



Majesty House
Avenue West
Skyline 120
Braintree
Essex
CM77 7AA
Tel: 01279 647111



PARTNERS
C.J. Barker
FRICS
S.E. White
MRICS
W.B. Bidewell
MRICS, RIBA
M.S. Merrill
MRICS
R.D. Gould
FRICS
R.S. Paynter
RIBA APMP

RIBA 
Chartered Practice



- 1.0 Introduction
- 2.0 School Campus
- 3.0 Campus Photos
- 4.0 Campus Access
- 5.0 Original Feasibility Report
- 6.0 Preferred Location
- 7.0 Application Site Photos
- 8.0 The Building
- 9.0 Massing Study
- 10.0 Design
- 11.0 Form
- 12.0 Schedule of Areas
- 13.0 Materials
- 14.0 Materials of Place
- 15.0 Street Elevation
- 16.0 Sustainability
- 17.0 Flood Risk
- 18.0 Highways
- 19.0 Design Development
- 20.0 Model

Appendices

- A ECC Feasibility Report (RevC)
- B Project Feasibility Study V1 (Barker Associates)
- C Flood Risk Assessment
- D Daylighting Study
- E Transport Statement IT1607 Date 05_09_16

1.0 Introduction

This document has been prepared to support a full planning application for a new two storey building to provide additional accommodation required to support a one form of entry expansion of the school from an eight form entry to a nine form entry and a commensurate expansion of sixth form facilities and is to be read in conjunction with all drawings and documentation submitted as part of the pre-planning application as set out below:

Architectural Drawings

BA P15 058 001	Location Plan
BA P15 058 010	Block Plan as Existing
BA P15 058 020	Site Plan as Existing
BA P15 058 031	Site Section AA & BB as Existing
BA P15 058 032	Site Section CC & DD as Existing
BA P15 058 033	Site Section EE as Existing
BA P15 058 010	Proposed Block Plan
BA P15 058 020	Proposed Site Plan
BA P15 058 201	Proposed Floor Plans
BA P15 058 210	Proposed Roof Plan
BA P15 058 031	Proposed Section FF & GG
BA P15 058 241	Proposed East Elevation/ Street Elevation
BA P15 058 242	Proposed South Elevation/ Street Elevation
BA P15 058 243	Proposed North & West Elevation
BA P15 058 244	Proposed Courtyard North & West Elevations
BA P15 058 901	3d Visuals of Proposed Building
BA P15 058 911	Physical Model of Proposed Building in Context

ECC Feasibility Report (RevC)
Project Feasibility Study V1 (Barker Associates)
Flood Risk Assessment
Daylighting Sunlight Assessment
Transport Statement IT1607 Date 05_09_16



The design proposals are a development of those detailed in the Pre-Application Submission dated March 2016 and seek to address all points raised in the Pre-Application Planning Advice, Ref: CC/EPF/09/PRE received on 18th May, 2016 and other consultation activities recorded within the 'Statement of Community Involvement'.

2.0 School Campus

Roding Valley High school occupies four adjacent sites that are separated by two major roads, Alderton Hill and Roding Road, and a section of the Central Line of London's rail network runs between the school's sports grounds.

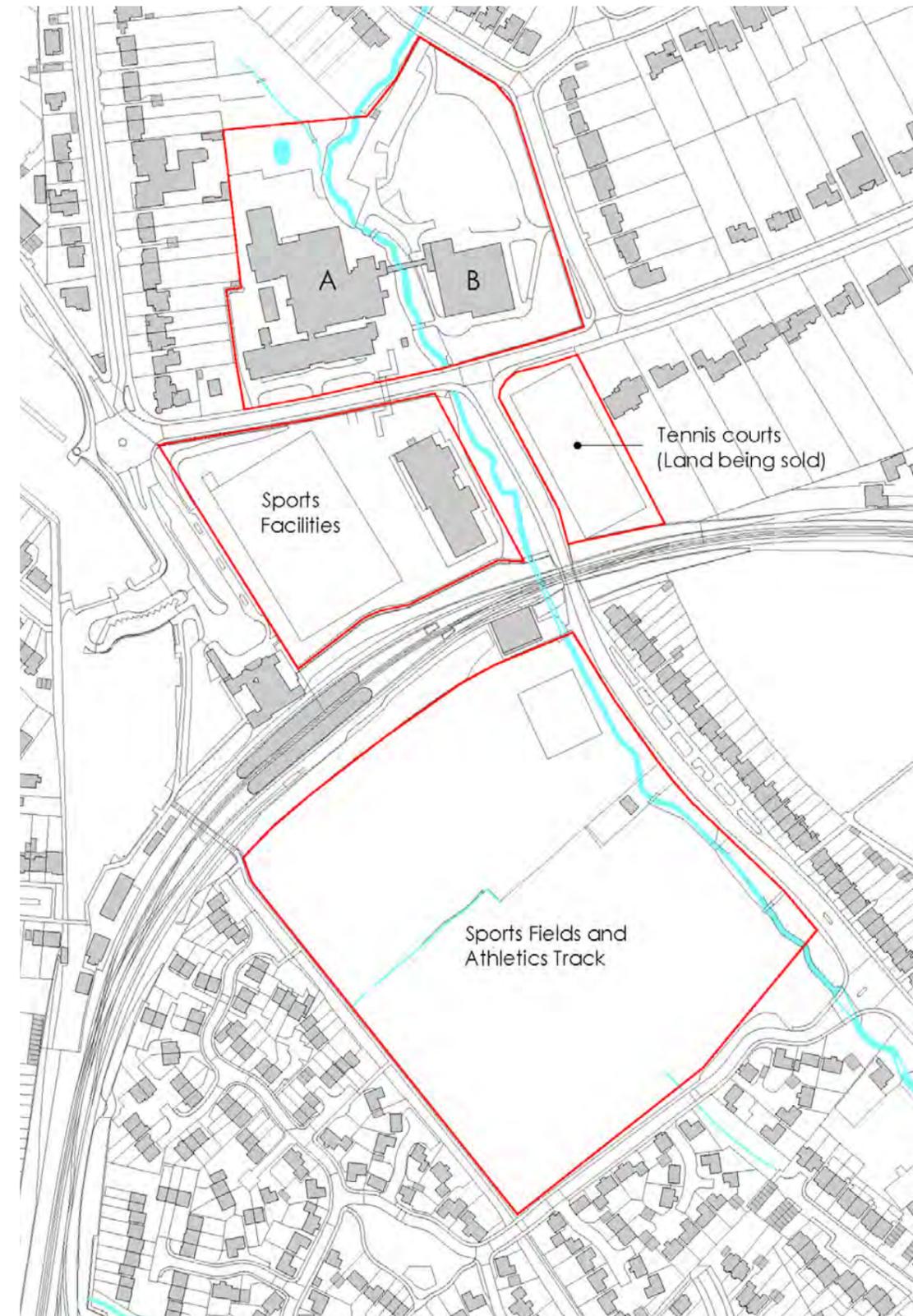
The surrounding area is predominantly residential. Loughton Station on the Central Line of the Underground lies immediately to the south of the campus and Loughton Town centre about one mile South-West.

