

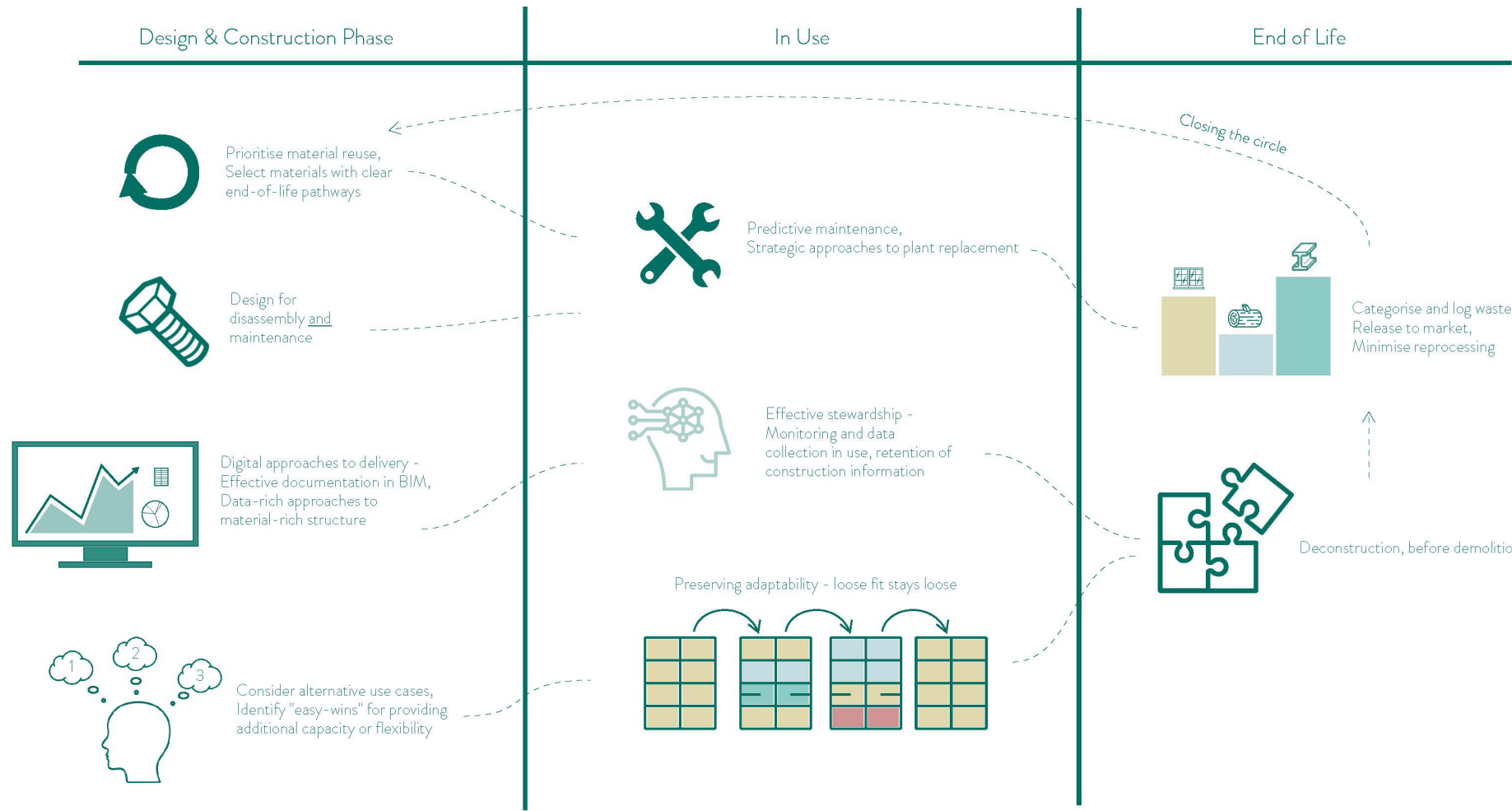
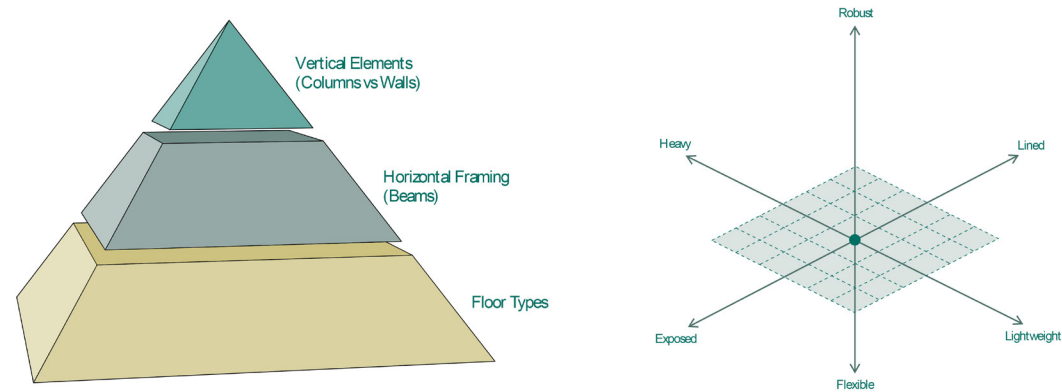
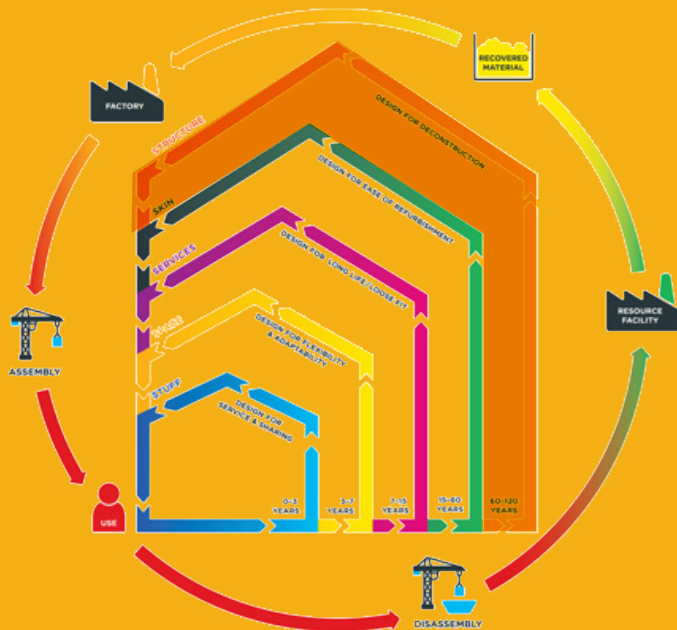
10. Key Strategies

Super Structure

The principles of building in layers was used to inform the choices when it comes to the structural solution. The design has been optimised using a robust pre-tension concrete frame. This solution is comparable with the alternative steel frame in terms of embodied carbon especially when the complexity of the site is accounted for.

