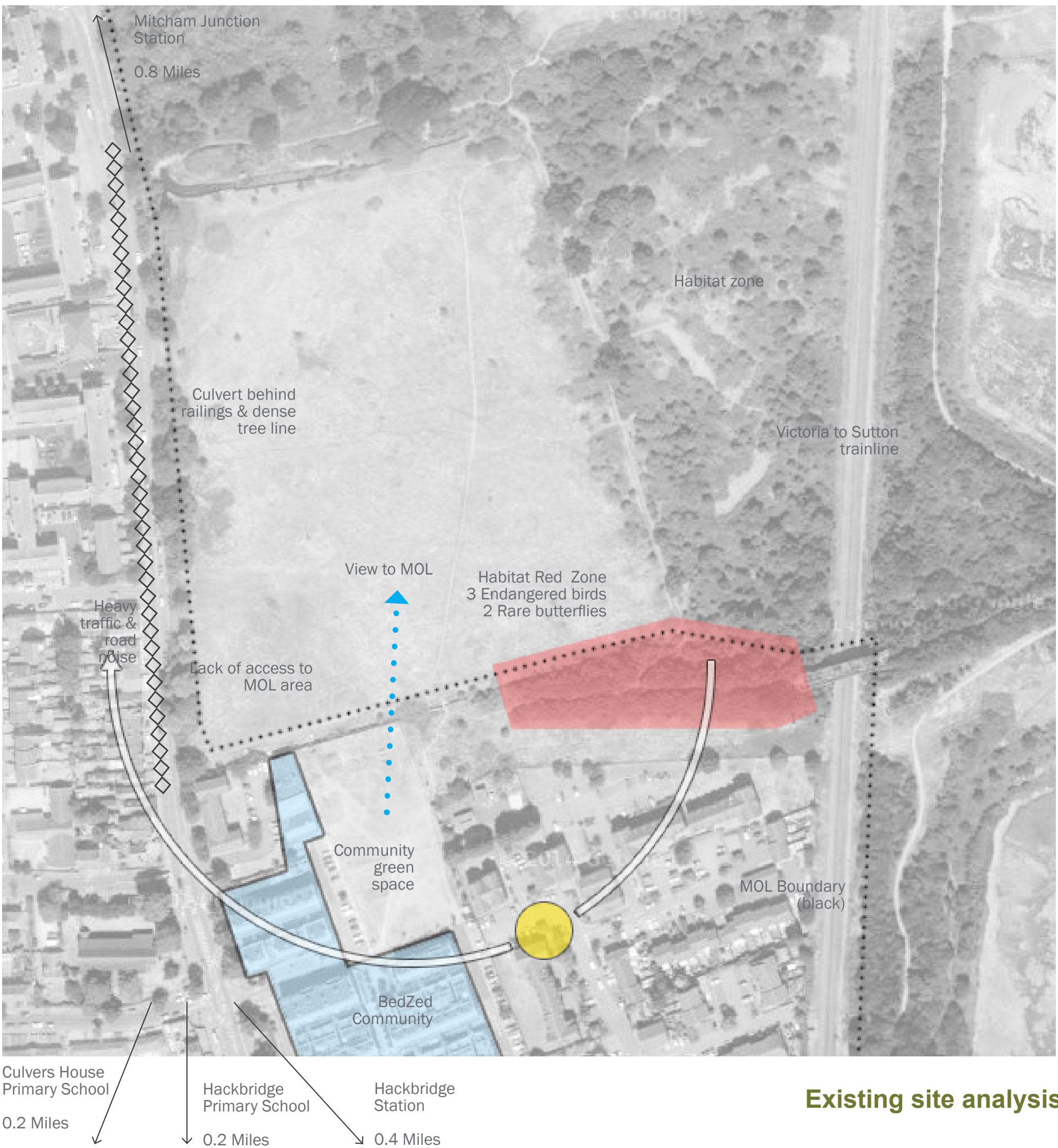


# Hackbridge Primary School Expansion: Context

Current proposals following continued design development, incorporating feedback and comments from the previous Public Consultation in March 2015.