The North Site accommodates all non-sports facilities and the majority of the outdoor social area. Bounded by Alderton Hill to the South, Brook Road to the East and residential properties to the North and West, this site is split by a brook running-north-to south over which several bridges connect external spaces and a first floor link connects buildings on either side.

Block A contains the main school assembly hall and is linked to the original 1907 school building designed by Herbert Tooley that is locally listed by Epping Forest District Council. Block B is a c1990 new teaching block that presents facades to both Alderton Hill and Brook Road that are screen by mature landscaping. The main school playground lies to the north of Block B and is used for outdoor social space formal sports activities.

The main schools sports facilities are currently located on the east, west and south sites.

It should be noted that the tennis courts on the east site are to be sold to raise capital for the project.





Old School Building (Block A)



Science & Drama Blocks



Drama Block & Main Hall



Existing Block (Block B)

4.0 Campus Access

The main vehicular access is directly from Alderton Hill. Visitor and some staff parking spaces are provided at the front of the old school building. Additional staff parking spaces are spread out around the rear of the site. A total of ninety four (94) parking spaces are provided on the main school site.

A secondary vehicular access is located in Brook Road.

Pedestrian access points are located in Alderton Hill and Brook Road.

Pedestrian access from the main school site to the Sports Centre is by a footbridge over Alderton Hill. Vehicular access is directly from Alderton Hill and parking is provided for 8 cars. The southern most playing fields are accessed from the south-east corner of the Sports Hall site, via the public footpath on Roding Road, which passes under a train line.



As part of the above ECC feasibility study a site assessment has been carried out to explore and identify potential space within the existing school building for providing additional teaching spaces . The approach was discounted as the existing spaces were considered to be spatially too small and dispersed requiring a complex reconfiguration which would prove prohibitively costly and disruptive. Therefore an approach of providing the additional teach accommodation required via a new-build solution was considered necessary and the study identified three potential site locations where new accommodation could be constructed.

A summary of each of the sites is presented below in a 'pro's and con's' format along side the school campus plan that illustrates the location of each of the sites considered. The following text and adjacent image are extracted directly from the ECC report.

(Pro's and con's extracted from page 13 of ECC original feasibility report Rev C)

Location 1 - adjacent to the "New Block" (Block B)

Pro's

- minimal impact on existing building
- no loss of parking spaces

Con's

- ground levels
- loss of informal & social play areas
- planning sensitive
- potential services diversions
- construction access
- possible loss of tree(s)

Location 2 - adjacent to the main hall (existing demountable Drama room)

Pro's

- not planning sensitive
- utilises poorly used area

Con's

- loss of parking spaces
- demolition / removals
- Space restrictions
- loss of daylight to main hall
- construction access is tight

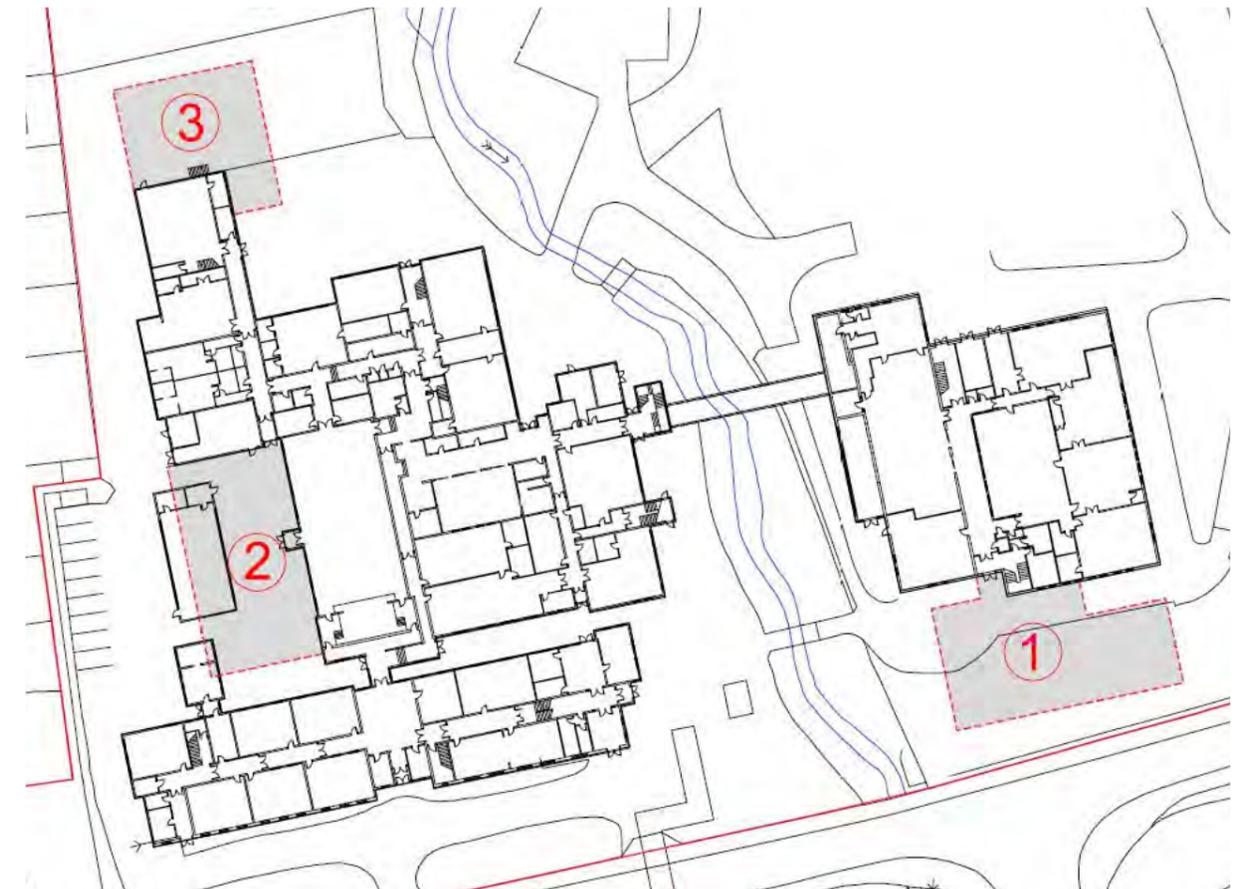
Location 3 - to the rear of the main Drama block

