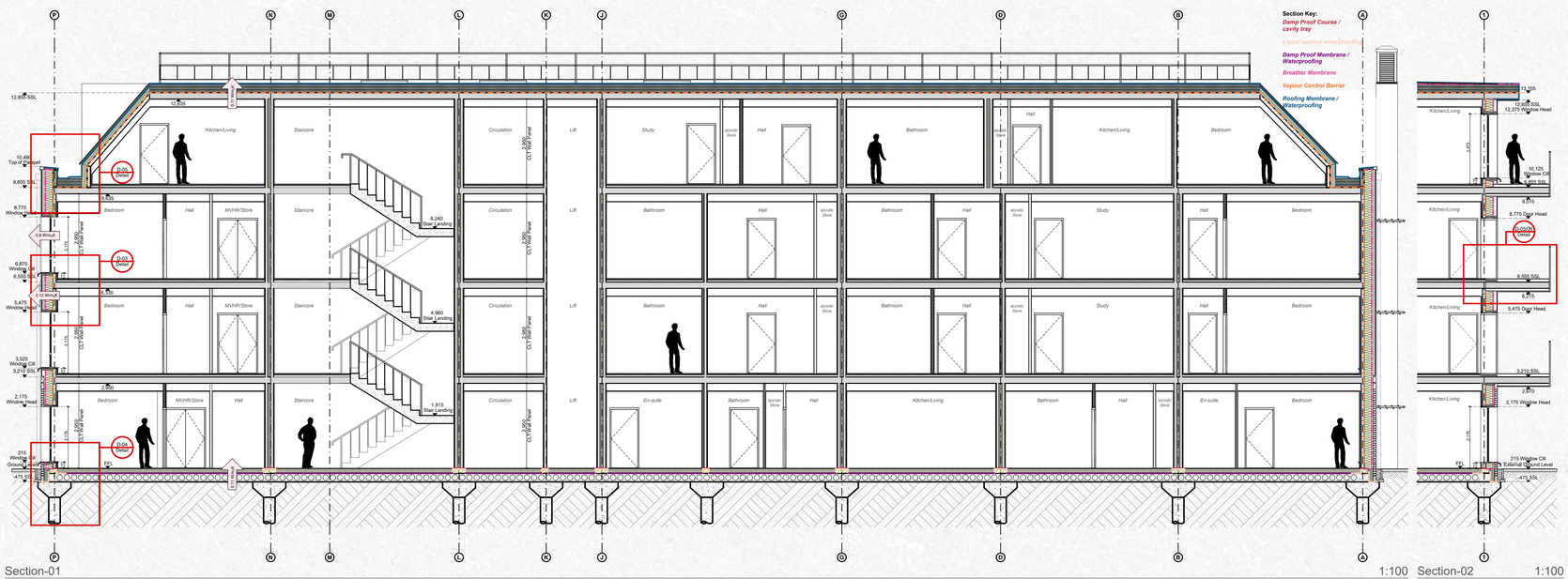
# Cranwood Residence

**Zero Carbon Intergenerational Living**
**Cranwood Residence, Muswell Hill, Haringey, London**




Section-01 1:100

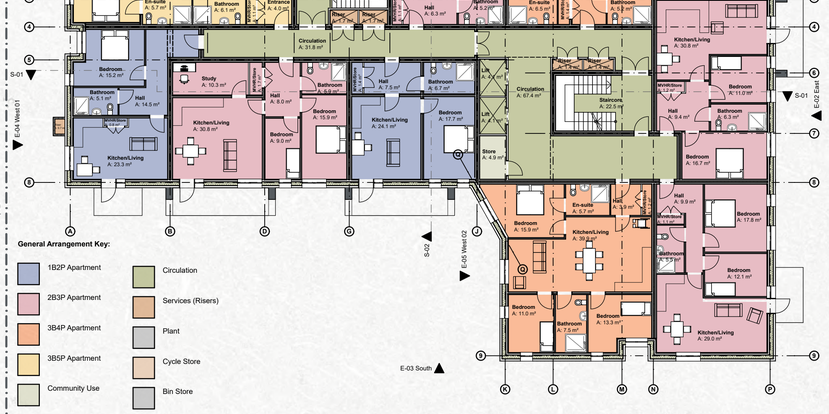


Section-02 1:100


**General Arrangement Key:**

- 1B2P Apartment
- 2B3P Apartment
- 3B4P Apartment
- 3B5P Apartment
- Community Use
- Circulation
- Services (Risers)
- Plant
- Cycle Store
- Bin Store

Ground Floor Plan 1:200

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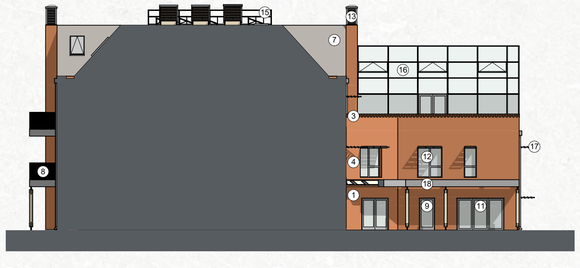
First Floor Plan (Typical Upper Floor) 1:200

