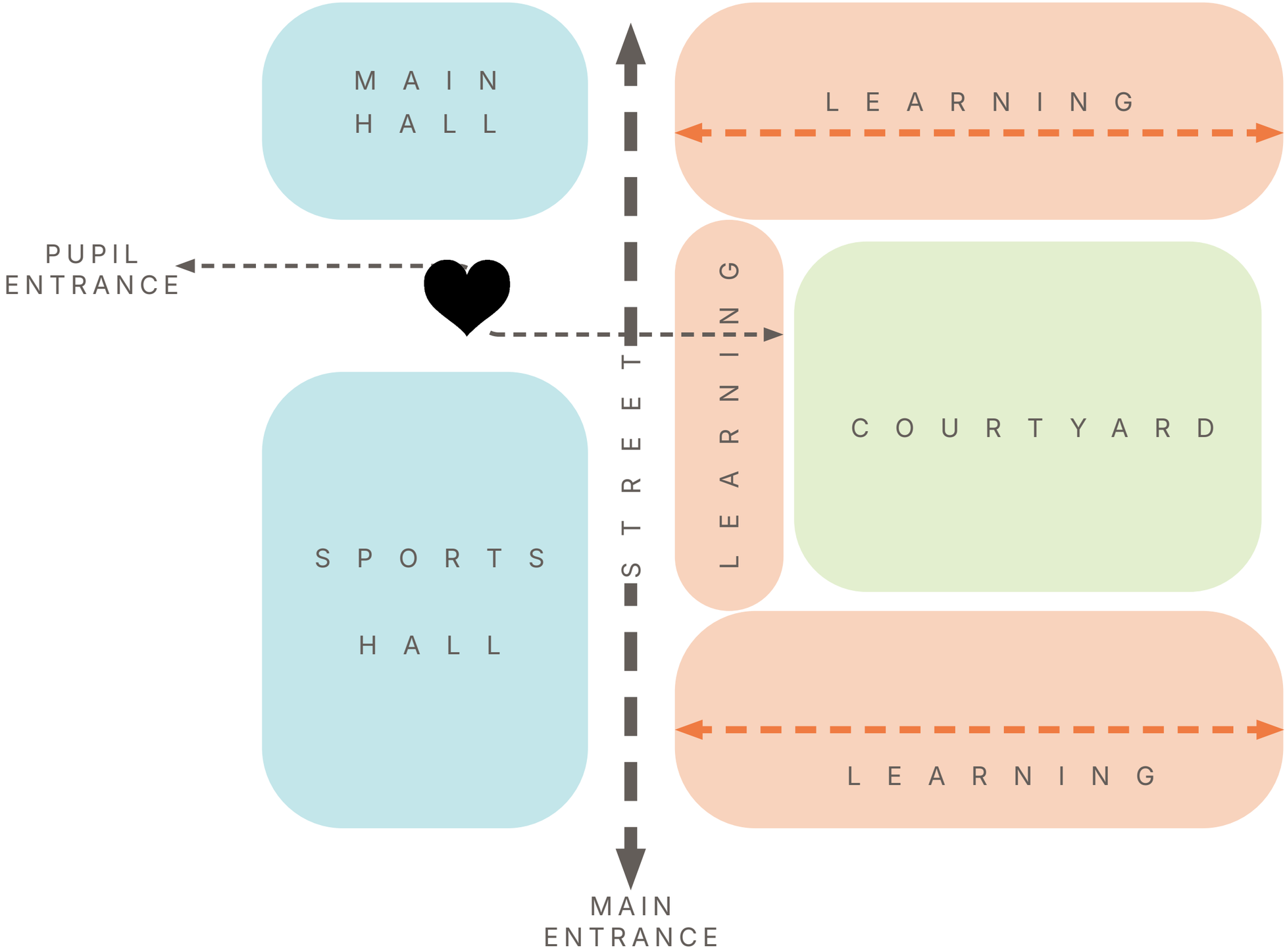
Advantages:
- Phasing would allow current school buildings to be kept in use during build to reduce cost and tranisition disruption
- Delivers new MUGAs early to maintain school and community sport provision during phasing
- Seperate Health & Wellbeing block provides safe and easy to manage access for community out of hours
- Pedestrian safe conflict free bus drop-off/pick-up design
- Potential to open up culverts for ecological and biophillic benefits and as a learning habitiat
- No conflict with known easements
- Courtyard typology breaks the school down to smaller buildings for pupils and provide smaller group hubs in each for those who struggle with transition to secondary school or with ALN
- Delivers more direct access to light, air and views to more classrooms as split into smaller blocks with more external facade - central courtyard space good for management of pupils at break times

Disadvantages:
- Seperate buildings creates a less efficent form interms of energy, cost and management of pupil movements - can affect pupil truancy
- Carparking and bus drop off will need multiple phases to be delivered
- Topography will be challenging to deliver pitches in this arrangement
- Pitch configuration under area from BB98 SoA
- Lose current open stream portion from culverts
- Not optimal orientation and forms for connecting to the landscape and exploiting sun path for lighting and heating demands
- New building not very prominently positioned as a marker of investment in the school and wider community to improve aspirations and inspire the school cohort to success
- MUGAs may encroach on distance required from residential properties to limit noise and light pollution and reduce operating hours

5.0

The Proposal

5.1 Design Concept



5.1 Developed Design - Plan Diagrams

The developed design settled on the C shape plan form with stepped massing as it was felt that this managed to address the site constraints best and achieve the preferred access points for pupils, community and visitors whilst also providing a discrete entrance for the LSC, secure delivery and servicing access and a better balance of external spaces.

The plan developed through further workshops to a refined concept that focused on enhancing the main and pupil entrances. The main entrance has an impressive arrival space with a triple height void which leads you into the “street” a clear circulation route drawing visitors into the heart of the school.

The pupil entrance collects pupils from the courtyard or bus/ car park entrances and funnels them into tthe heart of the school - the dining space, which can open up into the main hall and is at the end of the street.

The halls and sport facilities sit in a clear wing to the north of the street with the two wings of the building providing general teaching accommodation whilst looking into the south facing courtyard.

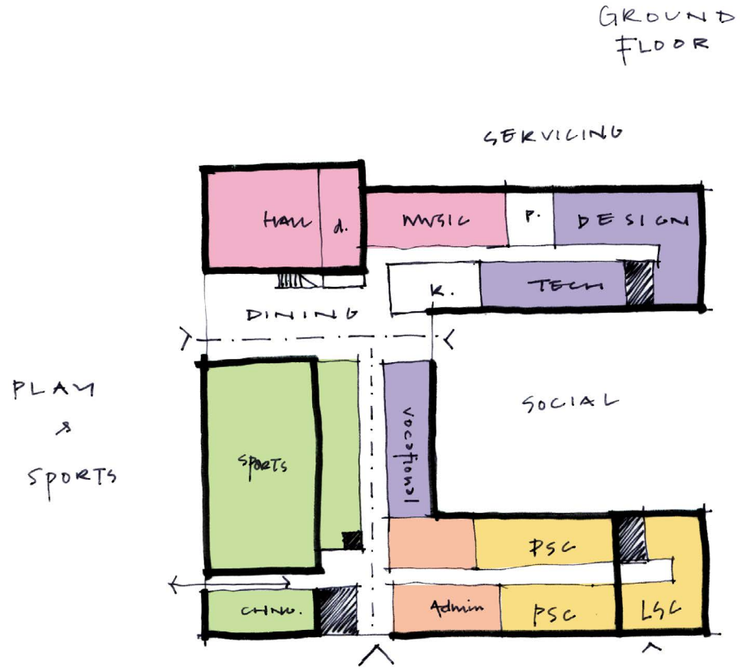
The LSC is located on the end of the front wing, providing separate safe, convenient access to the unit for taxi drop offs and also creates a clear external play space for the classrooms, sheltered away from the courtyard and to be screened fro the car park and the main road. Pupils will arrive and depart at different times of the day to the main cohort to reduce their exposure to too many vehicles and people.

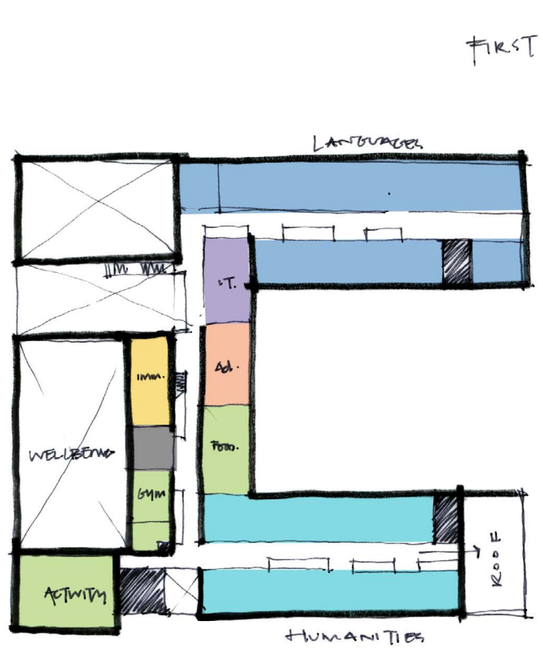
The PSC spaces are then located in from the LSC to enable sharing of resources whilst still having separation. The admin block then acts as a buffer between these areas and the rest of the main school, supporting those in most need.

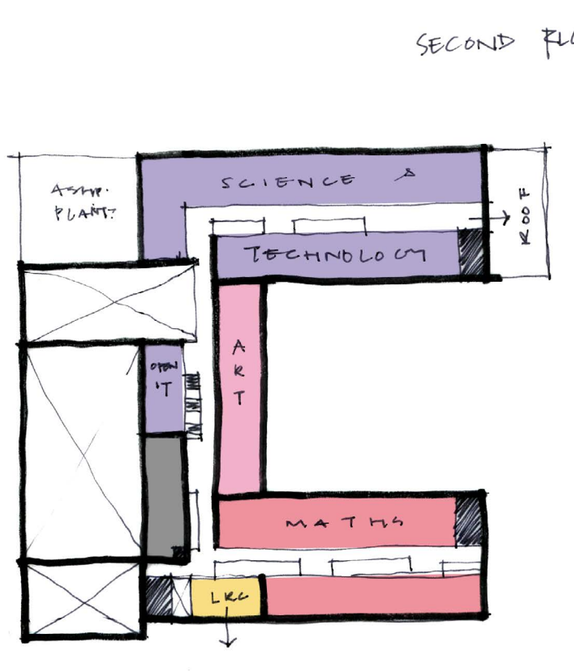
The vocational spaces line the street sharing glimpses into the courtyard and showing off their unique project work to visitors. The main hall has drama studio forming the stage space with music and practice rooms near by to act as green rooms. The Design technology areas finish the wing facing the Eastern service yard - with access to a construction yard for bricklaying.

The upper floors are very simple, to aid wayfinding, with health and wellbeing wrapping around the sports hall, Supporting IT and LRC spaces line the street and an area of learning fills each wing on the upper floors in a cluster with access to a roof terrace facing south in most cases.

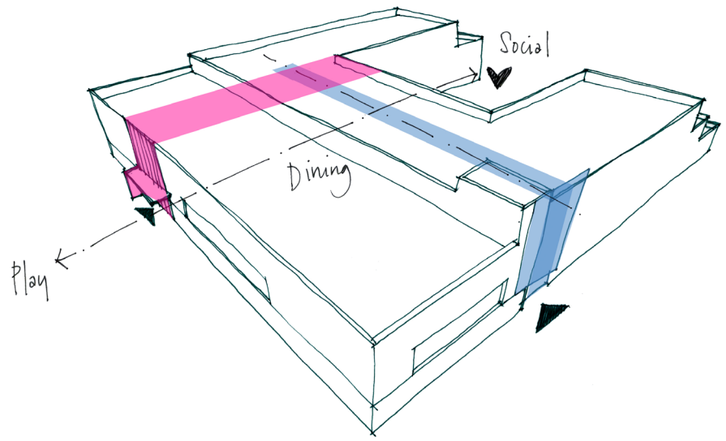
This stepped form has also been produced to reduce the massing of the new building away from Penscynor Road, respecting the neighbouring homes.