The option for utilising recycled steel was also explored. However current indicators show this is still an exceptionally volatile market in terms of cost and stock availability. The team will however continue to develop the strategy of further carbon reduction over the next design stages.

One key advantage of the proposed structural solution is that it provides a robust solution with regard to compartmentation and general fire safety. The approach provides great flexibility for end users in adapting the space.



Notes:

Sketch

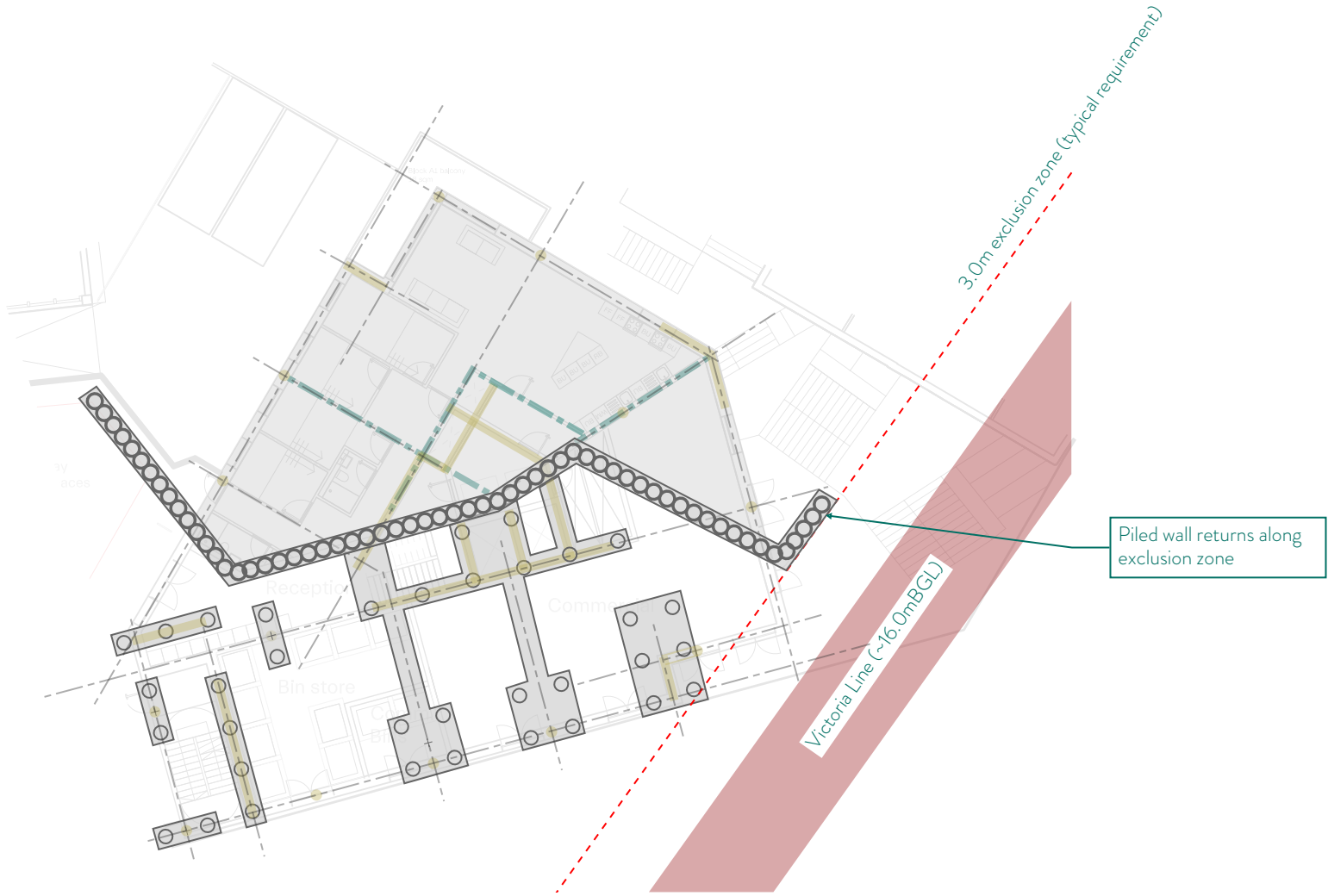
Project name	Warehouse Living	Project no.	1547	Date	Aug 22
Title	QRP Structural Input	By	AB	Sheet no.	Rev:

10. Key Strategies Foundations

Along with the significant level difference the site is also flanked by the **Victoria underground line**. The edge of Block A straddles the exclusion zone. This creates the need for a transfer structure within the building frame to avoid the need for piles within this zone area.

Various options for how achieve this were explored. Option 3 (right) was chosen as it proved the most economical in terms of sequencing, ground floor uses and overall material efficiency. It also makes legible the double-stack arrangement of the units within.

In response to comments from the QRP panel, the option of creating an outward expression of this element was explored but not pursued in the final proposal, due to reduced thermal, material and cost efficiencies.



