



Deneia Primary Academy

Document MIDP Reference Number	FSA-XX-XX-T-A-9000
Description	Design Quality Panel Presentation
Revision	P01
Revision date	12.01.25
Status/Suitability Code	S3
Purpose of Issue	FOR COMMENT
Project Reference	Deneia Primary Academy
Client	Cambridge County Council
Site Address	Waterbeach Barracks Development Phase 1
Procurement Route	CCC Framework
Type of School	Nursery & Primary School





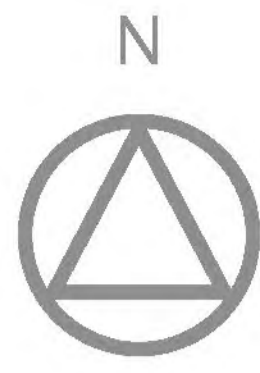
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Site Aerial Views



REGULATORY PLAN KEY CONSTRAINTS AND OPPORTUNITIES

KEY

- VEHICULAR ROUTES
- PRIMARY PEDESTRIAN/
CYCLEWAY
- SECONDARY PEDESTRIAN/
CYCLEWAY
- ACOUSTIC BUND
- SCHOOL SQUARE
- FUTURE HOUSING

Hall off of the School Square to increase flexibility for community use

Main Entrance directly form Public Square to enforce connectivity and place making

Nursery creates a node building from the Woodland Shared Cycleway/
Footpath

The bund wraps the entire western side of the site.

Wet Woodlands surround the school site.

A10

H

E

N

PLAYING
FIELDS

Allotments

Active 'Holding
Edge' of the School
Facade

Primary Pedestrian &
Cycle Route

Vehicular Access -
Car Park



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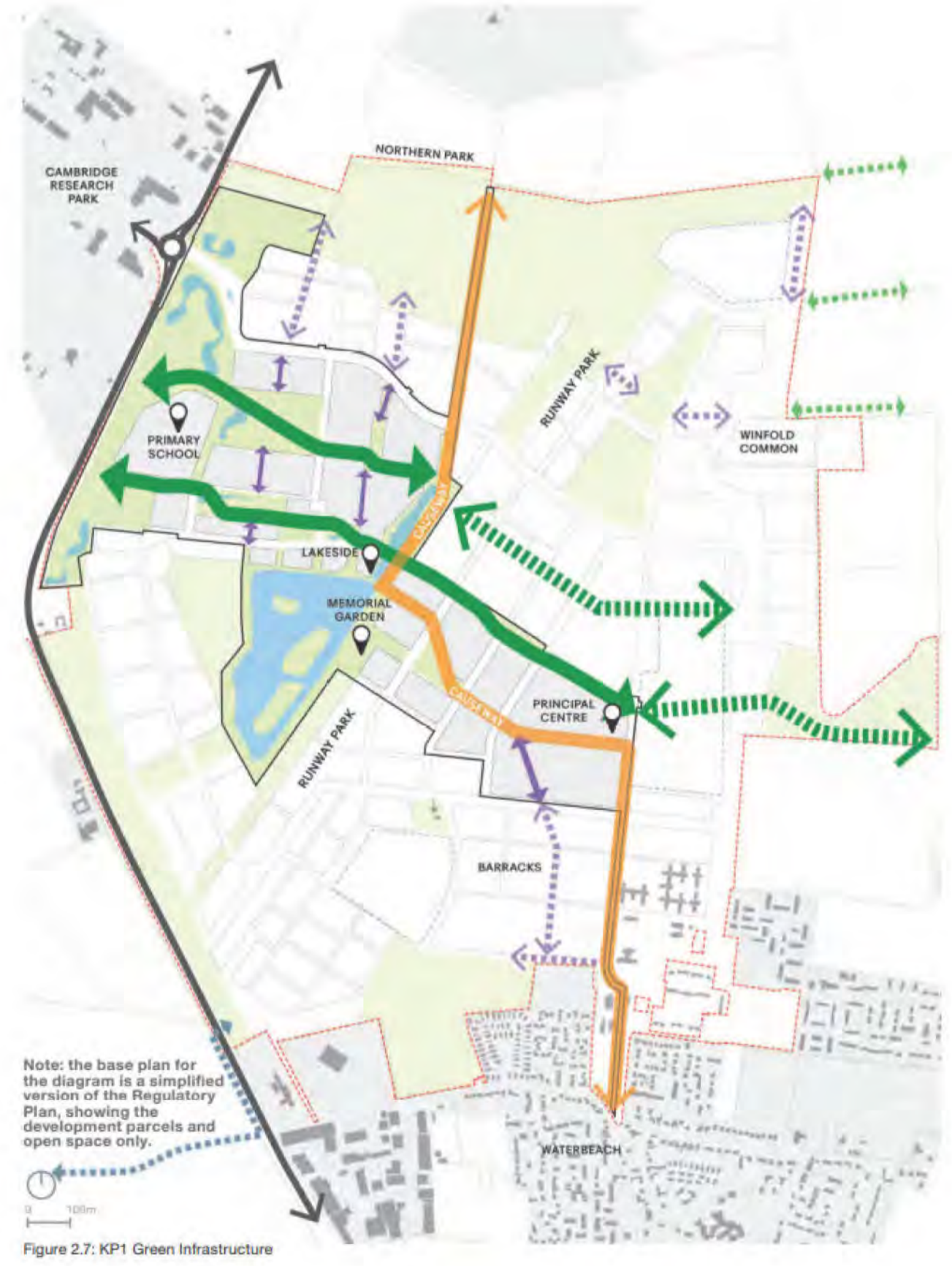


Site Context

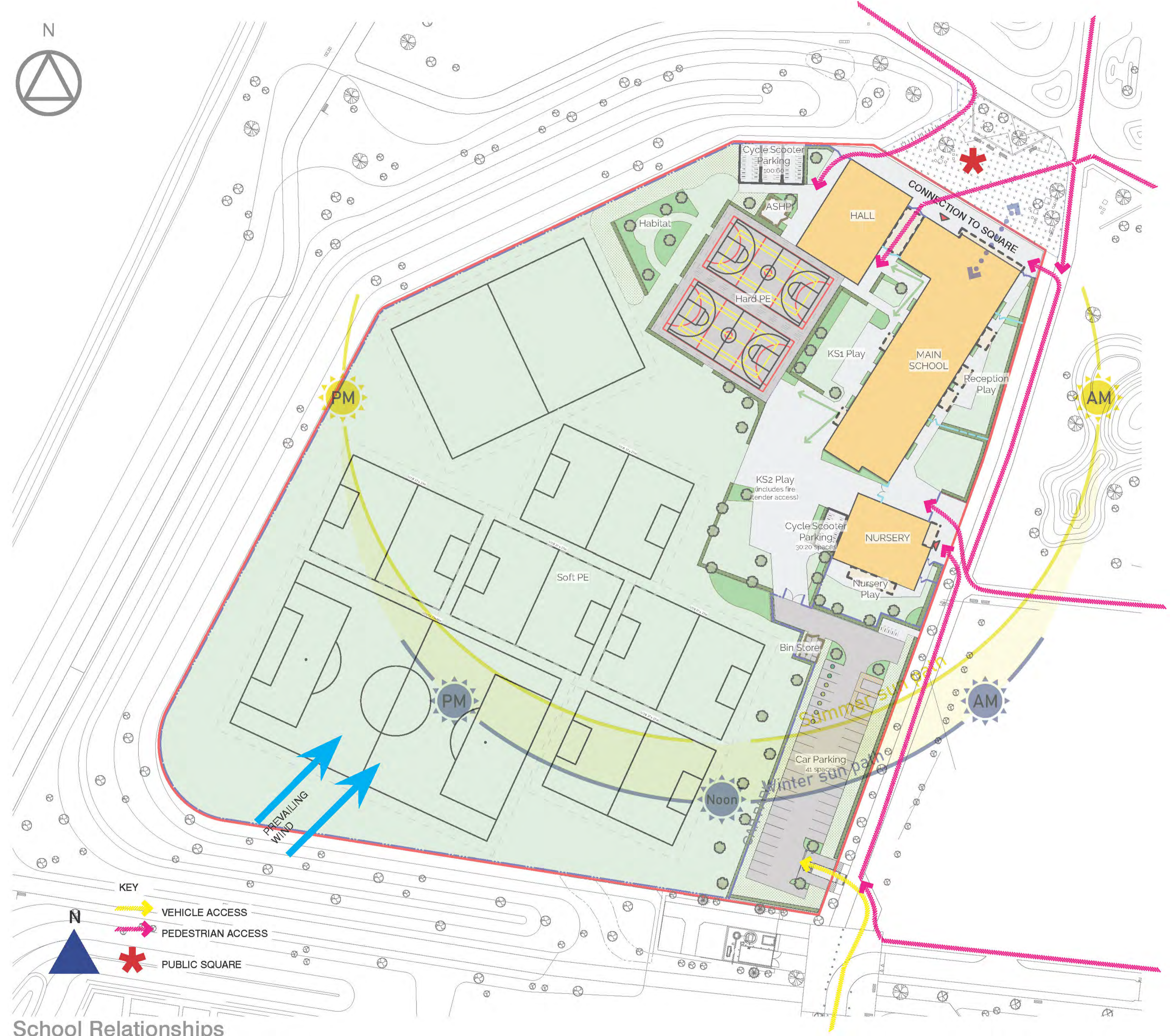
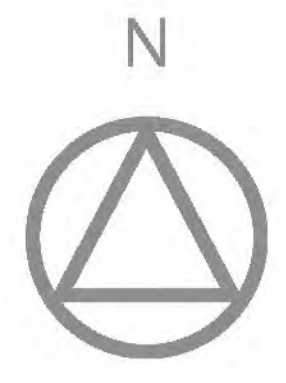