E-01 North Elevation 1:200

E-03 South Elevation 1:200

E-02 East Elevation 1:200

E-04 West Elevation 01 1:200



E-05 West Elevation 02 1:200

## General Arrangement Elevations Key

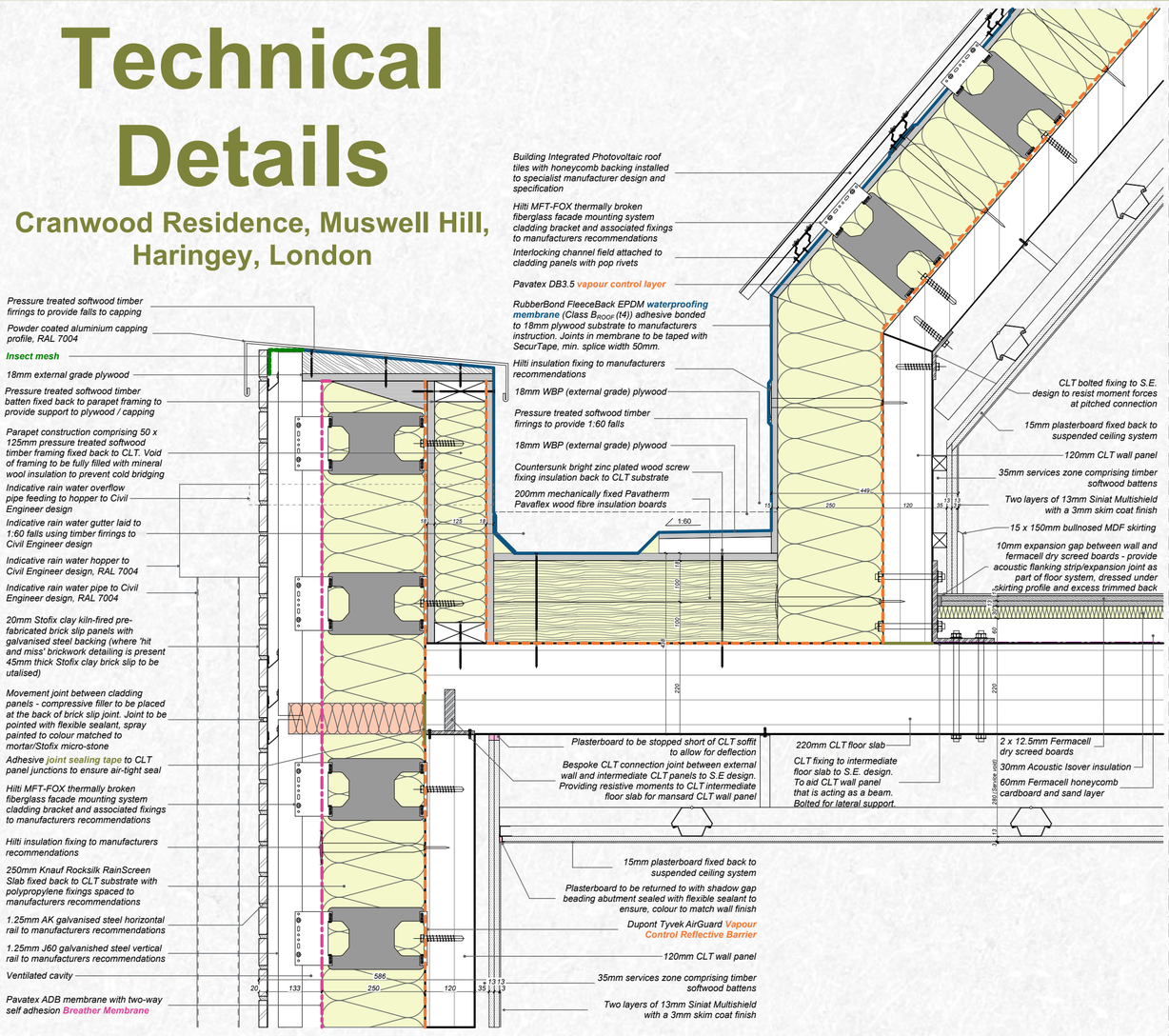
1. Red Facing Brickwork (Stretcher Bond)
2. Red Feature Brickwork (Soldier Bond)
3. Red Feature Brickwork (Hit and Miss Bonding)
4. Red Facing Brickwork (Pre-fabricated Brick-slips Rainscreen Cladding - Stretcher Bond)
5. Red Feature Brickwork (Pre-fabricated Brick-slips Rainscreen Cladding - Hit and Miss Bonding)
6. Pre-weathered Zinc Cladding
7. Roof Tiles with Building Integrated Photovolatic Panels
8. Polyester Powder Coated Aluminium Balustrade and Trim to Balconies in RAL 7004
9. Polyester Powder Coated Aluminium Triple Glazed Door (no glazing to secondary or plant access) in RAL 7004
10. Polyester Powder Coated Aluminium Triple Glazed Window in RAL 7004 with Splayed Window Reveal
11. Polyester Powder Coated Aluminium Triple Glazed Folding Door in RAL 7004
12. Polyester Powder Coated Aluminium Triple Glazed Window in RAL 7004 with Typical Window Reveal
13. Polyester Powder Coated Aluminium Wind Catcher (as part of ventilation strategy) in RAL 7004
14. Polyester Powder Coated Aluminium Rain Water Goods in RAL 7004
15. Polyester Powder Coated Aluminium Handrail Surrounding Plant (PV Panels & Bee Boxes) on Roof (for fall restraint) in RAL 7004
16. Glass House with Solar Glass and Integrated Louvres for Shading. Framing in Polyester Powder Coated Aluminium in RAL 7004
17. Polyester Powder Coated Aluminium Brise Soleil in RAL 7004 to South and West Facades
18. Entrance Canopy to North and South-East Facades with Timber Supports and Louvres with Polyester Powder Coated Aluminium Surround in RAL 7004

N

0m 2 4 6 8 10 12 14
Scale 1:200

# Technical Details

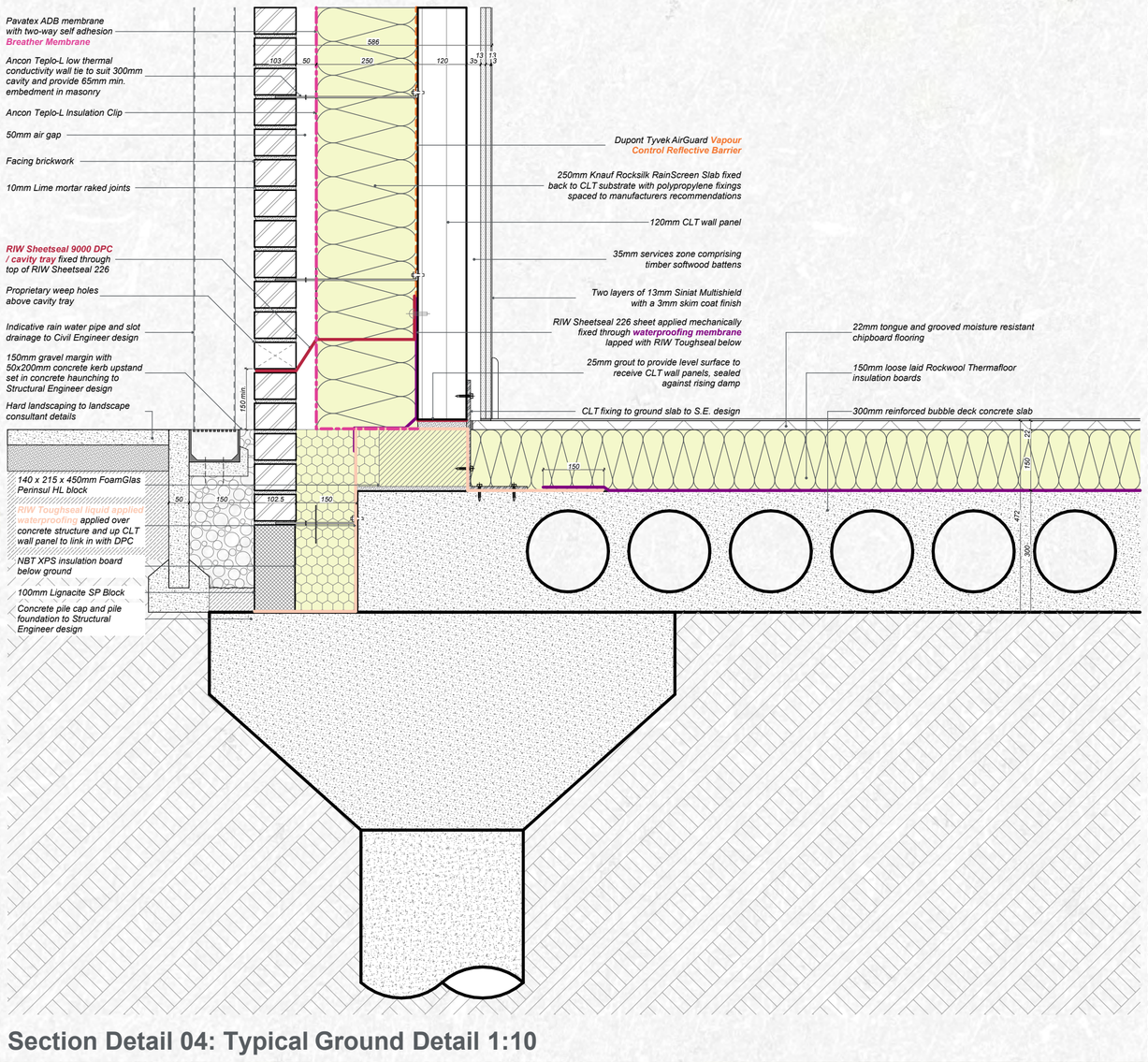
## Cranwood Residence, Muswell Hill, Haringey, London