Indicative structural layout for foundations at Seven Sister road

10. Key Strategies

Capturing water -SuDs and Attenuation

Blue roof

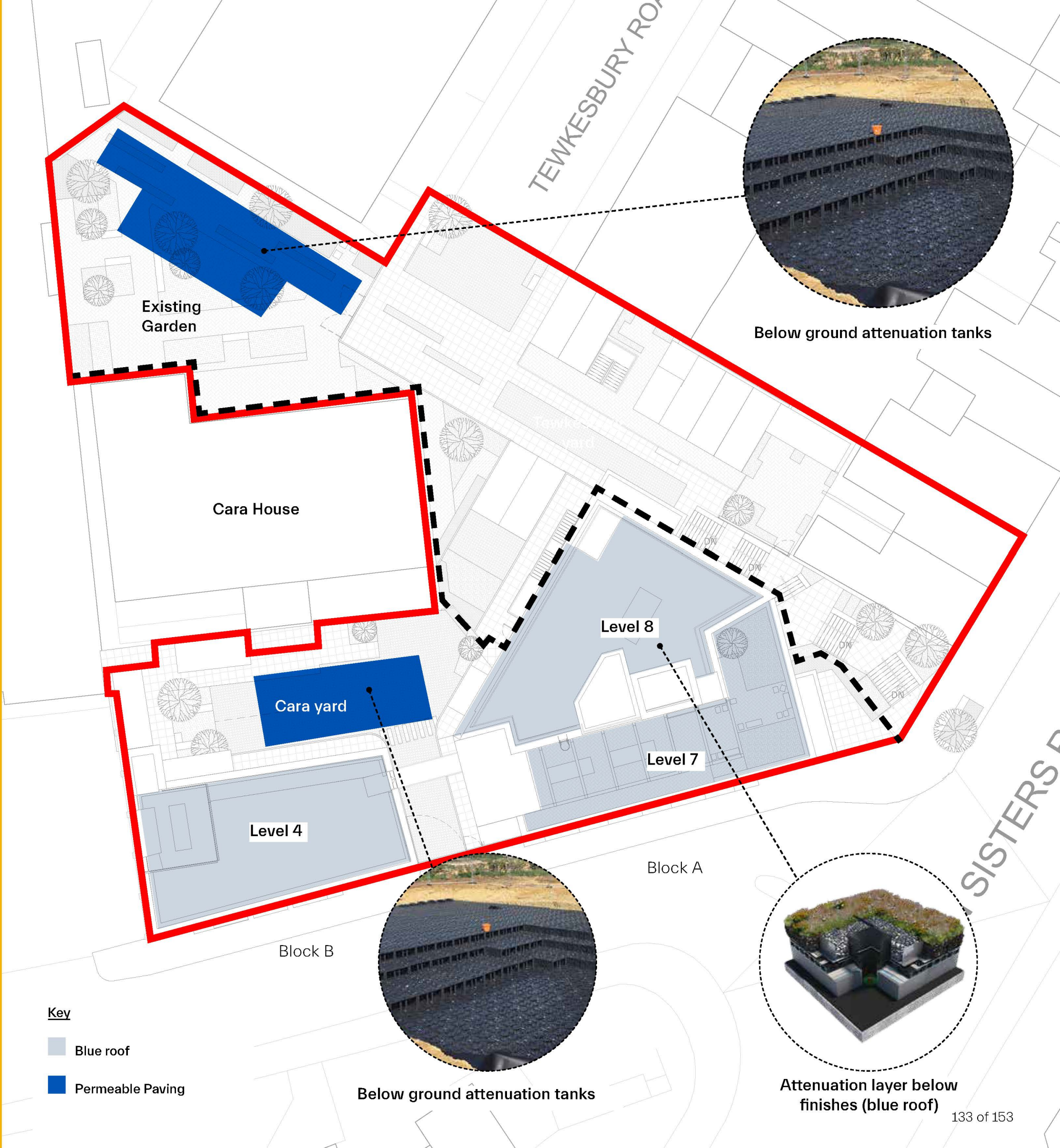
A blue roof attenuation layer has been provided across the roof areas in both blocks. This sits below both soft and hard finishes.

Ground attenuation

The overall surface water discharge from the site will be restricted to **1 l/s** for all rainfall events up to **1 in 100-year** storm which is equivalent to the **Greenfield QBAR rates** for the area. The design also incorporates 40% **allowance for climate change**. The resulting storage requirement will predominantly be provided in below ground attenuation tanks.

Permeable paving and rain gardens are also incorporated to the landscape layout offering water quality improvements as well as options for attenuation storage. The storage volumes available within these elements are currently not included in calculations for a conservative design.

Please refer to Flood Risk Assessment and SuDS Strategy for further detail. Extract page can be found in Appendix C.



10. Key Strategies

Overshadowing and Internal Daylight

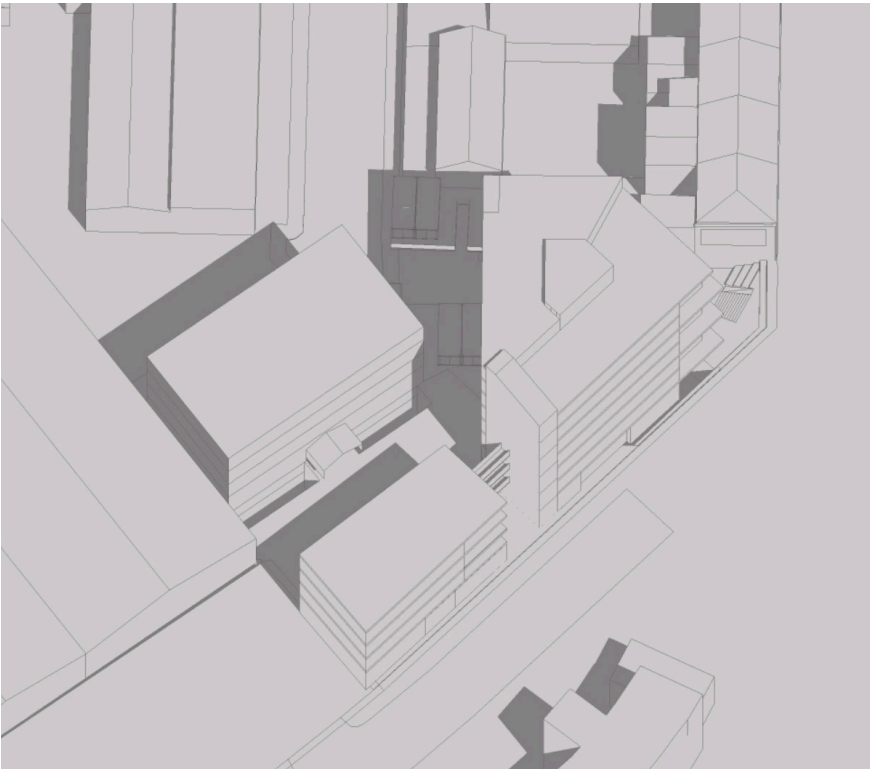
A daylight sunlight assessment was conducted as part of the design process. The majority of windows around the site meet the target daylight and sunlight values. Where this is not the case, the window in question either meets the alternative target value or is obstructed to daylight and sunlight by the architecture of the neighbouring building itself.

It should be noted, that least performing windows are the lower-level windows to Cara house. These do not meet target values in the existing conditions

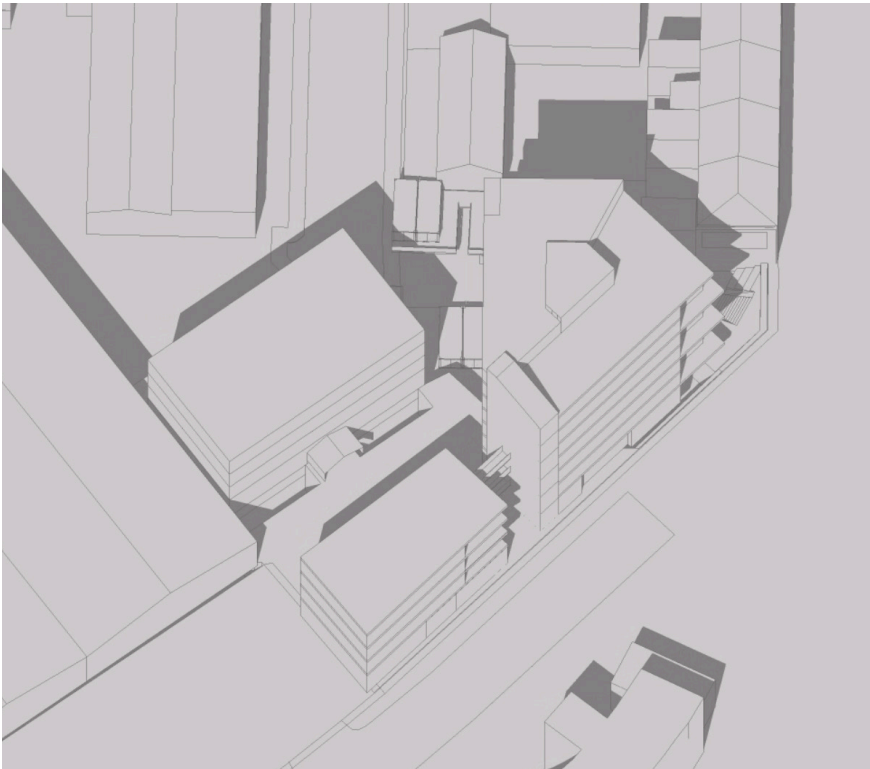
Please refer to Daylight Sunlight report for further detail



Windows with noticeable overshadowing in Cara house do not meet criteria in current conditions.



