The Project

In early 2021 KLB was selected by the Department for Education (DfE) as one of the initial 100 nationwide schools requiring replacement of buildings nearing the end of their life, as part of their School Rebuilding Programme.

The parts of the school to be replaced include:

- Kingswood (languages department)
- Gym
- DT
- Drama Hall, Stage area and Drama classroom behind
- Learning support
- Staff room area

These buildings were part of the original school on our current site built in the mid-1960s.

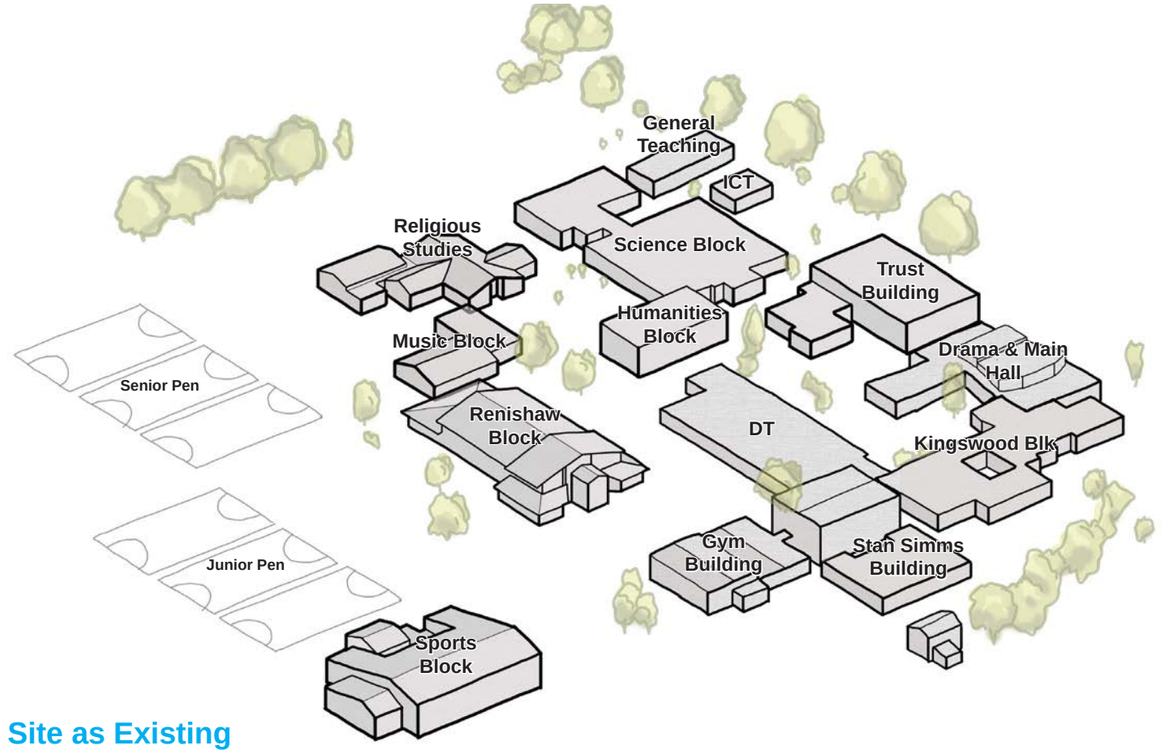
The design has also developed to include the demolition of the Caretaker's House in order to integrate an improved vehicular and pedestrian approach to the site, as well as safe parent drop-off and visitor parking.

Enhancing our School facilities

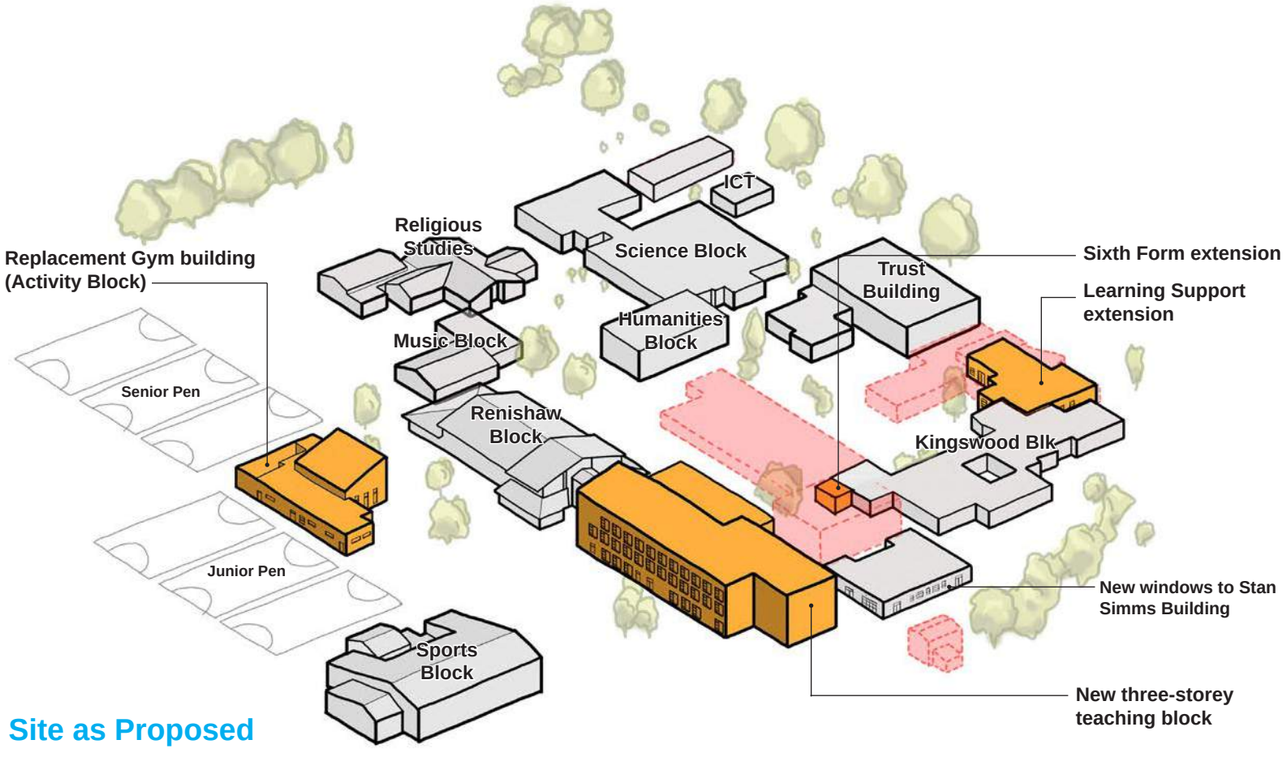
The replacement of these buildings will provide an opportunity for the school to further enhance the facilities for our pupils which the school is excited about.