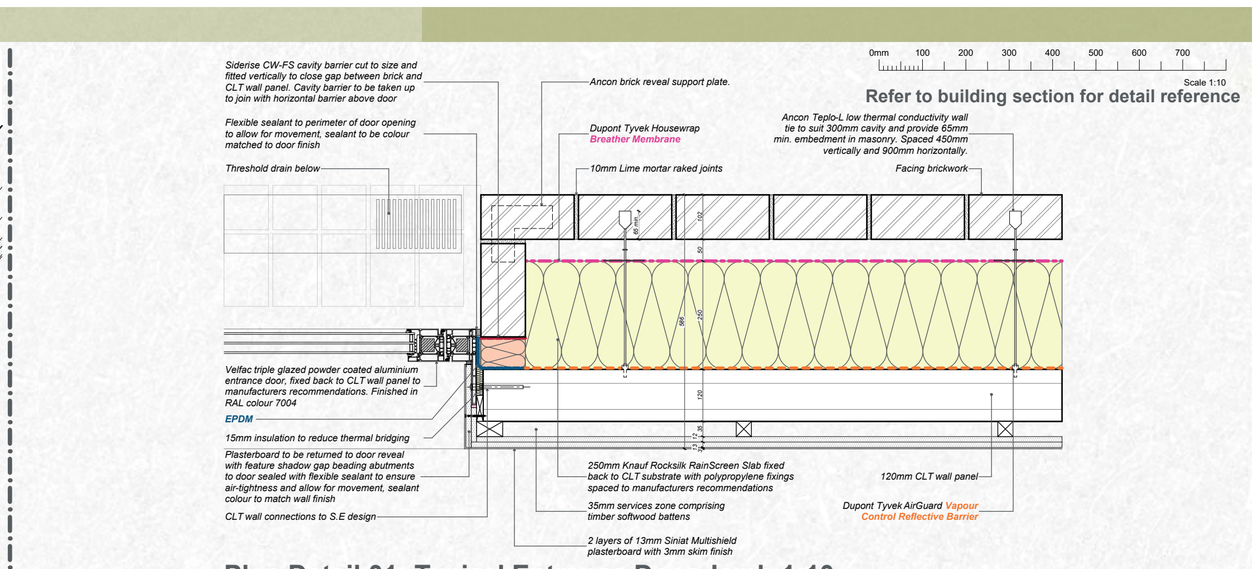

### Section Detail 01 & 02: Typical Parapet and Mansard Roof Detail 1:10



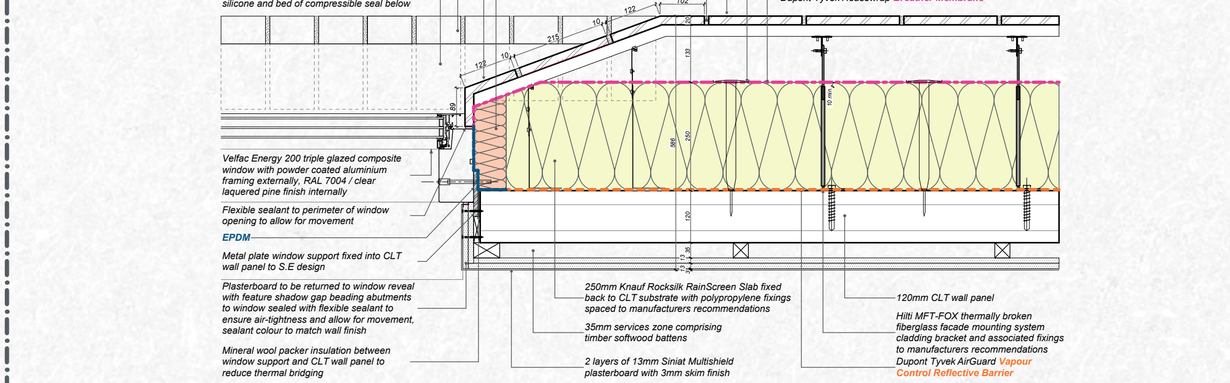

### Section Detail 03: Typical Intermediate Floor with Window Head & Cill Detail 1:10



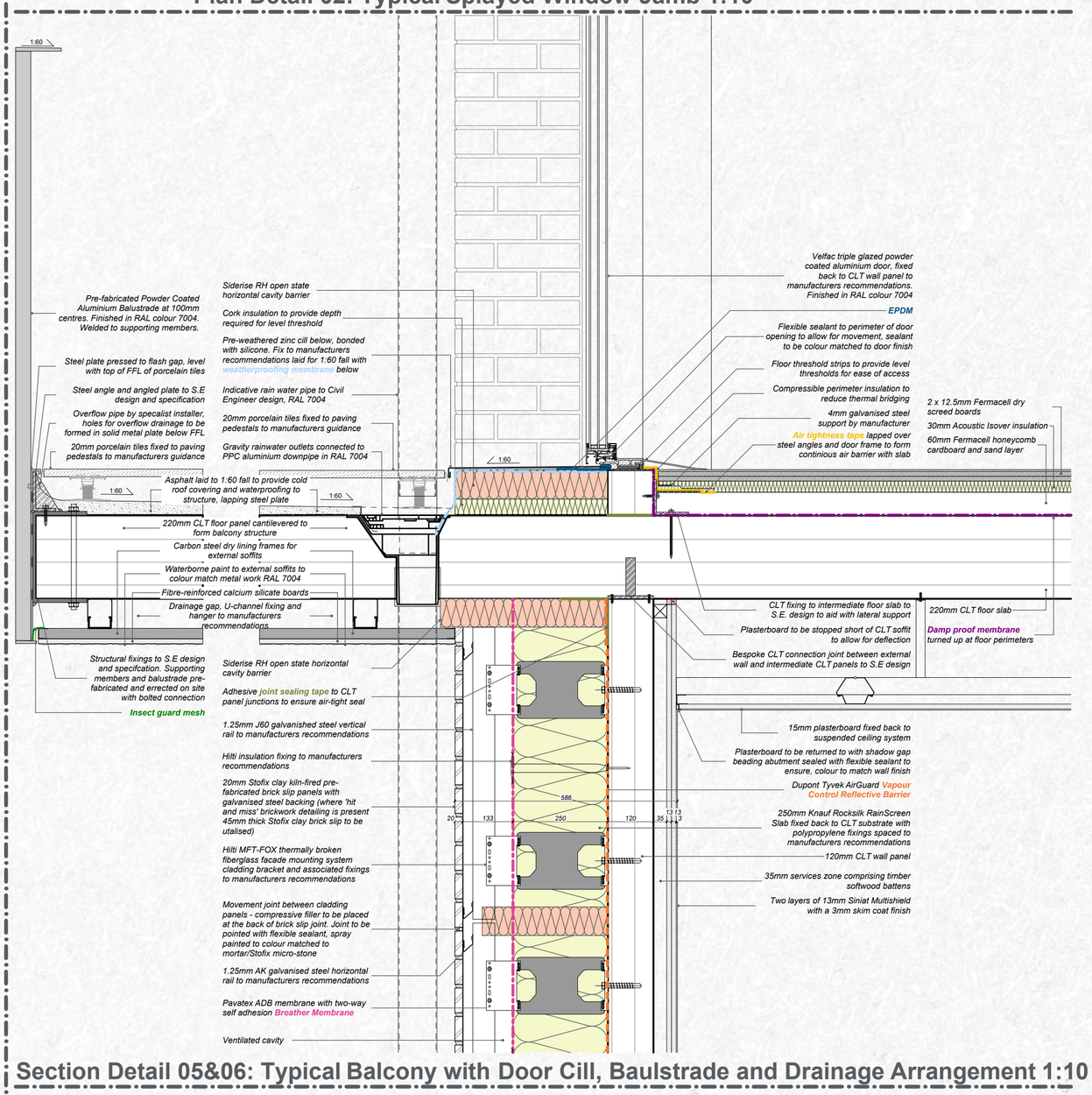

### Section Detail 04: Typical Ground Detail 1:10



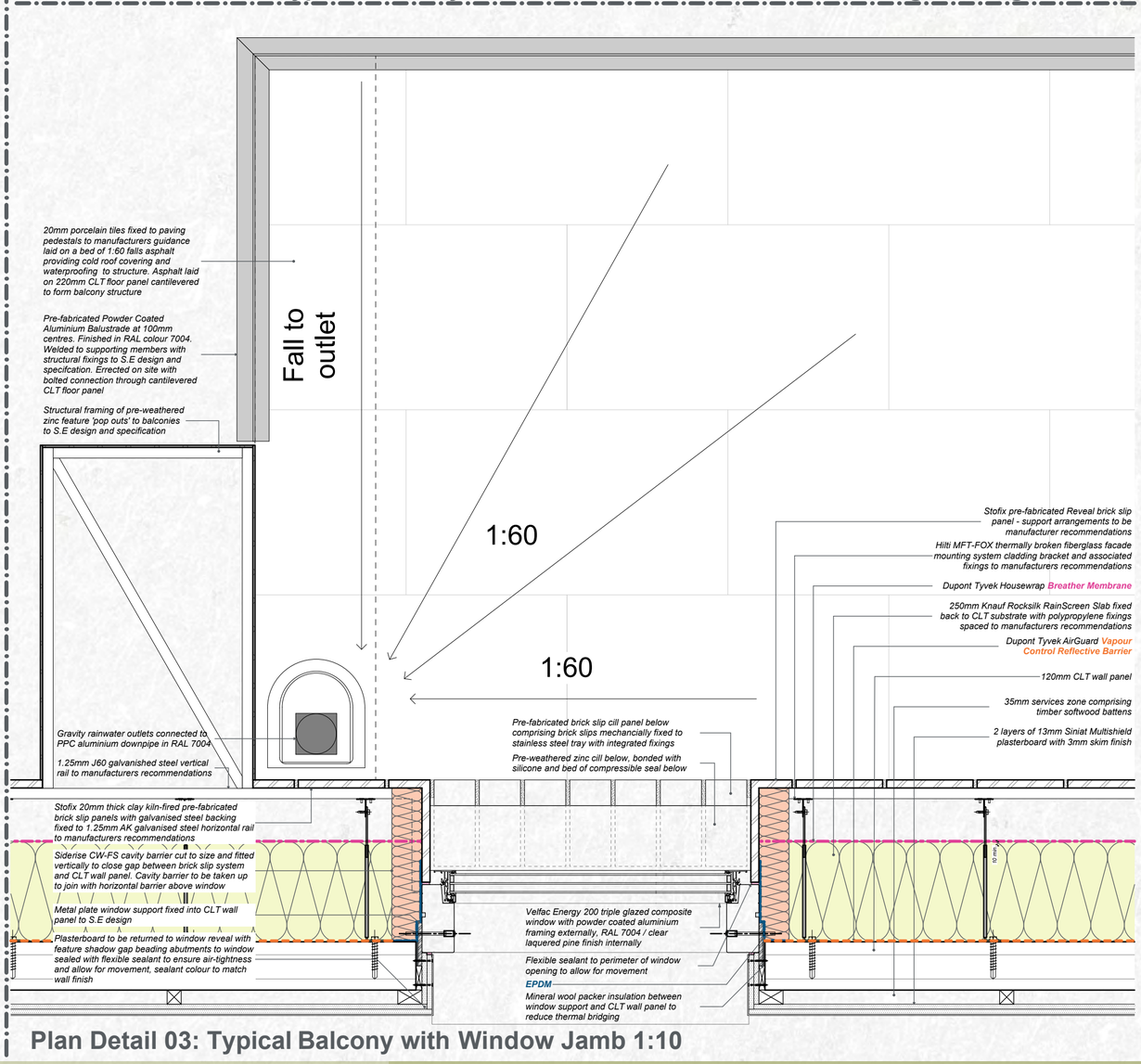

### Plan Detail 01: Typical Entrance Door Jamb 1:10




### Plan Detail 02: Typical Splayed Window Jamb 1:10




### Section Detail 05&06: Typical Balcony with Door Cill, Baulstrade and Drainage Arrangement 1:10




### Plan Detail 03: Typical Balcony with Window Jamb 1:10

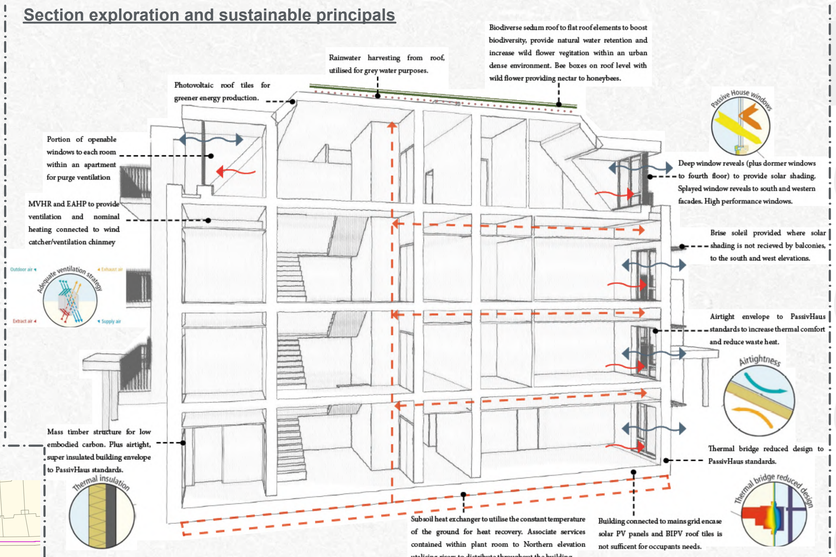
# Cranwood Residence

## Zero Carbon Intergenerational Living Cranwood Residence, Muswell Hill, Haringey, London

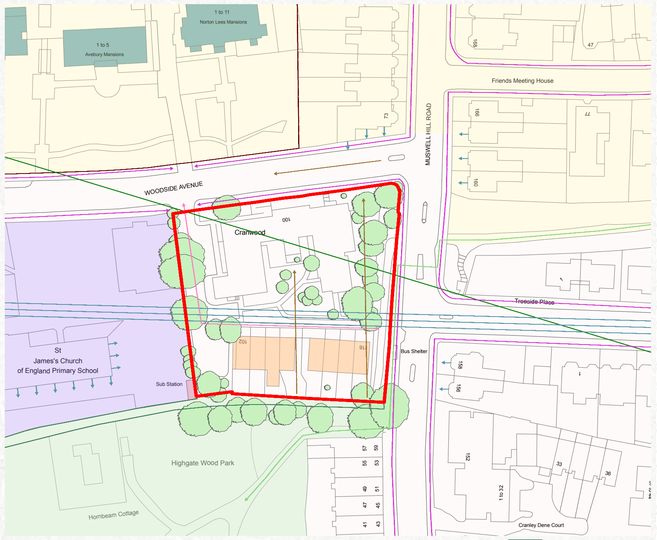
Cranwood Residence presents a zero carbon multi-generational community living concept, offering 28 apartments designed to suit diverse living arrangements and tenure preferences. At its core, the development strives to nurture seamless integration between new residents and the vibrant Muswell Hill, Haringey community. To this end, a substantial portion of the site will be dedicated to landscaped amenity spaces, inviting both residents and the public to indulge in the space with raised garden beds, a bio-diverse enhancing swale for water management, and secluded landscaped areas for enhanced privacy. Sustainability guides the project, minimising both embodied and operational carbon emissions with innovative construction practices and meticulous specification, to actively sequester carbon and strive to a greener future.