Building form and heights has be optimised to reduce overshadowing where possible



Southern facade of Cara receives during the summer months



10. Key Strategies

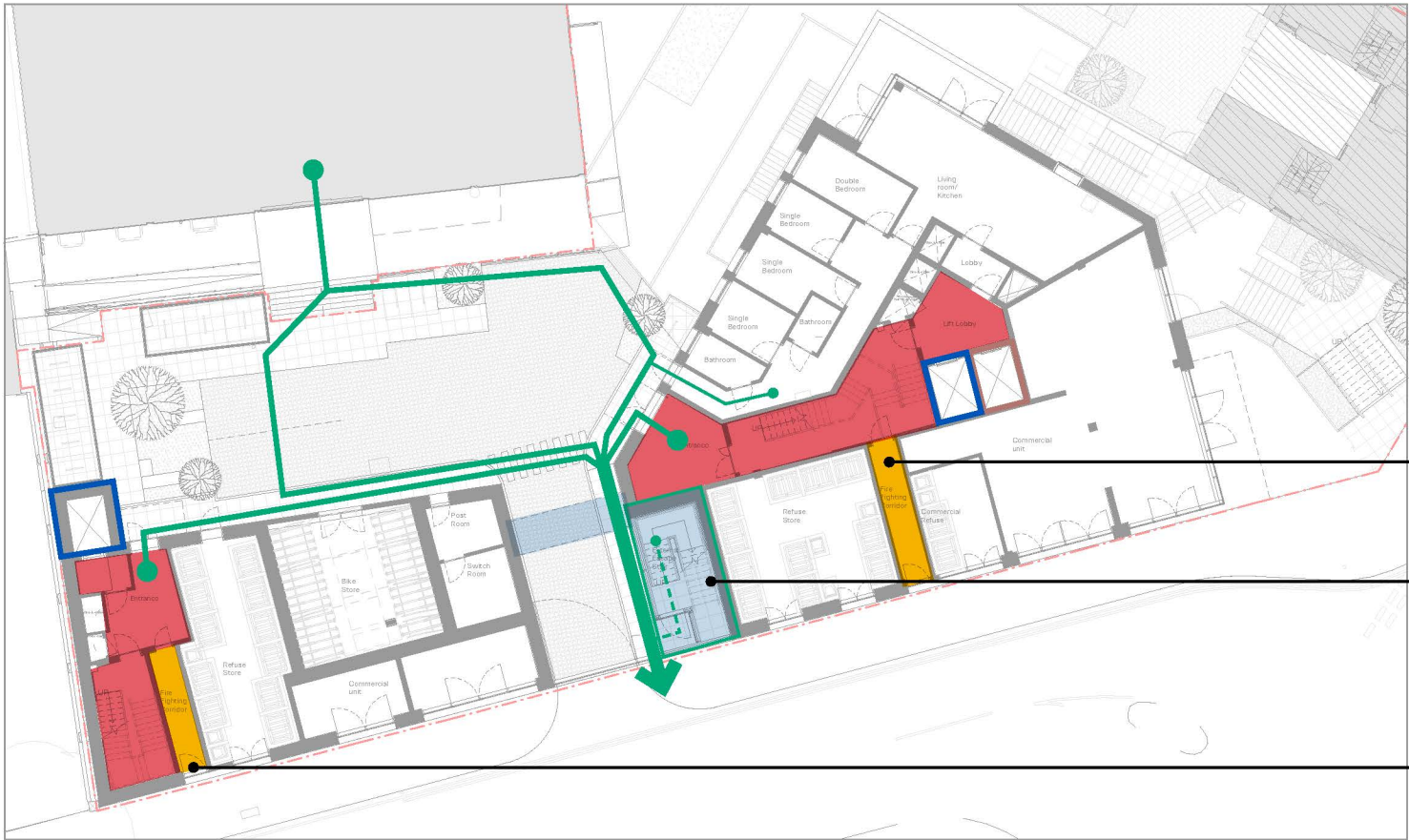
Fire and Escape

A robust fire strategy has been developed, incorporating passive and active fire mitigation principles. These include:

- + Provision for sprinkler system to Blocks A and B
- + Provision of multiple means of escape
- + Ventilated lobbies and smoke clearance to all stair cores
- + Dignified escape within main stair cores in both blocks
- + Direct access for fire brigade to new stair cores of Eade road
- + Compartmentation at all floor levels and between units

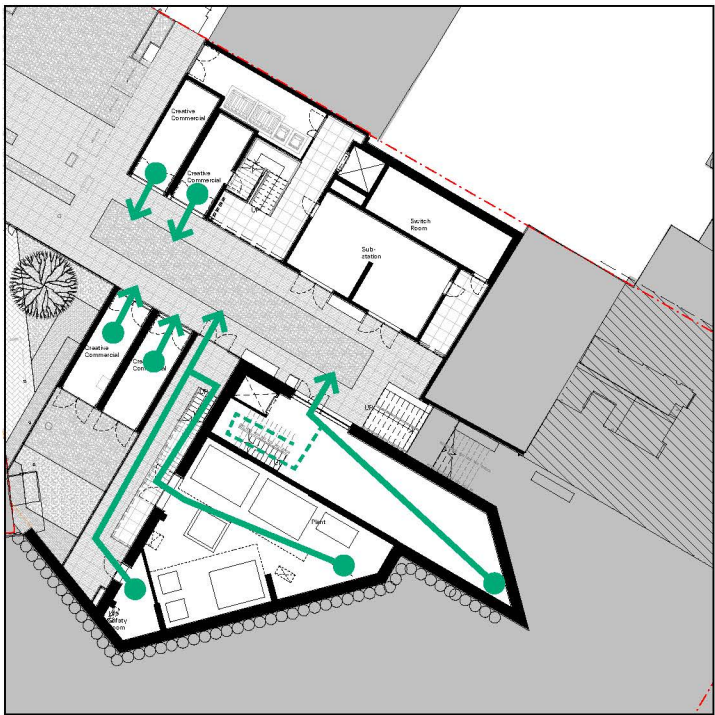
Resident rally points will be developed at next design stage.

Please refer to Fire Statement for further detail.