Key benefits the scheme will provide to our pupils and the wider community include:

- A standalone Activity Block which can be independently used from the Sports Hall, for exams and after school/weekend access for the Community.
- The Main Hall replacement will provide tiered seating and increase the overall floor space to deliver a more comfortable, flexible facility and improved experience for students and parents.
- Large, double-height pupil breakout space within the Main Block for study opportunities between lessons.
- A dedicated refectory space opposite the Main Hall for use during the School day and events such as Open Evenings to provide refreshments to visitors and parents.
- A new Languages Lab within the Main Block to accommodate specialist listening capability for students
- An extension to the entrance block to accommodate a central Learning Support Hub for all students to access easily
- An extension and renovations to the Sixth form suite to provide more modern study and social spaces, as well as a dedicated entrance for 6th form students.
- Retention of our open campus style that is enjoyed by our students and provision of a large central quad with additional seating and canopies for use by all.
- A variety of enhanced and additional outdoor spaces for use by staff, students and the community, giving opportunity for external teaching and performances.
- New windows and external doors to be installed to the Stan Simms building improving its appearance and energy efficiency.

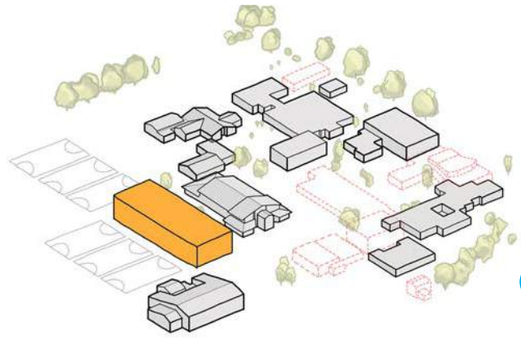


Site as Existing



Site as Proposed

Design Development



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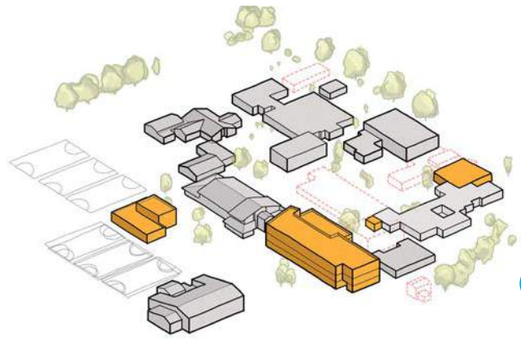

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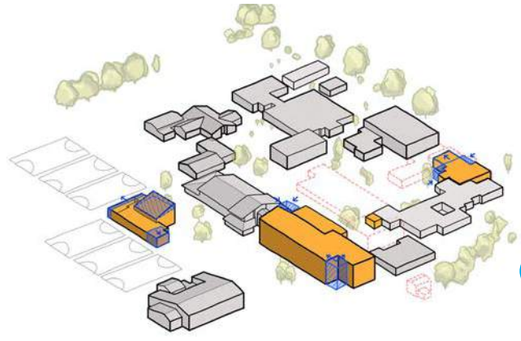

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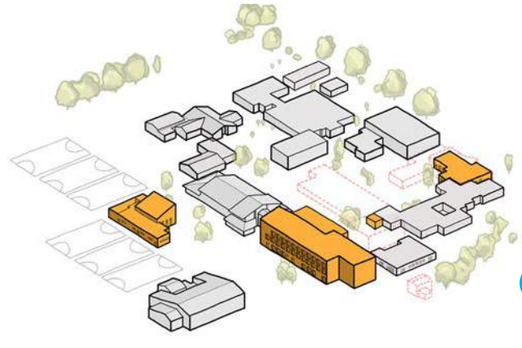

4

Introduction

Katharine Lady Berkeley's School
8th December 2021
Public Information Event

STROUD DISTRICT COUNCIL
Department for Education
KIER

1 Coach parking with manual access control - 12 spaces
2 Emergency access to sports field
3 Existing southern access junction retained
4 Existing exam storage containers re-located
5 Car drop-off - 7 spaces
6 New car park access junction via existing EFAL access
7 Car park with manual access control - 156 spaces & 2 DDA spaces
8 Emergency access to school site
9 Resistant materials drop-off
10 Car park with manual access control - 19 spaces & 4 DDA spaces
11 Mainteanance/ emergency/ refuse access
12 Minibus parking within secure line - 2 spaces
13 Enhanced paving to entrance
14 Sixth form outdoor space with canopy
15 New shelter to Sixth form entrance
16 Cycle parking - 20 spaces (40 spaces in total)
17 Learning Support outside space
18 Staff area with low fencing & soft landscape screening
19 Flexible space with seating
20 Seating area adjacent to new Activity Block
21 Enhanced paving
22 Existing canopy retained
23 Enhanced paving & stage area
24 New canopies to social space
25 Existing Junior Pen repositioned (resurfacing, new fencing, & lighting)
26 Memorial garden retained
27 Existing school grounds retained
28 Existing Senior Pen retained
29 Existing pitch layout retained
30 Relocated cricket wicket
31 Relocated cricket nets
32 Relocated long-jump run-up and pit
33 Tractor and grounds manitenance shed
34 Secure line
35 Proposed swales to edge of playing field
36 Existing barriers retained at main pedestrian entrance
37 Waste management area

Site boundary
Existing buildings retained
Proposed new buildings/ extensions

A separate car park and coach access are proposed to eliminate conflicts between car and coach movements. Coaches will enter / exit via the existing access point adjacent to the sports hall, while cars will access through a new central access point. The existing visitor car park is retained at the school main entrance. There will be no reduction in car park spaces. Pupils arriving on foot or by cycle will still be able to use the existing access points off Wotton Road.

A new courtyard is proposed centred around a staging area and providing an external hub space for teaching, recreation, performance and outdoor dining. New canopies in the courtyard will provide shelter with seating opportunities. A Learning Support outside space adjacent to their internal facilities is designed to provide external learning opportunities whilst screened with soft landscaping from the central courtyard.