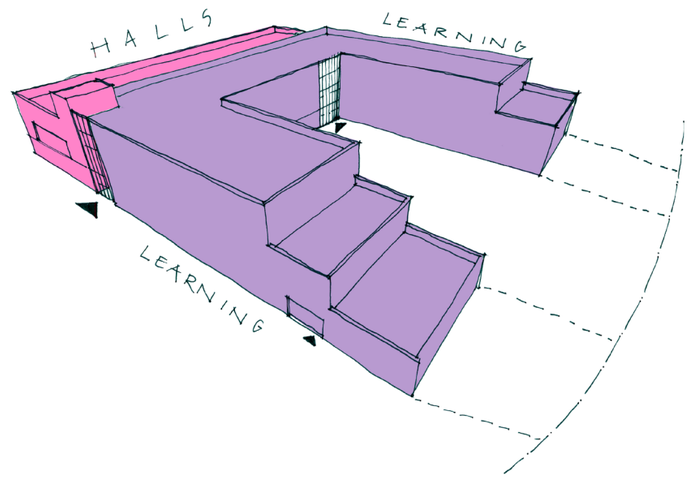


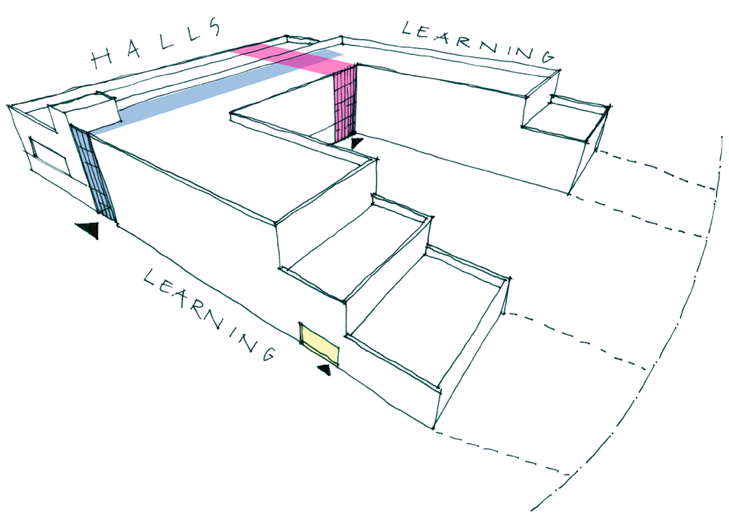


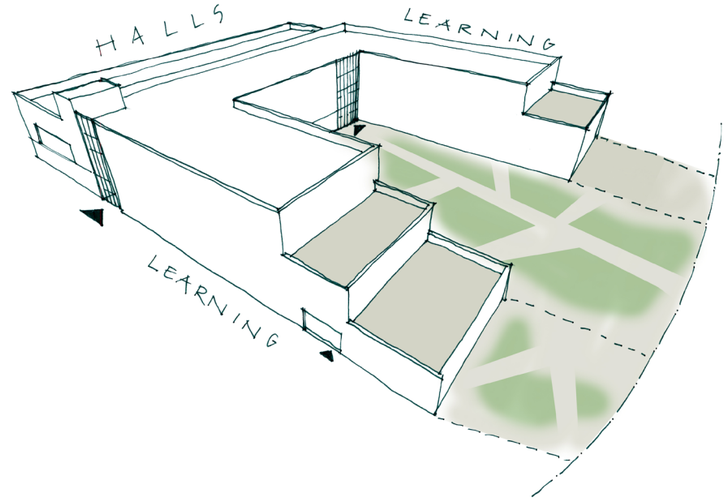


5.2 Scale & Massing

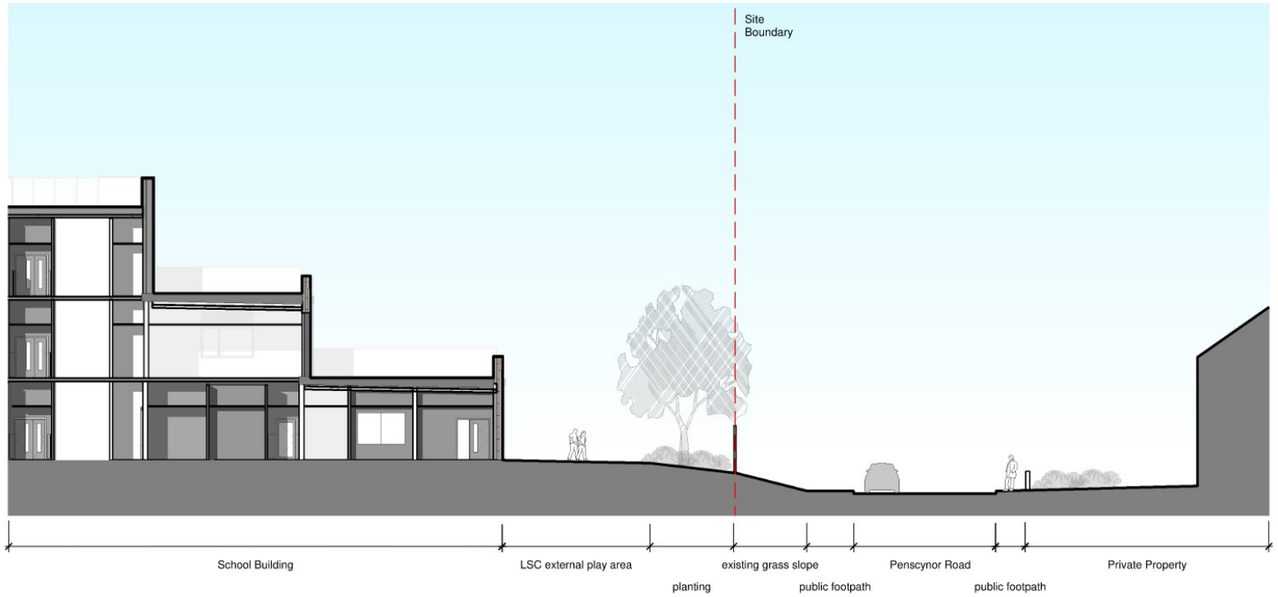






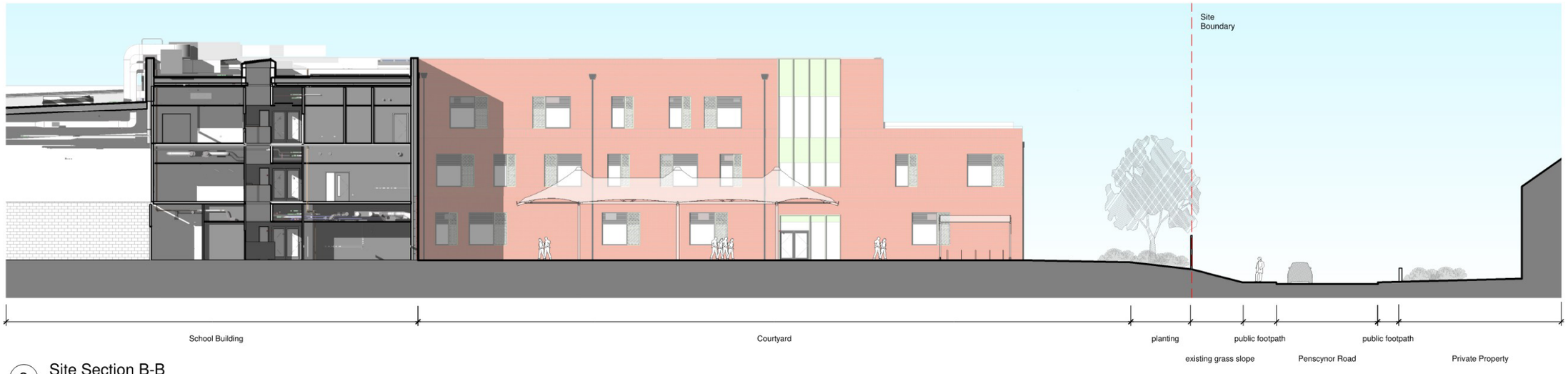


5.3 Site Sections



1 Site Section A-A
1 : 200





2 Site Section B-B
1 : 200

5.4 Proposed Building Plans
Level 00

- Admin
- Changing
- Circulation
- Creative Arts
- Dining
- Health and Wellbeing
- Kitchen
- LSC
- Main Hall
- Plant
- PSC
- Storage non teaching
- Store
- Technology
- WC's



5.4 Proposed Building Plans
Level 01

- Admin
- Central Areas and Support
- Circulation
- Health and Wellbeing
- Humanities
- Languages + Literacy
- Lift
- Plant
- Storage non teaching
- Store
- WC's



5.4 Proposed Building Plans
Level 02

- Admin
- Central Areas and Support
- Circulation
- Creative Arts
- Lift
- Numeracy
- Plant
- Science
- Storage non teaching
- Store
- WC's



5.4 Proposed Building Plans
Roof

Roof Types

Flat Roof System - Inverted Roof on composite decking - refer to landscape drawings for design intenet for roof terrace finishes.
Inverted Roof to Achieve U - Value of 0.1
50mm Precast Concrete Paving Slabs on Pedestal Pro Paving Supports. 300mm XPS insulation (160mm + 140mm)
Alumasc Hydrotech Hot Melt Membrane.

Pitched Standing Seam - Standing Seam Roof to Achieve U - Value of 0.1. Euroclad Elite 5 with perforated metal deck over large span sports hall and activity studio to assist with acoustics

Roof Access

Staircase up to main roof level for maintenance access refer to drawing 3510

Roof Access hatch with fixed ladder for escape only - Bilco E-50TB 915x915mm or similar

Fixed ladder for escape only from lower roof to upper roof

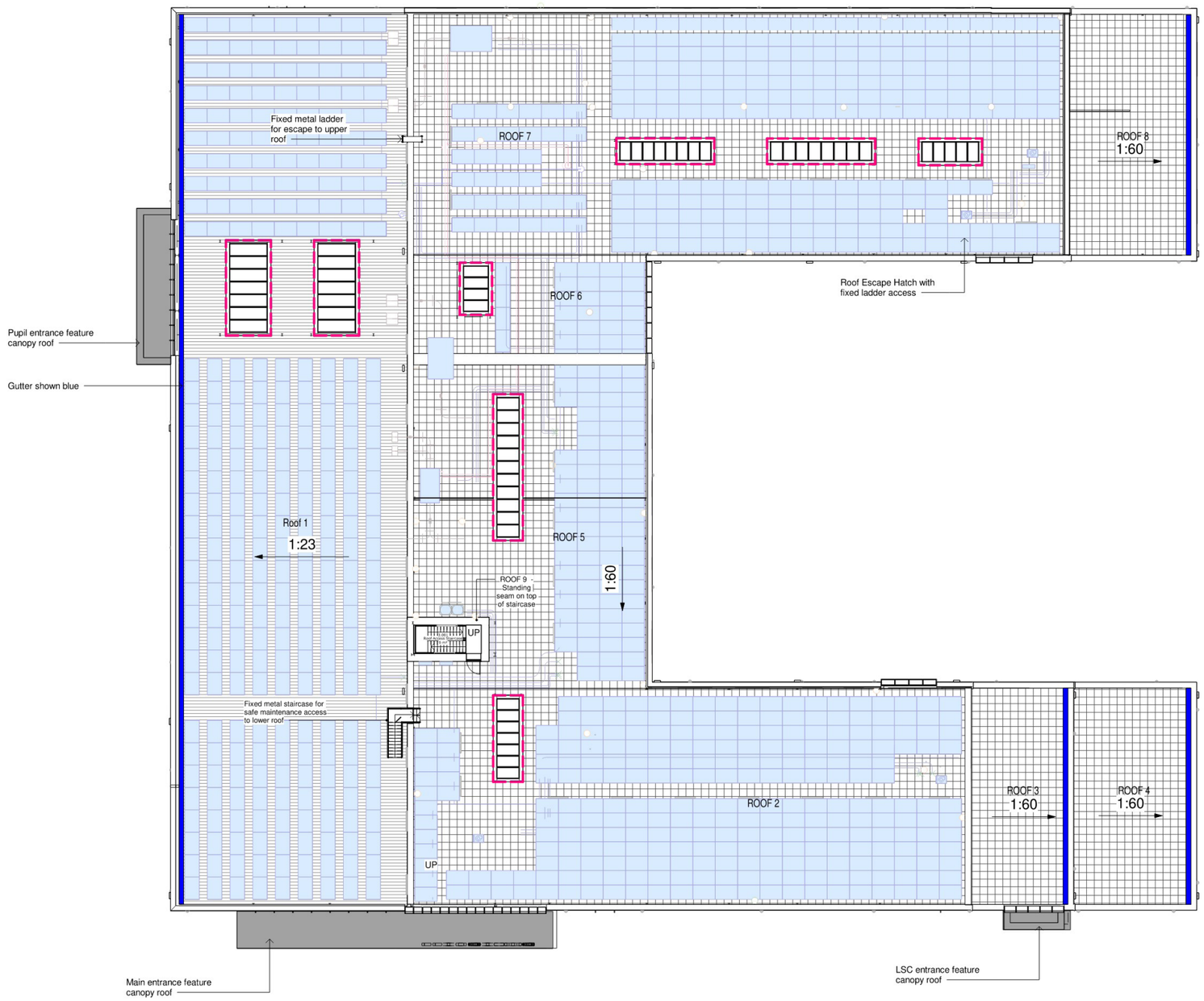
Allow for clip on fixed walkways to maintain PV panels - layout to be developed with MEP Engineers PV and roof plant layout

Rooflights
Refer to drawing ending in 3030 for details
Allow for a modular Velux Longlight system or similar with low monopitch.

Indicative line of safety guardrail to rooflights, freestanding or clipped to seams of roof as appropriate

All Metal Work finishes exposed on the roof are to achieve Marine Grade level suitable to the location's environment

MEP Plant



5.5 Internal Access Strategies

Access + Circulation

A clear and legible circulation strategy is adopted for the design inherent in the simple C shape form, aiding the flow of pupils and providing clear wayfinding for all. Corridors are minimised, with circulation organised around the open spine ”street” route and central to each wing and adjacent larger full height spaces, with daylight and visual connections throughout the building promoting passive supervision from staff workrooms. Wayfinding will further be aided by the use of bold graphics and finishes/colours to identify key spaces and the Areas of Learning in a clear approach.