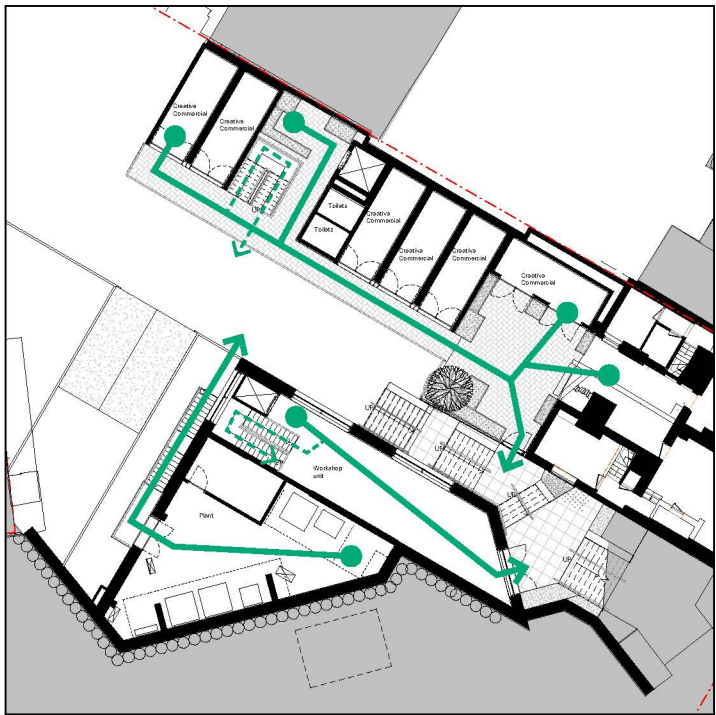


Seven Sisters Ground Level

- Fire Fighters access to new block from street
- Secondary means of escape via sheltered external stair and bridge link from Block B at upper levels
- Fire Fighters access to new block from street



Tewkesbury Road Level



Tewkesbury Mezzanine Level

- Key**
- Primary escape route
 - Secondary escape route
 - Protected escape zone
 - Fire-fighter access route

10. Key Strategies

Fire Services Access

The building and landscape design have been refined to ensure fire tender access to existing and new buildings on the site is maintained..

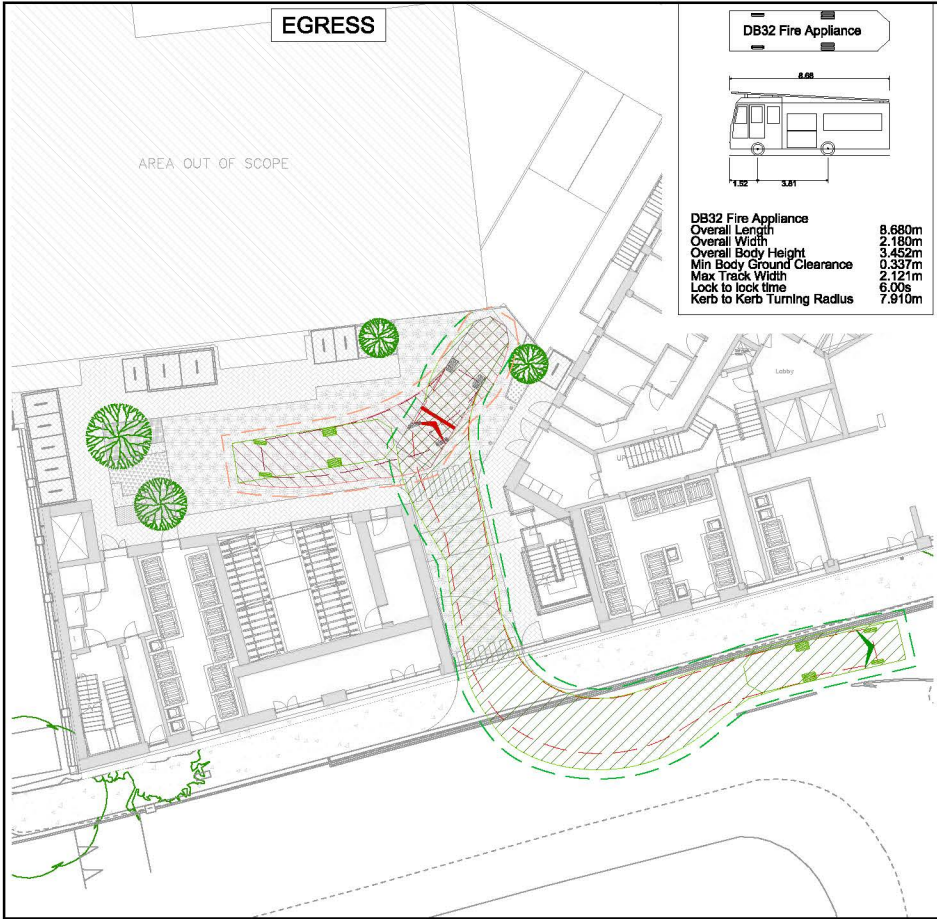
The secondary escape bridge link has also been designed with consideration for the headroom requirements of standard tender vehicles. This will ensure that the existing access to Cara house south elevation is maintained

Refer to Appendix B for additional tracking studies

Please refer to Fire Statement for further detail.