Figure 1.1: SPD Spatial Framework Plan

Location



Design Code Connections



School Relationships



Site Plan Concept



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Emerging Site



School Setting



Weldmesh fencing



Boundary Wall & Railing



Visitor cycle parking



Cycle & Scooter shelters



Tarmac surfacing



Entrance paving

Fencing Typologies & Materials



Soft Landscape Strategy

- Proposed Buildings
- Proposed amenity grass to be seeded within red line boundary. Grass seed mix to sports pitches to be confirmed by agronomist.
- Wildflower meadow seeding
Germinal Seeds wildflower mix WFG15 'Countryside, Schools & Colleges'. Mix to exclude Lotus corniculatus (Birdsfoot trefoil) and Ranunculus acris (Meadow buttercup)
Area shown is indicative to be confirmed based on uplift required for BNG score
- Proposed mixed native hedge. Planted as double staggered row.
Species:
Acer campestre - 35%, Height 60-80cm, B
Carpinus betulus - 25%, Height 60-80cm, B
Cornus sanguinea - 25%, Height 60-80cm, B
Ligustrum vulgare - 15%, Height 60-80cm, B
- 39no. Proposed tree planting to include a mix of:
Betula pendula
Prunus avium 'Plena'
Tilia cordata
Carpinus betulus
Supplied as single stem heavy standard, 12 - 14cm girth
- Boulder biodiverse green roof.
Green roof to extend beneath PV panels.
Refer to manufacturer's specification
- Proposed shrub planting to include a mix of:
Proposed ornamental planting species include shrubs: Abelia x grandiflora 'Francis Mason'
Hebe x franciscana 'Blue Gem'
Perovskia 'Blue Spire'
Skimmia japonica spp.
Pittosporum tenuifolium 'Tom Thumb'
Supplied as 2L or 3L pot
Herbaceous
Bergenia cordifolia
Heuchera spp
Vinca minor f. alba 'Gertrude Jekyll'
Grasses
Calamagrostis x acutiflora 'Karl Foerster'
Deschampsia cespitosa
Luzula nivea
Stipa tenuissima



Biosolar green roof



Tilia-cordata



Prunus-avium-plena



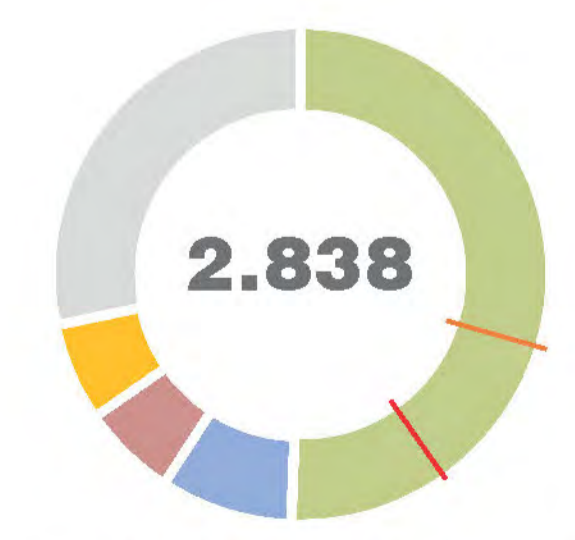
Native hedge



Seasonal interest planting



Wildflower



Urban Greening Factor
The proposals achieve an Urban Greening Factor score of 2.838





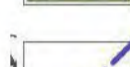



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KEY

-  Proposed secure weldmesh fencing 2.4m
-  Proposed buildings with biodiverse green roof
-  Proposed external canopy
-  Proposed asphalt paving
-  Proposed amenity grass
-  Proposed wildflower meadow
-  Proposed hedge planting
-  Proposed tree planting
-  Proposed planting areas
-  Proposed secure weldmesh fencing 2.4m high
-  Proposed internal fencelines 1.5m high
-  Wall 2.4m high, full height brick panels, with vertical railings between
-  Proposed 1.8m timber hit and miss fence to bin store and ASHP enclosure
-  Entrance barrier with intercom for controlled access
-  3no. external taps for play. Located in KS1, reception, and nursery

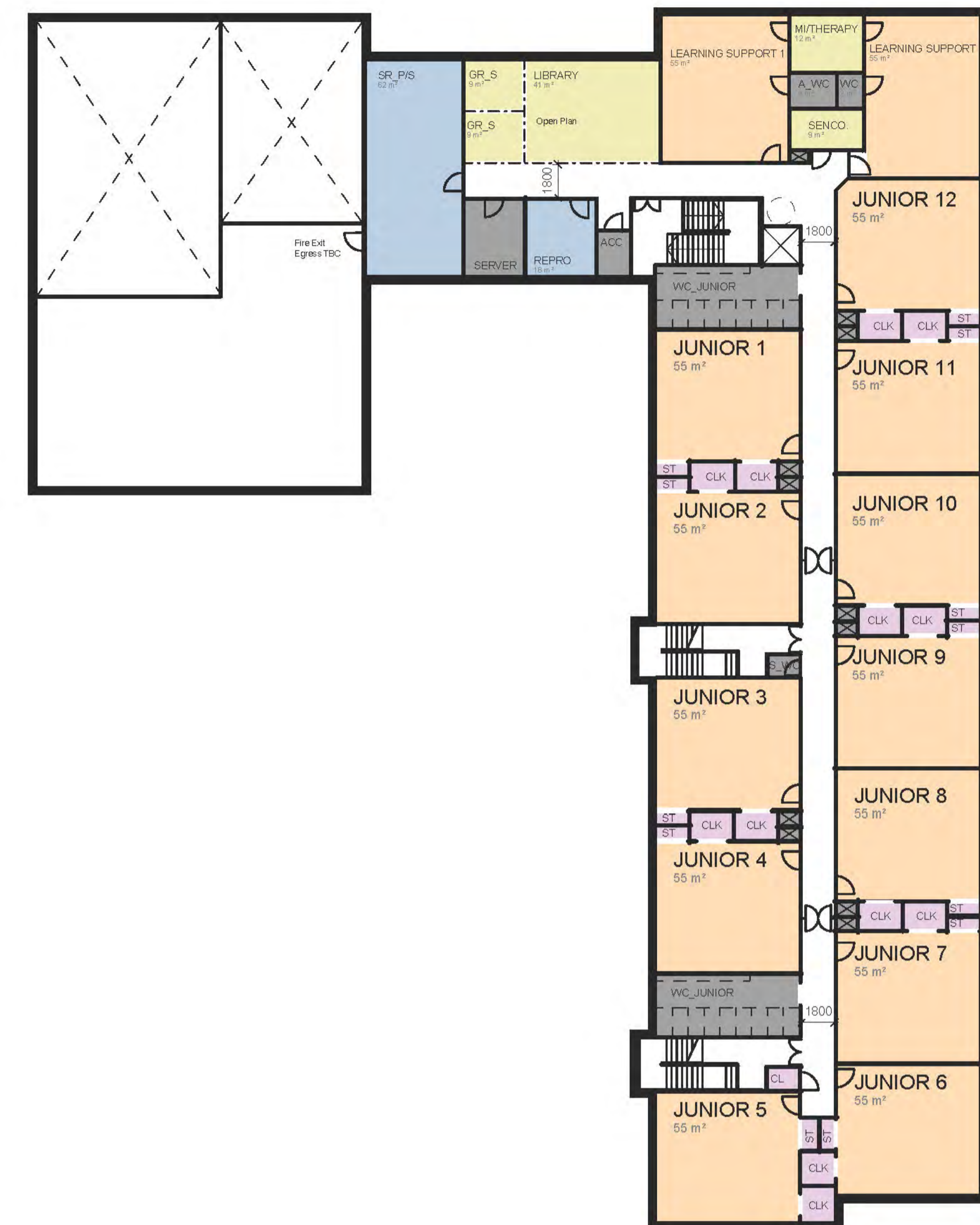


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Ground Floor Plan



First Floor Plan



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School Plan

FABRIC FIRST APPROACH REDUCING THE DEMAND FOR ENERGY



Optimised fabric performance to minimise heat loss and energy consumption including enhancing thermal insulation and glazing thermal performance.