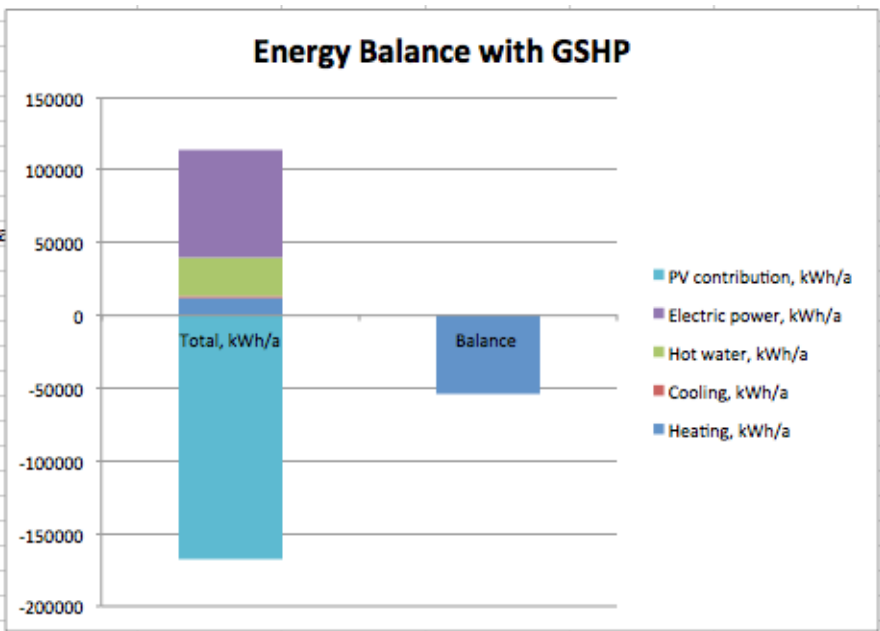
## Brief

- Demand for school spaces has increased dramatically in all areas of the Borough in recent years and there is a consistent anticipated shortfall in places. Proposed new housing on the Felnex site, along with other pressures in the Hackbridge area, means that there is a requirement for a new two form entry primary school.
- Architype has been appointed by the London Borough of Sutton to develop proposals for the provision of a new Primary School on the Metropolitan Open Land (MOL) site immediately to the north of the BedZED development.
- The school will provide space for 420 pupils aged 5-11.
- It will be a highly sustainable environment to learn in, and an environment to learn from. It will be energy efficient, be constructed of materials that are healthy and have low embodied energy and be easy to construct and maintain. The internal environment will be developed to maximise natural daylighting and fresh air provision.
- The school will integrate learning about sustainability by growing food, supporting active travel, reducing energy and waste and providing well-designed environments for outdoor learning and play.
- The school will be Zero Carbon and Passivhaus certified.