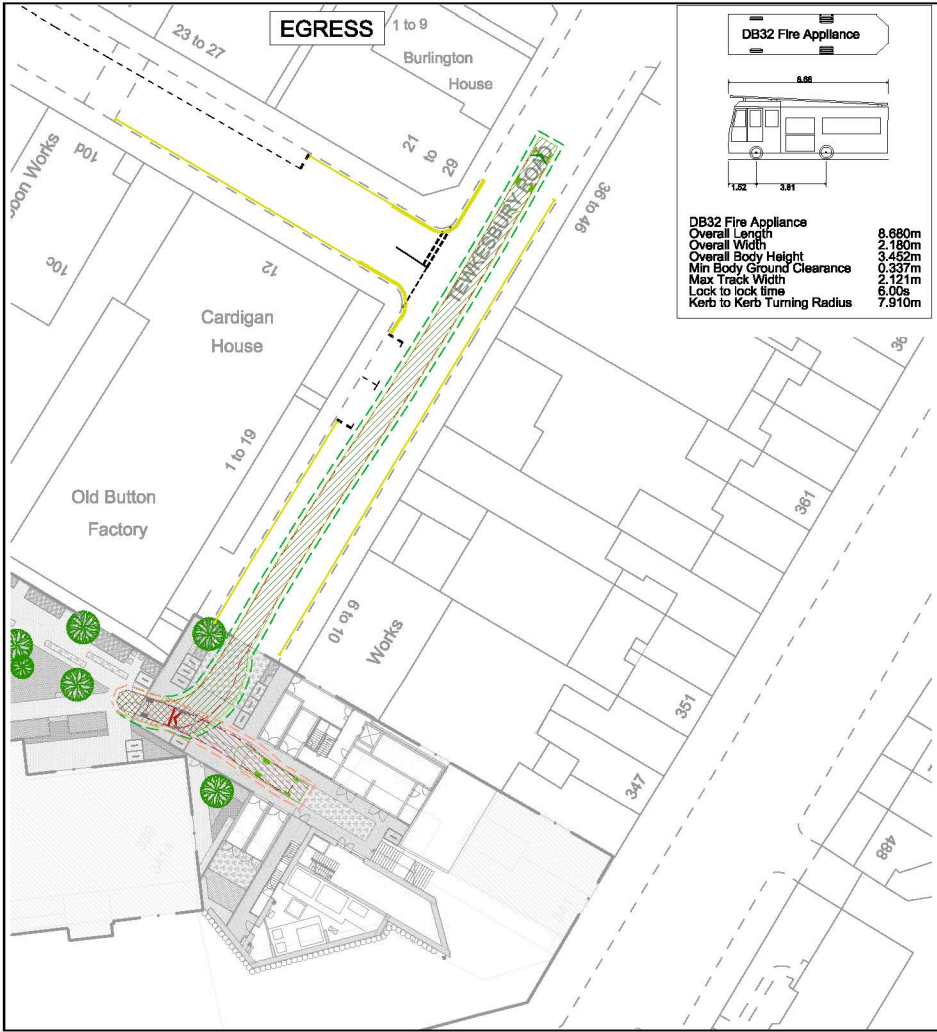
Ground Level - Fire Tender Access



Ground Level - Fire Tender Egress



Tewkesbury Road Level - Fire Tender Access



Tewkesbury Road Level - Fire Tender Egress

10. Key Strategies

Plant Replacement

Plant equipment will inevitably need to be repaired or replaced within the design life of the building. The plant replacement strategy can be differentiated into three tiers:

Tier 1: Normal Maintenance and Replacement of Small Items

Frequent routine maintenance events. Lifts and stairs able to be used by service and tradespeople carrying tools and replacement items

Tier 2: Replacement of Medium Plant Items

Infrequent maintenance events such as unit failure. Parts unable to be moved by lift to be moved to trolley to a position with agreed method statement.

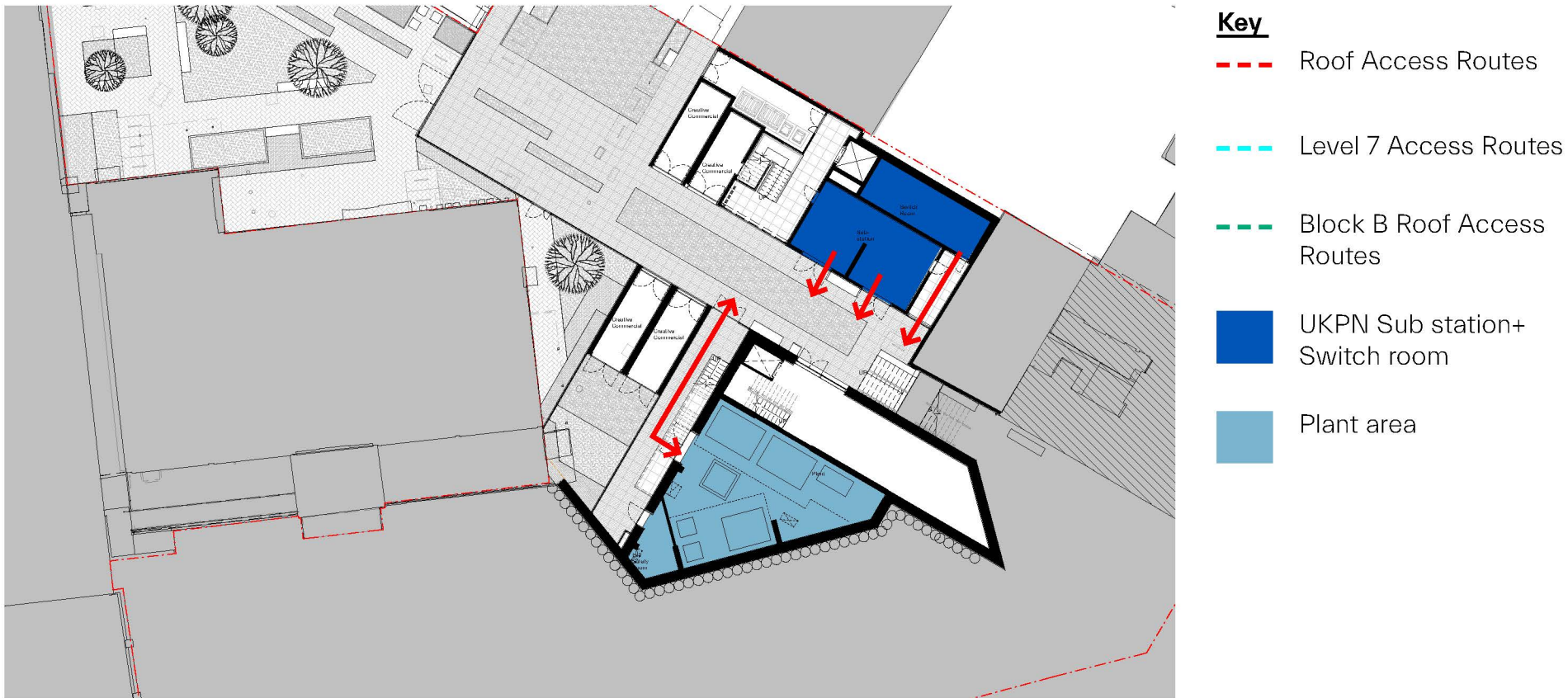
Tier 3: Replacement of Major Plant Items

Rare maintenance event when plant comes to the end of its serviceable life or major failure. Significant items of plant that may require crange, disturbance of building fabric or services to remove or replace.

