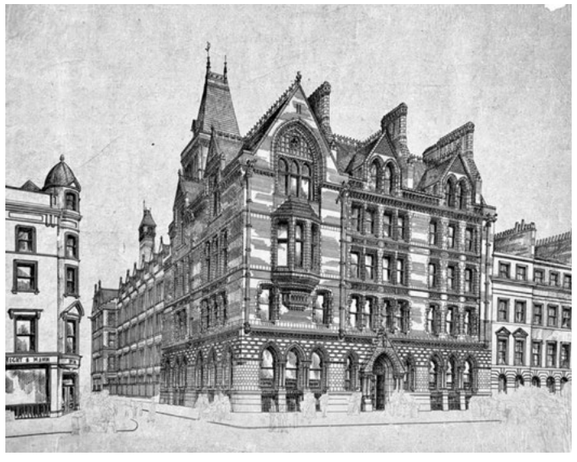
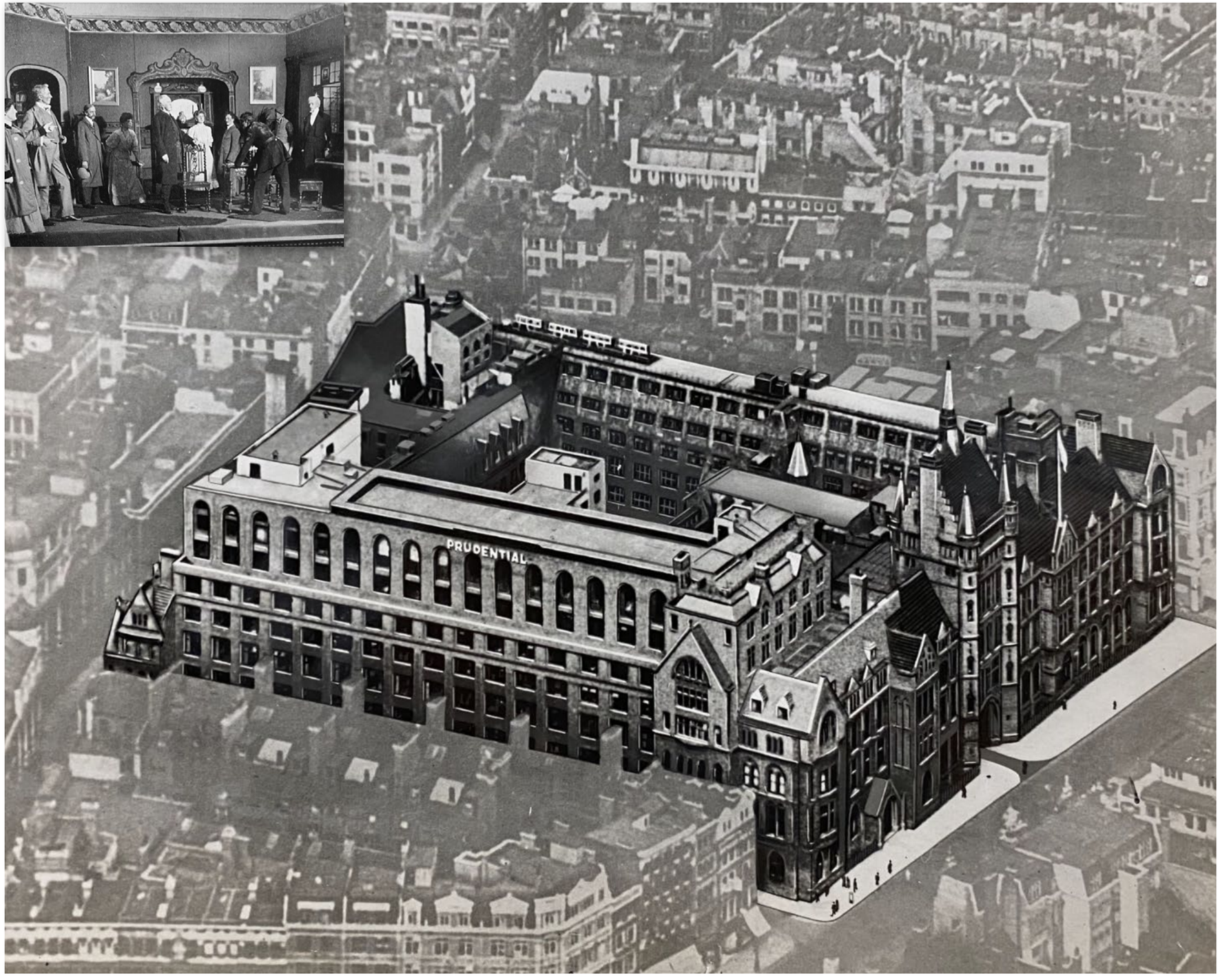
4.5 Placemaking