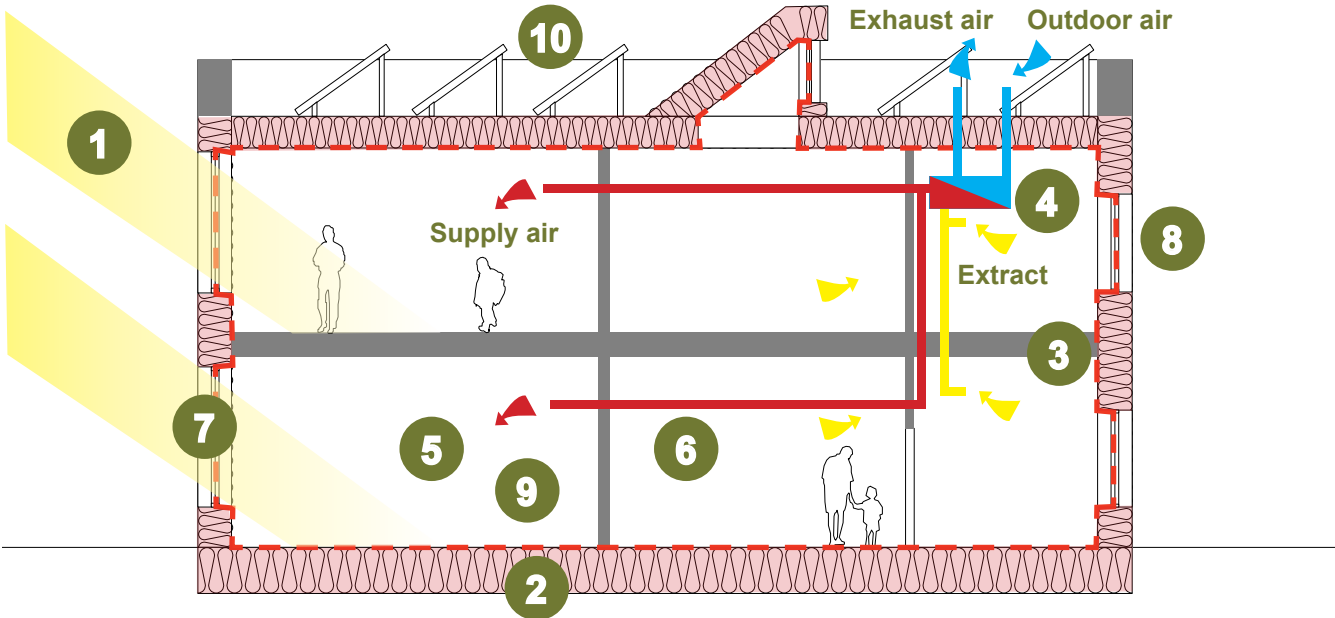


## Zero Carbon and Passivhaus certified

- The scheme is designed to be carbon zero which is befitting of its location next to the Bedzed project and also Sutton's One Planet Living aspirations. To achieve carbon zero requires a rigorous approach first to reducing energy consumption and then a robust strategy for implementing enough Low to Zero Carbon technologies (LZCs) to provide a net energy zero school.
- Architype have achieved the first aim on previous schools by designing to the Passivhaus standard. This has proven to have an exceptional track record of reducing energy consumption in Europe and now in the UK too. A typical school consumes 269 kWh/a.m2 Primary Energy (CIBSE TM-46) and a Passivhaus School, to achieve certification, must consume less than 120 kWh/m2.a Primary Energy. The resultant energy saving is 55%. In Germany Passivhaus schools have achieved savings in excess of 75%.
- The diagram to the right illustrates the key principles used by Passivhaus to ensure extremely low levels of energy consumption.
- Once energy consumption is reduced, achieving a net energy zero building becomes more realistic through the use of on site renewables. In this instance, we propose to achieve this through high efficiency solar PVs and a heat pump system with the potential for inter-seasonal storage. Off site renewables are not required.
- As the graph adjacent illustrates we are currently targeting a significant energy positive building.