Separate entrances are provided for LSC pupils, a main pupil entrance and a main entrance to the school for staff and visitors. Access control will be required for the LSC and PSC as well as the ability to restrict access between the school and the sports facilities for out hours use by the community.

The primary vertical circulation is achieved through an accommodation stair located within the main social areas of the building; the dining area and ground floor and the main street from 1st to 2nd floor. The lift is situated towards the main entrance to assist those less able or when carrying items through the school and is well sited for access to the main community use areas such as the activity studio and fitness room. Further to this are 3no. fire escape stairs are provided in each corner of the building, these can be used as vertical circulation routes to reduce demand on the corridors for those travelling vertically through the school.

Toilets

The following table shows how toilet provision has been calculated according to Sanitary Provision guidelines in BS6465-1-2006 A 2009.

Toilets are strategically located off the circulation street, open to the route to reduce bullying opportunities as requested by the school.The cubicles are full height to ensure privacy and plenty of unisex WCs are also located across the buildings to ensure private space for those who need it.

The general strategy is to provide 3 main unisex WC blocks with additional Staff and Accessible WCs dispersed around the building to ensure that the maximum distance to an Accessible WC is no more than 40m as per the Approved Document M - Section
5.10). Where possible the layout has been designed so that the sanitary provision can be vertically stacked.

Accessible WCs have been included the Pupil WC count and are to be used by both students and members of staff. Currently the layouts are showing 3 additional Staff WCs and 3 Additional Pupil WCs. Changing Room WC and shower provision to Sports England guidance are not included in the overall WC calculation.

A Hygiene Room is provided next to the sports hall at ground floor and another is located by the activity studio at first floor.

Location	Accessible WCs	Staff WCs	Pupil WCs
GF	4	2	10
GF LSC		1	2
L01	5	2	9
L02	3	2	8
Total	**12**	**7**	**29**

Catering + Dining Areas

The main dining space is positioned at the heart of the school, into which the pupils will enter but away from front-of-house spaces and teaching to avoid disruption, this opens out onto an external covered area with seating to the north and sheltered courtyard to the south. Daylight will flood into this full height space, with the main hall having the ability to open up when not in use to allow for an increased seating area.

The main kitchen is located on the east façade, with direct access out to the service yard for deliveries and waste disposal. A grab & go area is proposed to be provided via moveable catering equipment overlooking the central dining area. This is adjacent to the pupil entrance points allowing quick egress to the external dining and play areas.

Servicing

A secure and discreet servicing area has been proposed to access the key areas requiring it most.

The kitchen, resistant materials prep room, main plant room, switchroom and bin stores are accessed through from a service road running adjacent to Leckwith Road to the east of the building. Turning circles are included in each service area. This area will be secure and not accessible to pupils or the public. The ASHPs, sprinkler and hydrant tank are all proposed to sit within this area to keep the main school external areas open and safe.

No. of floors 3

Relevant Section BS 6465-1-2006 A2009 - 6.7 - Schools - Table 6 & BB98

		Occupants	WCs	Wash hand basins	Showers	Notes	Stage 2
Total Number of pupils		**850**					
Requirement of 1 per 20 pupils			43	28		If whole pupil cohort measured with this ratio	
LSC Unit		16	2	1		ratio increase to 1 per 10 pupils	14
	TOTAL	**866**	**44**	**29**			**14**
Sports facilities		150			15	10FE - male & female 75 person capacity changing rooms	
1 per 10 BS6465 Table 12 - half a year group		43			4	6th form - male + female 22 person capacity changing rooms	
	TOTAL				**19**		
Total Number of staff (FTE)		**90**					
Requirement of 1 per every 10 FTE staff member			**9**	**9**		using BB98 guidelines - Unisex WCs to be provided	
OR							
Requirement of 8 for first 100 staff then 1 per 25			8	8		using BS 6465-1 6.4 and Table 3	
Catering staff accounted for seperately			1	1		catering subconsultant to ensure staff WCs provided in kitchen areas	
Shower facilities for cyclists; one shower per 100 staff					2	2no. Unisex showers to be utilised as part of officals/staff change in	

Relevant Section Approved Document M - Section 5.10 (Accessible WCs within travel distance of 40m)
BS 6465-1-2006 A2009 - 7.2 - Toilets for disabled people - Provision of an accessible toilet can count towards the total WC provision

Unisex Accessible WC	9	9	2	Requirement of 3 per floor - Counts towards staff or pupil totals

TOTAL NO. OF SANITRAY ITEMS:

53	**38**	**21**
WCs	**Wash hand basins**	**Showers**

5.5 Access + Circulation

School Main Entrance

School Pupil Entrance

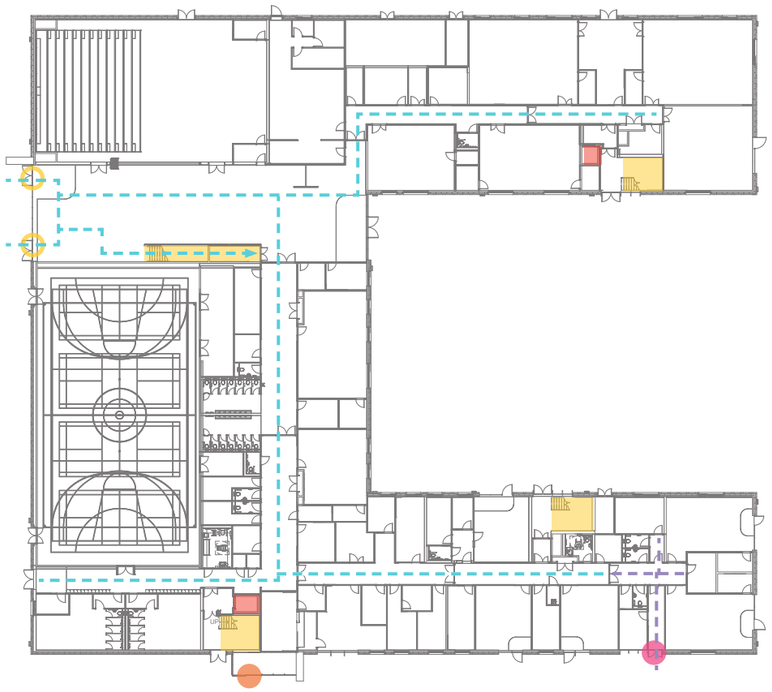
School Circulation

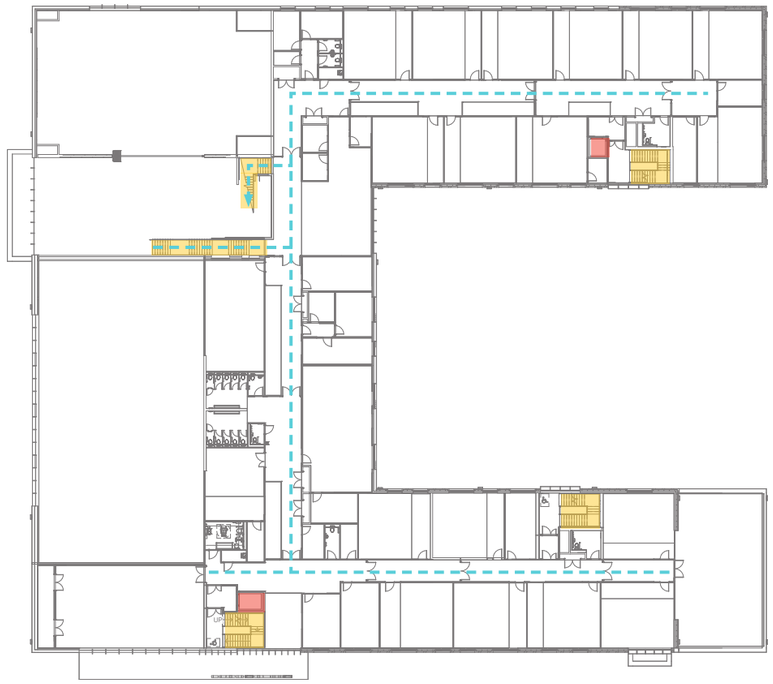
LSC Entrance

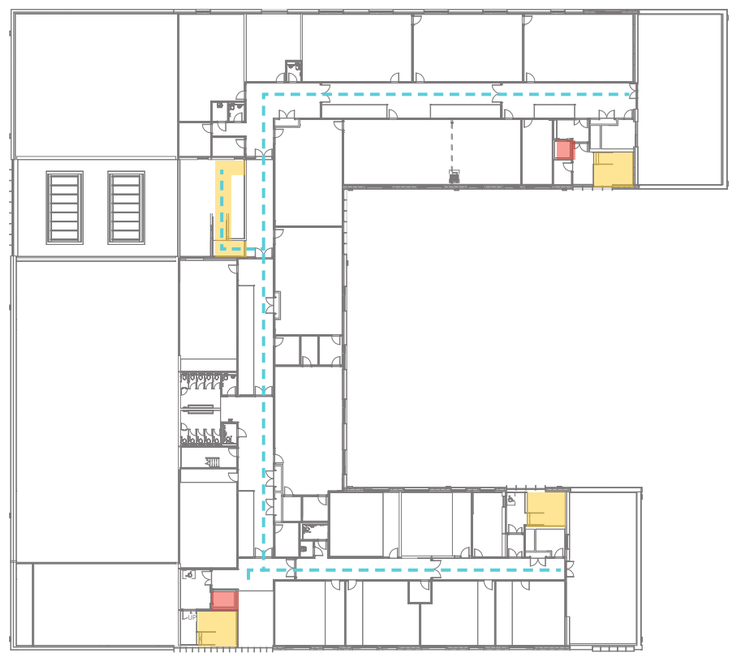
LSC Circulation

Stair

Lift

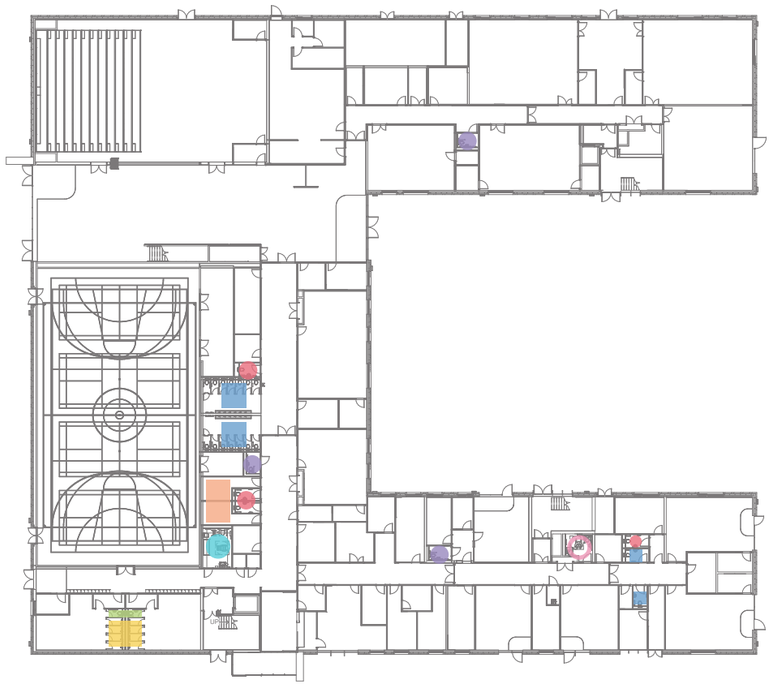






5.5 WC Strategy

- Pupil Toilets
- Accessible WC
- Staff WC
- Changing Places Facilities
- Accessible Shower + WC
- Staff Changing Rooms, WC + Shower
- Pupil Changing Room WCs
- Pupil Changing Room Showers







5.5 Zoning - Community Use

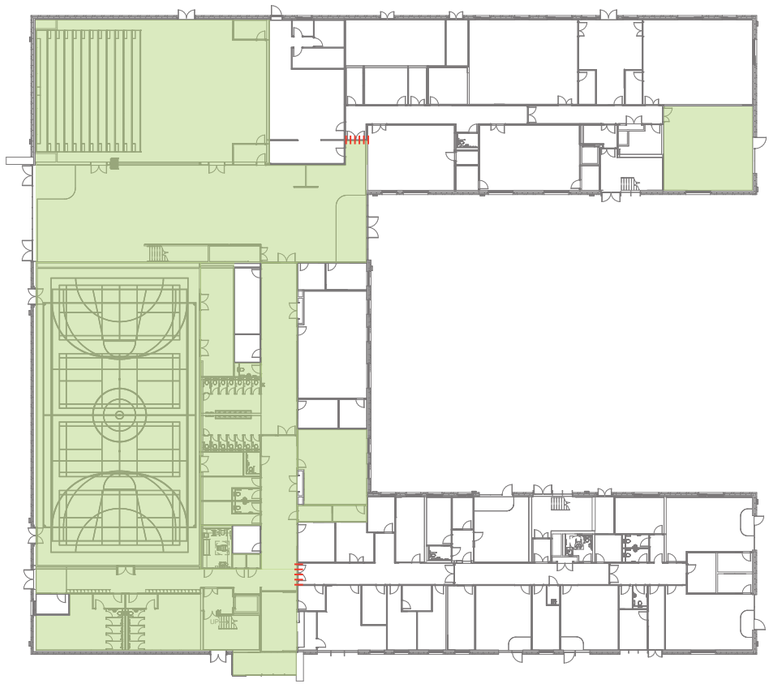
The developing thoughts of the school and NPTCBC on the use of the new school facilities are set out as follows;

Out of hour community use for the main hall once a month, vocational skills and hair until 9pm each night and the sports hall, activity and associated changing rooms until 10pm.