Low infiltration rates to minimise heating energy consumption.

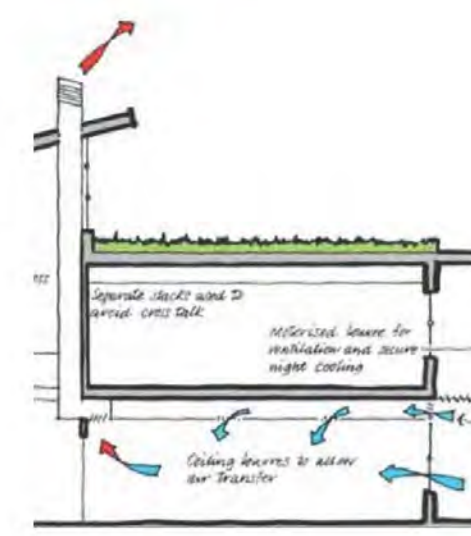
Parameter	Value	Units
Roof (U-value)	0.12	W/m ² .K
Wall (U-value)	0.15	W/m ² .K
Ground Floor (U-value)	0.12	W/m ² .K
Average window (U-value)	1.1	W/m ² .K
Air Tightness	3	m ³ /h.m ² @50Pa



Solar Control glazing provides optimum level of natural daylight and useful solar gain whilst avoiding solar gain becoming excessive during warmer weather helping to reduce the risk of overheating.



External shading devices (fins) to reduce excessive solar gain.



Prioritised Natural ventilation – façade openings combined with passive stack ventilators use wind pressure and air buoyancy to mitigate overheating risk.



Low powered Hybrid Ventilation system incorporating heat recovery & demand control technology that provides draft free fresh air into occupied spaces year-round. Always maintaining comfortable internal temperatures and indoor air quality whilst minimising fan power consumption and heat losses.



Climate resilient building features designed to provide overheating mitigation against future temperature increases.



10% biodiversity net gain targeted as part of the development.



Collaborative approach to the procurement of electrical equipment and ICT will improve the environmental and energy performance of the building

EFFICIENT BUILDING SERVICES & LOW CARBON HEAT SOURCES



Energy monitoring to highlight energy usage within the buildings and on-site energy generation from photovoltaic panels.



Low energy LED light fittings with intelligent controls that respond to occupancy and natural daylight



Variable speed pumping will reduce pump energy and allow the heat generator to operate more efficiently for longer periods. Increased emitter sizes with lower mean surface temperature will also allow the heat generator to operate more efficiently for longer.



Low carbon heat source using fossil fuel free renewable energy comprising of Air Source Heat pumps serving low temperature space heating circuit(s) with heating coils and other heat emitters as required.



Local point of use water heaters minimise pipework reducing energy consumption and heat gain into the building.



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NET ZERO CARBON IN OPERATION (NZCIO)

- 100% of the total regulated and unregulated energy consumed on site will be offset by renewable sources (PV) surpassing CCC requirement of 80% renewable contribution.
- Low Energy Usage Intensity EUI < 52KWh/m²
- EPC Band “A+” Target. Carbon negative in terms of regulated energy.
- BREEAM Ene Excellent



Low water sanitary fittings to minimise water consumption. Leak detection systems to shut down water services water when building is unoccupied.



On-site recycle facilities for paper, magazines, cardboard, plastics, metals and printer toner cartridges.



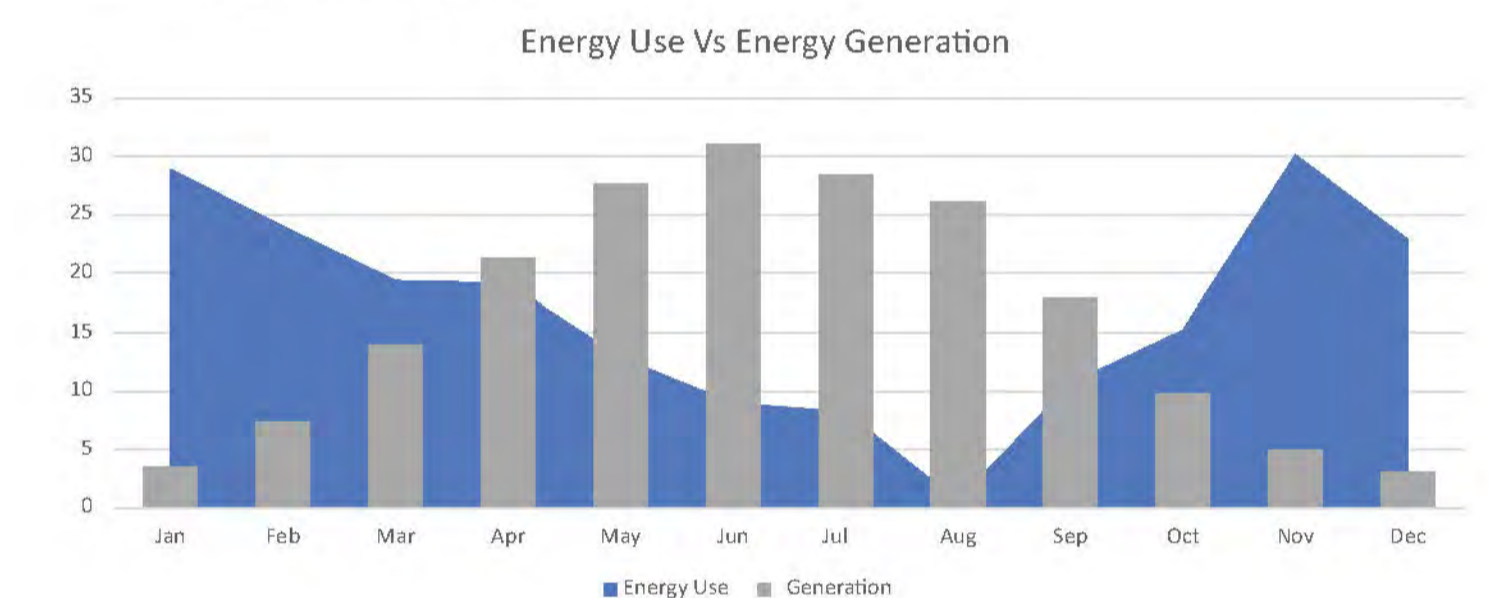
Vehicle Charging will be provided to the new car park for staff and visitor use.

ON-SITE RENEWABLE ENERGY GENERATION

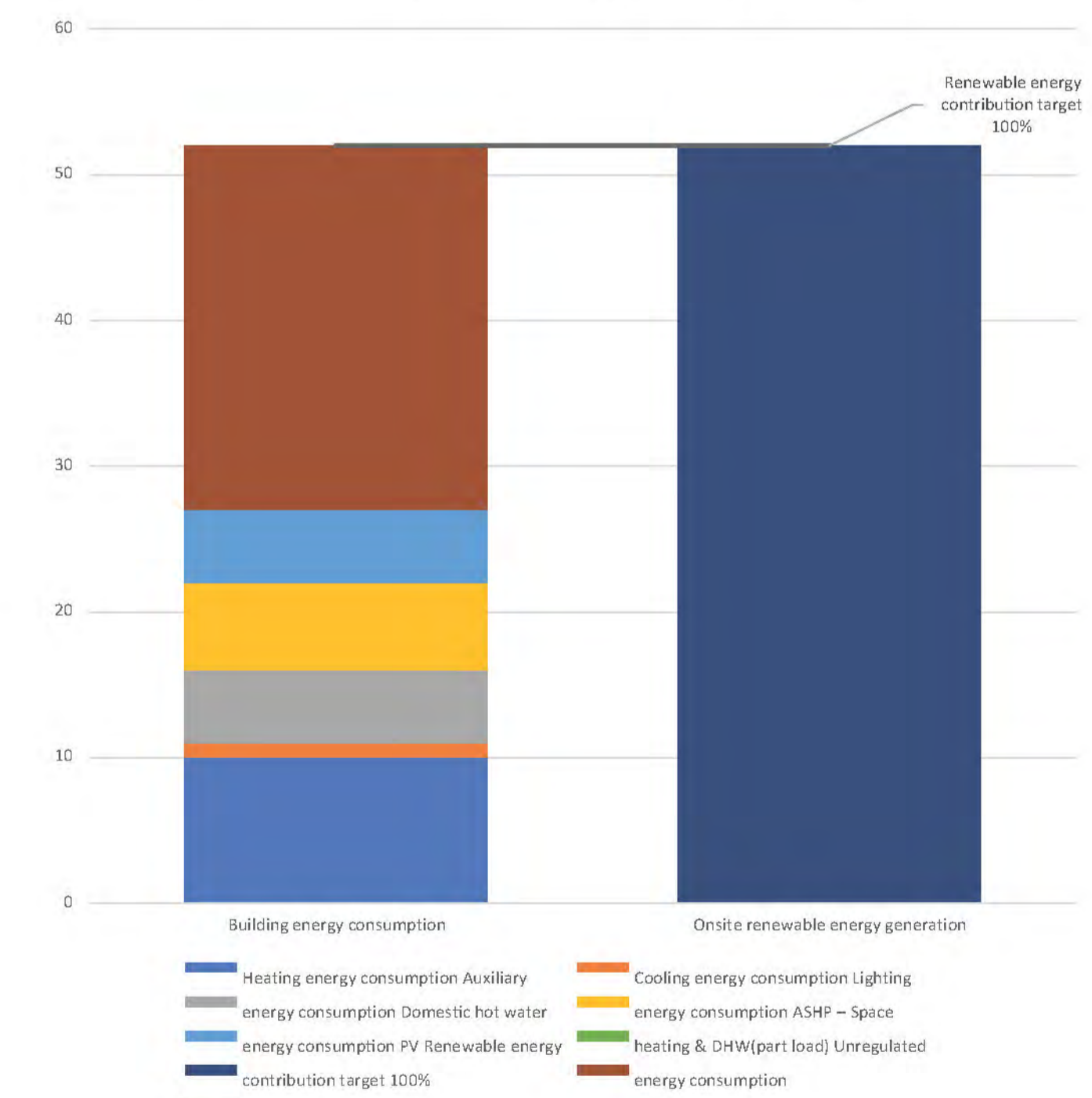
On-site renewable energy generation to fully offset regulated and unregulated energy use.