Pro's

- not overly planning sensitive
- minimal impact on existing building
- construction activities remote from main school area

Con's

- floor levels don't allow sufficient headroom
- Stepped floor plates
- loss of parking spaces
- space restrictions - total accommodation cannot be provided in this location alone
- limited to two-storey (Planning issue)
- requires widening of bridge access



(Diagram above extracted from page 12 of original feasibility report)

5.1 Original Feasibility Report (continued)

Within ECC's feasibility report, site option 3 was discounted for reasons shown in the below text extracted from page 13 of the ECC's feasibility report.

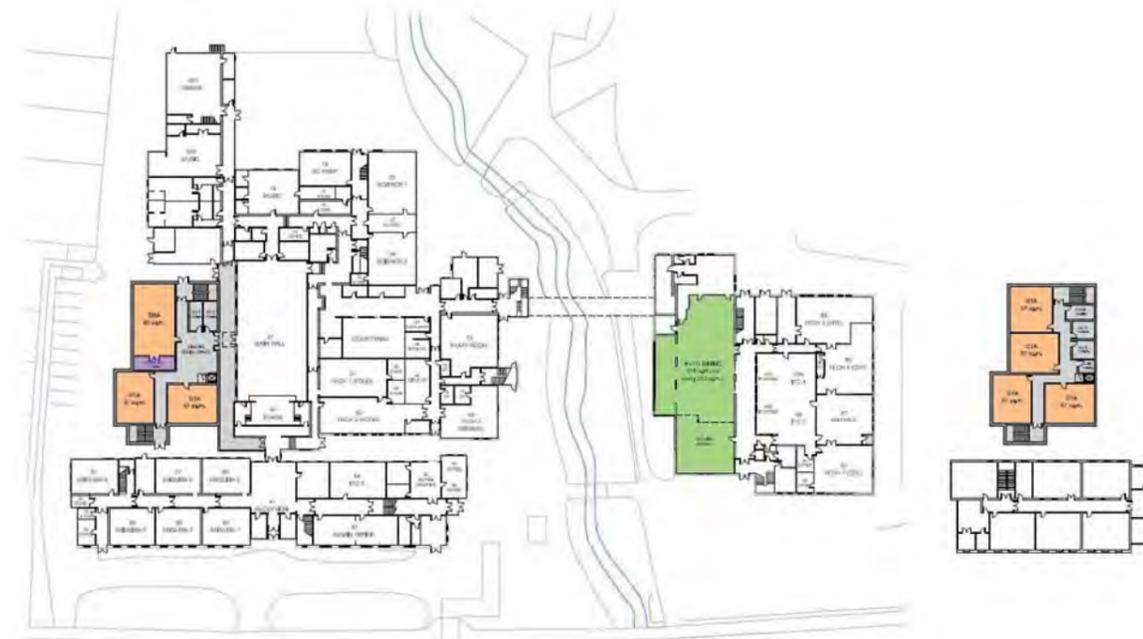
'Whilst all 3 locations have both "pros" and "cons", it is apparent that location 3 is overly restrictive in terms of available expansion space, and development of this space would result in an excessive loss of parking spaces and hard-play area. Furthermore, the floor plates of the existing Drama unit would not align with the required floor levels of the new extension.'

Site option 2 was subsequently discounted by Roding Valley High School for the following reasons:

- There is already a high concentration of teaching accommodation in this part of the site and significant congestion is caused during class change because the existing corridors and staircases are too narrow for the number of users.
- The area is bounded by the main vehicular route to the staff car park and service areas of the site and the management of high volumes of pedestrian and vehicle movements would present significant safety and operation challenges.
- The location of a new multi-storey building in this location would present difficulties in successfully interfacing with existing buildings without compromising certain criteria such as daylighting, ventilation and circulation patterns.

Site location 1 was therefore identified by Roding Valley High School (RVHS) as their preferred position for new accommodation.

Barker Associates have been appointed directly by (RVHS) to provide professional consultancy services to progress the project.



Option2A



Option2B

6.0 Preferred Location

The preferred location lies in the south east corner of the north site that contains all of the non-sports buildings and is the academic and administrative hub of the campus.

The site is traversed by Loughton Brook running north-south and together with the main teaching buildings also accommodates the majority of staff and visitor parking and the school's main playground.

The south and east boundaries of the north site align with the existing adjacent roads and are defined by a mix of mature hedgerows, fencing and trees that provide varying degrees of visual separation from the adjacent footpaths, roads and residential dwellings.

The west boundary is defined by fencing shared with the gardens of the adjacent residential neighbouring properties.

Mature trees and fencing run along the north boundary between the school site and adjacent residential properties.

The preferred location has many site constraints. The area originally considered in the ECC Report lies between the existing Block B building and the boundary with Alderton Hill. Following further exploration of this area it was determined that the location of several mature trees combined with the dimensional constraints of the site compromised the possibility of containing the new accommodation required within this limited area. The relationship between the new building, the existing Block B building and the boundaries with Alderton Hill and Brook Road became the subject of extreme design exploration.