## Passivhaus Principles



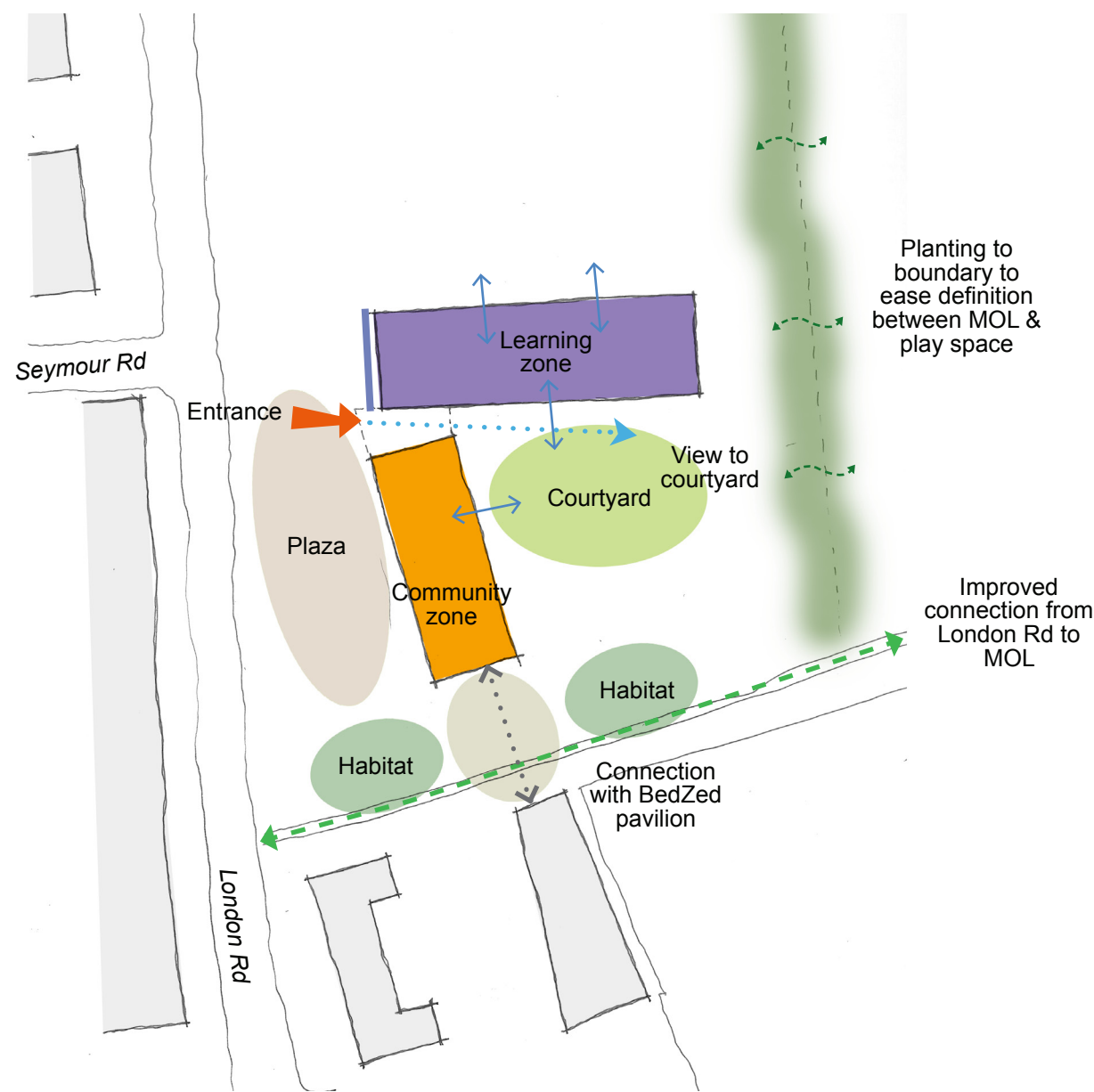
- KEY:
- 1 Good solar orientation & compact form
  - 2 Super insulation and no thermal bridges
  - 3 Air tight envelope
  - 4 Ventilation with heat recovery
  - 5 High comfort levels
  - 6 Low primary energy
  - 7 Triple glazing
  - 8 Natural ventilation in the summer
  - 9 Reduction in small power
  - 10 Photovoltaic panels to help achieve Zero Carbon



# Hackbridge Primary School Expansion: Planning & materials

## Planning

- The site is zoned Metropolitan Open Land (MOL) but the GLA have given their support to use of the MOL for a new school. The proposals provide a comprehensive masterplan for the southern section of the site.
- The site of the school is divided into 3 zones.
- A community zone comprising of the main entrance, hall, kitchen, administrative facilities, drop off and deliveries. The habitat area is adjacent to the existing BedZED pavilion. This provides additional community provision and a marker to the start of the cycle/foot path to the proposed Eco Park.
- The North wing is the learning zone, comprising the main teaching accommodation and associated external covered play.
- To the north of the building is the main external hard and soft teaching and play spaces in a secure perimeter.
- The rest of the MOL will remain open, to become an Eco Park that both the school and community could benefit from.