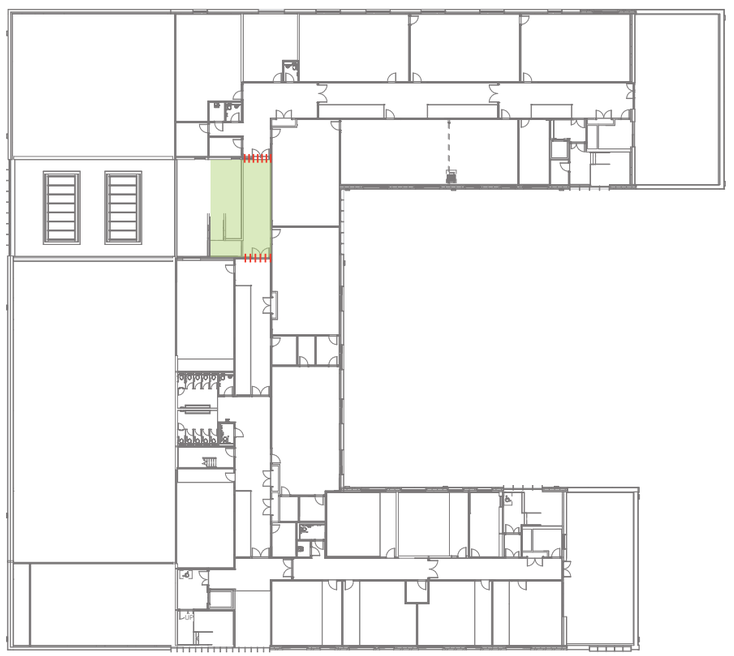
Externally, all of the pitches will be open for community use until 10pm each night.

Areas which require access control

Areas open to the community OOH

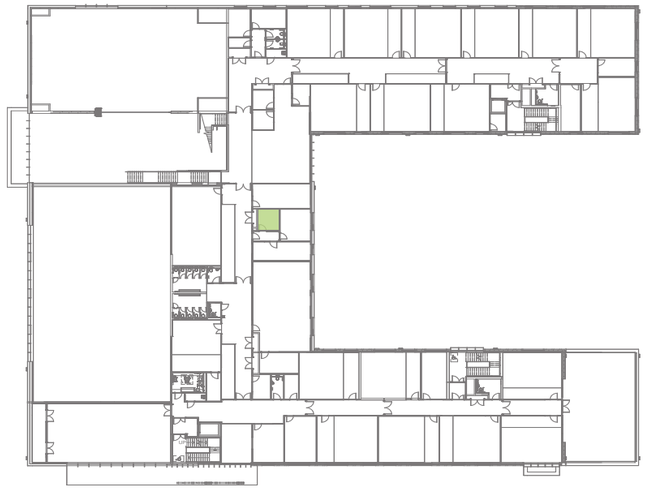


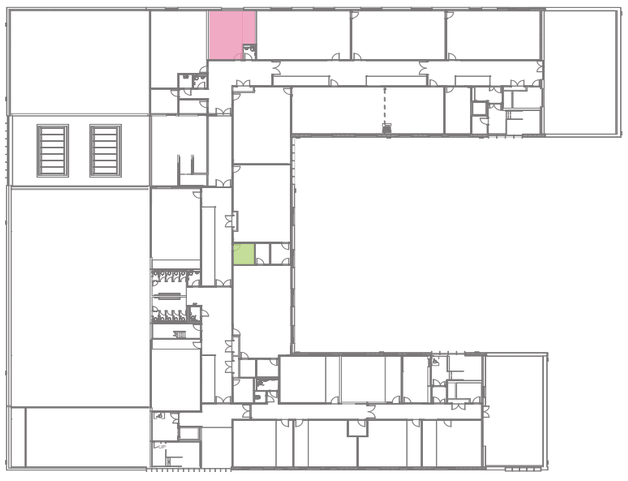


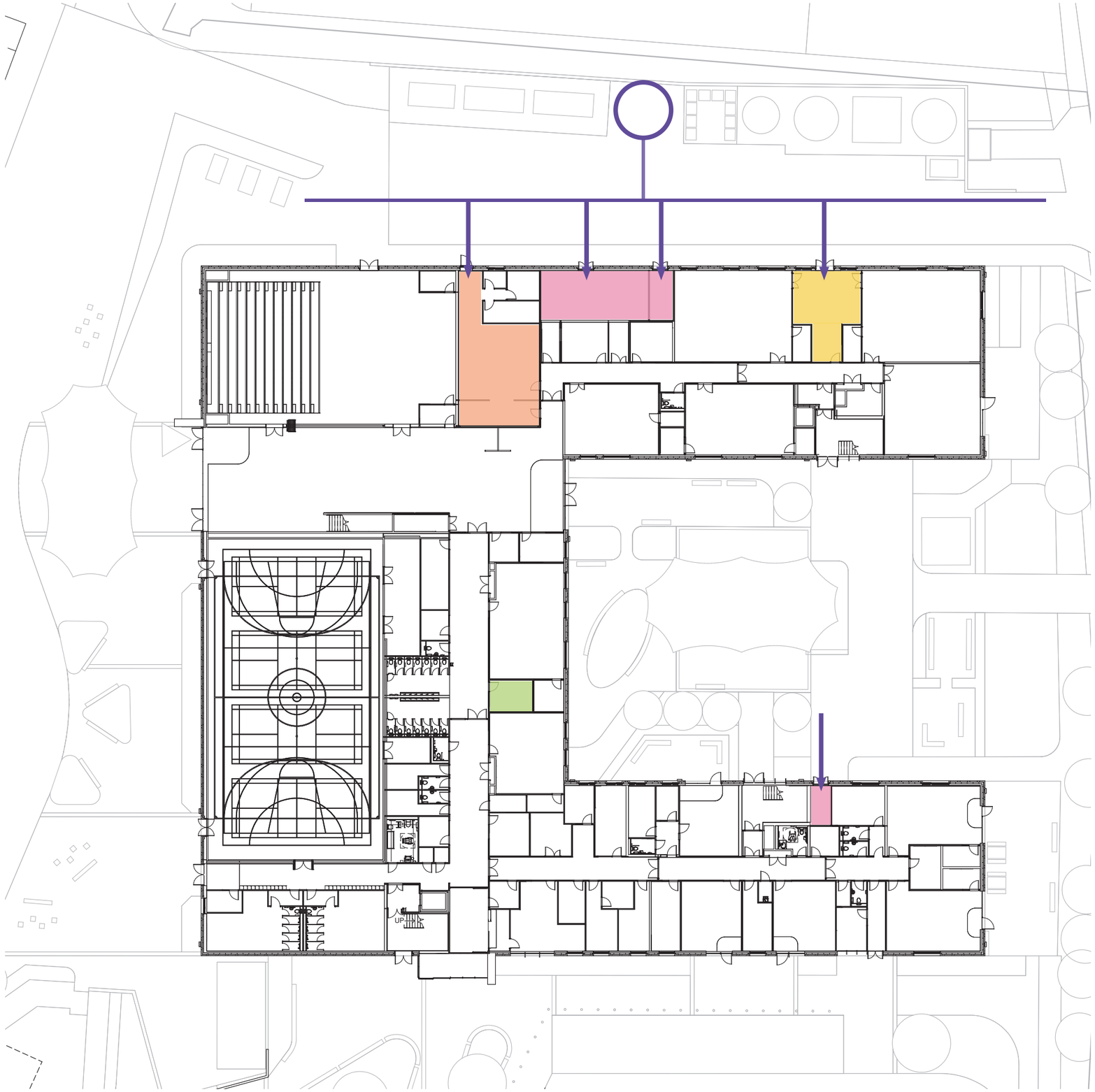


5.5 Servicing

- Internal Plant Room
- Kitchen
- Resistant Materials Store
- Server Room
- Servicing Route







5.5 Facade Development - Bay Studies

Developing a characterful and appealing facade for the new school development is critical to it's success in Place-making and creating a welcoming new learning environment that the school community can be proud of.

Developing an architectural style from the red brick buildings that are currently on the site seemed appropriate given the enduring appeal of them, their visual link to the past heritage of the site and the vernacular use of red brick in the local area's buildings.

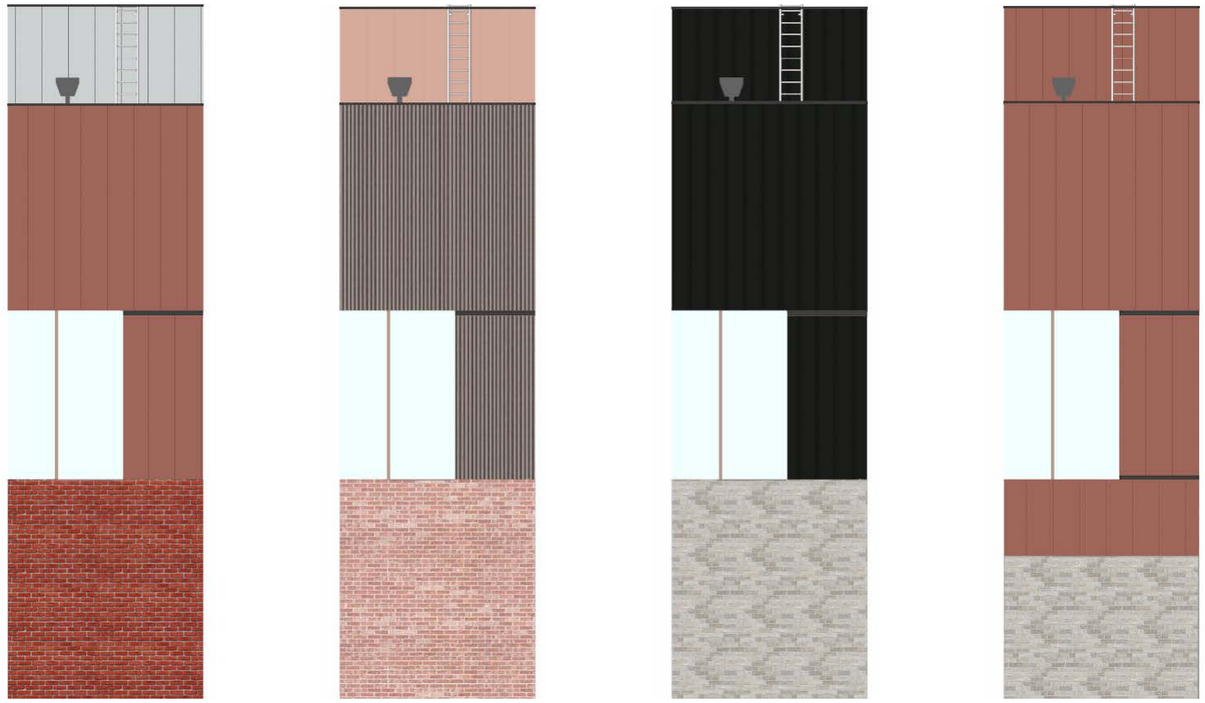
We have developed a whole of options looking at various colours of brick as the main material and how best to articulate this to break down the mass of the new building.

We chose to use a metal cladding for the larger hall spaces of the main wing to help it visually stand out from the main teaching wings in brick. We have reviewed multiple configurations and colours for these as you can see from some examples in this selection of images.

We also developed multiple options for the main entrance elevation especially - looking how best to form a striking and obviious entrance in the school for visitors and users.

The introduction of feature canopies with a feature colour that contrasts with the red brick has been our preferred approach. A sage gree colour currently shown is timeless and ties into thte greenery of the surrounding site and the school logo.






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5.6 Facade Development - Windows

1.
Maximizing the natural ventilation for the school design this required a number of horizontal breaks in the window module.

This option introduces a lot of framing, visual interruption of view and requirement for teleflex to be able to open the windows.

The louvre at the head of the window provides the normal MVHW into each room as required.

Overheating was occuring to some rooms due to so much glazing

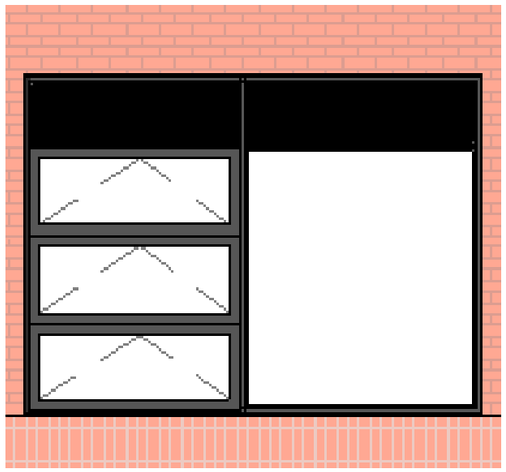
2.
This option also looked to maximize natural ventilation through the introduction of 4 opening lights.

