

10. Key Strategies

Cycle Storage Accommodation

The scheme aims to encourage healthy and more sustainable modes of transport. In order to ensure an appropriate uptake the scheme provides a variety of parking types to cater to individuals of varying abilities or lifestyles. The team recognises there one single solution suitable for residents.

Cara House Cycle Parking

There are currently a handful of cycle racks on the site serving Cara House, but these are unsheltered and in a general state of disrepair.

As part of the proposal, new cycle stands will be provided to replace the existing stands in the gated garden area to the rear of Cara House. These will be integrated as part of the landscape strategy which will be developed in further detail with the residents.

General feedback from the local residents was a strong preference for storage within the units. This feedback has been incorporated into the new build elements of the scheme and will be taken forward in the wider framework guidelines for future redevelopment within the district.

*64 double stacked spaces provided
*10 1.2m Sheffield stands spaces provided
Uplift to 1:1 provided within units

Recommended			
Residential provision			
	Ratio (%)	Ratio	
Long-stay cycle ratio		100.00%	1
Short-stay cycle ratio		2.50%	1 per 40 beds
Provision split			
Double stack ratio		80%	
Sheffield 1.2m		15%	
Sheffield 1.8m		5%	

		No.of beds	Long-stay spaces		Short-stay spaces	
Block A	Double stacked Sheffield 1.2m Sheffield 1.8m	83		66		
				12		
				4		
			Total	83		
Block B	Double stacked Sheffield 1.2m Sheffield 1.8m	18		14		
				3		
				1		
			Total	18	4	
Total Block A+B			cycle spaces	101	4	



Sheffield Stands



Double Stack Cycle Racks

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Cycling Storage Distribution

Warehouse living parking

The proposal provides a 1:1 ratio of long-stay cycle parking spaces for every new-build bedroom.

These are provided with 80 spaces accommodated in the dedicated cycle storage enclosures/rooms at ground floor.

Capacity in excess of the 21 spaces can be accommodated within the Warehouse Living units themselves.

Commercial Cycle parking

Long stay cycle requirements across the site is low due to the limited footprint of most demises.

To ensure the provision is tailored to demand, allocation for cycle parking will form part of the tenant fit-out requirements.

The requirements based on floor areas are as follows:

- + Long-stay: 4 spaces across site (within units)
- + Short-stay: 23 spaces across site

Tewkesbury Level



15 spaces
Sheffield Stands

Relocated and
ungraded existing
provision

Key

Residential long-stay (Covered and secured)