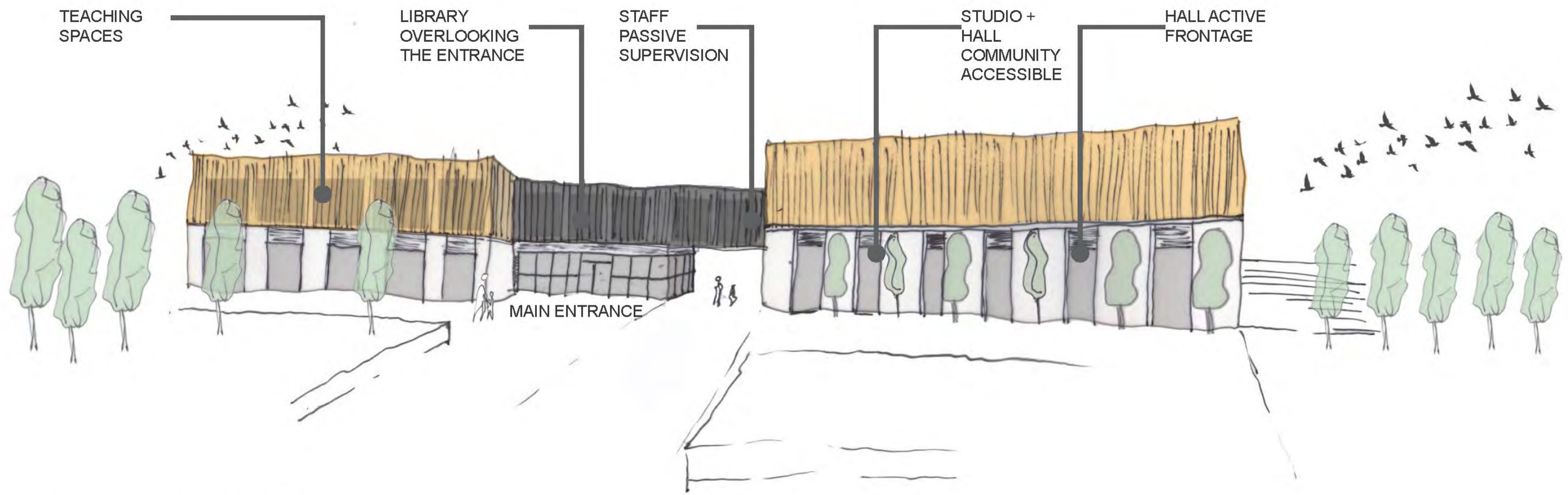


Photovoltaic panels producing electricity. Promotes sustainability and reduce overall energy usage.



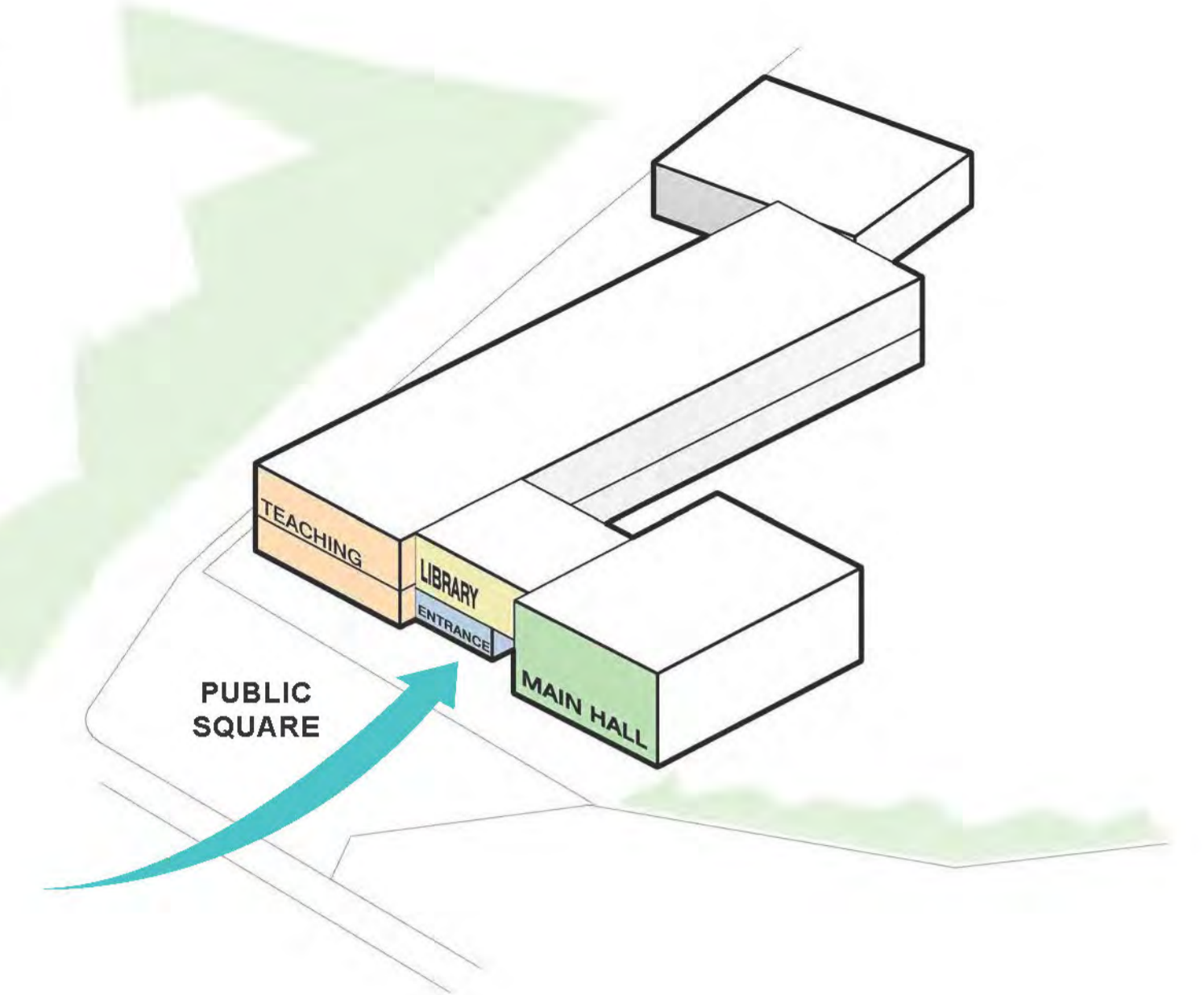
Renewable energy contribution against energy consumption