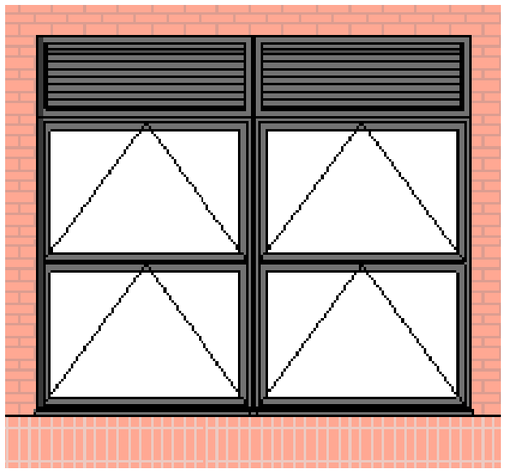
This added a lot of visual breaks to the windows, over complicating the overall elevations with so much framing and still required teleflex to open the higher windows. It also blocked eyelevel standing views for pupils and staff inside the building looking out.

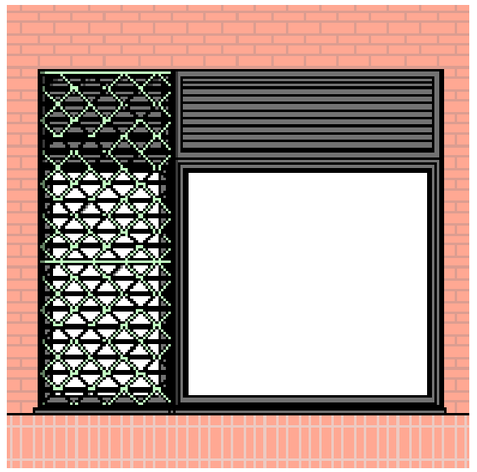
Overheating still occured.

3.
Our preferrred solution. This uses a mesh screen to provide protection for window panes behind to be opened into the room fully to both maximize ventilation and stop users falling out.

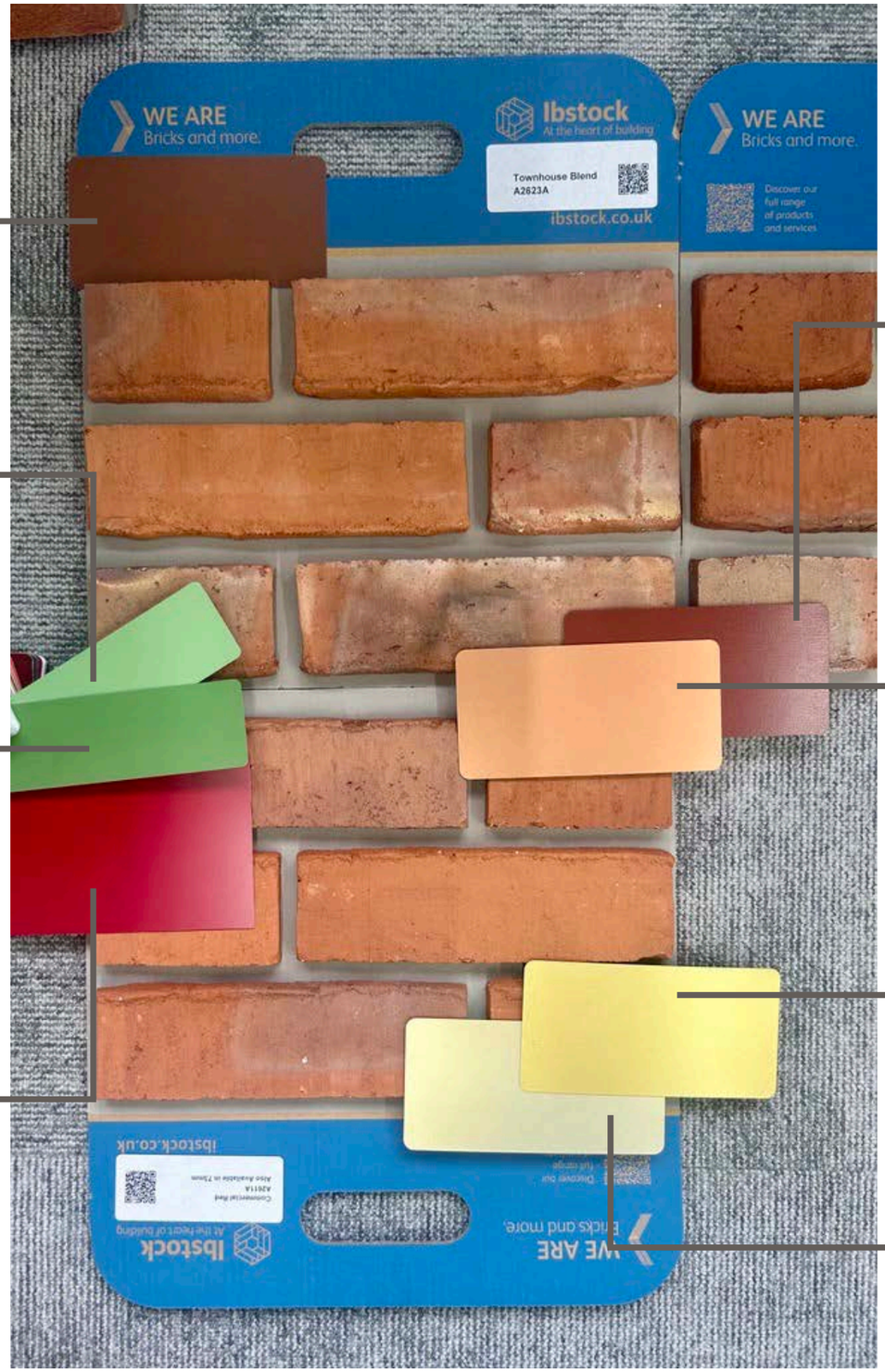
This side panel also provides shading to reduce overheating in the summer whilst also adding visual interest and reducing the requirement to add any further opening lights to the windows. It has simplified the overall appearance of the elevations and provides a pop of the accent colour in the mesh panel to enliven and add character to the facades.







5.7 External Materials Palette



Helios

RAL 130 60 30

RAL 130 50 30

Ruby Red

Oxide Red

Seren Copper

Seren Midas

Seren Gold

5.7 External Materials

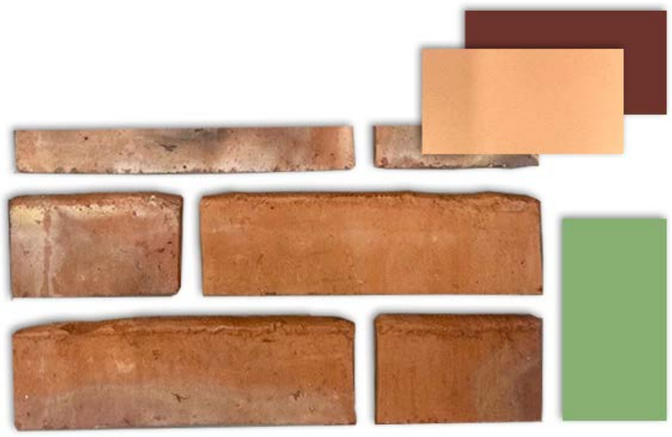
The idea is to keep a brick plinth at ground floor level around the entirety of the building and allow the sports block to have its own identity by cladding the upper storeys in a metal - standing seam (vieo) or planks (opus). The brick colour is yet to be determined.

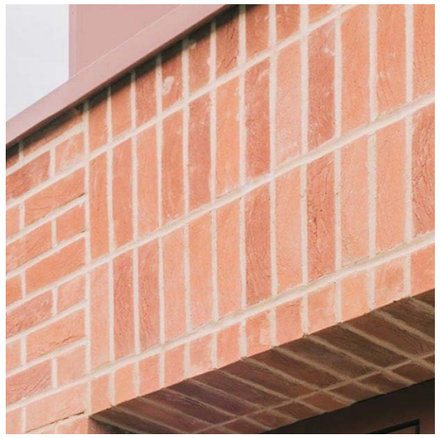
The brick plinth will be robust and weather well to high traffic conditions. The colour of the brick will have a large impact of the appearance and character of the school and requires further investigation in stage 3.

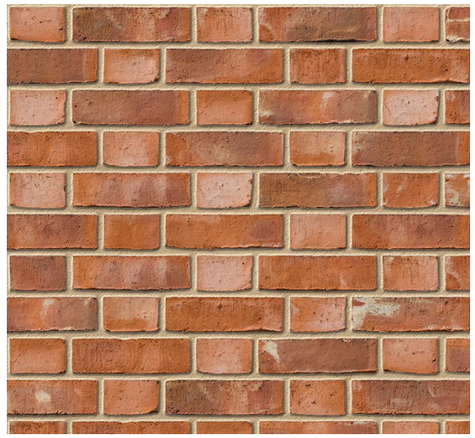
Following the colour palette below, there is proposed to be elements of a metallic copper colour highlighted throughout the project, potentially on shading fins, window surrounds and entrance canopies. This will unify the building and allow all of the elements to work together seamlessly. Such a natural metal colour will age better than a feature flat colour related to a school logo for example.

Large expanses of glazing are proposed to the main entrances to allow visibility through the building and act as markers for the key locations for people to enter and showcase the activities beyond to the community.

The general window module is to be developed to ensure ventilation and daylighting are balanced against overheating and visual appearance.