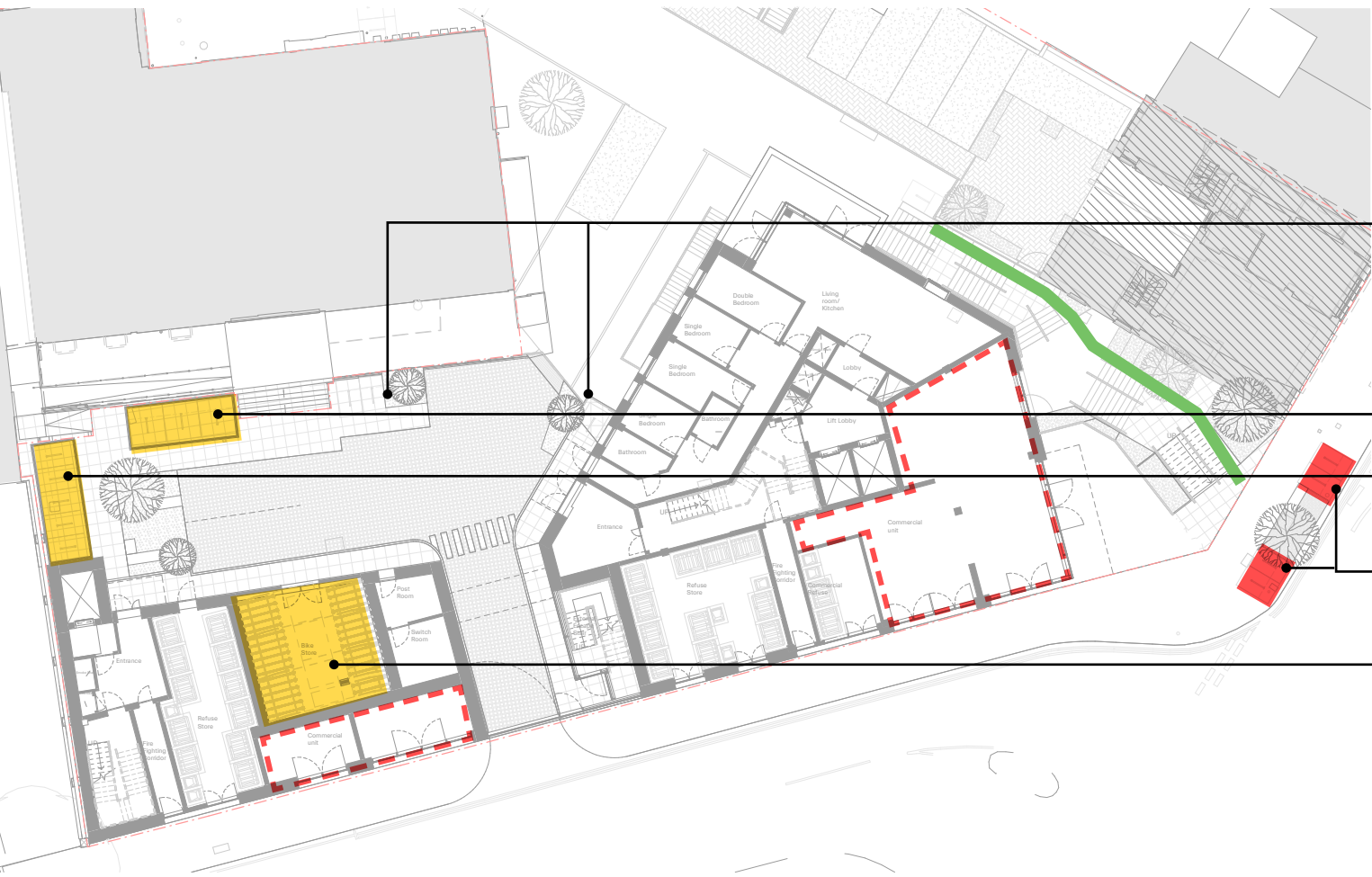
Residential short-stay

Commercial spaces within public realm

Commercial spaces Short stay within public realm

Ramp for bikes and trolleys

Ground Floor Level



6 spaces
(Inc. 2 for Cara House)
Sheffield Stands

6 spaces (accessible)
Sheffield Stands

10 spaces
Sheffield Stands

8 spaces
Sheffield Stands

64 spaces
Double Stacks

10. Key Strategies

Cycling Parking- Internal Storage

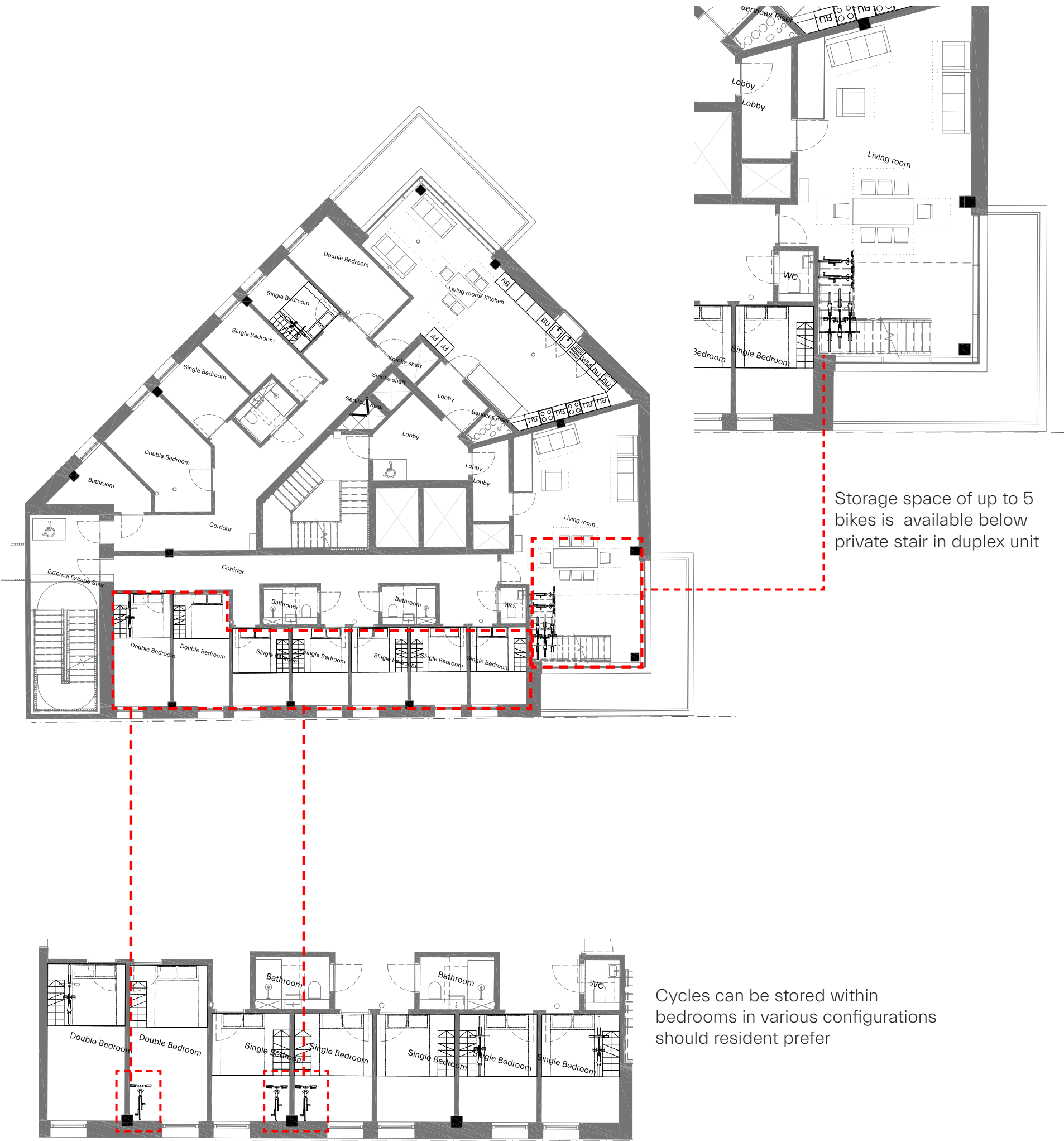
The strong message from the community consultation process was the preference of many Warehouse residents to keep their bikes inside their unit.

This preference can be flexibly accommodated within the proposal. Bikes can be transported in the lifts and stored either within bedrooms or within duplex communal spaces underneath the private stairs.

Over **21 cycles** can be stored within the units to provide the 1:1 ratio of parking spaces.

Storage space is available under the private stair in each duplex unit. Additionally, the increased floor to ceiling height allows bikes to be stored either under bed decks, against the wall, or raised on an off-shelf hanger system within the bedrooms.

Ultimately the design aims to offer residents **flexibility** and **choice** on how they wish to store their bikes.



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Part-M Compliance

Standard access provisions in all warehouse units will be designed to comply with M4 (2).

For units where accessible bedrooms are located the requirement throughout all general spaces will be designed to meet the enhanced criteria set out in M4(3).

M4(3) Units within the new blocks



- Block B**
(All units)
Provision per unit:
- 2 Accessible bedroom
 - 1 Accessible bathroom
 - Dropped counter position
 - Changeover/wheelchair charging position

- Block A Northern units- Levels 1–5**
(Total 5 units)
Provision per unit:
- 1 Accessible bedroom
 - 1 Accessible bathroom
 - Dropped counter position
 - Changeover/wheelchair charging position

10. Key Strategies
Accessible Units Layouts-
Block A



10. Key Strategies
Accessible Units Layouts-
Block B



10. Key Strategies

Sustainability Strategy

The development aims to optimise all relevant aspect of sustainability through a **balanced approach**.