The new teaching block will have a landscape space with opportunity for recreation, socialising, and practical education classes. This space also provides access to the new activity studio linking with good links to the schools existing sports facilities. The position of the new block creates opportunity for a new Sixth form garden, including enhanced paving, planting, and canopies for shelter the space provides great opportunity for students to socialise.

New cricket wicket, nets, long jump and improved hard games area will be provided.

Landscape Masterplan

Katharine Lady Berkeley's School
8th December 2021
Public Information Event

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1 Existing MUGA repositioned (resurfacing, new fencing and lighting)
2 Seating area adjacent to new Activity Block
3 Cycle parking - 20 spaces (40 spaces in total)
4 Existing school grounds retained
5 Bioretention areas/rain gardens
6 New canopies to social spaces
7 Existing canopy retained
8 Minibus parking within secure line - 2 spaces
9 Learning Support outside space with enhanced paving
10 Staff area with enhanced paving, low fencing and soft landscape screening
11 Raised stage area with enhanced paving and seating
12 Plinth for future art instalations
13 Enhanced paving/ coloured asphalt
14 Flexible social space with enhanced paving
15 Enhanced paving with seating to Acitivity block
16 Emergency access to school site
17 Existing exam storage containers re-located
18 Coach parking with manual access control off Wotton Road - 12 spaces
19 6no EV active parking bays to main car park - 1 accesible bay, 5 standard bays.
20 Car park with manual acces control - 156 spaces & 2 DDA spaces
21 Resistant materials drop off
22 Sixth form outdoor space with enhanced paving and canopy
23 New shelter to Sixth form entrance
24 Enhanced paving to entrance
25 3no EV active parking to visitor car park- 1 accesible bay, 2 standard
26 9no passive bays to visitor car park
27 Visitor car park with manual control - 19 spaces & 4 DDA spaces
28 Maintenance/ emergency/ refuse access
29 Existing barriers retained at main pedestrian entrance
30 New car park access junction via existing EFAL access
31 Car drop off - 7 spaces
32 Existing southern access junction retained
33 Emergency access to sports field
34 Pedestrian barriers
35 Static bollards to end of individual coach parking bays
36 Drop bollards to allow for emergancy access to sports field

Car and Coach Parking Proposal

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CGI View of Proposed Main Hall

CGI View of Proposed Second Drama Studio

CGI View of Proposed Resistant Materials Classroom

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Proposed Ground Floor Plan - Main Block

Katharine Lady Berkeley's School
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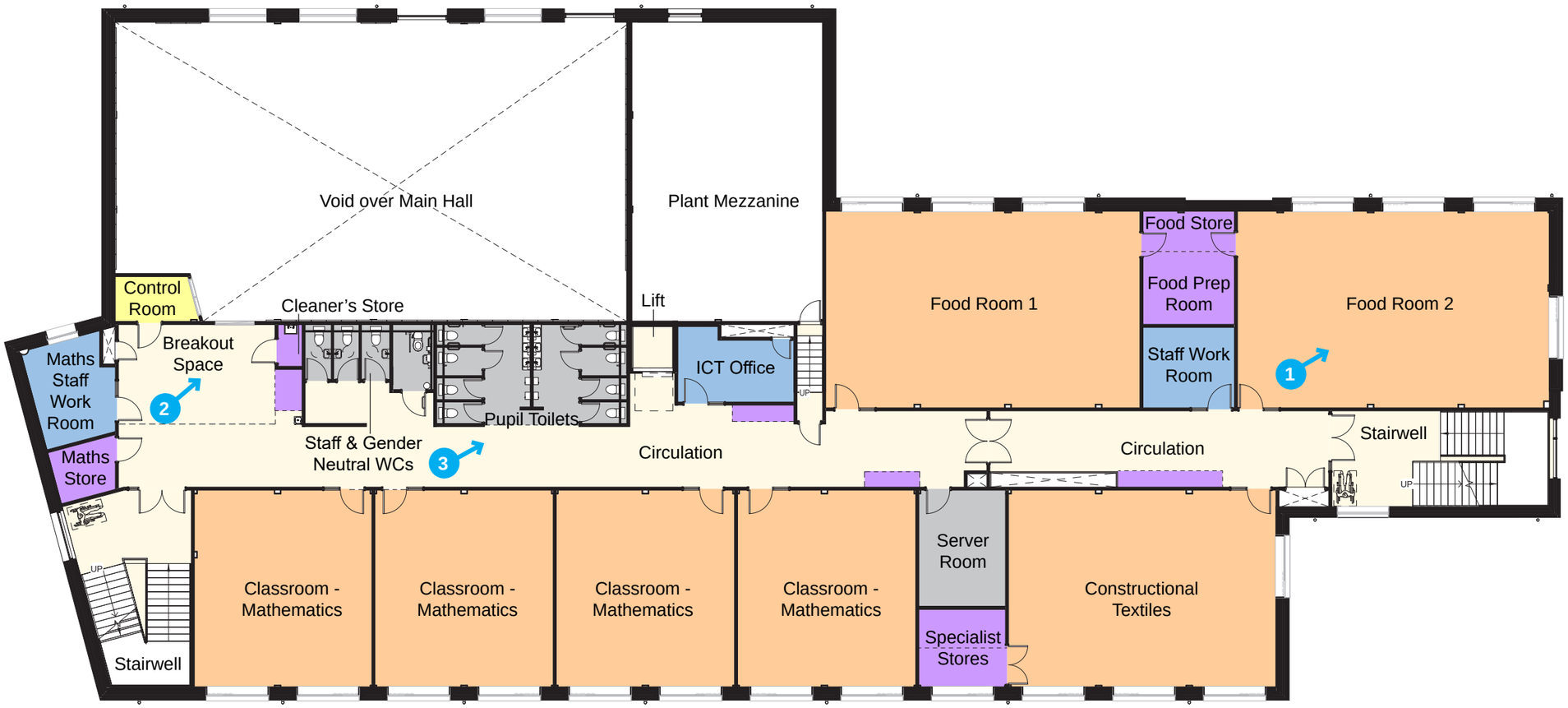
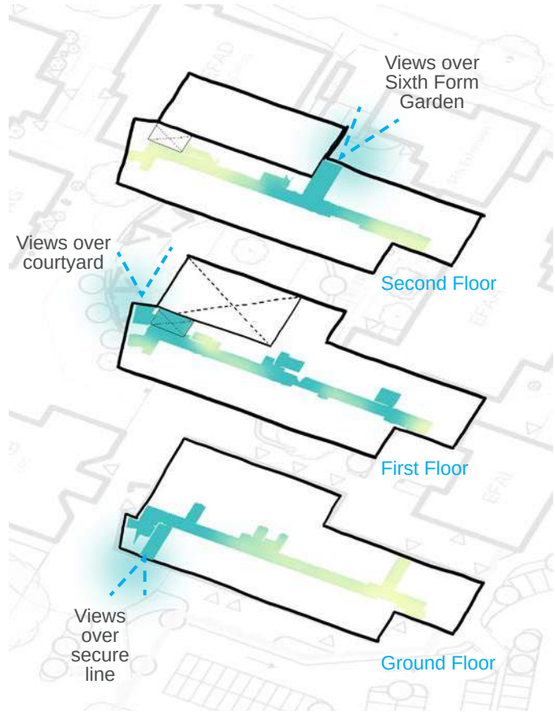
CGI View of Proposed Food Room