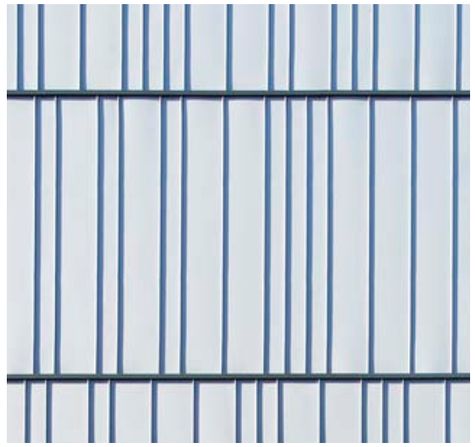




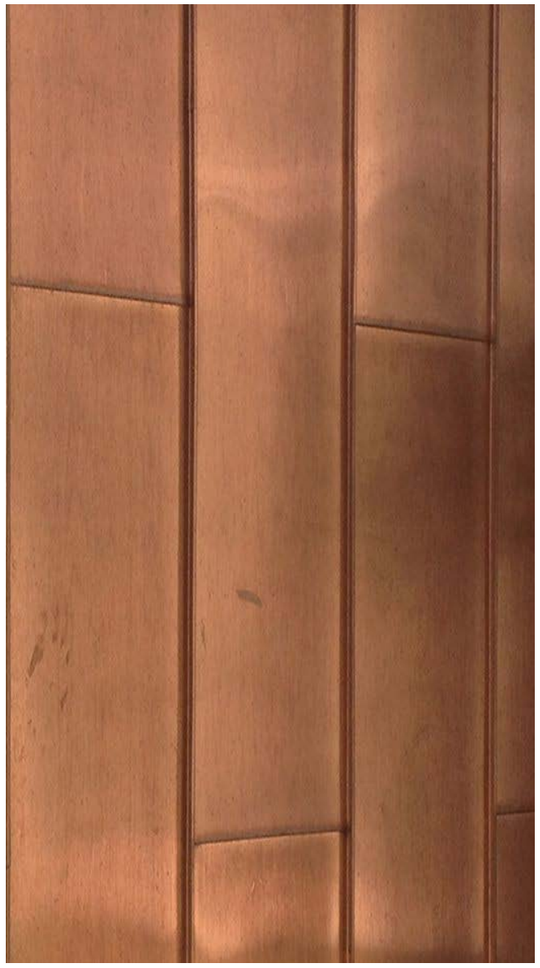
Red Brick



Metal Mesh to windows

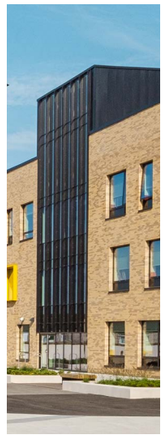


Standing Seam Cladding - Euroclad Vieo in Copper finish





Window Surrounds





Curtain Wall glazing with projecting fins



Canopy and Metalwork Features











Selection of Precedent project Imagery relevant to the scheme

5.7 Proposed Elevations - 01



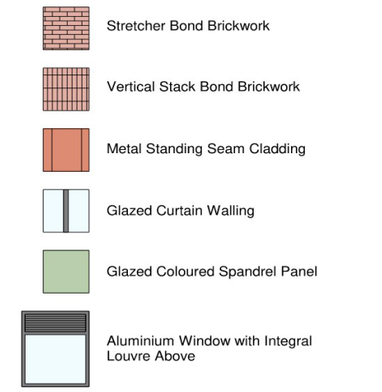
North Elevation

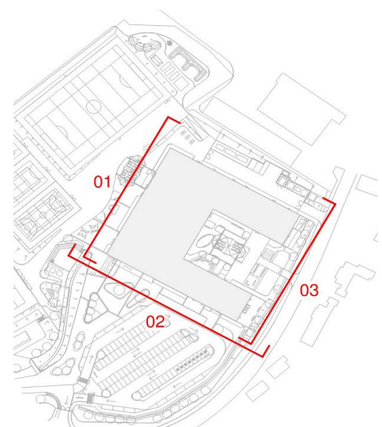


West Elevation



South Elevation





5.7 Proposed Elevations - 02



Western Courtyard Elevation



Eastern Courtyard Elevation



East Elevation

Metal Standing Seam Cladding

Glazed Curtain Walling

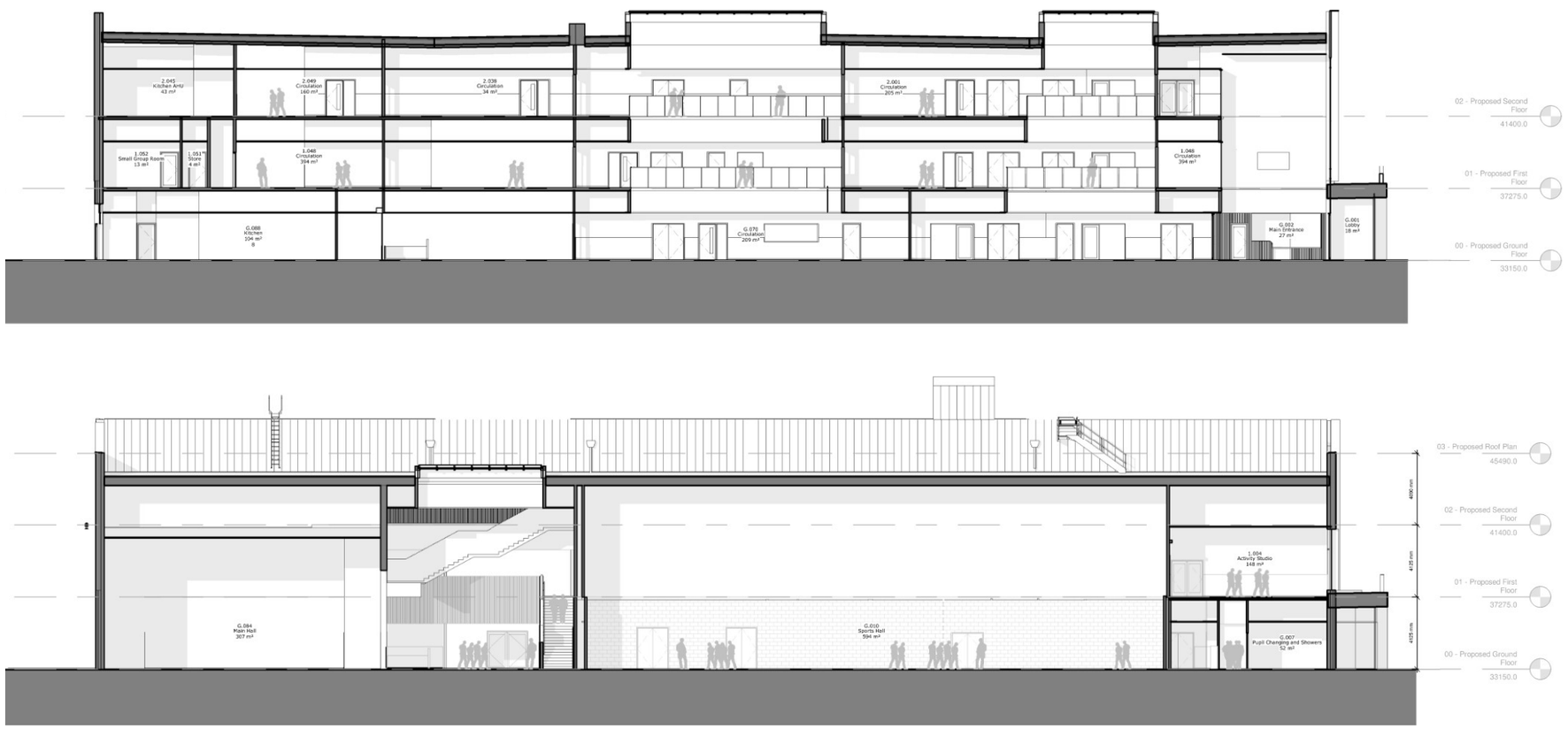
Glazed Coloured Spandrel Panel

Aluminium Window with Integral Louvre Above





5.7 Proposed Sections - 01



5.7 Proposed Sections - 02







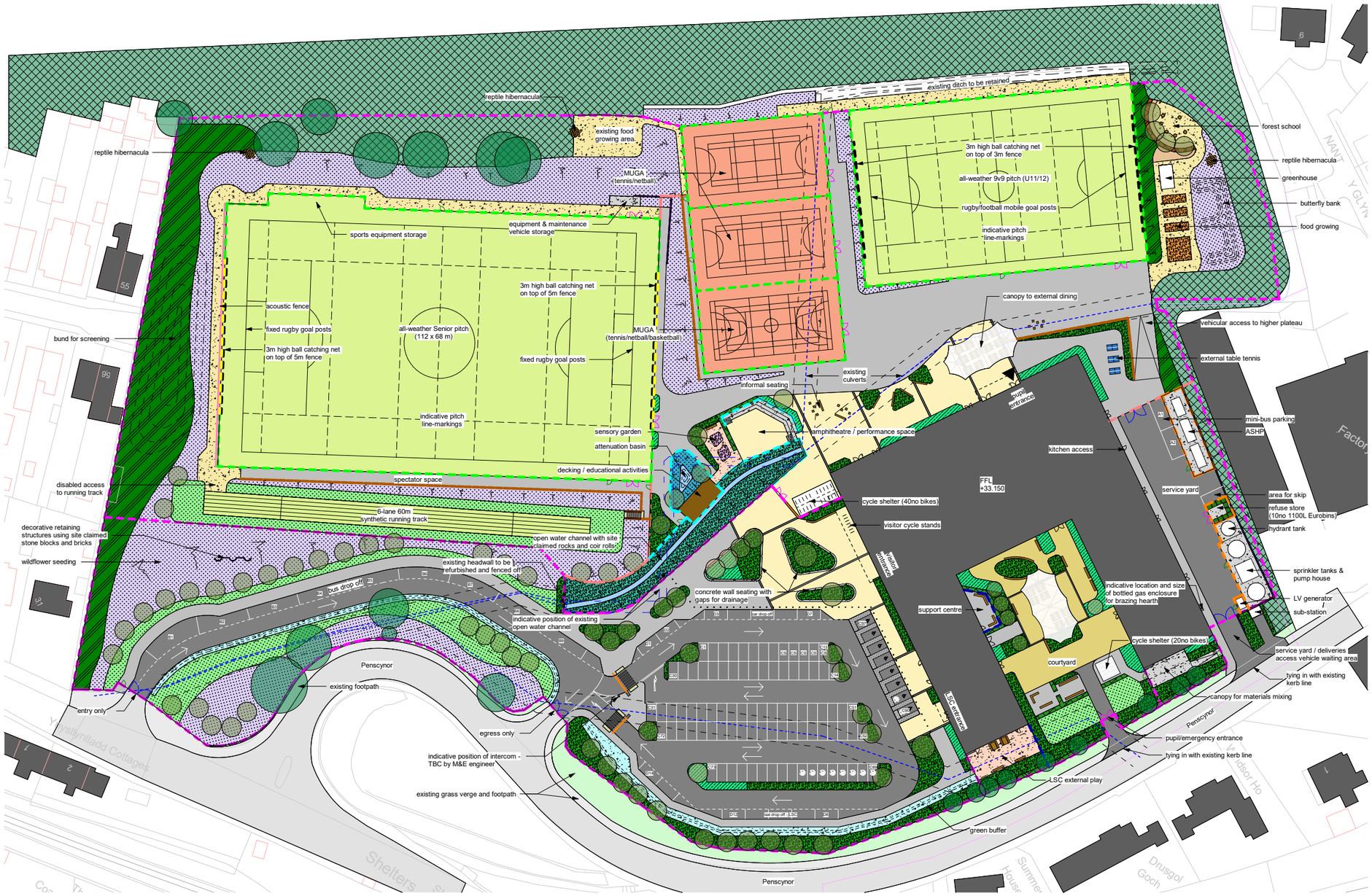

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5.9 Site Layout



Tensile canopies



Cycle shelter and hoops



Exercise station examples

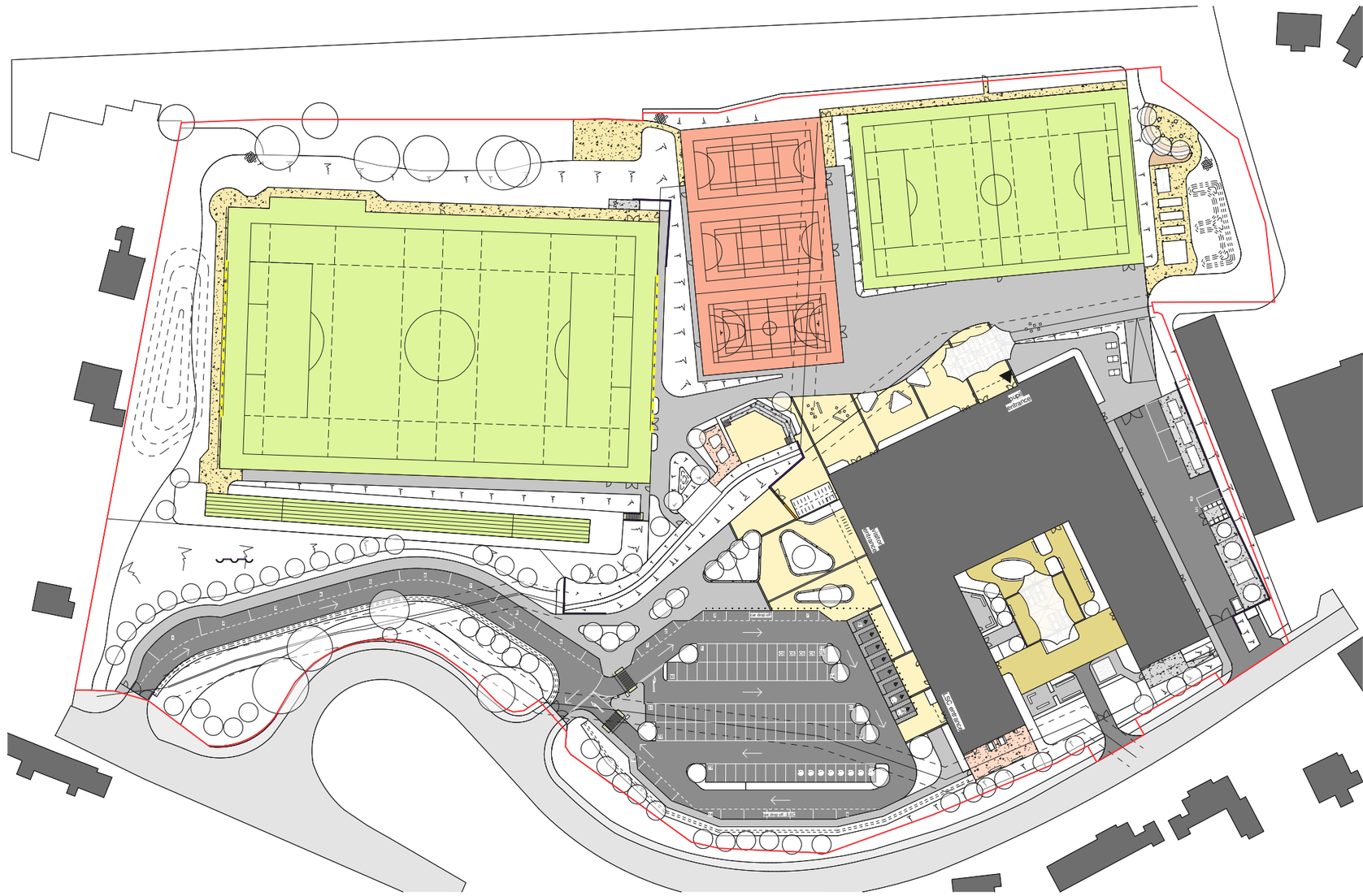


Activities



5.9.1 Hard Landscaping

- Block Paving Bands
- Proposed Retaining Wall
- Vehicular Asphalt
- Pedestrian Asphalt
- Multi-Sports Asphalt
- Feature Paving - Type 1
- Feature Paving - Type 2
- Tactile Pavement
- Resin Bound Gravel
- Bark Mulch
- Self-Binding Gravel
- Concrete Slab
- Synthetic Grass



5.9.1 Hard Materials

Product Palatte Summary

01/ Paving To Entrance and Social Area

02/ Paving To Courtyard

03/ Paving Edging

04/ Block Paving Bands

05/ Resin Bound Gravel

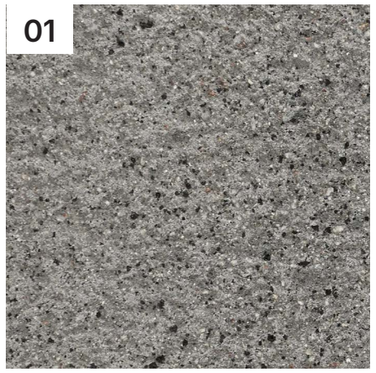
06/ Tactile Paving to Crossings

07/ Composite decking to roof terraces

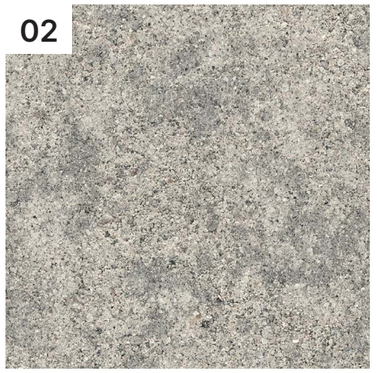
08/ Self binding gravel

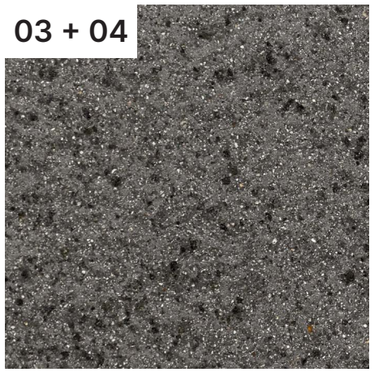
Further detailed information can be found in the Landscape Outline Specification.