Option1A



Opion1B



View across site looking North



View across site looking West



View of Hedged Boundary



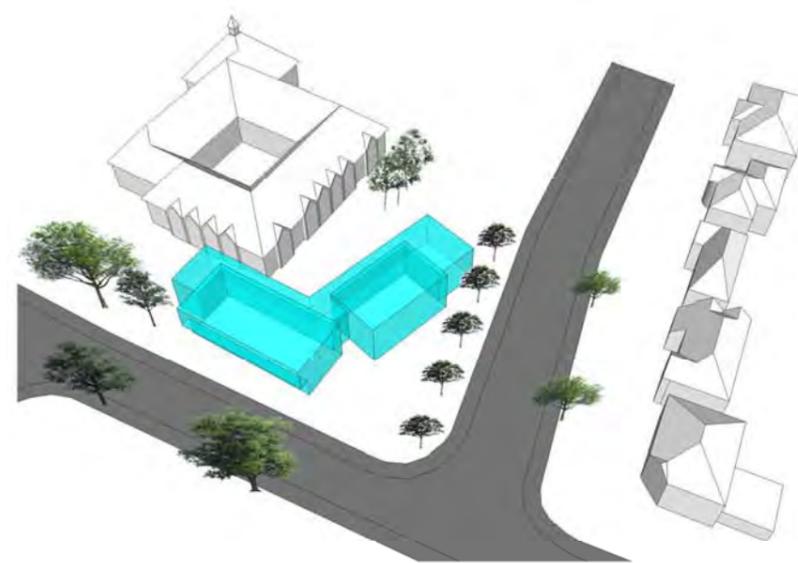
View of Block B

Due to spatial constraints and the location of mature trees it became apparent that any new building in this location would need to wrap around Block B to some extent.

The form of the proposed building and its relation to the site and surrounding context has been explored through 3d modelling and the following 4 options considered:

Option 1 (Preferred Option)

The building wraps the corner of the site and kinks outwards creating a generous courtyard between the building and Block B. The building presents elevations to both Allerton Road and Brook Road. At its closest point, the 'overlap' has been kept to a minimum and rather than a solid blunt form, the west staircase is proposed as an open structure to reduce mass and increase visual permeability.



Option 1



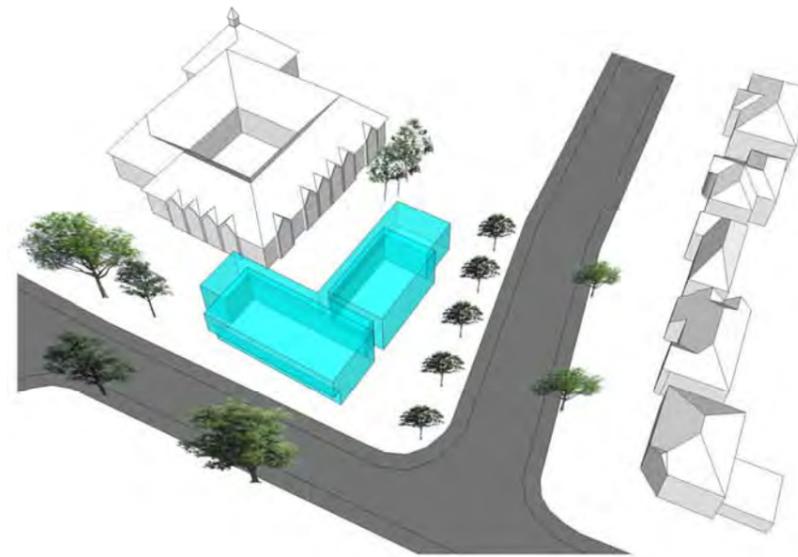
Option 2

Option 2

The building seeks to predominately address Brook Road relating to the orientation of Block B and the houses opposite.

Option 3

Similar to option 1 the building wraps the corner but wraps around Block B orthogonally.



Option 3



Option 4

Option 4

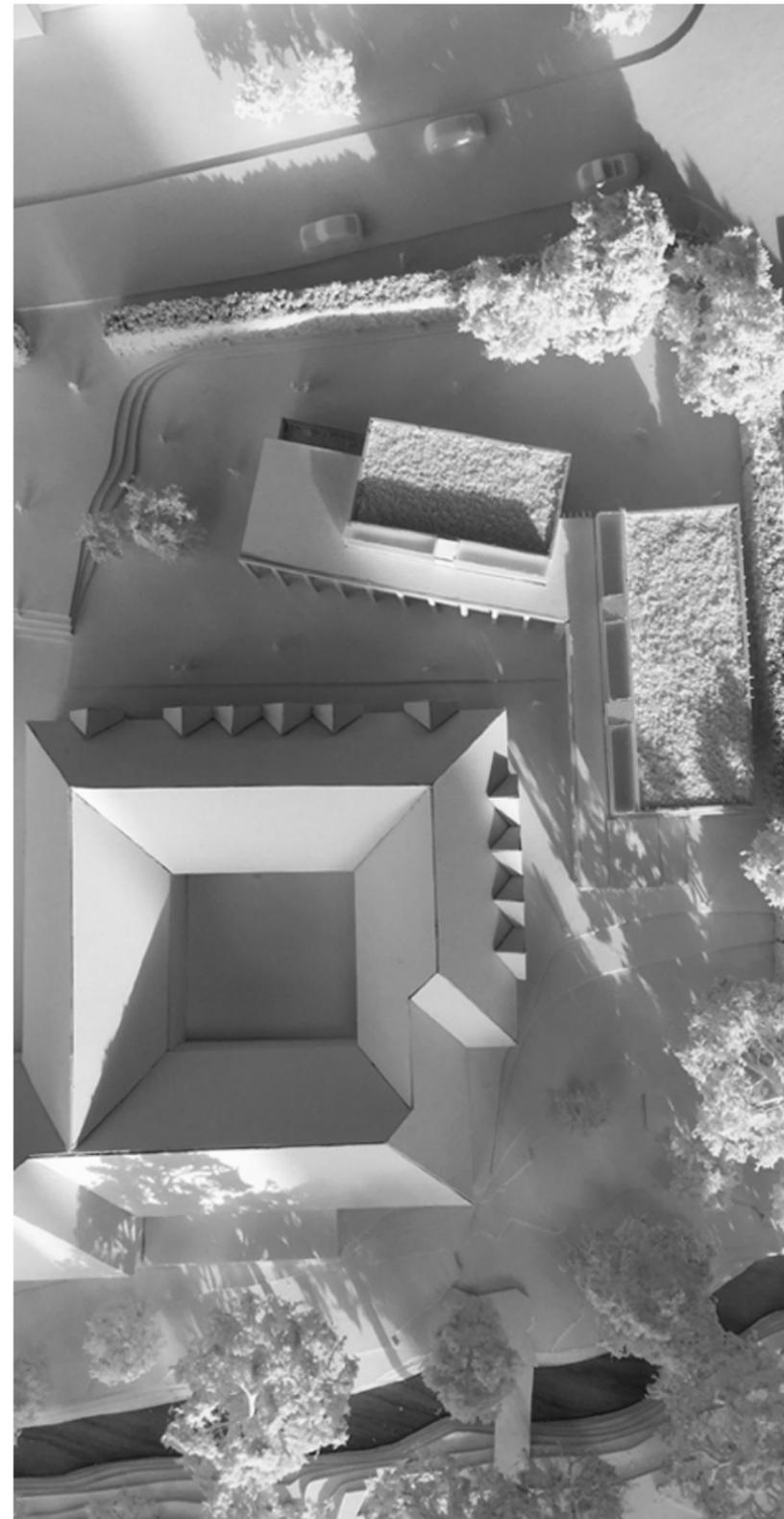
Seeks to address both the corner of the site and brook road. The form shown in this option allows more space around block B, which it does not overlap on the Alderton Road aspect.