CGI View of Proposed Breakout Space

CGI View of Proposed Pupil Toilets



Passive Supervision through Building Design



- Large Spaces
- Staff and Administration Areas
- Teaching classrooms
- Storage
- Learning Resource Areas
- Circulation
- Non-net areas

Scan me to watch video of proposals:

Proposed First Floor Plan

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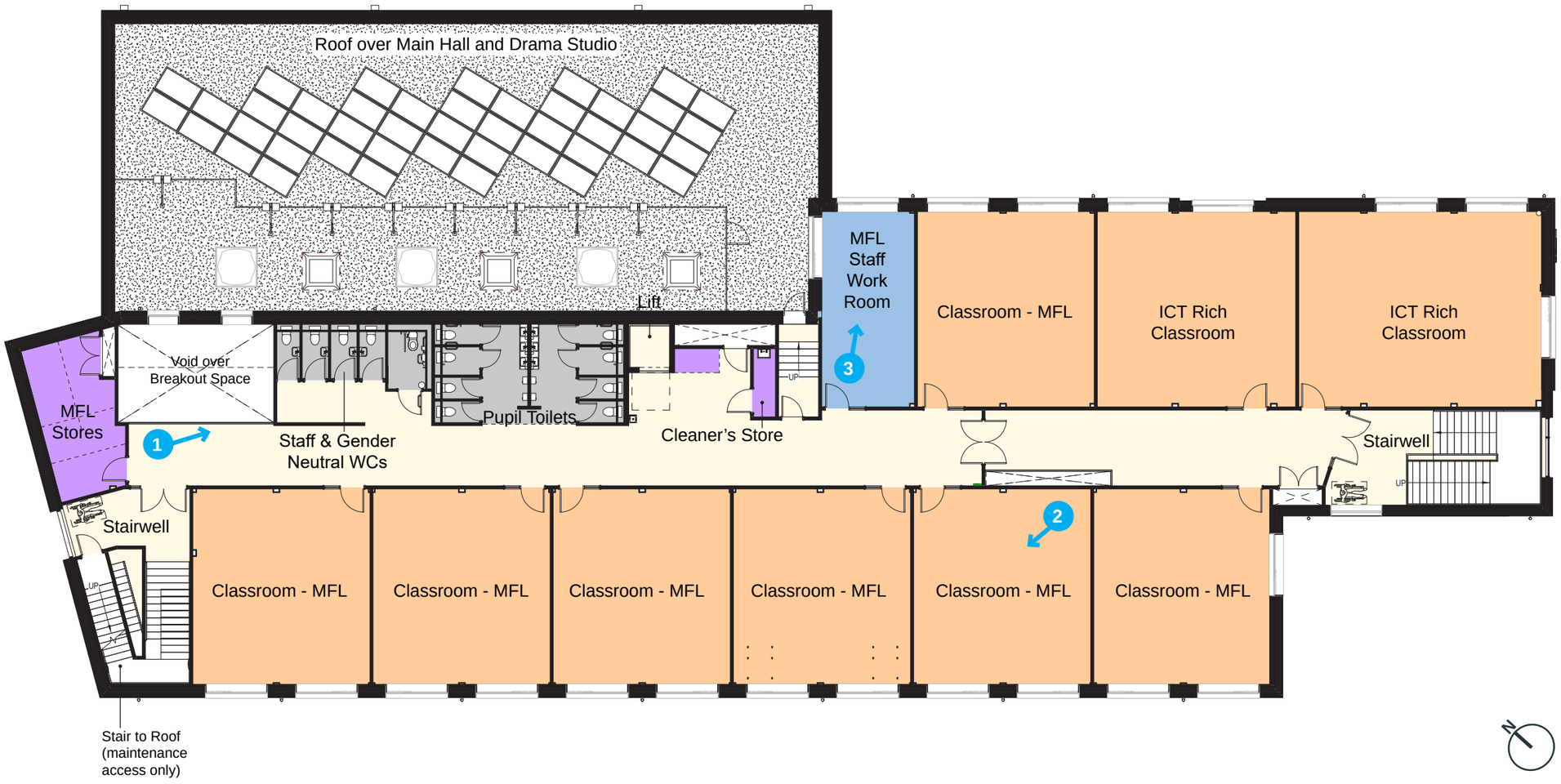
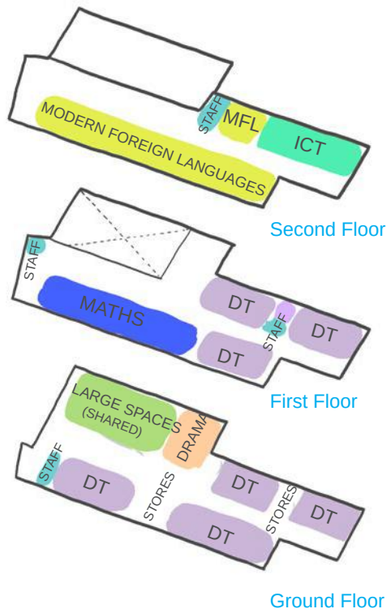
CGI View of Breakout Span from Second Floor