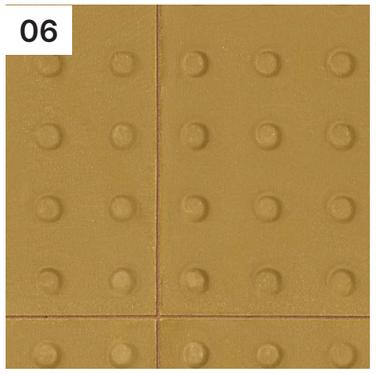
















5.9.1 Street Furniture

Product Palatte Summary

01/ Curved seating

02/ Picnic tables to external dining

03/ Individual benches

04/ Cube seats

05/ Cycle shelter

06/ Canopy to vocational workshop external space

07/ Tree grilles

08/ Tree guards

09/ Tensile canopy - single

10/ Tensile canopy - triple

Further detailed information can be found in the Landscape Outline Specification.

01



02



03



04



05



06



07



08



09



10



5.9.2 Soft Landscaping

Wildflower meadows are proposed at large areas around the sports pitches and close to the existing woodland, as well as at areas where the gradient is not suitable for any other type of vegetation.

The sensory garden plants offer a different palette of species with benefits to both the pupils as well as for local habitat and can attract a variety of insects.

A butterfly bank is proposed to the northern side of the site close to the forest school and existing woodland.

A reptile hibernacula is also proposed to the forest school area and close to the existing woodland which creates an habitat rich environment while providing educational opportunities.



- Shrubs
- Rain Gardens
- Bioretention Planting
- Swales
- Marshy Grassland
- Native Woodland Buffer
- Sensory Garden
- Amenity Grass
- Meadow Mix with Plugs

5.9.2 Ecological + Arboriculture

Figure 4 shows the extent of the existing vegetation that needs to be removed to realise the scheme, however many of the existing trees to be removed are identified as either Category C or U in the tree survey (refer to Appendix 04.1) and therefore provide limited value.

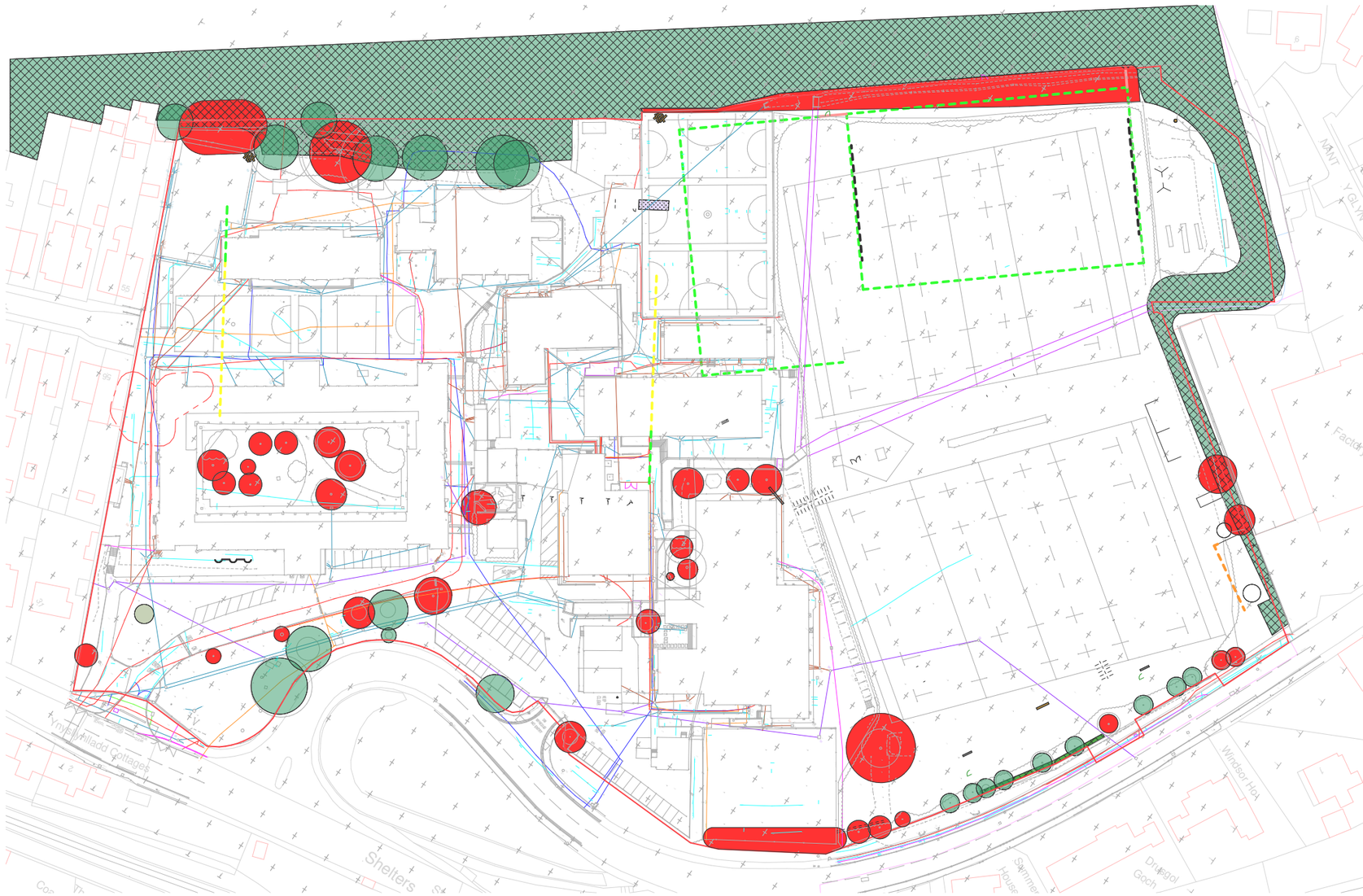
The removal of some of the higher quality trees is dictated by conflicts with the proposals to meet the school needs in terms of sports or access provisions.

Table 1 below indicates the number of individual trees that are marked on figure 4 for removal and the overall areas of vegetation groups that will also be removed and need to be mitigated with similar areas.

SITE TREES	Existing removed	Mitigation
Individual (no)	34	102
Groups (m^2)	1316	1316

Existing trees + vegetation to be retained

Existing Trees + vegetation to be removed



5.9.2 Planting Palette

Product Palatte Summary

01/ Deschampsia caespitosa ‘Goldtau’

02/ Hebe pinguifolia ‘Pagei’

03/ Lavandula angustifolia ‘Hidcote’

04/ Santolina chamaecyparissus

05/ Heuchera ‘Key Lime Pie‘

06/ Carex testacea ‘Prairie fire’

07/ Alchemilla mollis

08/ Festuca glauca

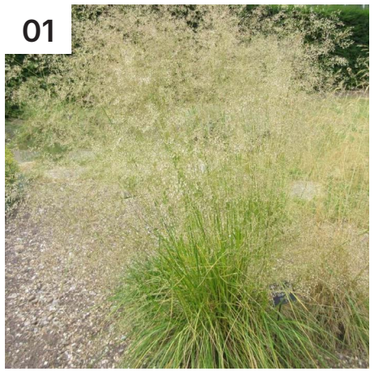
09/ Acer campestre ‘Streetwise’

10/ Betula pendula fastigiata ‘Obelisk’

11/ Carpinus betulus ‘Fastigiata‘

12/ Tilia cordata ‘Green Spire’

Further detailed information can be found in the Landscape Outline Specification.









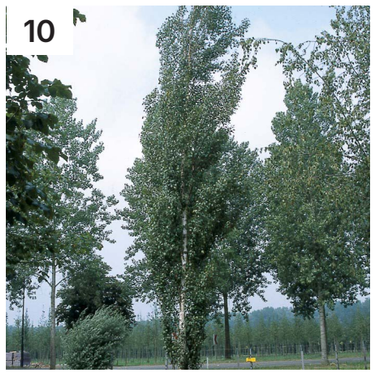
















5.9.3 Boundary Treatments

2400mm high self-leveling vertical bar railings

3000mm high wildmesh fencing

1800mm high self-leveling vertical bar fencing

1800mm high timber 'hit-n-miss' fencing

1100mm high railings

1500mm high vertical bar railings

Acoustic fence

8000mm high ball catching net

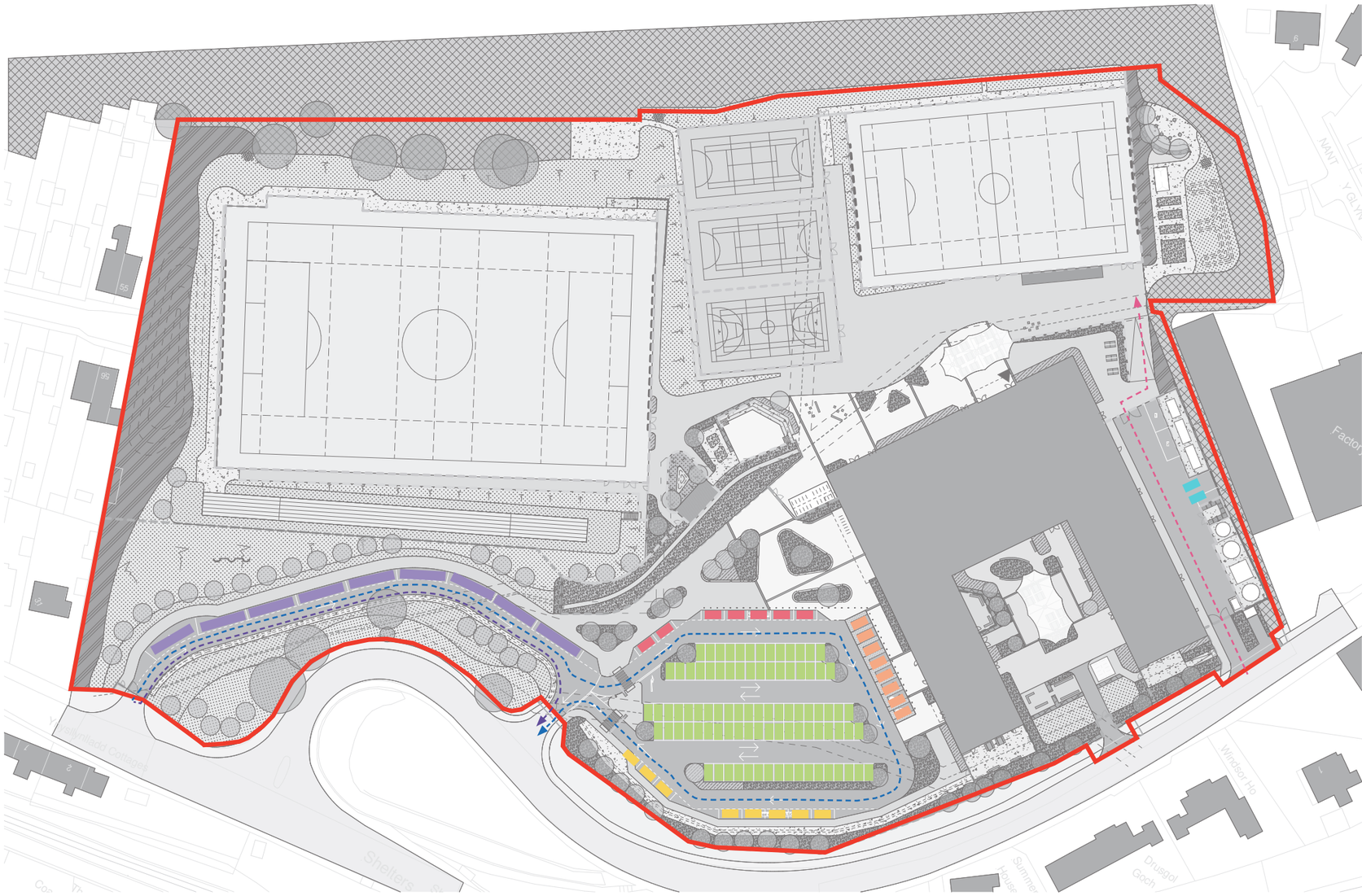
Feature wall



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5.10 Vehicular Access

- Site Boundary
- Vehicular Access
- Vehicular Access (Bus)
- Deliveries, ASHP, Refuse, Fire Tender Access
- Car Parking (spaces)
- Disabled Parking (8 Spaces)
- Pickup / Drop-Off (Car)
- Pickup / Drop-Off (Taxi - LSC)
- Bus Parking
- Mini Bus Parking