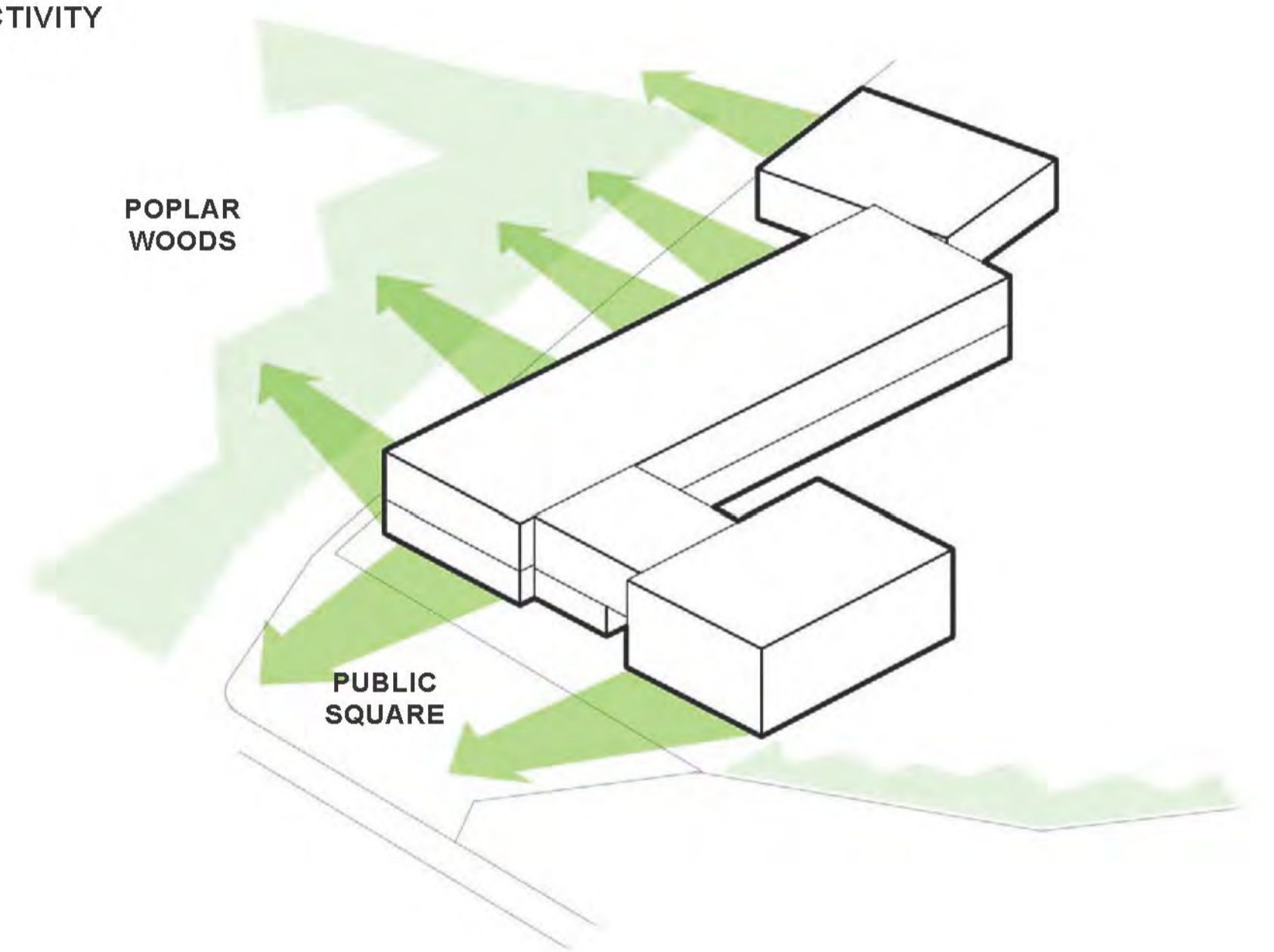
Community Square Sketch

PUBLIC SQUARE CONNECTIVITY



Library/ Break-out

VISUAL CONNECTIVITY

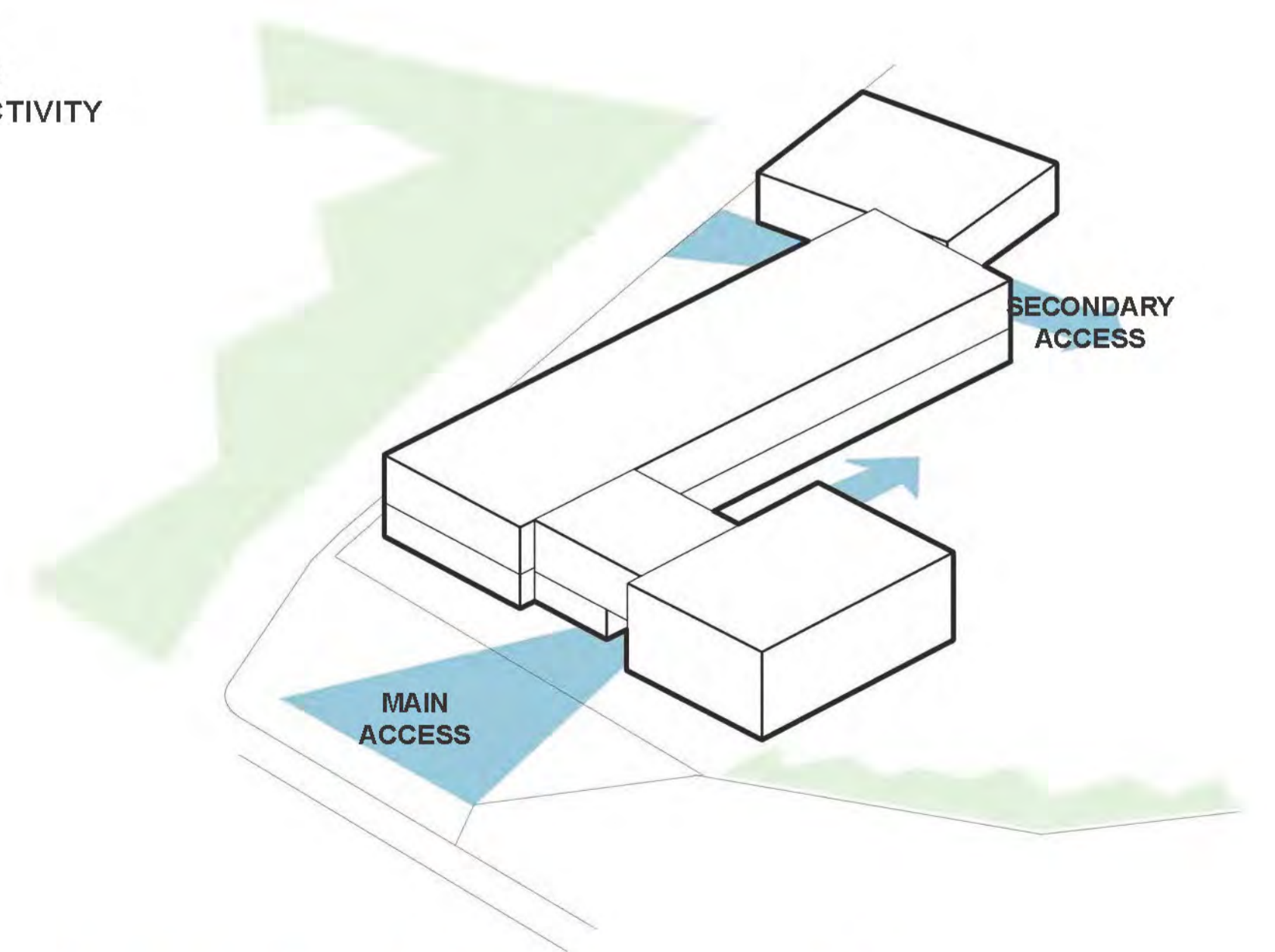


Village Square Sketch View



Group / Break-out spaces

ACCESS CONNECTIVITY



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School 3D Views