CGI View of Proposed Typical Classroom

CGI View of Proposed Staff Work Room



Faculty Diagram



- Large Spaces
- Staff and Administration Areas
- Teaching classrooms
- Storage
- Learning Resource Areas
- Circulation
- Non-net areas

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Proposed Second Floor Plan

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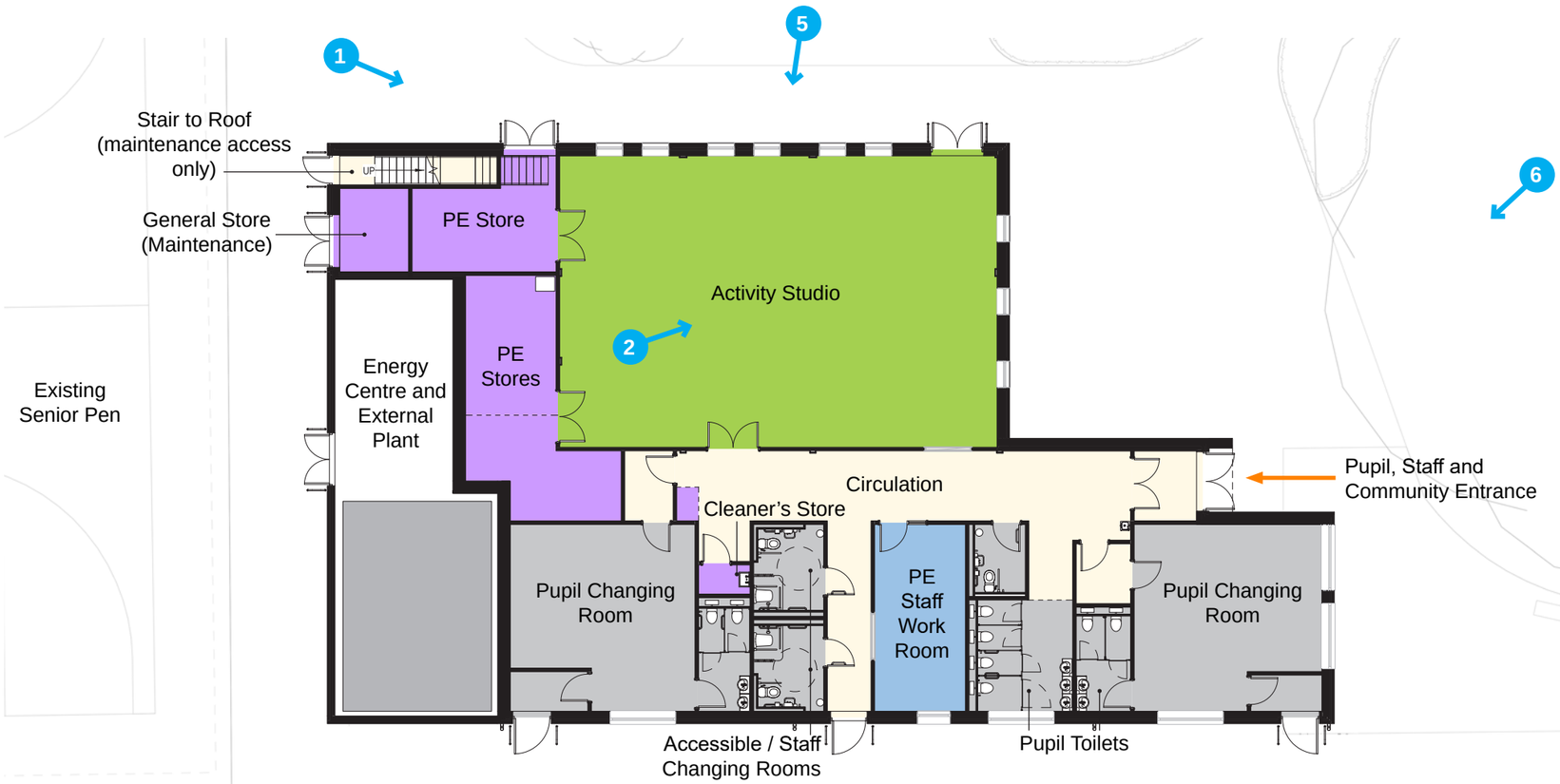
CGI View of replacement Gym block

CGI View of Activity Studio

CGI View of Activity Block from new Junior Pen

View alongside Junior Pen



View from Memorial Garden

View from Entrance from existing Oak tree

Proposed Activity Block (Gym replacement)