In each of the four options the position of building has been spaced back from the street edge allowing for the existing boundary hedging to be retained and integrating the building within existing and proposed new trees minimising visual impact.

- The design proposes a standalone two storey building in a corner location of the main site within the school campus.
- The building has two wings, one facing Alderton Hill, and the other Brook Road which wrap around the existing Block B building.
- The design is based upon a clearly legible grid with an expressed structural frame
- The primary rhythm of the structural frame is refined through a secondary rhythm of glazing and elevational articulation to create a series of well balanced facades that relate well to the character of the adjacent Block B and the original 1907 school building that has large gables articulated with three bays of glazing.
- The use of external walkways at first floor level aides the new buildings interaction with established circulation control around the wider school campus, reduces the visual mass of the new building and contributes positively to the relationship with the existing Block B building.
- Façade designs have been developed to express the rhythm of the structure with clear expression of the internal function. Whilst the employment of large areas of fenestration increases visual permeability and reduces apparent mass when viewed from the adjacent roads.

Accessibility

The proposed building has been designed in accordance with part M of the building regulations. All external doorways have level thresholds accessible via paths with gradients not exceeding 1:20. Internally a lift gives access to the first floor and accessible toilets are provided with the two building.



The building form has been developed to,

- Maximise natural daylighting
- Facilitate a mixed mode ventilation strategy
- Optimise interaction with existing circulation patterns
- Contribute positively to the existing streetscapes.
-

A variety of roof forms have been explored and a flat roof solution preferred to reduce height and visual impact. Two roofing options have been modelled:

- 15 degrees mono-pitch / flat roof combination.
- Mixed height flat roofs.

Both options include clear-storey height glazing and specialist ventilation equipment to ensure the highest standard of internal environment.

1:200 colour street scenes are provided to give an indication of the visual impact of the proposals when viewed alongside existing buildings and boundary conditions.

In direct response to feedback from ECC's Urban Design Team it is now proposed that the existing trees in the south east corner of the site are to be retained with the exception of one minor specimen.

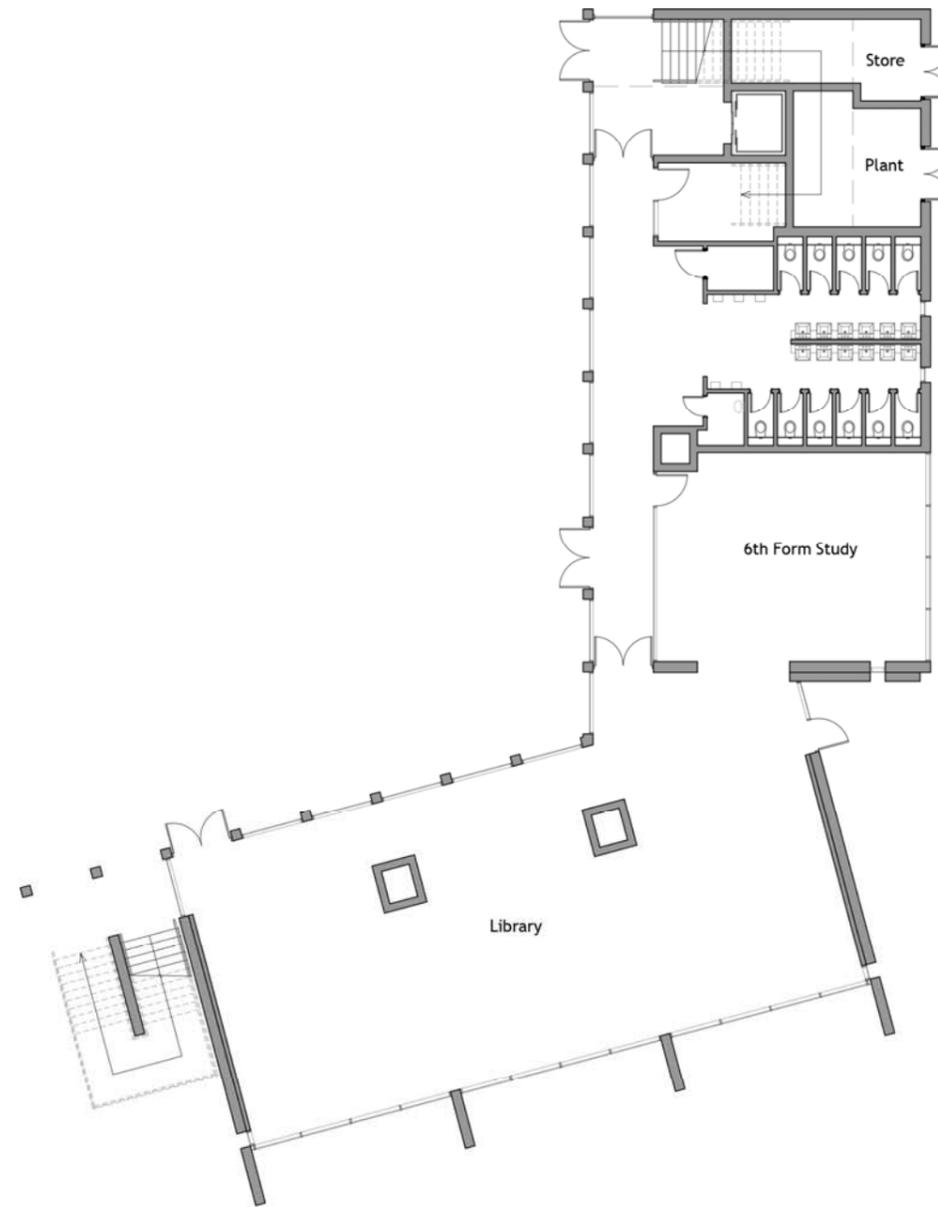
It is further proposed that the existing hedge on the boundary to Brook Hill is to be retained at its present height of approximately three metres and existing gaps to be replanted and fully infilled to assist in screening the new building from residential properties on the opposite side of the road.