Proposed site diagram



### KEY:

- 1 Classroom wing
- 2 Community zone
- 3 Canopy
- 4 Vehicle entrance/exit
- 5 Potential future ecology park
- 6 Staff car park
- 7 Main building entrance
- 8 Access to MOL
- 9 Playground
- 10 Grass football pitch
- 11 Soft and hard play
- 12 BedZed pavilion
- 13 Cycle/foot path
- 14 Habitat area
- 15 Footpath widening
- 16 New raised table in road

Proposed site strategy

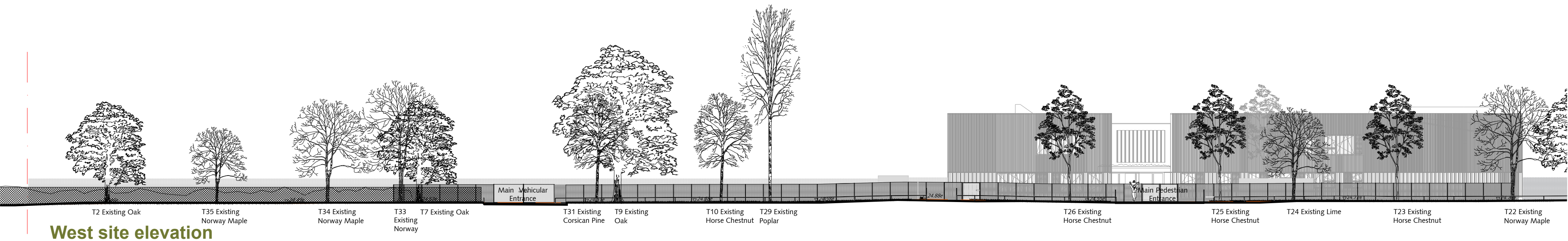




# Hackbridge Primary School Expansion: Landscape Strategy

## Landscape proposals

- A range of formal and informal play spaces with an emphasis on soft planting provides active, social and natural play opportunities for all age ranges. The landscape proposals are underpinned by promoting habitat value for both educational and ecological benefit.
- Decking links and a paved piazza provides pedestrian access to the front of the school from London Rd. Vehicular access with limited staff parking/drop off space is also intended. Cycle / scooter parking is to be provided for pupils and staff.
- ‘Soft’ informal social spaces consist of planted areas with seating and shelters, grassy embankments & swales, trim trails and natural play equipment. ‘Hard’ informal social areas provide imaginative activity space. A grass pitch for 7-a-side U10-11 football with surrounding fence, and a hard surfaced playground that accommodates 2No. Netball courts or a mini soccer pitch for 5-a-side side football is also intended. There is future opportunity to install growing beds and a green house to the north of the building.
- The heart of the landscape presents a ‘courtyard’ play space south of the learning zone, combining hard surfaced access and soft planting interior with climbers lining the canopy edge.
- The landscape integrates a Sustainable drainage system (SuDS) that collects, transfers and treats surface water run-off. This minimises the risk of flooding and removes pollutants in the water before discharging into the existing ditch along London Rd. Porous paving, a rill, a swale to the boundary, and retention pond form the SuDS network. Decking provides access adjacent to and over the retention pond, which sits within a lush habitat garden to the south of the site.
- A secure fenceline surrounds the school landscape. This fenceline is intended to provide some visual permeability into the Metropolitan Open Land as it is positioned in the base of the swale. Planting to the boundary of the school is intended to ease the definition between the MOL land and play surfaces.
- Promoting the ecological value of the site is key to the proposals therefore the existing trees and vegetation are retained wherever possible and a green roof is proposed. The lighting will be designed to minimise any impact on bats and proposed planting will be predominately native with non-native species with specific wildlife value.