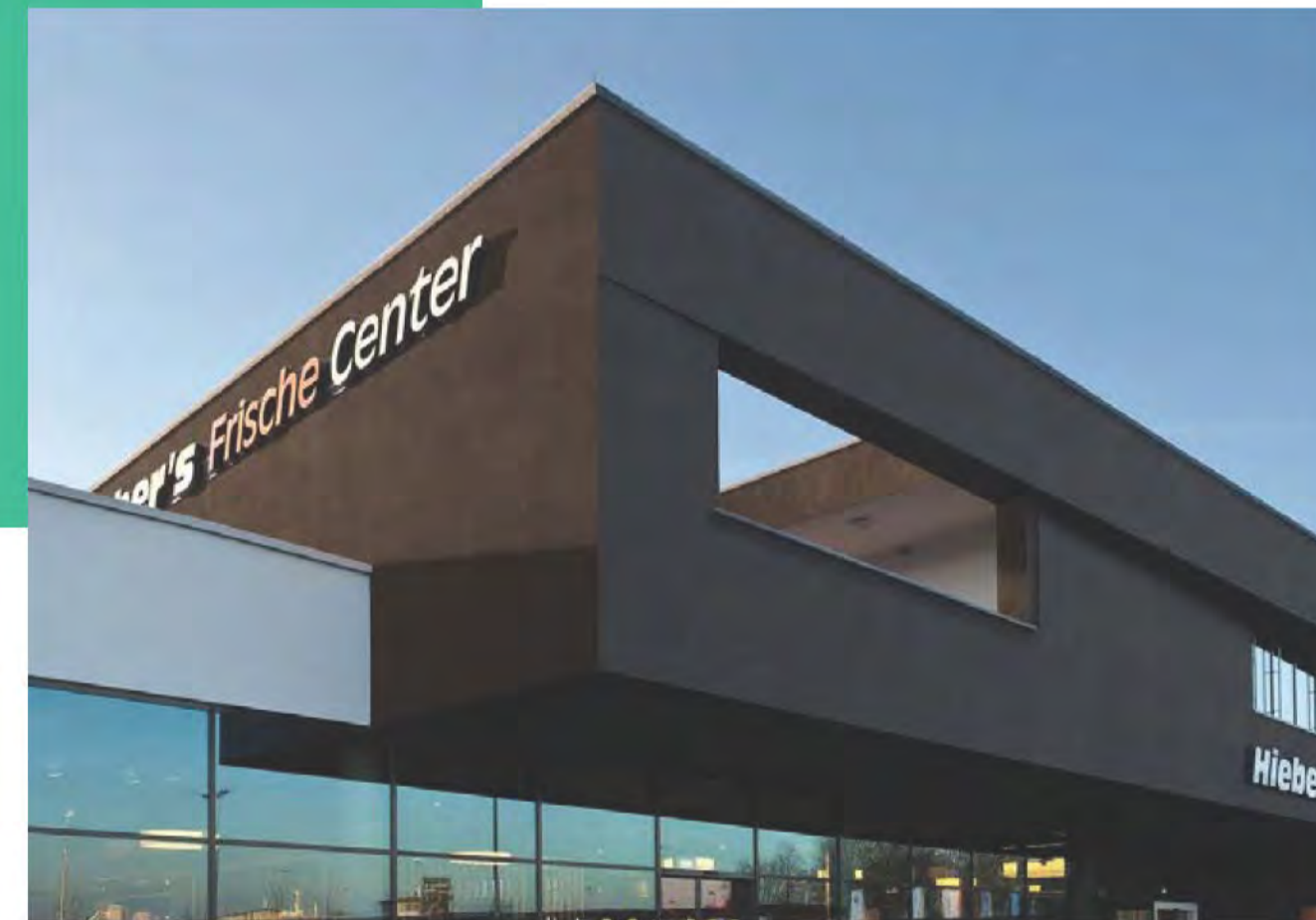
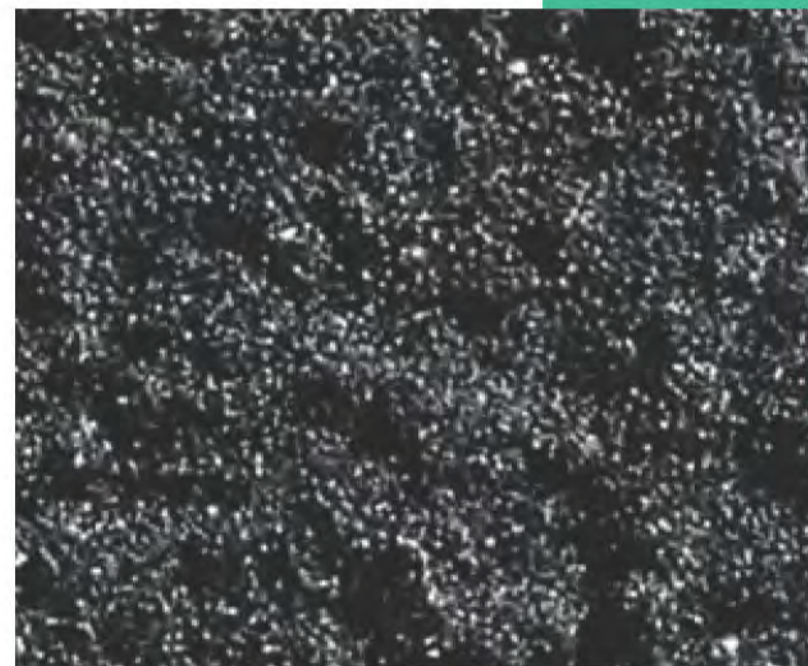
Cladding



Fins



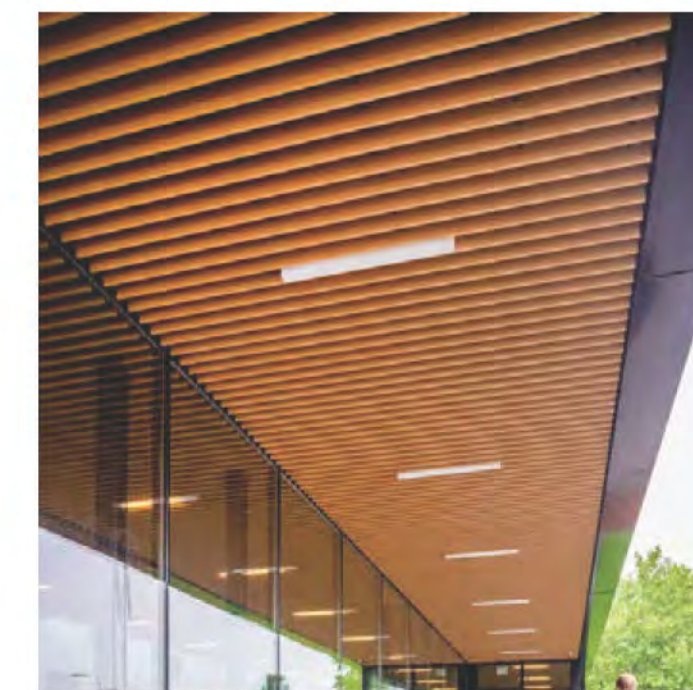
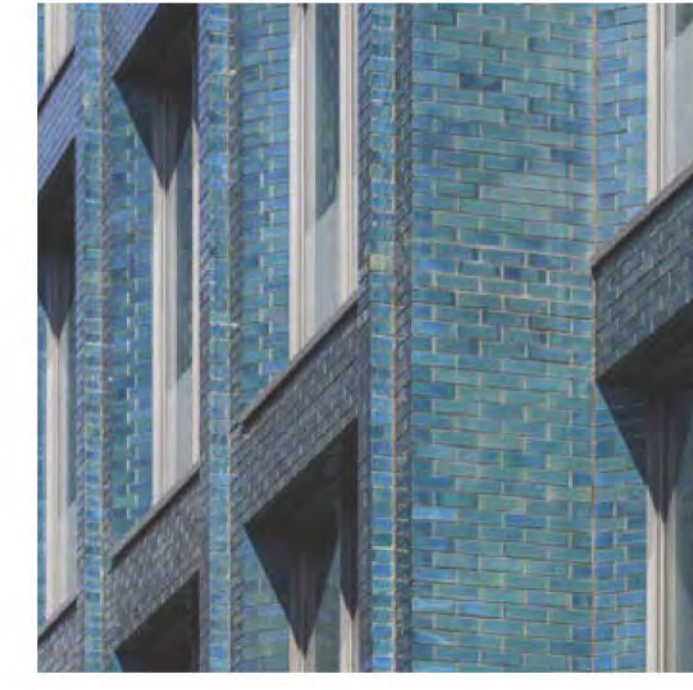
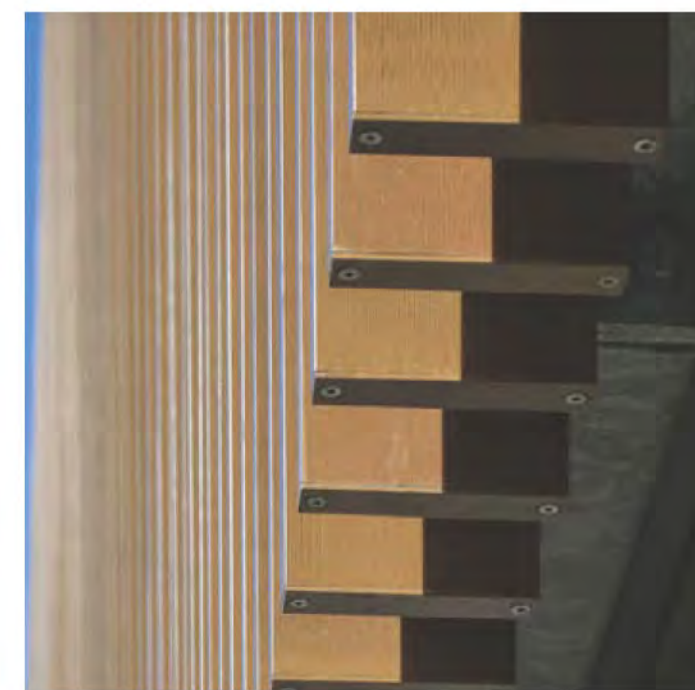
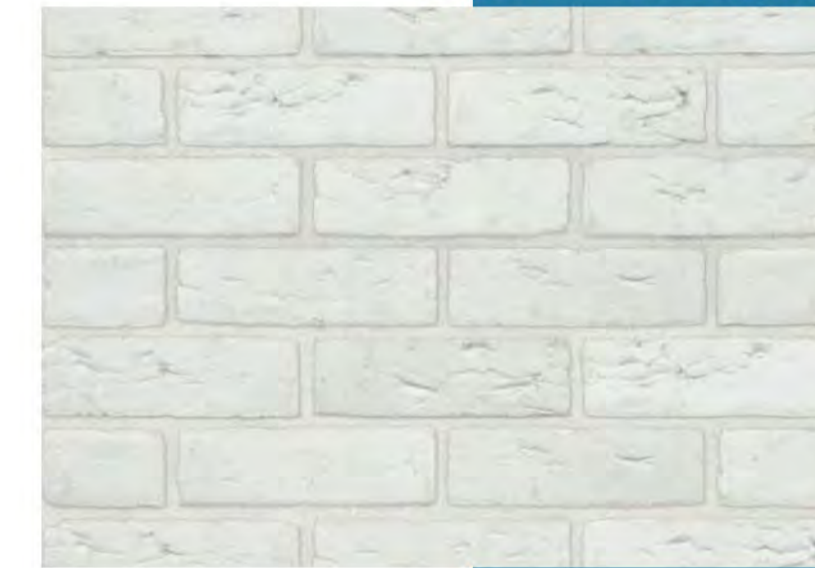
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Feature Brick