The building has been set at a level that is approximately 1500mm below the level of Brook Road to further assist in reducing the visual impact of the building when viewed from this side.



Ground Floor Accommodation

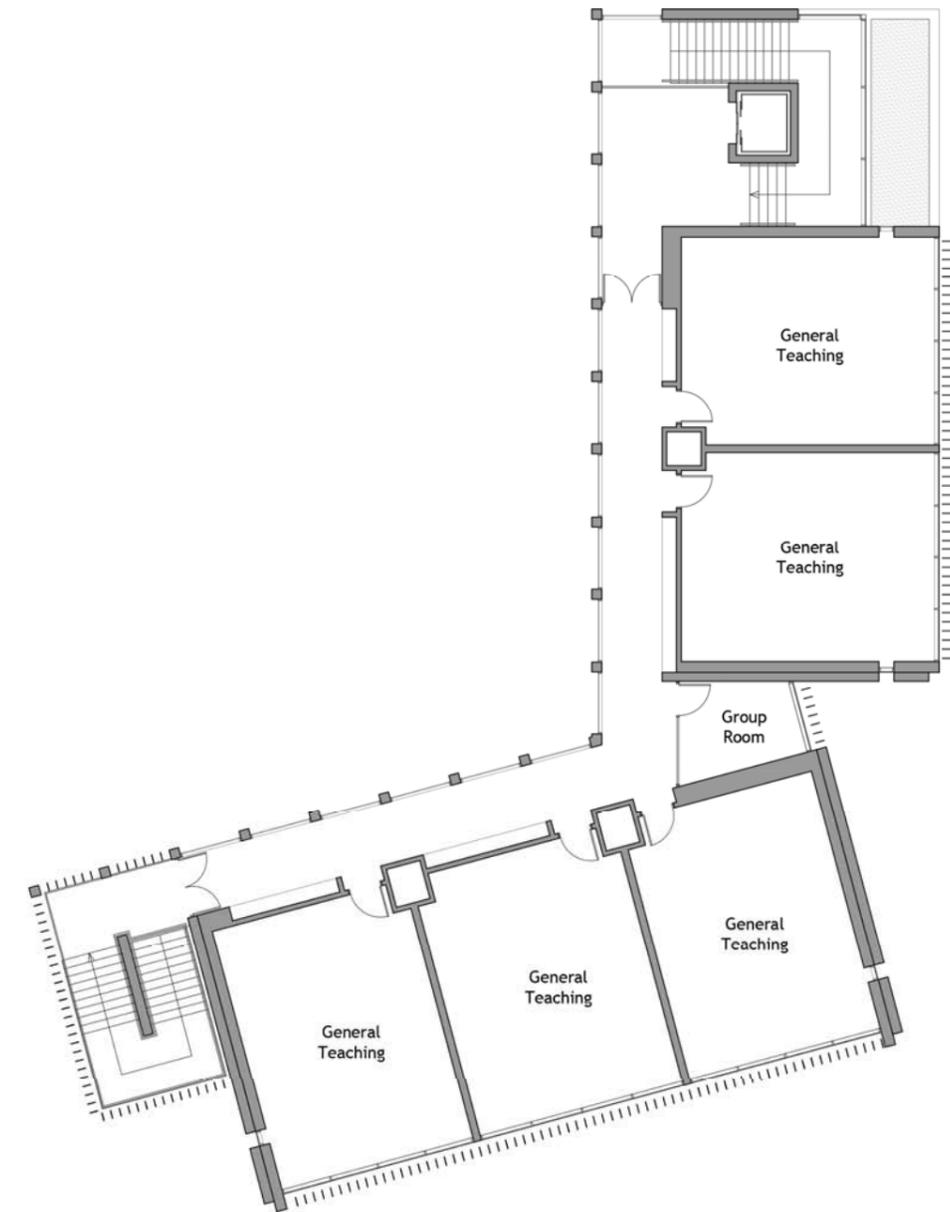
Library	210m ²
6th Form Study	60.7m ²
Office	10.6m ²
Circulation	73.2m ²
Plant Room	17.8m ²
Store	10.0m ²
WCs	42.0m ²
Dis WC	3.3m ²
WC	2.1m ²
Stair External	31.7m ²
Total GIA	453.6m²



Ground Floor Plan

Upper Floor Accommodation

Classroom No.1	57.2m ²
Classroom No.2	60.2m ²
Classroom No.3	57.2m ²
Classroom No.4	57.4m ²
Classroom No.5	57.4m ²
Group Room	11.5m ²
Circulation	130.4m ²
Stair External	31.7m ²
Total GIA	465.2m²



Upper Floor Plan

Total GIA (Floors Combined)	918.8m²
------------------------------------	---------------------------

The key proposed external materials are listed below and have been selected based on factors such as aesthetic appeal, cost, life cycle, performance, environmental impact etc. and relate to the surrounding context with the aim to integrate the building with its surroundings.