5.11 Safety & Security

Site Boundary

Public Access

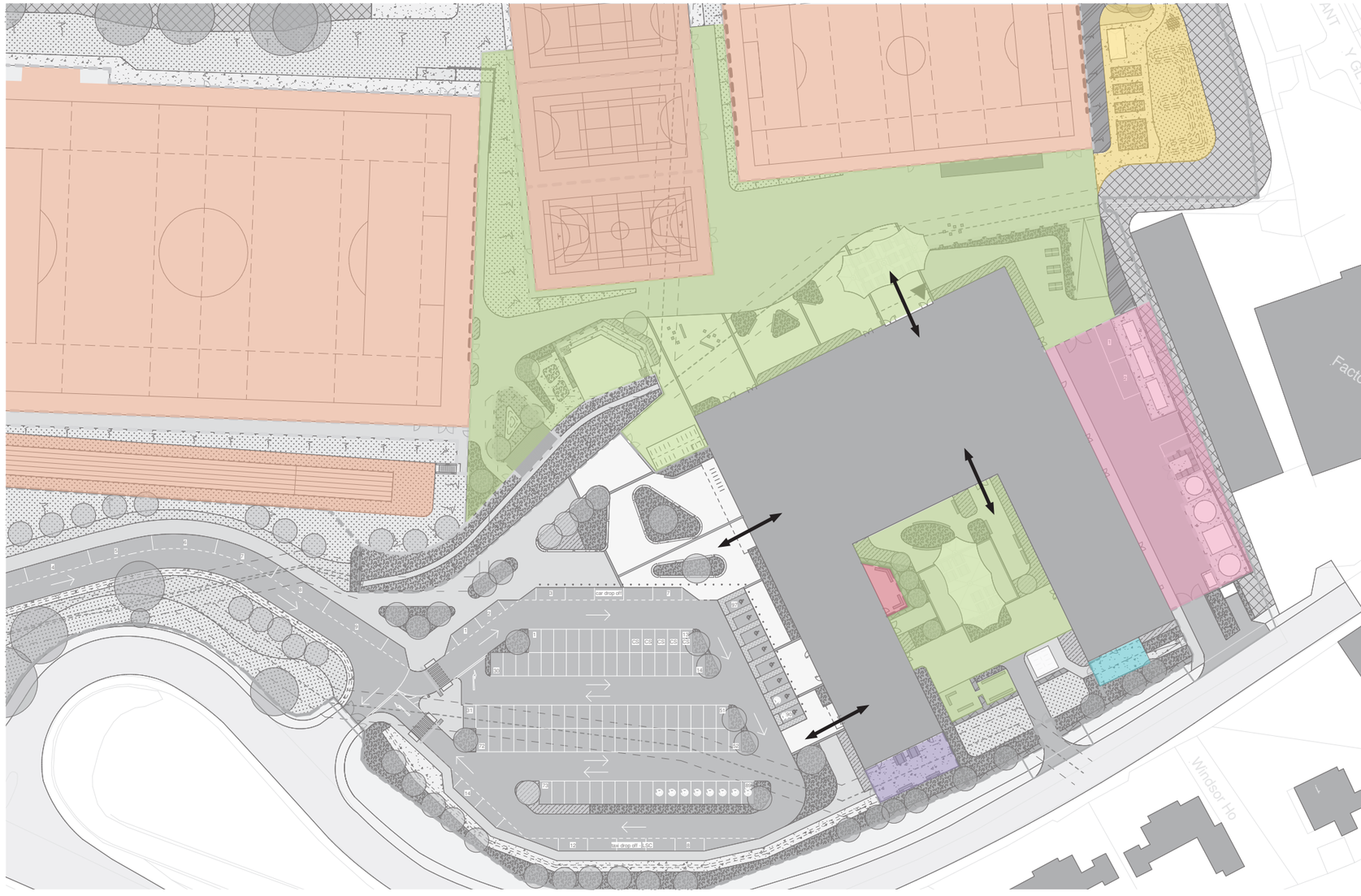
Controlled Access

Secure Access



5.11 External Activities

- Sports
- Forest School
- Dining + Lunchtime Play
- LSC External Play
- Y Bont External Play
- Brick Workshop Mixing Area
- Service Yard



5.12 Access & Movement

5.12.1 Aims of the development
The scheme will aim to provide access for all with an inclusive design in compliance with Building Regulations Approved Document M 2004 edition incorporating 2010 amendments, Wales. The recommendations of BS 8300: 2018 part 1 'Design of an accessible and inclusive built environment and External environment - code of practice' and part 2 'Design of an accessible and inclusive built environment. Buildings - code of practice' have also been incorporated wherever possible along with Approved Document K 1998 edition incorporating 2000 and 2010 amendments) Wales. This is to ensure the scheme is fully able to welcome the whole community and ensure that the project enhances the facilities available to the school's pupils, staff and visitors.

5.12.2 Approaches & External Routes
Please refer to the earlier section of the design statement for diagrams highlighting the approach to the school site but it ensures there is a safe approach for users on foot, cycle, bus or car/taxi to the site and step free entry into all entrances. Please refer to the Transport Assessment to review details of the wider Active Travel plan which aims to improve and build on sustainable modes of transport to access the school site.

The existing main entrance points for the site have been maintained for ease of wayfinding and to ease disruption to the highways network during construction. The final scheme see's an additional pedestrian access into the new courtyard from Penscynor for pupil use in the start and end of each school day only.

A new segregated service area has been created to the North East boundary of the site off Penscynor to ensure there is a safe place for the collection of refuse, deliveries, storage of school vehicles and clear access to sprinkler and hydrant tank for the fire service in event of an emergency.

5.12.3 Vehicle Parking Provision
The current proposal improves parking and access for School buses off the main entrance driveway with a clear pedestrian route and space to wait for pupils. The main staff and visitor car park includes 97 spaces for electric vehicle charging, car share, disabled bays and normal parking bays to the Parking SPG guidelines. Please refer to the Transport statement for details as well as the hard landscaping plans. There are also a number of pick up/drop off bays to enable safety of those using the car park and those pupils arriving that way. This also includes a dedicated quieter route in for pupils attending the Learning Support Centre away from the main entrance and main pupil entrance who area likely to arrive via taxi or private vehicles.

5.12.4 Cycle Parking
60 long term cycle parking spaces are provided for in the new scheme under canopies and behind the secure line to ensure they are safely stored and increase uptake of cycling. The shelters will have lighting and CCTV coverage also.

There are a number of short stay visitor cycle stands located adjacent to the main visitor entrance to provide convenient access, this is sheltered by the projecting feature canopy.

Internally a number of lockers and showers are available close to the entrance to encourage cycling, this forms part of the easy access to the sports facilities likely to be used by the wider community.

5.12.5 Internal Accessibility
The interior layout, facilities and finishes of the proposed new school will be fully accessible to all including those with a range of accessibility needs including ALN, physical mobility issues, neurological needs or hearing/visual impairment.

The layouts of all rooms have been developed with extensive end user consultation to facilitate the process. A significant amount of the spaces and the equipment are specialist use and required end-user input to advise on how they will use the spaces. This includes the provision of wheelchair access tables/equipment in every department through the FFE provision.

The fixed furniture that will be provided includes the main Reception Desk to the main entrance will be DDA compliant. Hearing loops have been identified as required when scoping the Audio Visual Provision in the new school.

Finishes to the interiors will comply with the required Light Reflectance Values to enable safe wayfinding and a strong strategy is being developed for visual wayfinding trough both signage and colour.

Horizontal circulation has been simplified to avoid confusing corridor spurs, clear and wide corridors re maintained in the C shape of the building, all being above the minimum recommendations required. Natural light is brought into the main corridors through lightwells to improve wellbeing and aid in wayfinding.

Vertical circulation is provided through the use of main accommodation stairs off from the heart of the school and also through fire escape staircases in each wing of the building. Two lifts are provided to the main entrance area and the delivery (Northern wing) of the building to provide access for those requiring it to all areas of the school in a convenient way as part of the fire stair cores. They are also designed to provide emergency evacuation for those requiring it subject to an RRO and the development of the fire strategy in the next stage.

6.0

Sustainability

6.0 Sustainability

6.1 Aims of the development
A crucial part of the redevelopment of the new school is to ensure that the project will help to address the Climate Emergency and the WfGA to ensure that the scheme delivers a sustainable learning environment for both the current and future community.

As a Welsh Government and NPTCBC funded project it is part of the Sustainable Communities for Learning Programme the project must meet the following standards;

- Net Zero Carbon in operation (NZCiO)
- Reduced embodied carbon target of 500 $kgCO_2e/m^2$
- EPC rating of A
- BREEAM Excellent
- Ecology & Biodiversity Protection and Enhancements
- SAB - Sustainable Drainage
- Social & Economic sustainability

6.2 Net Zero Carbon in Operation
NZC in Operation is defined by the UKGBC as: *"When the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset."*

The design of the project looks to reduce the carbon and energy demands on the building through the use of passive design and a fabric first approach with low U-Values specified, solar shading devices to glazing where required, high airtightness etc to limit these. Renewable energy technologies are then maximized on site wherever feasible to meet the demand, extensive solar panels are planned for the roof layouts for example. Once further detail design has been undertaken the design and client team will review how any shortfall in carbon demand can be achieved on or offsite.

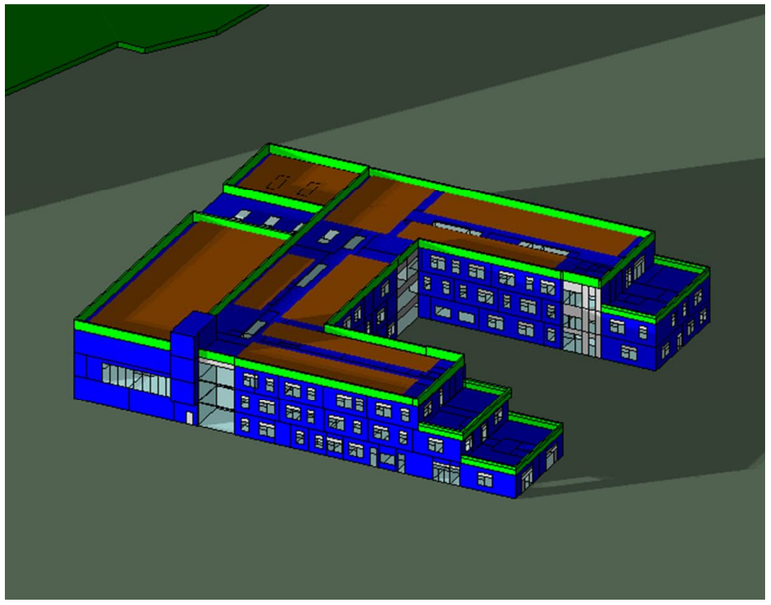
6.3 Embodied Carbon
The project's target is to achieve an emodied carbon target set by the Welsh Government of of 500 $kgCO_2e/m^2$. The project is being designed to achieve this target through the use of appropriate materials whilst also being mindful of the whole life term impact of the materials chosen when replacement, repair and recycling of materials needs to be considered.

6.4 BREEAM
The scheme is targeting BREEAM Excellent under the New Construction scheme which requires a score of 70%. We are currently on track for this target with the desgin stage score aiming at 77.2%. This ensures that the scheme will mitigate the life cycle impacts of the new buildings on the environment in a robust and cost-effective manner. It ensures that the Management of the school, Energy, Water and Material use, Pollution and Waste limited, Health and Wellbeing, Ecology and transport access are all improved.

Llywodraeth Cymru
Welsh Government

Cymunedau Dysgu Cynaliadwy
Sustainable Communities for Learning

Extract from TB+A Low Zero Carbon Study Report showing an image of an IES model analyzing shading from the nearby hill



Extract from Arda's Net Zero Carbon Report Stage 3 v.1 showing upfront carbon impact of material choices

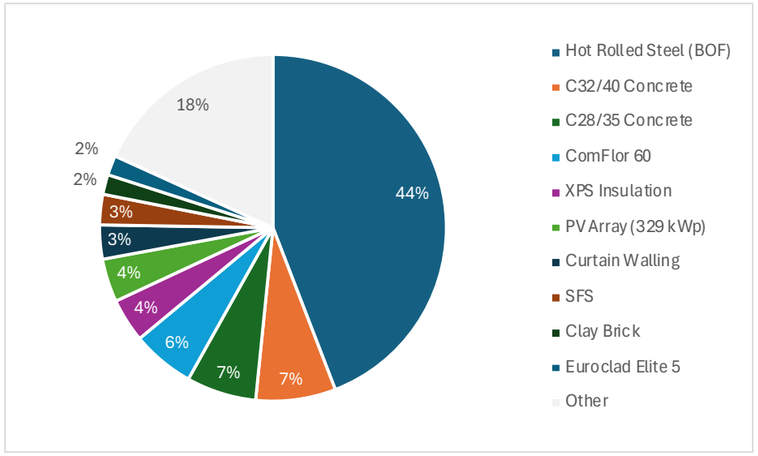


Figure 1: Upfront Embodied Carbon Impact by Material (A1-A5)

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