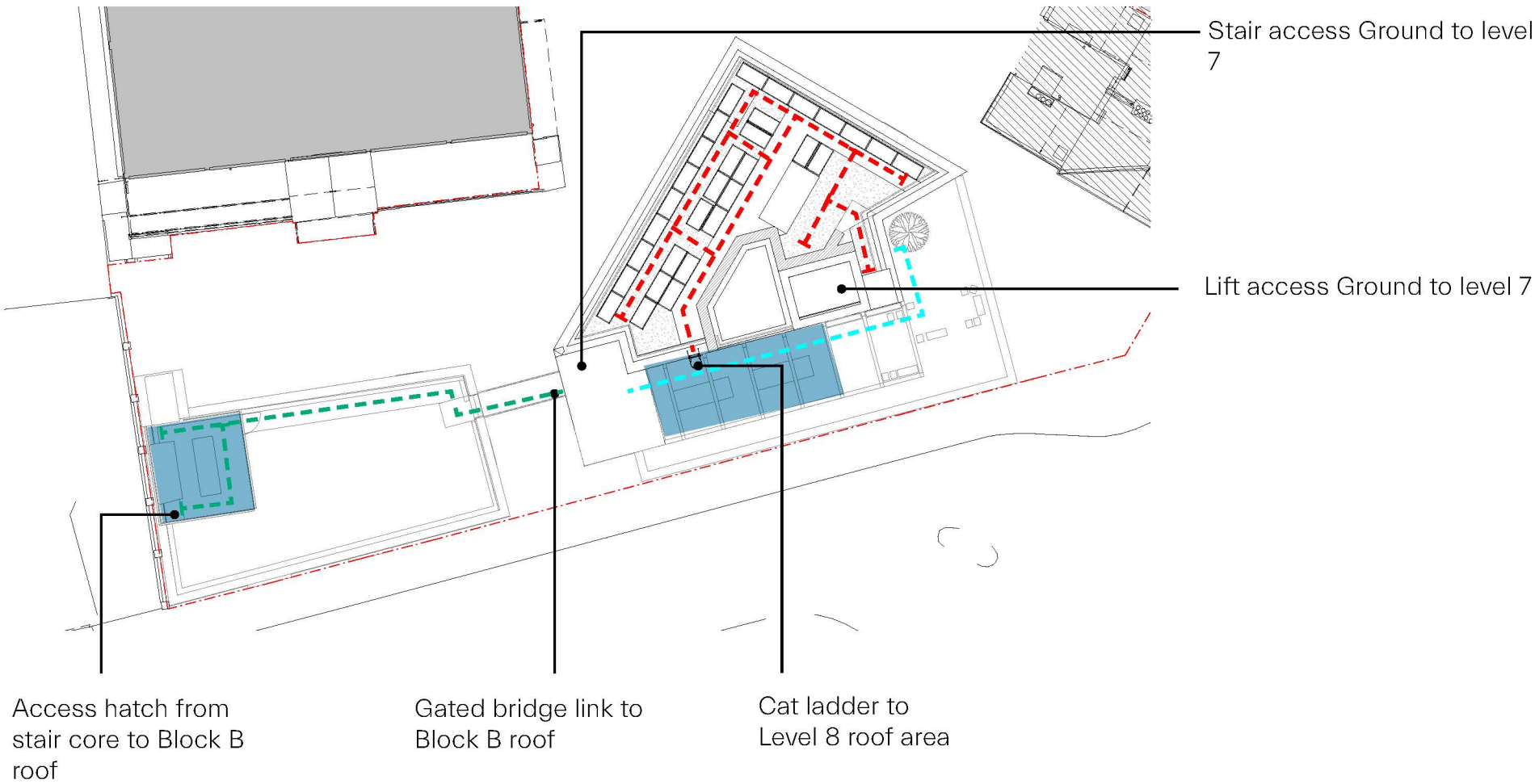
UKPN have been consulted to establish the outline strategy for servicing of the new sub-station as part of the proposal.

Please refer to Appendix D for further detail on UKPN service vehicle tracking.

Tewkesbury Road Level



Roof Level



10. Key Strategies

Access at height

Health and safety of all building users has been paramount through out the design process. The Key principles eliminate, prevent minimise have fed into the site and building wide access strategy.

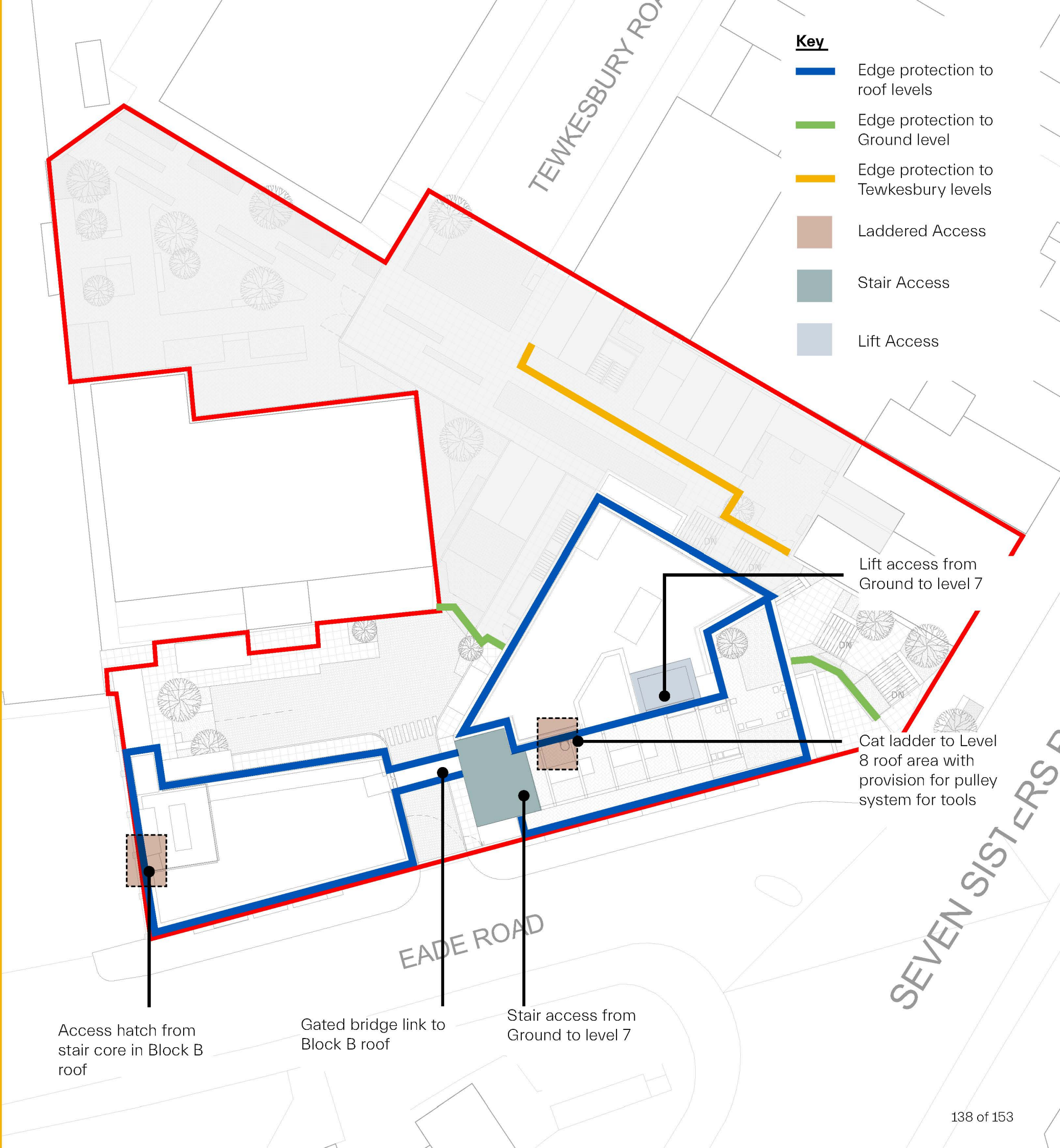
Protective barriers in the form of fixed rails or enhanced parapets are provided to all roof areas.

Window cills have been set to align with barrier heights to provide similar protection within the bedrooms

For areas where access is primarily via Cat ladder all product selection will comply with BS 4211:2005+A1:2008 and be accompanied by a separate system enabling users to transport tools and equipment safely.