Residents of Cranwood Residence will enjoy the convenience of communal spaces, including a ground-floor shared community room and a landscaped rooftop terrace complete with a greenhouse on the first floor. As part of a comprehensive masterplan, existing council homes will undergo redevelopment, adding an extra residential storey (phase 2) and introducing amenities such as a coffee shop and nursery (phase 3). This thoughtful inclusion caters to families, providing a seamless journey from nursery to primary school, with educational facilities conveniently located adjacent to the development's west boundary. Cranwood Residence emerges as not just a living space but a vibrant community hub, enriching the lives of its residents and the surrounding neighbourhood alike.

## Section exploration and sustainable principals

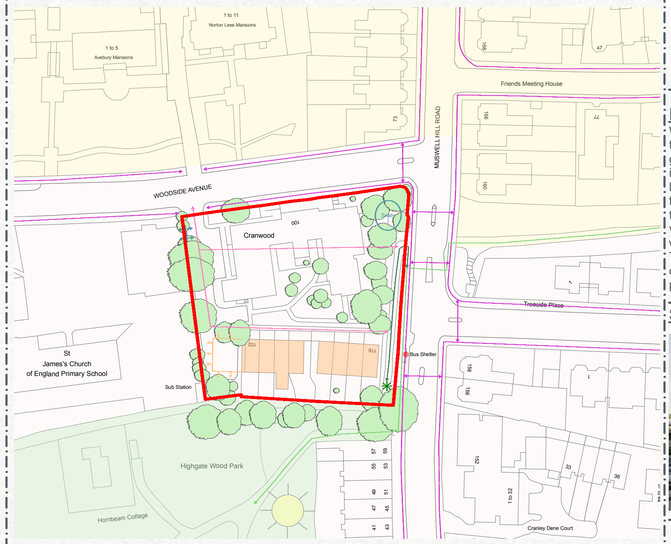



## Site Constraints




Thames water mains x3 (8 meters deep)
Sewer Mains
Residents Access
Public Path
Level Difference
Parkland Walk
Neighbouring Overlooking Buildings
Retained Terrace Housing
Substation
Munswell Hill Conservation Area
Locally Listed Building
Historic Park
Highgate Wood
Ecological Corridor
Existing Trees (No TPOs)
School Grounds

## Site Opportunities

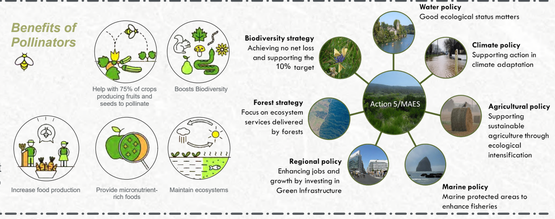



Potential of Reorientating Highgate Wood Entrance
Improve Public Realm of the Parkland Walk
Parkland Walk
More Present New Boundary with the School
Complete Row of Terraces
Pedestrain and Residents Route through Site
Pedestrain Public Footpath and Traffic Islands
Bus Stop
Refurbish Exterior of Existing Terraces
Respond to the Character of Munswell Hill Conservation Area
Highgate Wood
Potential opportunity for swale
South Elevation

## Bio-Diversity Net Gain

With a commitment of achieving greater than the 10% minimum biodiversity net gain, the project strategically incorporates various elements such as bee boxes at roof level flourish by a wild flower sedum roof, landscaped features throughout the site with diverse native vegetation, and a meticulously designed water retention swale and planters. These features work harmoniously to not only enhance the natural habitat but also promote ecological resilience.

### *Benefits of Pollinators*



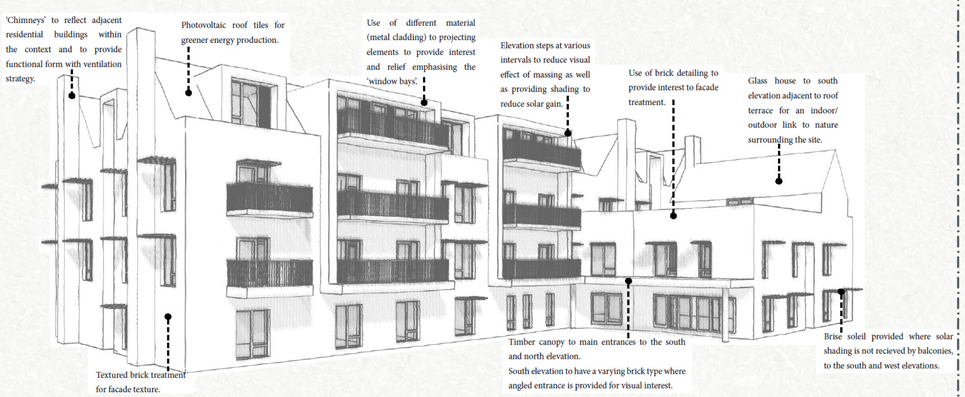




## Solar analysis for summer solstice



## Sketch massing and concept material exploration




## Site Plan Key

1. Public accessible playground
2. Permeable hardstanding
3. Residence parking (disabled sizing)
4. Bollards with integrated LED light fittings. Bollards automatic for access for vehicles requring turning circle during deliveries, refuse collect or emergency services
5. Stone slab footpath leading to seated surrounded by vegitation
6. Soft landscaping comprising of mix of lawn and wildflower
7. Resident and public accessed tranquility garden with seating and swale, surrounded by tall dense vegitation to mitigate surrounding noise impacts
8. Raised planters and green house for residents to grow their own food or flowers. Or to enjoy the outdoors with seating area.
9. Planters for residence use plus seating area
10. Planters for residence use plus seating area
11. Bee boxes to boost biodiversity
12. Sedum biodiversity brown roof
13. Roof access hatch for maintenance
14. PV panels to roof, providing residents with clean renewable energy source
15. Building integrated photovolatic panels to provide residents with clean renewable energy source
16. Phase 2 - Existing residential units (8) refurbishment plus additional story with new residential (4) accommodation
17. Phase 3 - New coffee shop and nursery
18. Widened paved area to allow for coffee shop seating (once phase 2 development has completed)
19. New proposed entrance gate to adjacent primary school

## PASSIV-HAUS AND SUSTAINABLE PRINCIPALS

### Sustainability for Cranwood Residenc

The project adopts a zero-carbon ethos through sustainable design, sequestering embodied carbon in construction materials and prioritising timber, striving for a greener future.

### Rainwater Recycling

Rainwater harvesting for the building uses the 555m² flat roof to collect approximately 281,807 litres annually, providing 45% of the water needed for flushing toilets. Store within a swale and used for irrigation, flushing toilets, and watering plants.

### Renewable Construction Materials

The project utilises renewable construction materials, such as sustainably sourced timber and recycled bricks, reducing environmental impact. These materials sequester carbon, promote sustainability, and enhance the building's overall ecological footprint, ensuring long-term environmental benefits.

### Natural Light

Large windows create natural lighting, enhancing indoor spaces, reducing energy use by maximising daylight, promoting well-being, and connecting occupants with the landscaped outdoor spaces.

### Reducing Energy Useage

The building will use renewable electricity generated by photovoltaic (PV) panels and building integrated PV panels from the roof tiles, providing sustainable energy and fulfilling all electricity needs, with excess feeding back to the grid.

### Operational Carbon

Operational carbon is reduced through high-efficiency systems, renewable energy sources, and passive design strategies, minimizing energy consumption and lowering the building's carbon footprint significantly.