Main Bricks



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External Materials



1 NORTH ELEVATION
1:100



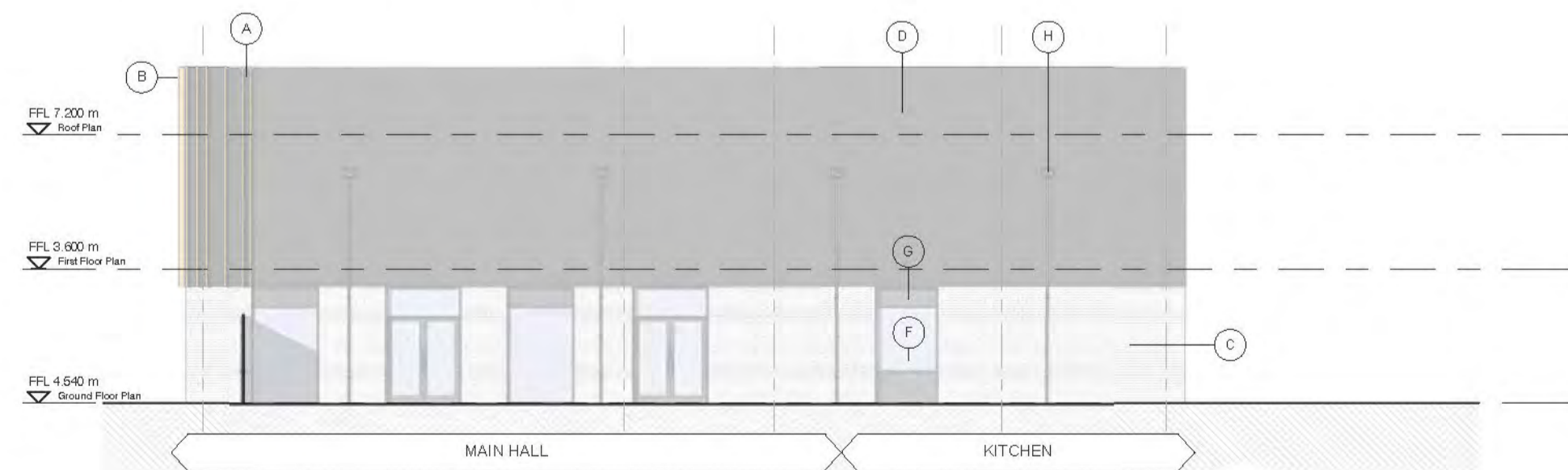
2 PRIMARY EAST ELEVATION
1:100



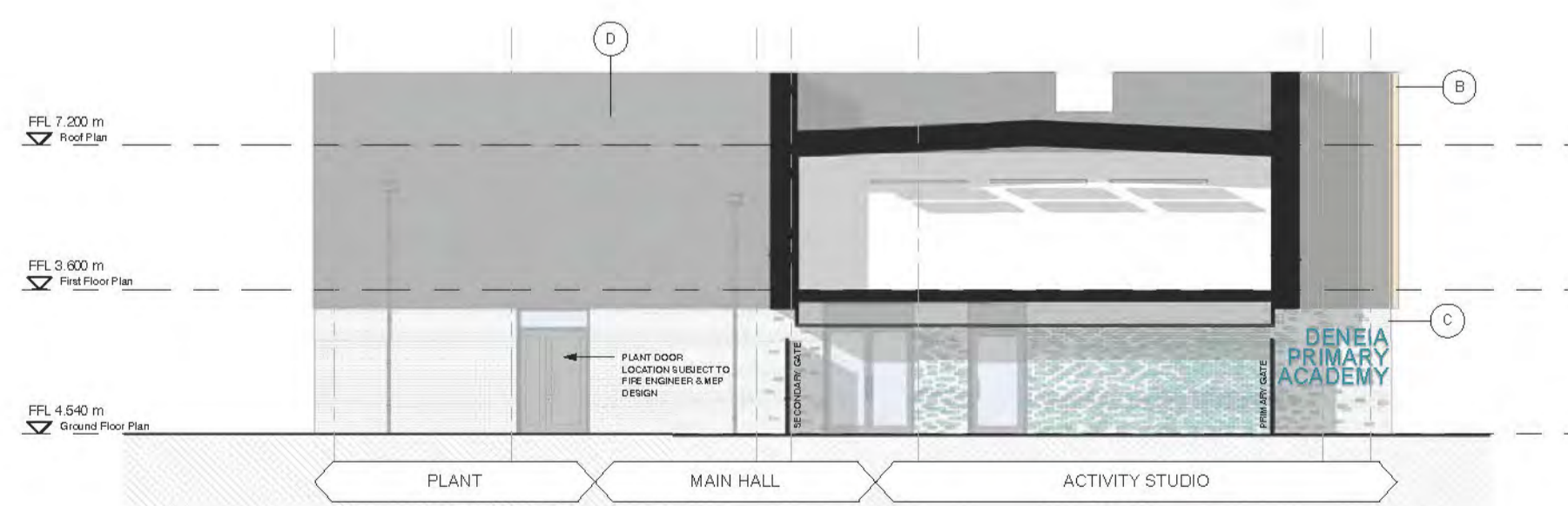
3 PRIMARY SOUTH ELEVATION
1:100



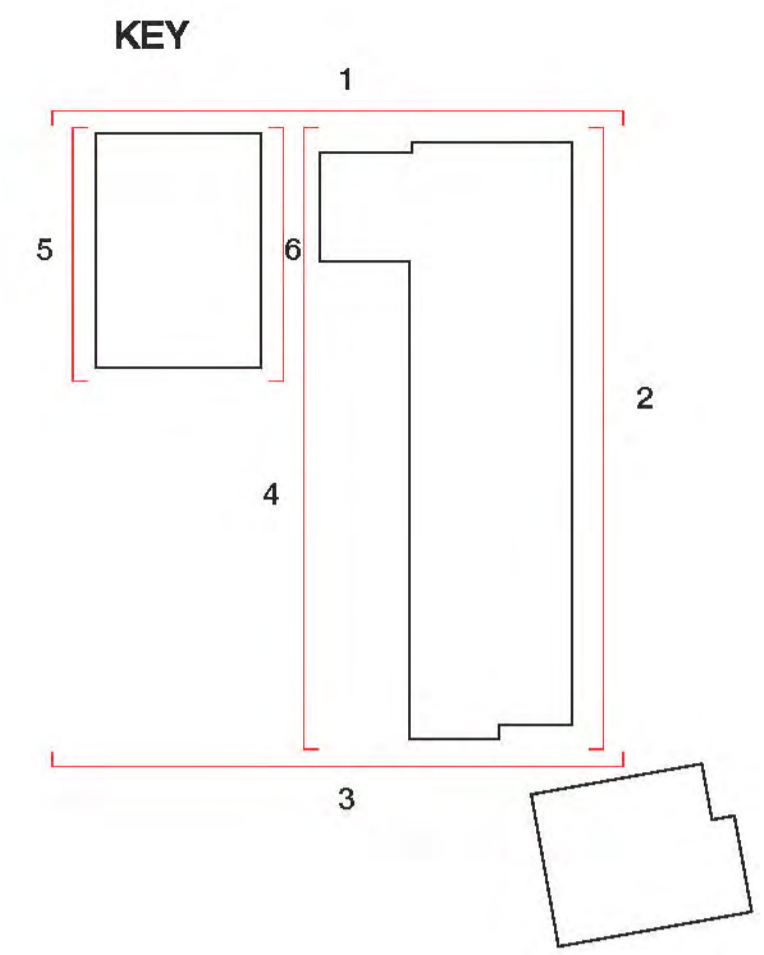
4 PRIMARY WEST ELEVATION
1:100



5 HALL WEST ELEVATION 1
1:100



6 HALL EAST ELEVATION
1:100



- Materials Key**
- A VERTICAL STANDING BEAM CLADDING (BLACK/DARK GREY)
 - B PFC ALUMINIUM FINIS (BROWN)
 - C WHITE FACING BRICK
 - D DARK GREY RENDER
 - E FEATURE GLAZED BRICK (AQUA MARINE)
 - F PFC ALUMINIUM CURTAIN WALLINGS / WINDOW FLASHING (DARK GREY / BLACK)
 - G PFC ALUMINIUM INFILL PANELS