Walls

- Brick to match the original 1907 school building.
- Zinc cladding panels

Fenestration

- Powder coated aluminium curtain walling
- Powder coated aluminium vertical solar shading
- Powder coated aluminium lightwell glazing

Roof

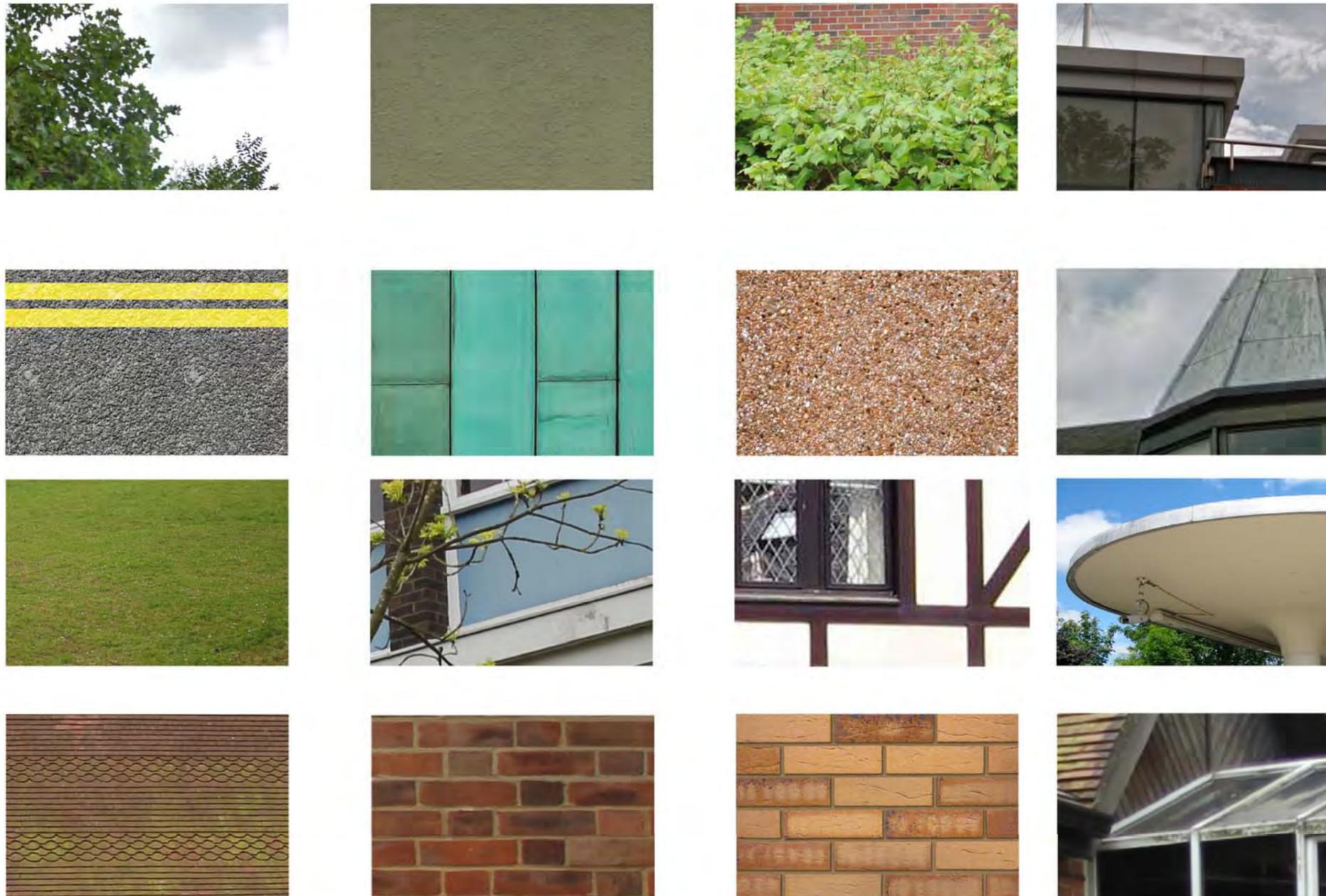
- Zinc standing seam
- Intensive green roof
- Single ply flat roof membrane.

As requested in the Pre-Application guidance, detailed colour elevations have been submitted at a scale of 1:100 to assist with demonstrating the proposed appearance.



14.0 Materials of Place

A material palette of the surrounding context has been assembled to portray the character of the place.