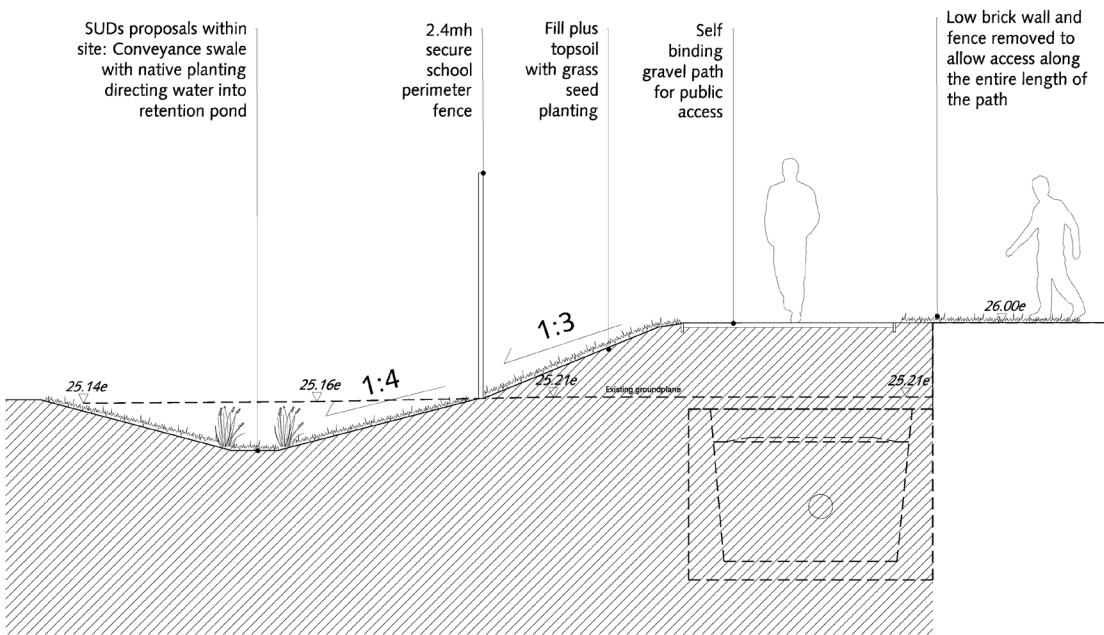
# Hackbridge Primary School Expansion: Landscape Strategy