### Passive Ventilation

Passive ventilation utilises natural air movement to regulate indoor air quality and temperature, reducing energy consumption by minimising the need for mechanical systems while maintaining comfortable and healthy living spaces.

### Mechanical Ventilation

Each apartment features Mechanical Ventilation Heat Recovery and an Exhaust Air Heat Pump to enhance ventilation efficiency by harnessing waste heat. Fresh air intake is provided through ventilation chimneys for habitable rooms, while kitchens and bathrooms use extract ventilation connected to air bricks in the façade.

### Pre-Heating System

Superior thermal performance and Passive House principles reduce reliance on central heating. The MVHR plus EAHP unit recovers up to 96% of extract air heat, while wastewater heat recovery captures up to 68.5% heat, reducing energy use and costs.

### Passive Solar Glare

Passive solar design mitigates glare through strategic use of Brise Soleil on south and west-facing elevations, optimising natural light and shading to enhance comfort and energy efficiency in buildings.

### U-Values - Super Insulation

High-quality insulation for Passive Haus standards for significant reduction in thermal bridging and to enhance energy efficiency, comfort, and sustainability while lowering heating and cooling expenses.

### Air Tightness

Air tightness to minimise air leakage, improving energy efficiency, indoor air quality, and comfort while reducing heating and cooling costs.

### Total Energy Space Heating

Implementing all these factors will significantly reduce Cranwood Residence's overall energy consumption and carbon footprint throughout its lifecycle, achieving zero carbon emissions for the construction of the building.

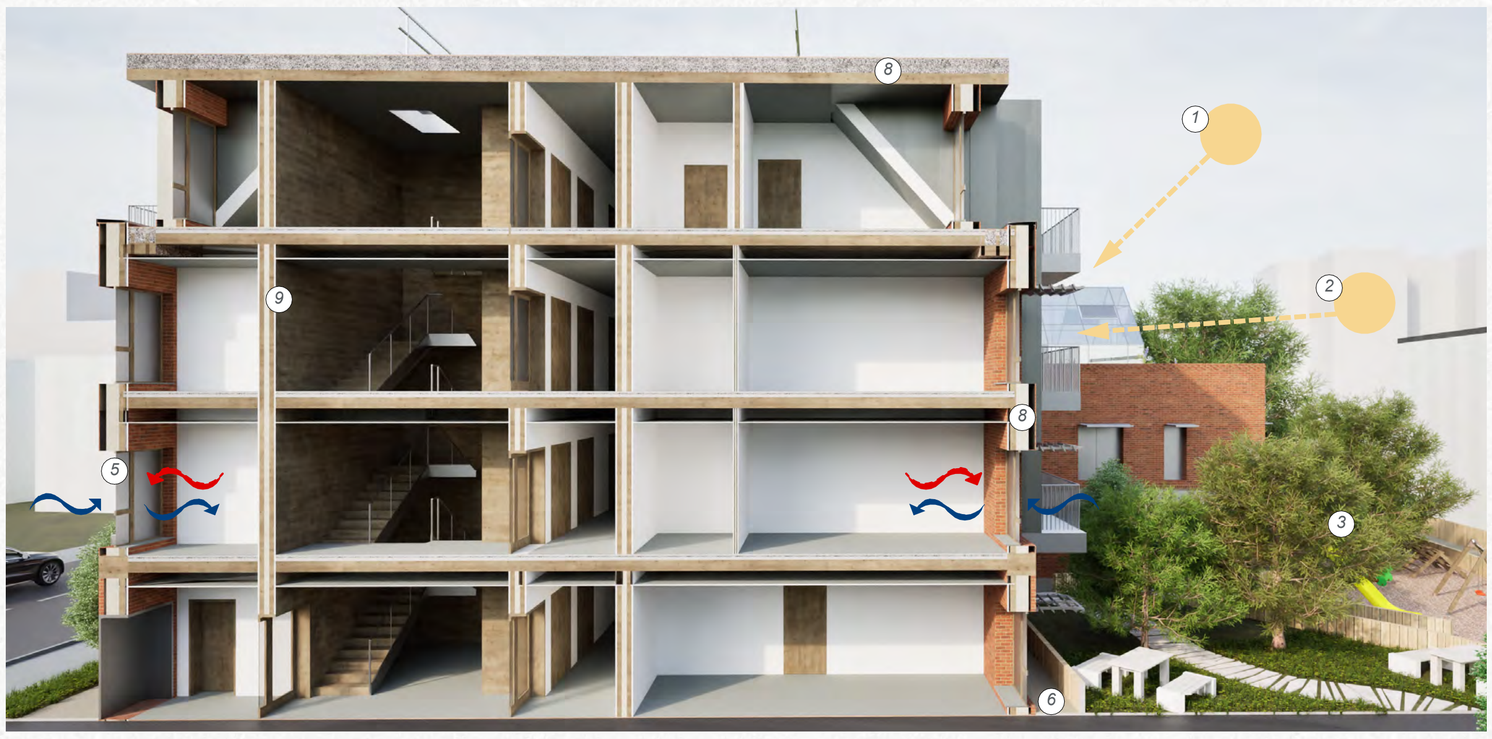
# Cranwood Residence

## Zero Carbon Intergenerational Living
## Cranwood Residence, Muswell Hill, Haringey, London

Cranwood Residence integrates advanced sustainable technologies to enhance building performance and occupant comfort. Key features include mechanical ventilation heat recovery, super insulation, and renewable energy solutions to meet Passiv Haus standards. Rainwater harvesting, greywater recycling, and stringent health and safety protocols emphasise environmental stewardship and well-being.