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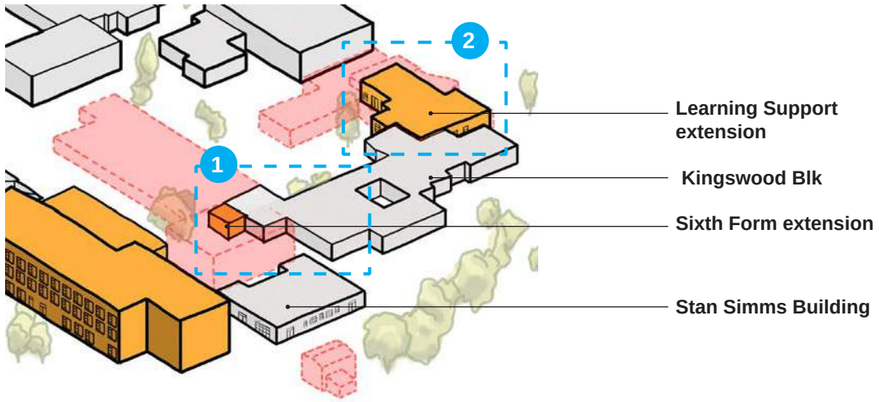
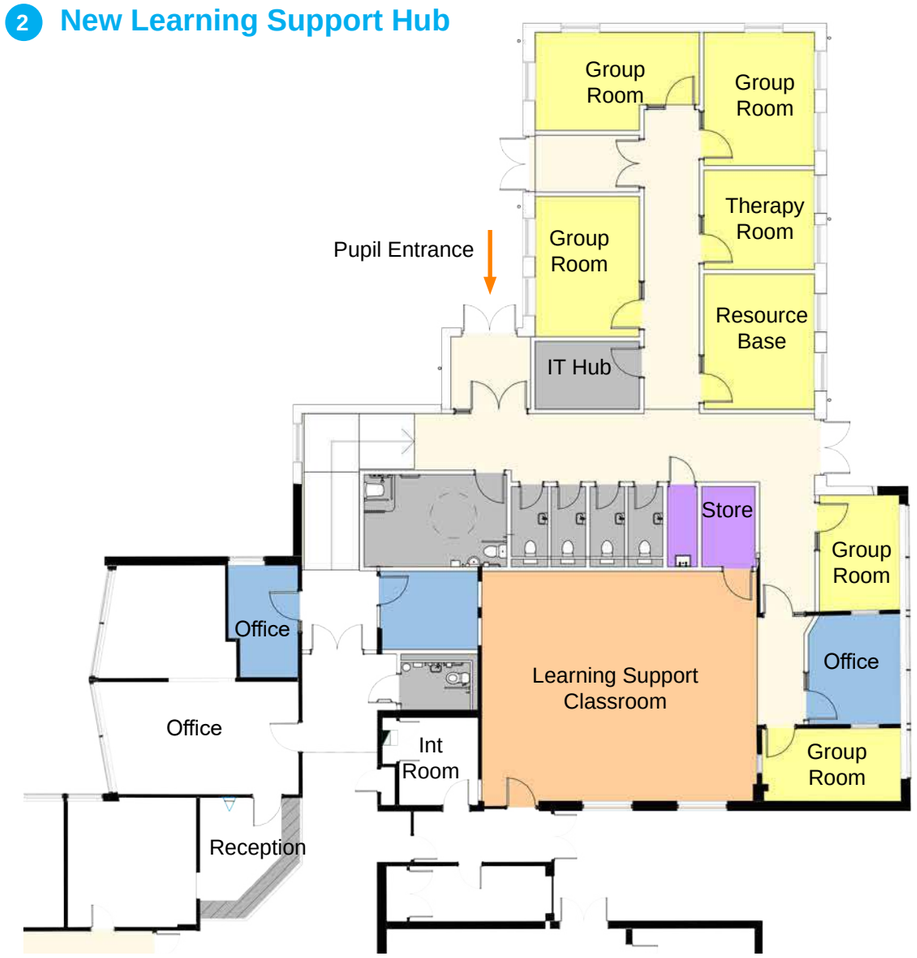


CGI View of Proposed Learning Support

CGI View of Proposed 6th Form Entrance

1 Refurbished Sixth Form Suite

2 New Learning Support Hub



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Learning Support and Sixth Form Extensions (Kingswood Block)

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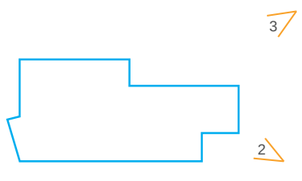
Birds Eye View from Proposed Coach Park

Proposed Main Block Street Facing Elevation

Proposed Street Scene from Wotton Road

View of Proposed New Central Courtyard and New Builds



Key

Proposed Massing and Site Views

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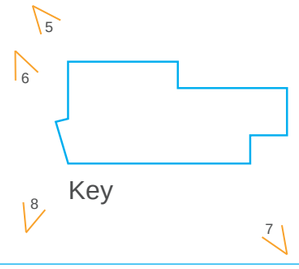
CGI View of Dining and Outdoor Play Area

CGI View of Dining and Outdoor Play Area

Proposed Site Massing

Proposed Site Massing



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Proposed Massing and Site Views

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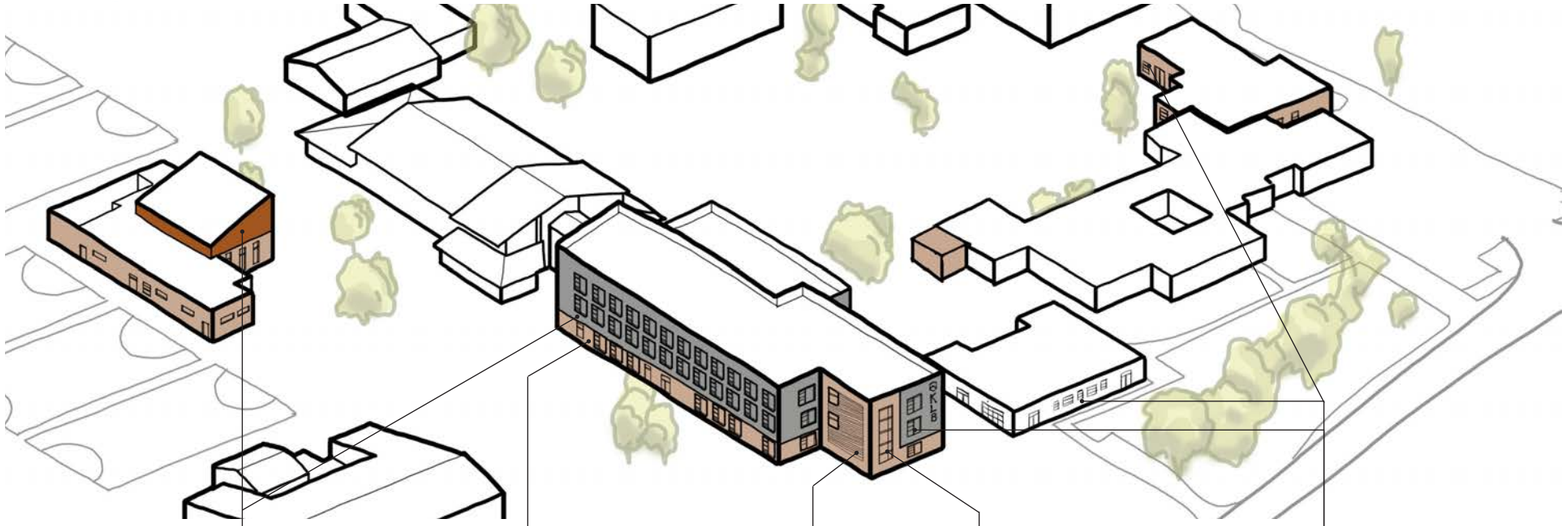
Building Material Strategy



Fibre Cement Cladding System

Buff Brick & Feature Brick Panel

Curtain Wall Glazing System

Window Frames

CGI View from Bus Park Entrance

CGI View - North Approach from Wotton Road

CGI View - South Approach from Wotton Road

CGI View from Car Park Entrance

Street Scenes

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8th December 2021
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I. Sustainability Targets

- **A** To put the long-term needs of the school users at the centre of all decisions.
- **B** To be future proofed against the risks of climate change as defined by UK adaptation policy.
- **C** To achieve **NZCiO (Net Zero Carbon in operation)** at completion, as defined by the standards within the Net Zero Carbon Buildings
- **D** To report on Embodied Carbon in Construction as defined by the standards within the Net Zero Carbon Buildings
- **E** To create a healthy and productive whole school setting in response to UK's 25-year Environment Plan including biodiversity net gain.