Security control measures will also be put in place to ensure only authorised personnel are granted access where specialist equipment is located.

Traffic calming methods will be used in locations were there is potential crossover with pedestrian flow. These measures will be further developed at the next design stage.



10. Key Strategies

Facade Cleaning

Efforts have been made to reduce the facade maintenance requirements as far as possible through material selection. The building will inevitably require some level of cleaning throughout its lifespan. The anticipated method of access are listed below.

Warehouse Living Window Cleaning

Inward-opening windows to bedrooms to allow window cleaning to be conducted from inside rooms, minimising risk to operators. Areas of curtain walling to communal areas can be pole-cleaned from unit balconies.

General Facade Maintenance

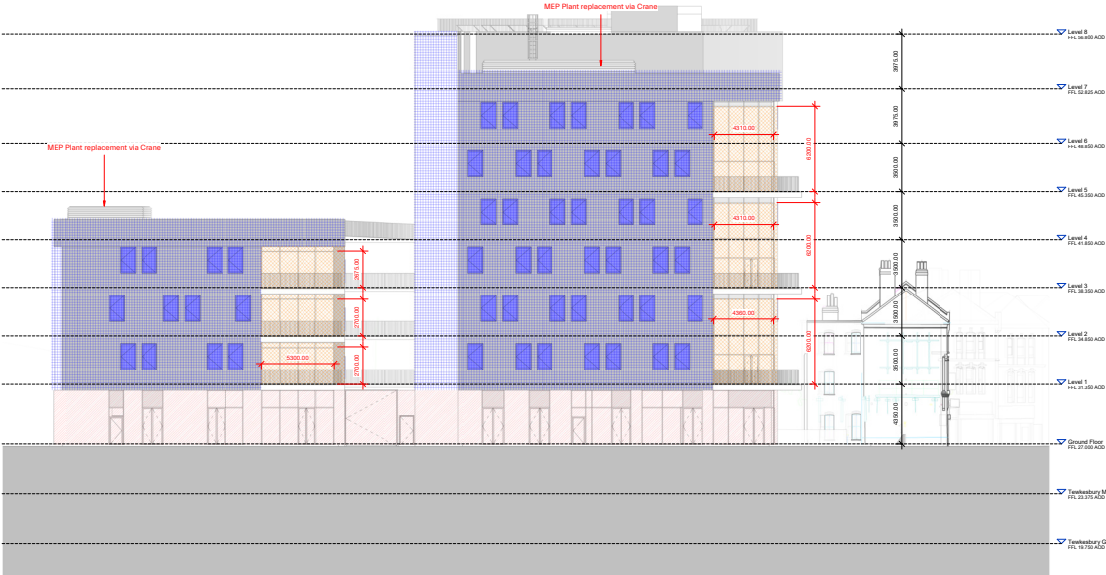
Infrequent cleaning and maintenance to the facade can be conducted by scaffold or rope access from roof level. Ground and Tewkesbury Road levels can be reached with a pole from ground level.

Building Maintenance Unit (BMU) Considerations

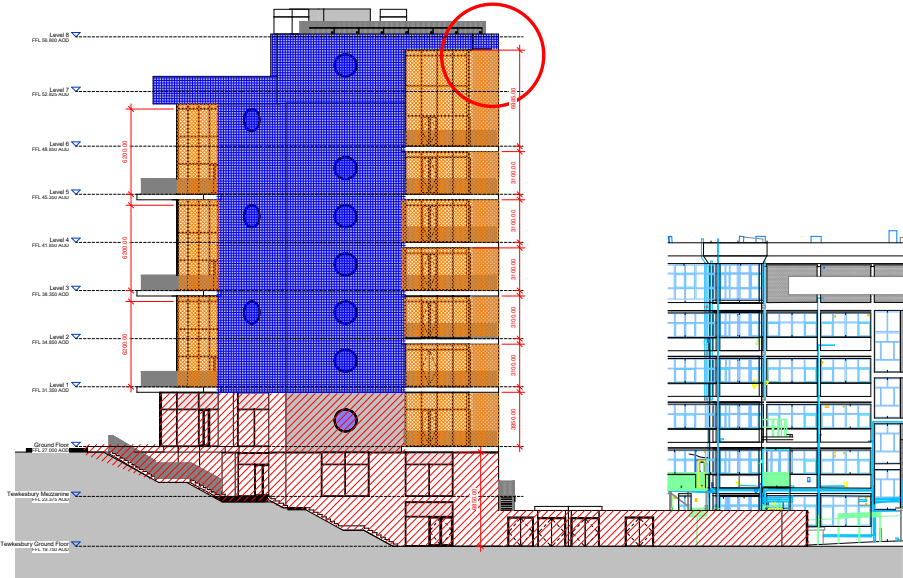
The use of a BMU was discounted due to the spatial limitation of accommodating large equipment and providing meaningful external terraces.

A detailed cleaning strategy will be further developed as part of the next design stage.

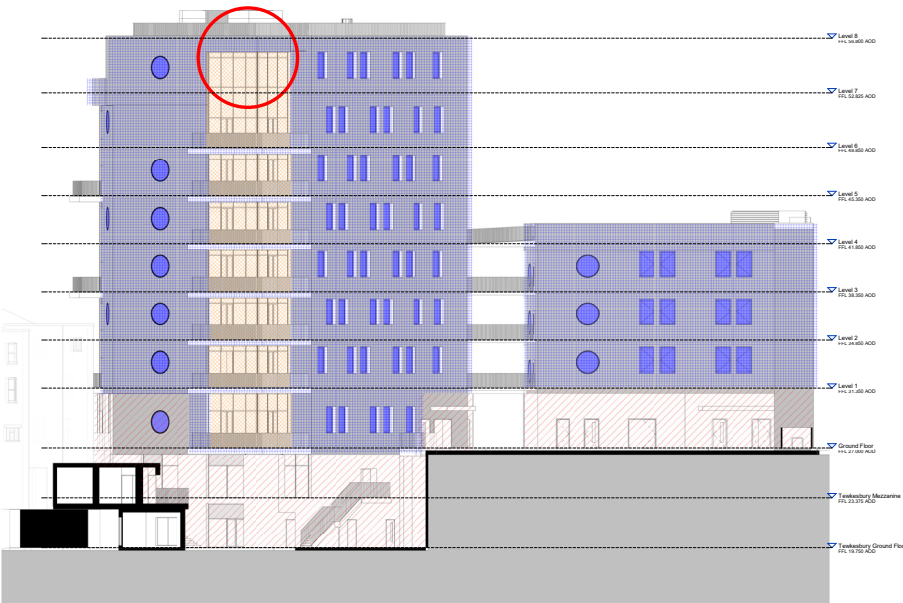
South Elevation



East Elevation



North Facade



Key

-  Inward opening windows
-  Cleaning from Ground/Balcony
-  Pole cleaning from Balcony
-  Scaffold/ Rope access irregular maintenance