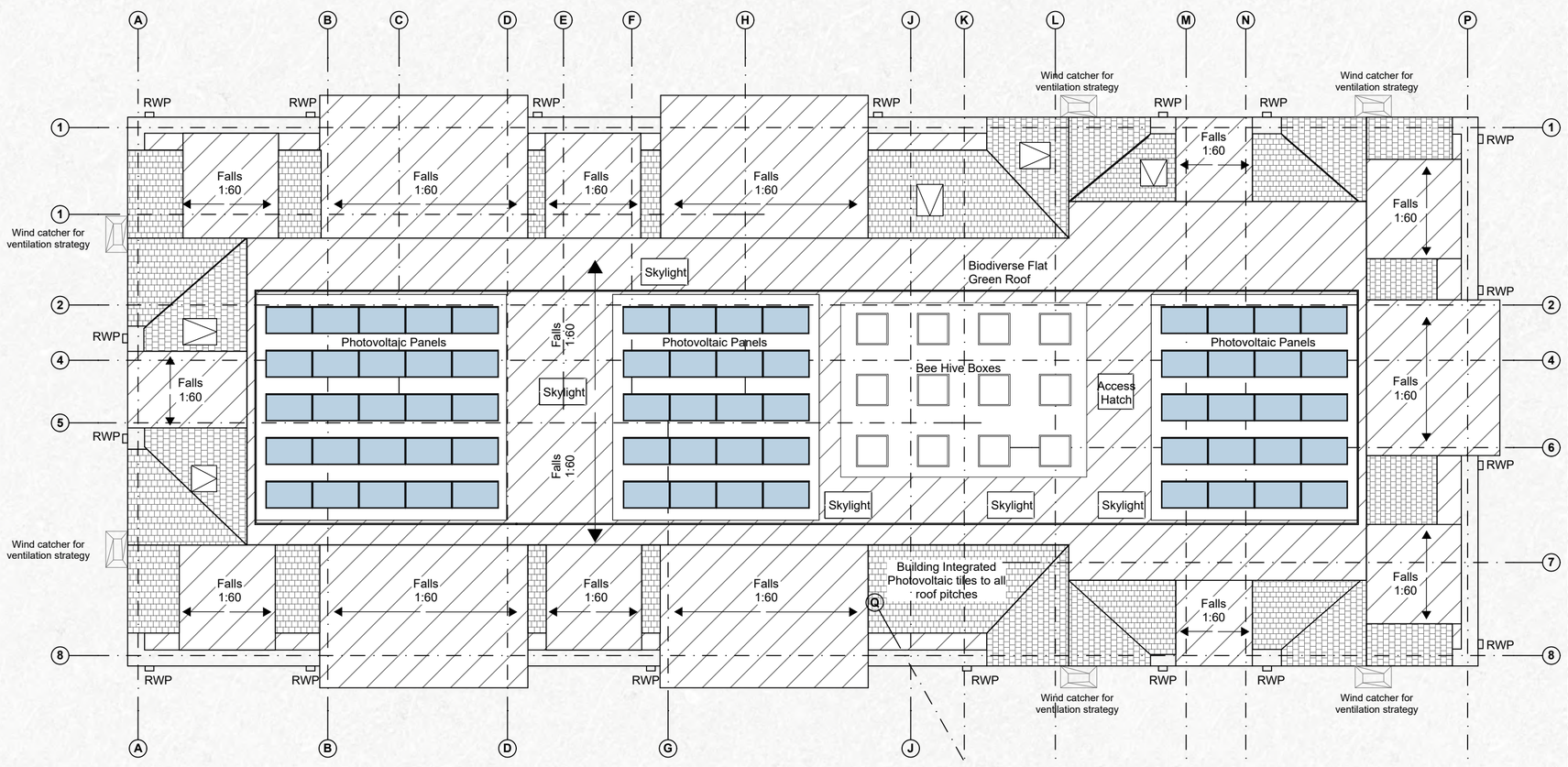
### Energy Strategy

The development utilises renewable energy sources to power the building through Building Integrated Photovoltaic (PV) roof tiles and 65 Photovoltaic panels. *This setup ensures a reliable, clean energy source, enhancing the building's sustainability and offering financial benefits through reduced energy costs and potential income from excess power.*



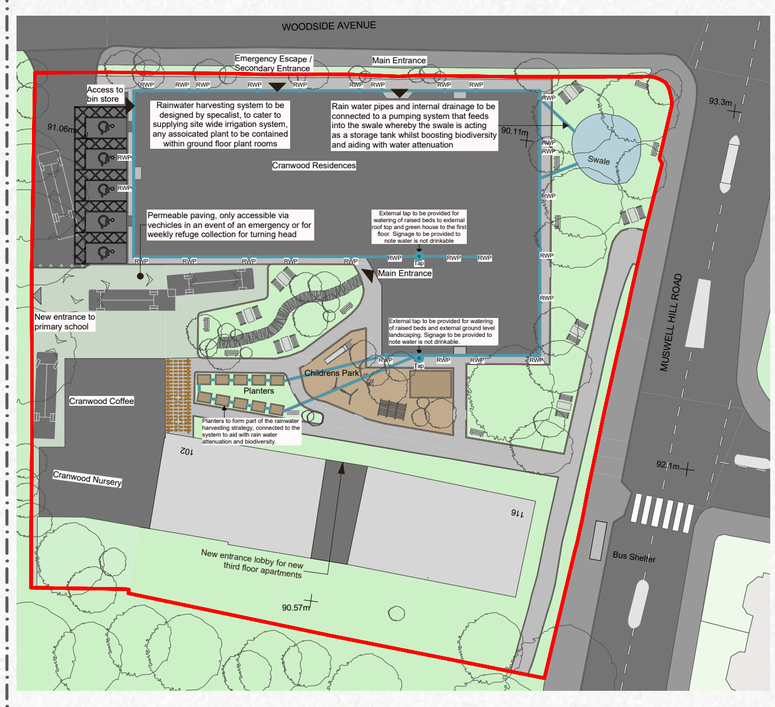

### Cut Section Key

1. ***Summer sun:*** *flats shaded by brise soleil, deeply set back windows & recessed balconies*
2. ***Winter sun:*** *low level sun reaches flats - solar gains for warmth*
3. ***Rainwater harvesting:*** *Aided with the swale to east of the site. Water utilised for irrigating planting and raised beds.*
4. ***Large areas of planting and trees*** *Encourage bio-diversity and planted surfaces reduce Urban Heat Island effect.*
5. ***Natural ventilation:*** *All habitable rooms have been provided with windows and where possible dual aspect to ensure high levels of cross-ventilation. Wind catchers provide fresh intake air highlevel.*
6. ***Permeable paving to all hard landscaping*** *Aids with surface water attenuation*
7. ***BIPV and PV solar panels:*** *Flats supplied with green renewable energy, surplus fed back to grid*
8. ***Efficient thermal fabric:*** *Building fabric designed to high airtightness standards and Passivhaus u-values (0.08 - 0.15 W/m²K)*
9. ***CLT Mass timber:*** Contributes to healthy environment with low embodied carbon.



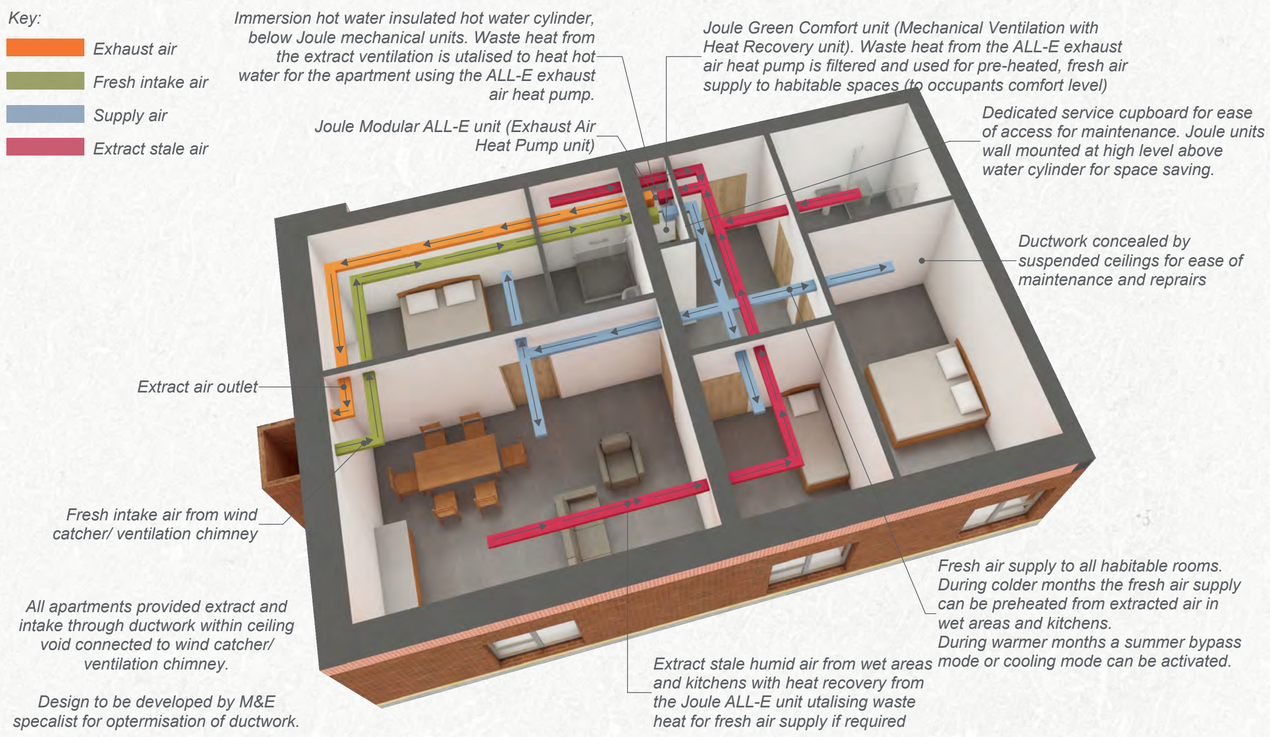

### Sustainable Urban Drainage Strategy & Rainwater Harvesting

The project includes a comprehensive rainwater harvesting system with swales and planters to manage stormwater sustainably. This system supports irrigation and reduces the burden on municipal water supplies.