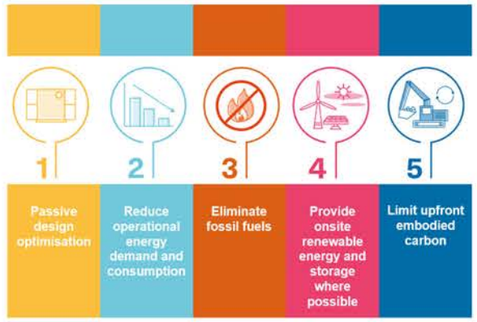

Image: *Factors contributing to Net Zero Operational Carbon (Source: Cundall)*

II. Heating Strategy

- The primary energy supply will be derived from **Ground Source heat pumps** (GSHP) located within the main energy centre.
- An ASHP **(Air Source Heat Pump)** is also provided adjacent to the energy centre. **No gas fired boilers are included in the heating strategy.**
- The water to water heat pumps are also designed to **recover or scavenge waste heat from various sources**. It is expected that the heat scavenging operation will **recuperate 20-30% of the annual energy needs** for both buildings

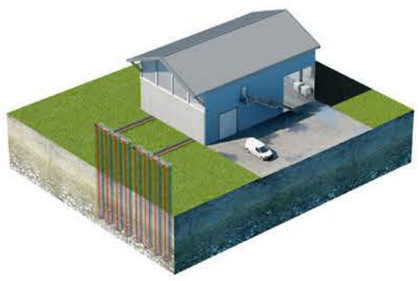

Image: *Ground Source Heat Pump Illustration (Source:Kensa Heat Pumps)*

III. Ventilation Strategy

α Natural Ventilation

The ventilation and 'cooling' hierarchy proposes to make maximum use of:

- **Exposed thermal mass** combined with natural cross ventilation.
- **Stack effect (shown in the above image)** to provide a comfortable internal environment.

Where this is not possible or practicable the aim is to **minimise mechanical ventilation energy usage** through locating the plant near to point of use and using the exhaust air from mechanical extract to pre-heat the incoming fresh air (known as heat recovery), thus **improving the overall heat delivery efficiency.**

Typically, all occupied rooms have been tailored to maximise the natural ventilation availability via opening windows and hybrid ventilation units.

β Mechanical Ventilation

Some rooms are 'land-locked' and do not have direct access to an external wall for ventilation.

In these rooms the strategy is to provide **mechanical supply and extract via a centralised air handling unit (AHU)** located in the 1st mezzanine plant-room.

This AHU will be provided with **high efficiency fans and a heat recovery unit** to minimise energy consumption.

The **fresh air will be heated to comfortable temperatures** such that the air into the room also provides the space heating.

Cooling installations are limited to internal offices and server rooms, by the use of heat scavenging fan coil units (these recover heat from these indoor spaces back into the ambient heat network)

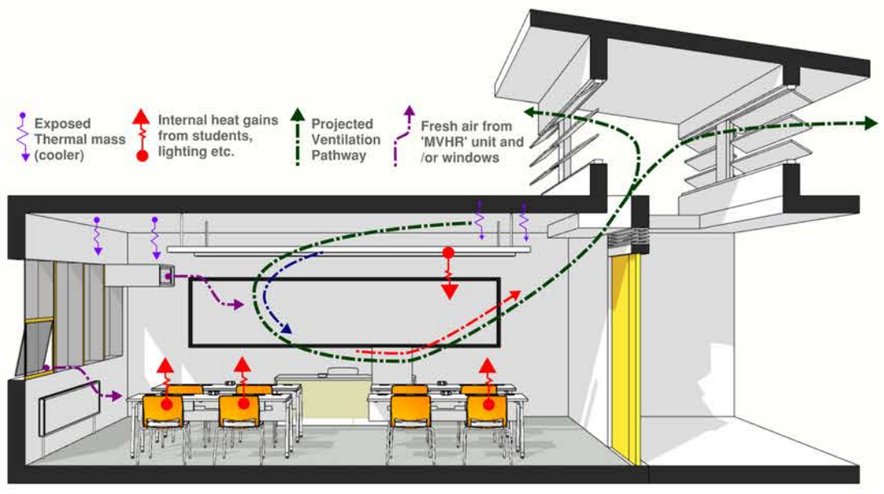

Image: *Classroom ventilation concept with* ***openable windows, thermal mass,*** *MVHR unit and stack ventilation (Source: Cundall)*

IV. PV Array

- To achieve NZCiO for new builds requires ~192,000kWh **(~3,650m² x 52.5 kWh/m²)** to be generated via PV systems per year.
- Our proposal includes **three high module efficiency (22.6%) PV systems.**
- The roof will comprise of photovoltaic panels (PV) with optimum orientation to maximise electricity generation.

Image: *Illustration of the PV system on the building (Source: Cundall)*

V. Lighting strategy

- **Daylight design has been carefully considered**. The size of windows, their location and the type of glazing / blind control are provided to give good views out, to provide good levels of natural light during the day and to reduce the energy requirements of the artificial lighting.
- **Artificial lighting design includes efficient lights** such as LED type fittings as well as automated lighting controls. These controls allow **prevent lights being left on when not required as well as dimming to reduce energy** when natural light levels are high.