Sustainability is a **core** principle within the scheme.

Carbon, Ecology, Well-being, Future adaptability Economical, Social and physical robustness are all key considerations when developing the proposal.

Full details on the sustainability objectives can be found in the Sustainability Statement produced by Expedition as part of this application.



Energy and Carbon

- + Fabric first-Solar shading to reduce risk of overheating + high performing building envelope Targeting BREEAM Excellent
- + 53% carbon savings against Part L compliant baseline
- + Building Primary Energy Rating: 26% improvement against Target
- + On-site renewables
- + Future-proof for changing energy demands



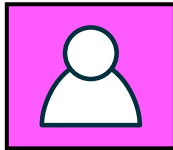
Environmental Resilience

- + Target UGF of 0.35
- + Environmental net gain. Planting mix to support biodiversity
- + Target greenfield run-off rates
- + Provide surface water attenuation suitable for 1 in 100 year event +40% buffer to cope with effects of climate change



Materials and Circular Economy

- + Targeting 95% diversion of waste from landfill
- + Designed in adaptability and flexibility for long lifespan
- + Designed to optimise disassembly where feasible.
- + Balance robustness with disassembly



Health & Well-being

- + Private and public amenity. Roof terraces, yards and balconies
- + Improved safety to public realm
- + Noise mitigated where necessary
- + Centralised and user-operated environmental control features
- + Engage community to create communal sense of ownership

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On-site Renewables

The viability of various on-site renewables were assessed as part design process.

Air-source heat pumps

Air source heat pumps have been selected to meet the heating and hot water demands of both buildings. Each block has a central plant linked back to water source heat pumps within each unit. This offers the best of both worlds in terms of adaptability. The chosen system also provides good balance between spatial and energy efficiency as there is less heat loss through pipework. General space heating will be provided via the use of underfloor heating.

The proposed water based system can also be easily adapted to connect to a future **District Heating network**.