Alderton Road



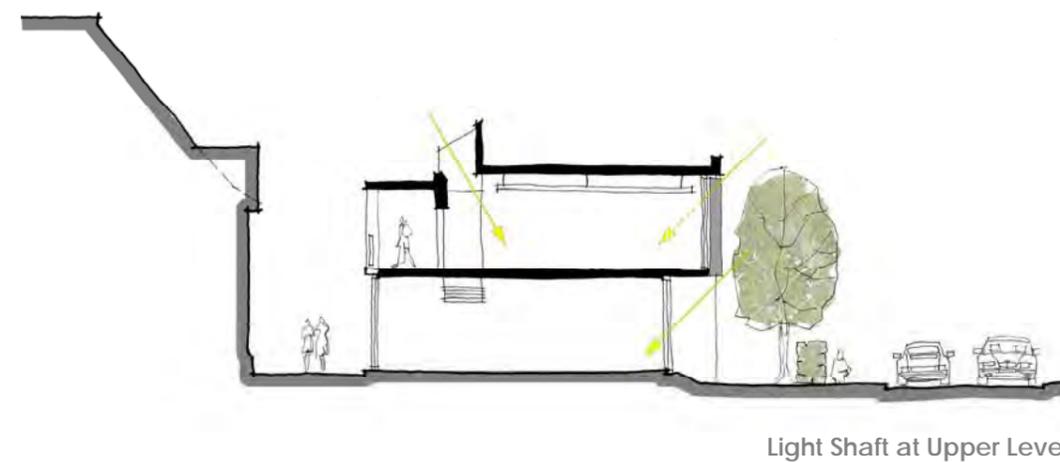
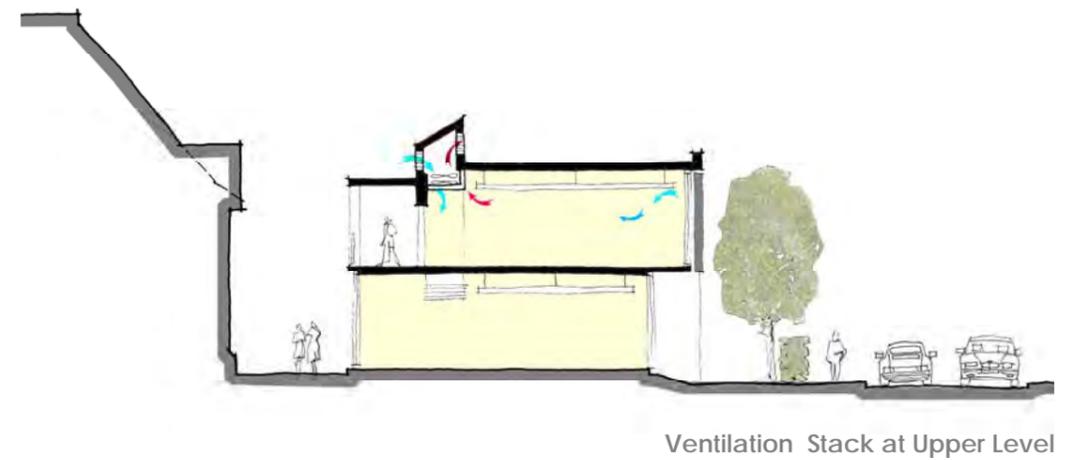
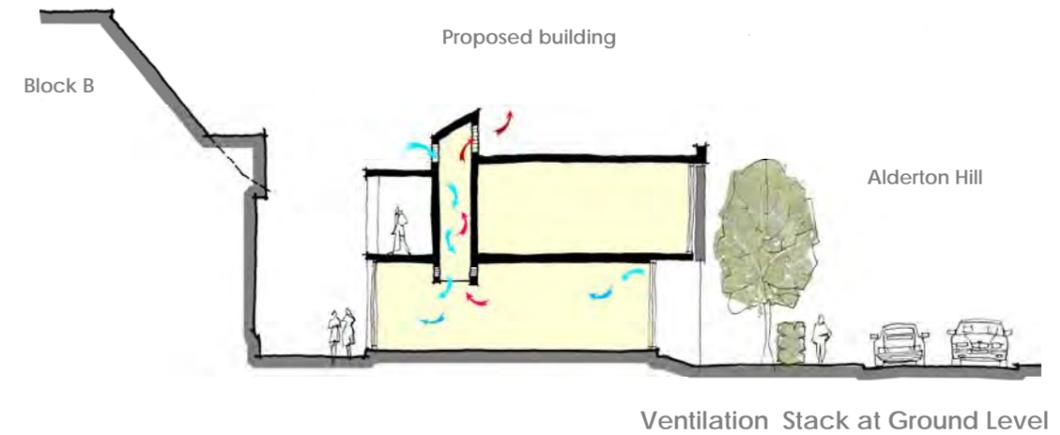
Brook Road

Designing for sustainability is integral to all aspects of the design. Orientation, construction materials and detail design have all been included within a coordinated strategy contributing to the building's performance, financial sustainability and environmental impact. The basic building dimensions and orientation have informed the conceptual approach and support maintenance strategies. Natural day-lighting is used to create an efficient, user friendly and inspiring internal environment. As well as enhanced basic construction technologies such as improved wall and roof insulation.

The following sustainable technologies have been considered:

- Displacement mixed mode ventilation systems with heat recovery that are designed as part of the building fabric to provide a coordinated overall design aesthetic from the outset, rather than the use of 'bolt-on' specialist engineering components.
- Heating and cooling systems which utilise the exposed thermal mass of the building structure. Floors and roof slabs will be constructed from concrete utilizing the material's thermal mass properties to regulate temperature within the internal building environment.
- Utilising natural elements and flora to create a positive internal environment. The surrounding trees on the site have been maintained with the proposed building carefully positioned in and amongst framing views of trees through windows. The use of green roofs would provide environmental benefits as well as integrating the building visually with the surrounding context.
- Use of materials from sustainable sources. Where available and appropriate, materials will be sourced locally, to reduce transport energy use TGS is committed to achieving environments that are demonstrably sustainable in their procurement and use.
- Good natural light is fundamental for an efficient working environment; it also adds enjoyment, productive use of the building and energy efficiency. Classrooms will benefit from generous areas of glazing including integrated roof lights to the top floor classrooms spaces that allow natural daylight to penetrate to the full depth of the plan.
- Solar shading in the form of vertical louvres line the south and east facades protecting the classrooms from glare and overheating. Shading to the ground floor accommodation will be provided by the overhang of the upper floor.

The sketch sections opposite show the ventilation strategy for both the ground and upper floor and the proposed design for maximising natural daylighting.



17.0 Flood Risk

As previously stated the wider site is traversed by Loughton Brook running in a north—south direction.

The design proposal increase the area of hard landscaping and in order to reduce overland storm water run off a combination of permeable paving a rainwater attenuation systems will be considered within the technical design stage.

It also proposed that a substantial area of the roof of the new building has a sedum covering that will reduce storm water run off from these areas.

A flood risk assessment is included in Appendix D:

Proposed Extension

Roding Valley High School, Loughton, Essex IG10 3JA

Flood Risk Assessment & Surface Water Drainage Strategy

Document Ref: 617947-REP-CIV-FRA

Revision: 0

Date: 1 September 2016

The report concludes the following:

“.....in flood risk context, the proposals are safe and appropriate and do not cause increased flood risk and.....there are feasible solutions for the management and controlled discharge of surface water generated by the site”.



18.0 Highways

The design proposals to not involve the provision of any additional vehicular or pedestrian accesses to the site and whilst pupil and staff numbers will increase, the general circulation of vehicles remains unchanged.

The site has excellent public transportation connections hence no additional car parking are considered necessary.

The school considers that the local road infrastructure and the lack of dedicated cycle routes make safe travel to school by pupils very difficult and hence this mode of transport is not actively promoted by the school.

It is, however, proposed to provide two additional cycle parking spaces for staff and to locate these near to the existing sports hall to facilitate easy use of existing staff shower and changing facilities.

A full Transport Statement is included in Appendix C: Proposed Expansion of Roding Valley High School, Loughton: Transport Statement Ref: IT1607 dated 05/09/16





PARTNERS
C.J. Barker
FRICS
S.E. White
MRICS
W.B. Bidewell
MRICS RMAPS
M.S. Merrill
MRICS
R.D. Gould
FRICS
R.S. Paynter
RIBA APMP

RIBA 
Chartered Practice

 RICS