VI. EV charging points

- **10% of on-site parking spaces to be provided with electric vehicle (EV) charging points** with 5% active being provided as part of the development, with 5% passive for future installation.
- The allocated EV parking bays will be split between the two car-parks. The intent is to provide a **dedicated EV charging distribution board located within the new main building.**

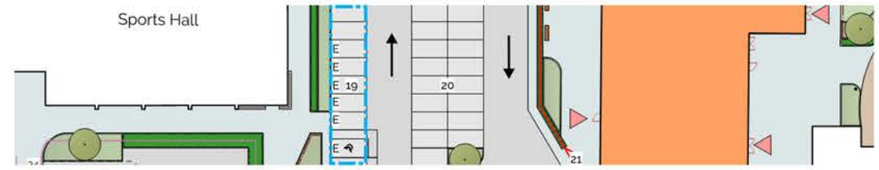

Image: *Location of 6 EV charging points marked on the site-plan (Source: Noviun Architects)*

VII. Additional Plantation

- **New trees will be planted** across the site to allow greater carbon capture.
- **Green roofs** and new planting to create wildlife habitats
- Pollinating and berrying plants to **support insects and birds**
- Use of **native species** tree planting
- **Rain gardens and wildflower swales** to provide conditions for a wide range of species

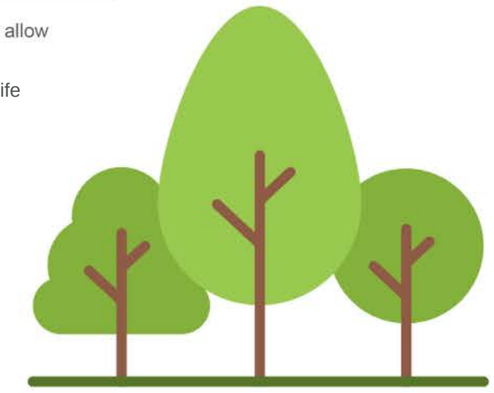

Image: *Trees vector (Source:Iconpacks)*

Sustainability at KLB

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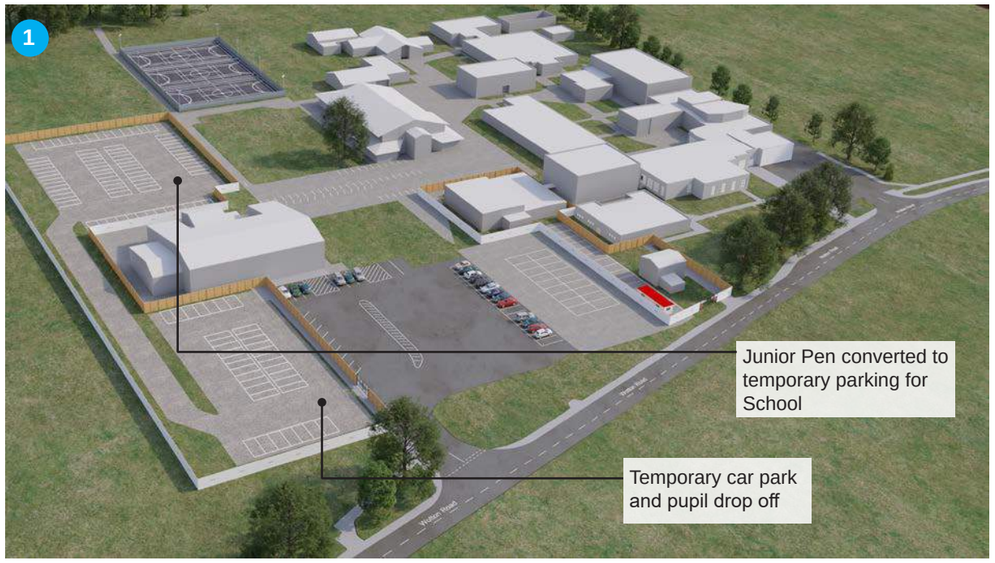
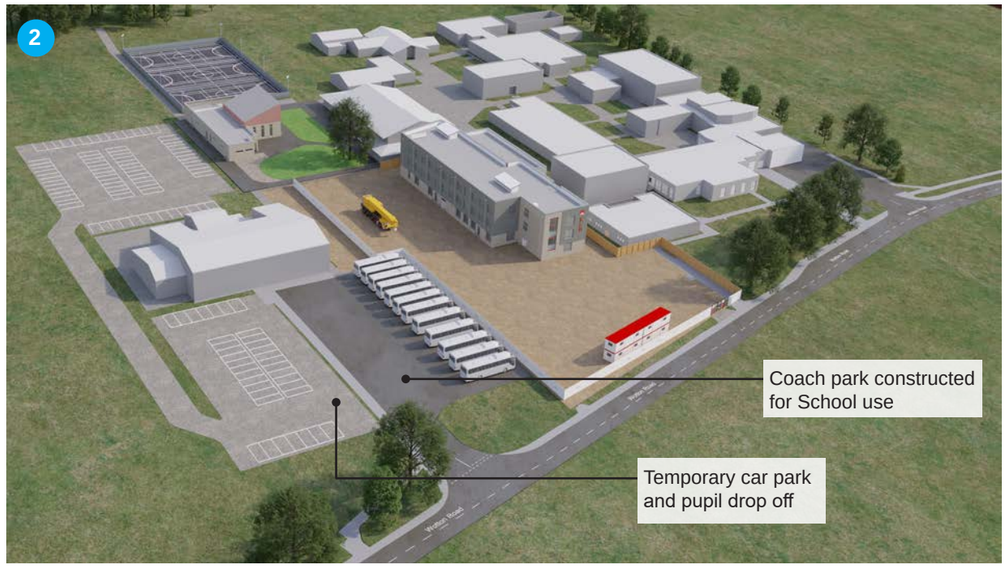


Early construction of temporary car park and pupil drop off



Temporary car and coach parks segregated from construction works

Junior Pen resurfaced and main car park constructed during Summer 2023

Completed works - July 2024

June 2022 — Start on site

Project scheduled over a number of phases

July 2024 — Target completion

Scan me to watch video of the proposed construction process:

During the Build

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8th December 2021
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Perspective Section A-A through Main Hall

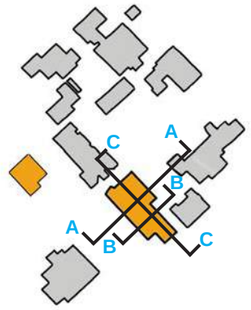
A Message from the Headteacher

This investment in our school is much welcomed and will support the school's aim of providing a modern state of the art learning environment for our students.

It will deliver a level of investment and change that could never have been realised through our normal funding streams, and will deliver accommodation appropriate for the next 50 years and beyond.

We look forward to working with everyone involved, not only to ensure the facilities meet the needs of students and staff but also that any work is sympathetic to the beautiful Gloucestershire countryside in which we are located.

Key



Section B-B looking West

Section C-C through Main Hall looking South

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Proposed Building Sections

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