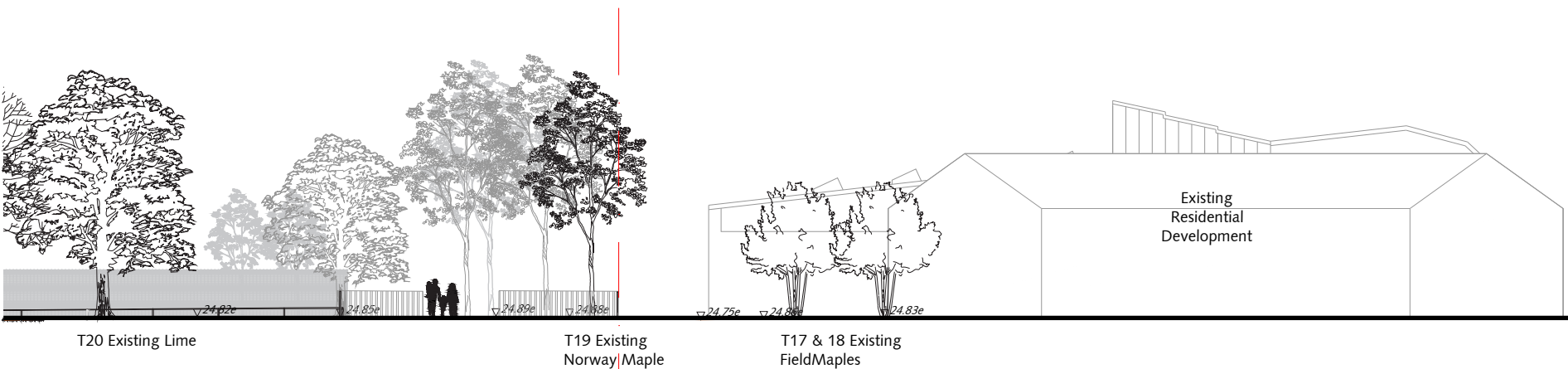
Fence and gate diagram



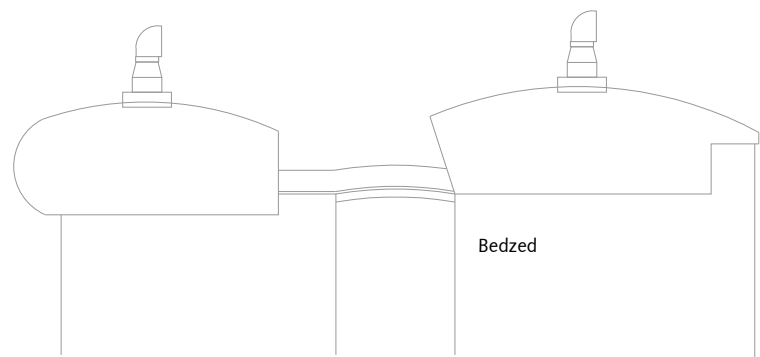
SUDs diagram



Indicative Boundary Section



West site elevation





# Hackbridge Primary School Expansion: Building Plans



First Floor Plan

<span style="color: yellow;">■</span> Halls	<span style="color: green;">■</span> Kitchen and Servery
<span style="color: orange;">■</span> Learning Resources	<span style="color: purple;">■</span> Staff and Admin
<span style="color: pink;">■</span> Basic Teaching	<span style="color: blue;">■</span> Toilets
<span style="color: darkblue;">■</span> Storage	<span style="color: yellow;">■</span> Circulation



Ground Floor Plan

## Building organisation

- The school building is two storeys and orientated predominantly on a North/South axis to maximise daylighting and allow for controlled heat gains in the winter and easy shading in the summer. This orientation is ideal for a fully certified Passivhaus scheme.
- There are two blocks, one which provides the teaching accommodation and the other has ancillary spaces/community use spaces.
- The main pedestrian entrance enters into the heart of the building with the administration, halls and kitchen facilities to the South and the teaching accommodation to the North. The South block is designed so that it can be closed off from the rest of the school to allow out of hours use, and therefore provide the potential for hire revenue.
- The main teaching provision faces North and South to make best use of solar gains. It has a top lit central corridor that leads to a hub space where group activities can take place. This exciting, daylight space at the end of the corridors helps animate the corridor spaces.
- Moveable acoustic walls are proposed between the year group classrooms to provide flexible arrangement of spaces and facilitate the use of different teaching methods.



# Hackbridge Primary School Expansion: Sketch views



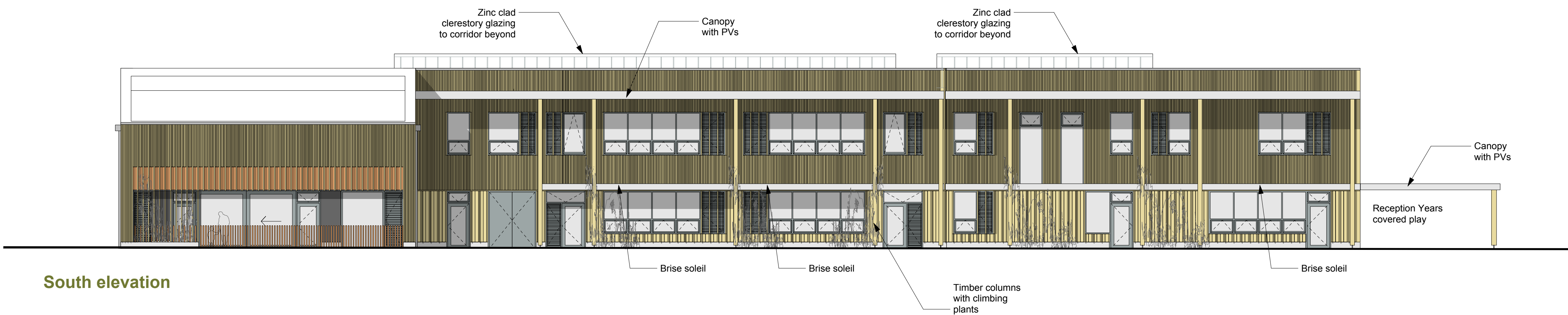
View from BedZed towards MOL

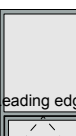
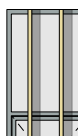






View from MOL - looking South



# Hackbridge Primary School Expansion: Elevations



KEY:			
	Glazing		Timber vertical shading fins over windows - fin depth tbc
	Ventilation louvre (for secure night-time purging)		Timber cladding with fins at upper level
			Timber cladding with fins at lower level
			Pre-cast concrete plinth