 - H PFC ALUMINIUM FLASHING & ACCESSORIES (GREY)



NORTH ELEVATION



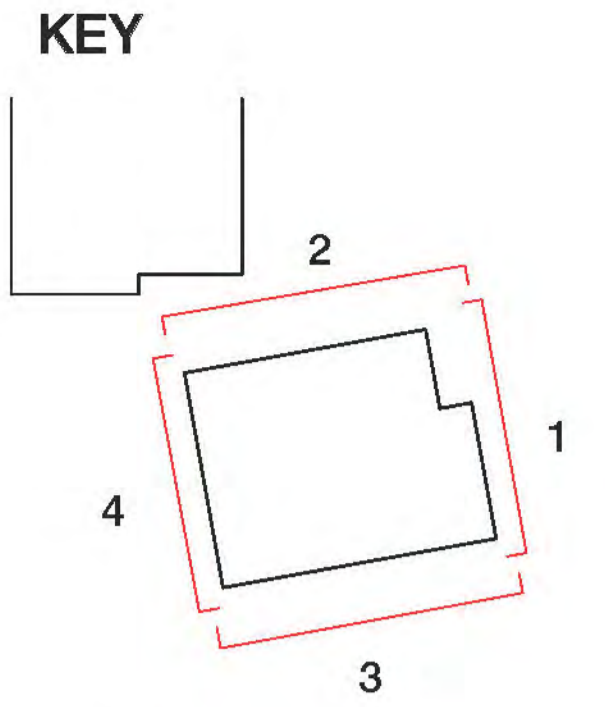
3D SCHOOL AERIAL 1



NURSERY ENTRANCE



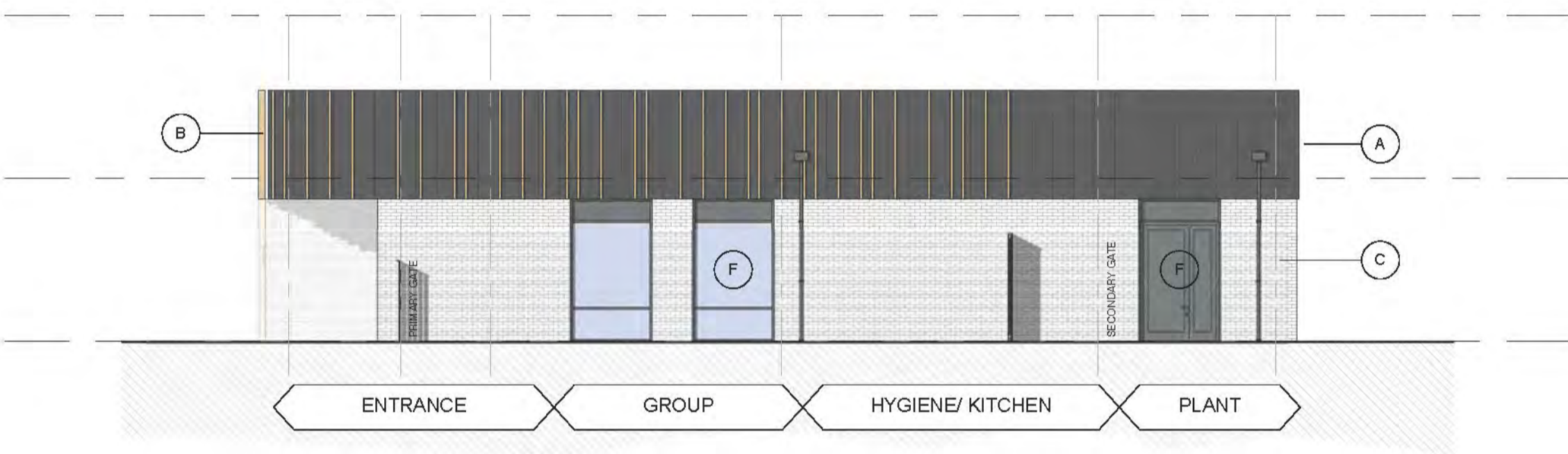
NURSERY SOUTH ELEVATION



- Materials Key**
- A VERTICAL STANDING SEAM CLADDING (BLACK, DARK GREY)
 - B PPC ALUMINIUM FINIS (BROWN)
 - C WHITE FACING BRICK
 - D DARK GREY RENDER
 - E FEATURE GLAZED BRICK (AQUA MARINE)
 - F PPC ALUMINIUM CURTAIN WALLING / WINDOWS / FLASHING (DARK GREY / BLACK)
 - G PPC ALUMINIUM INFILL PANELS
 - H PPC ALUMINIUM FLASHING & ACCESSORIES (GREY)



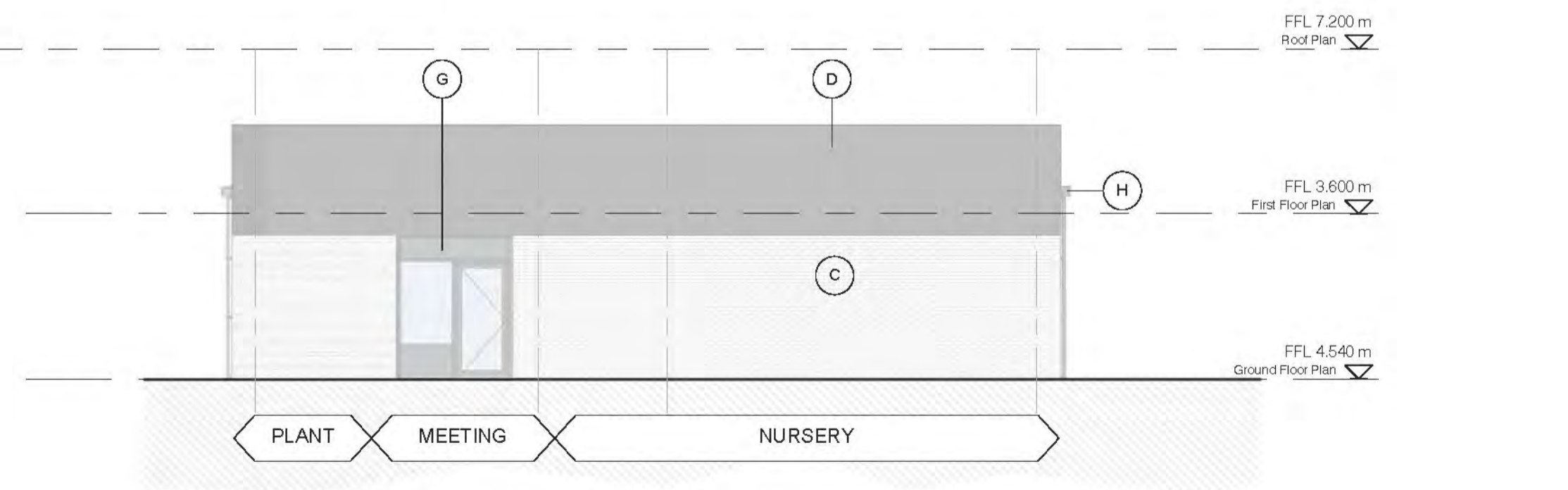
1 NURSERY EAST ELEVATION
1: 100



2 NURSERY NORTH ELEVATION
1: 100



3 NURSERY SOUTH ELEVATION
1: 100



4 NURSERY WEST ELEVATION
1: 100