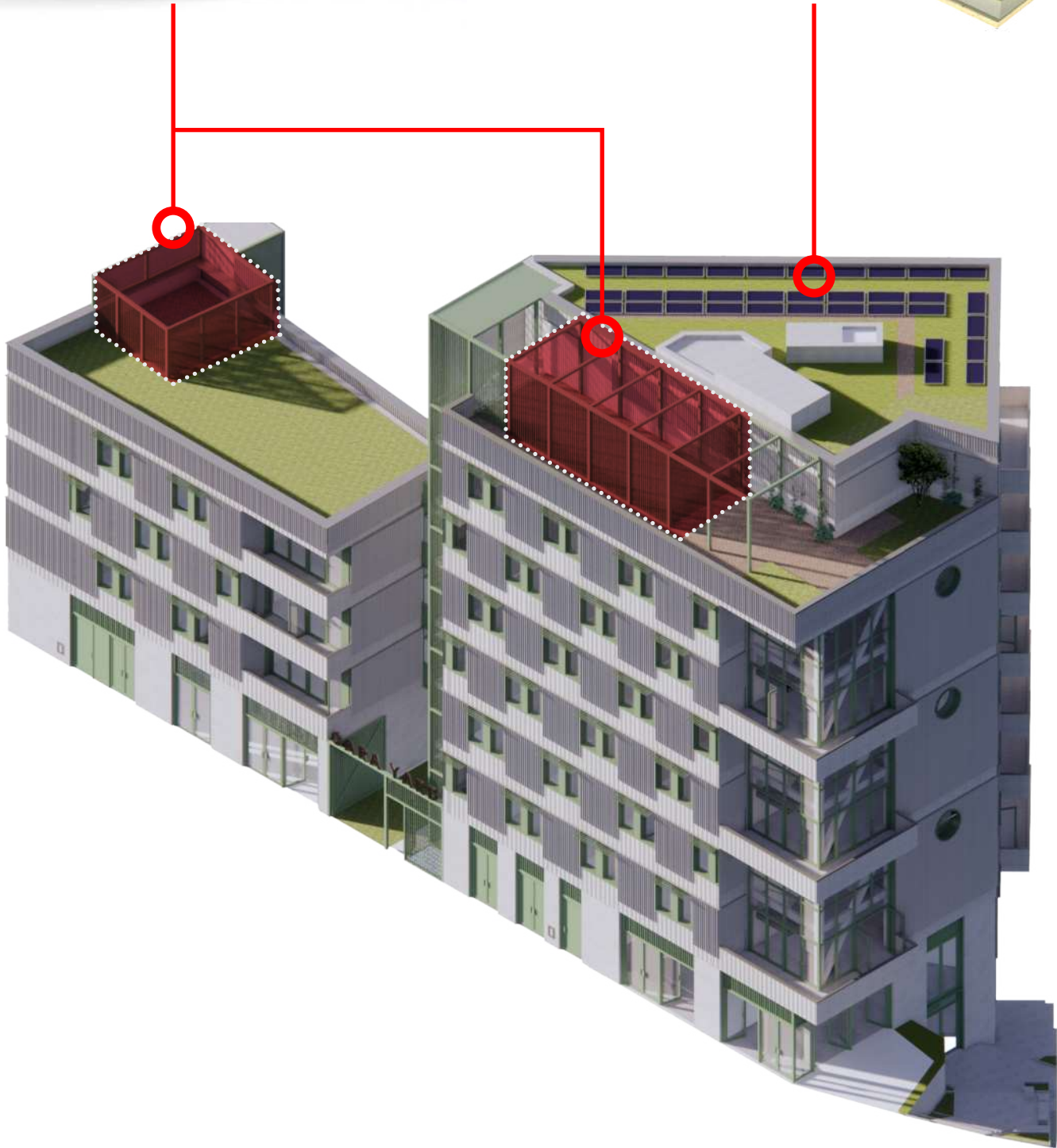
Photovoltaic

Photovoltaic will be installed on the higher service roof of Block A. They have been integrated into the green roof system creating a bio-solar roof. This system has the added benefit of increased energy efficiency due to the cooling effect of the planting below.

Air source heat pumps



*Photovoltaics on service only
Bio-solar roof



*Image obtained from ICB roofers web catalogue

10. Key Strategies

Sustainability- Building fabric

Passivhaus principles have been used to inform the design process from the get-go. A fabric-first approach was adopted to resolve fundamental issues such as overheating and the reduction of operational energy demand

Thermal Mass

The building fabric has been designed to have high thermal performance well above the latest part L 2021 criteria.

Solar shading

Brise soleil are integrated into the facade design. They have been applied to the area most prone to overheating (Southern facing elevations). Iterative testing was done to ensure their projection have been optimised.

Purge ventilation

The building has been designed to be mechanically ventilated with closed loop heat recovery. Space heating will be centrally controlled with the use of underfloor heating within the units. Operable windows have also been provided to ensure users have a **low energy solution** to adapting their local environment if they chose.



Optimised brise soleil

Overhang to provide passive shading

Operable windows

Integrated louvres for mechanical ventilation system /purge ventilation

Designated zone for louvres and signage to commercial spaces

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Noise and acoustic comfort

A key issue raised during the consultation was that of noise mitigation for new and existing residents. A carefully considered strategy has been developed. Robust materials will be selected to provide good acoustic conditions internally and externally.

The development will act as a **physical buffer**, reducing incoming noise pollution from Seven Sister's Road to Cara house. The design is efficient through each layer utilising:

- + High performing **insulation** that acts both thermal and acoustically
- + The profiled nature of the rain-screen cladding assists with sound mitigation via **diffusion**.
- + **High performing double glazing** will be installed to ensure acoustic comfort.
- + Blockwork walls to the façade and internal partitions provide good acoustic separation.

All major building elements will be designed to meet and exceed the criteria set out in BS EN ISO, 140-3:1995.

(Please refer to Acoustic report for further detail.)