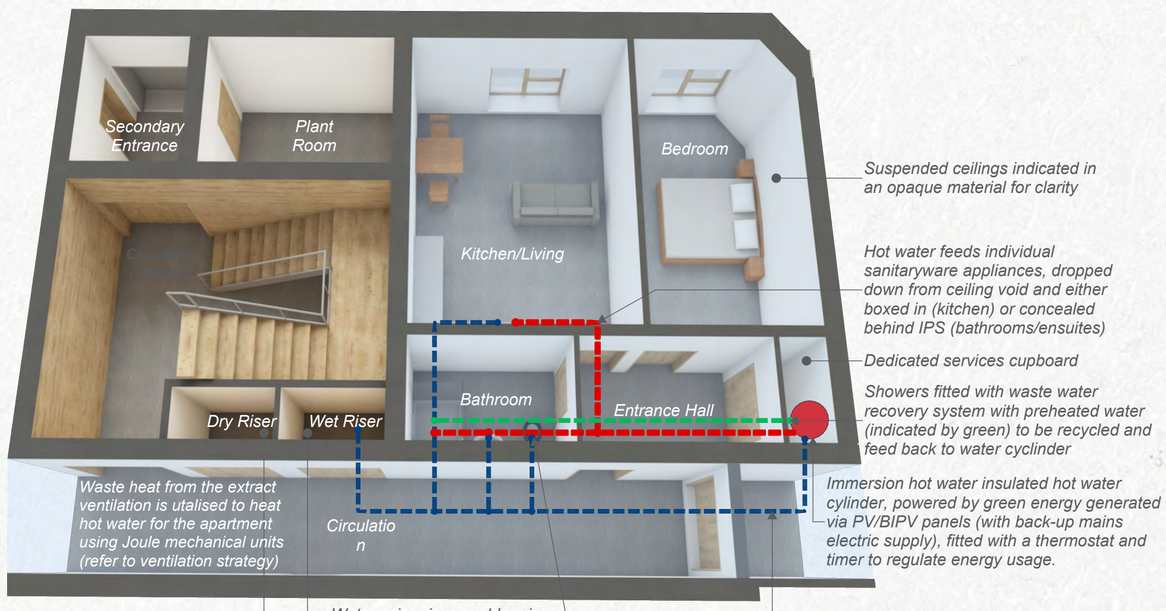

### Ventilation Strategy

The advanced systems provide ventilation and climate control, ensuring a comfortable indoor environment with minimal energy use. The Mechanical Ventilation Heat Recovery system recovers heat from outgoing air, while the Exhaust Air Heat Pump utilises waste heat/energy from occupants to efficiently manage indoor temperatures.

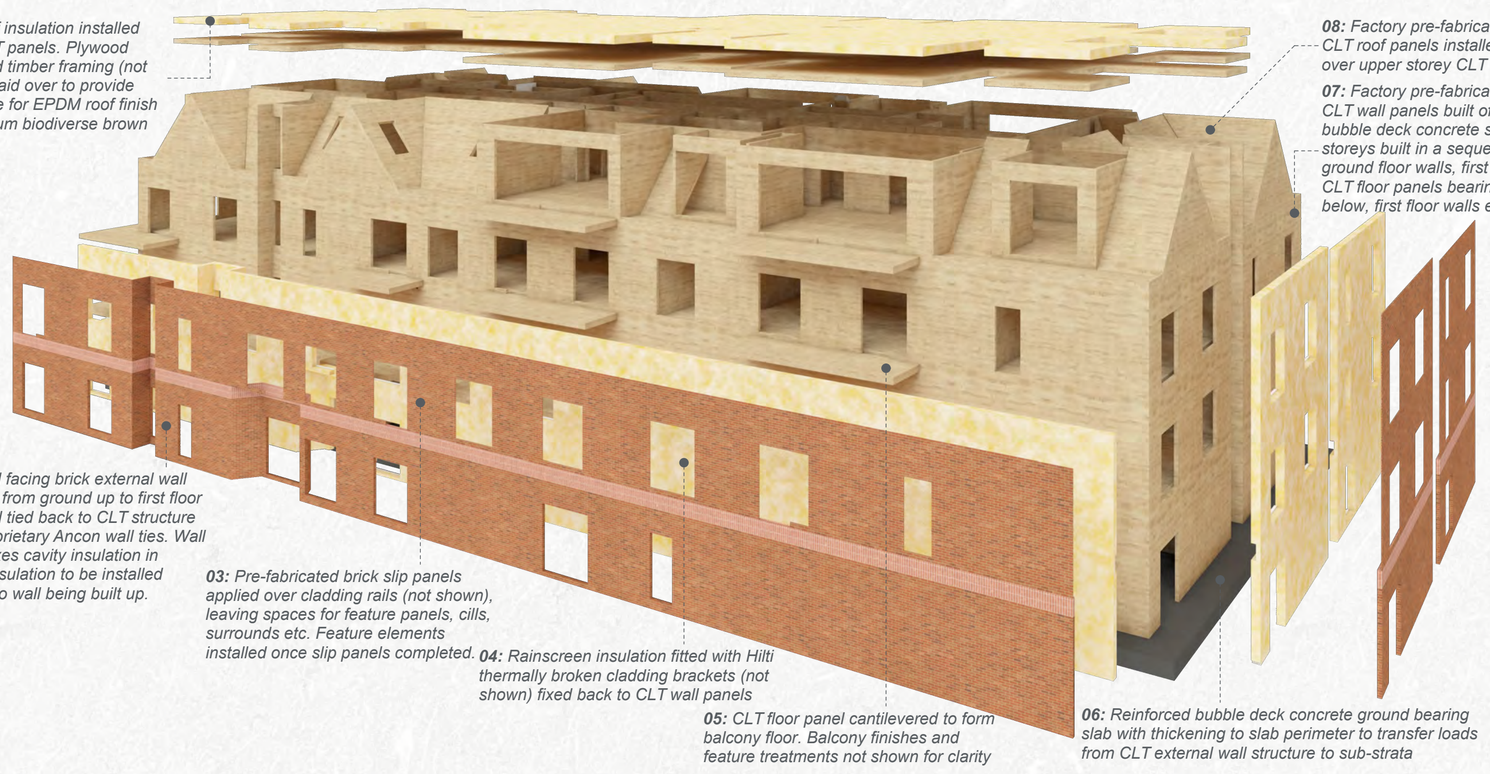



### Heating and Hot/Cold Water Strategy

The building's thermal performance exceeds Approved Document Part L values, making a heating source unnecessary, and its summer bypass feature eliminates the need for additional cooling systems. Moreover, the innovative system not only manages heating effectively but also recovers heat from wastewater, significantly enhancing energy efficiency and reducing the building's environmental impact.




### Basic structure and external construction sequence




### Structure axonometric