An active block through the centuries





4.5 Placemaking

Residential

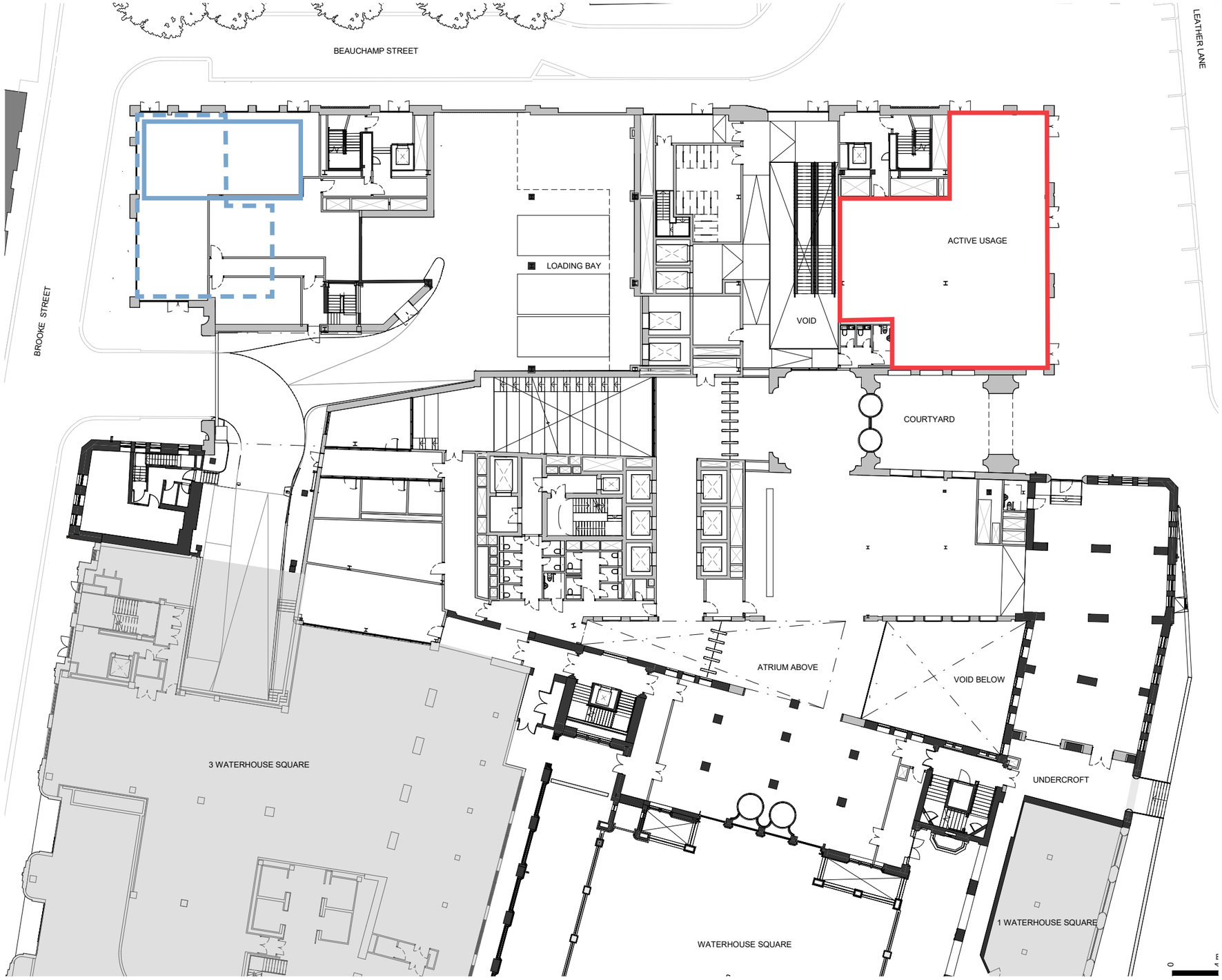
Residential provision has been discussed during the pre-application process.

In line with Camdens mixed use policy 50% of the commercial uplift should be provided as residential. This would amount to 313sqm of residential.

Providing this quantum on the ground floor would provide low quality residential space and eliminate an active use, outweighing the public benefit. The residential waste would also need to be collected from the kerb as the existing loading bay cannot accomodate a residential refuse vehicle.

If the area was split over ground and first floor the active use would be compromised facing Brookes Market due to the provision of a core, cycle storage, plant and refuse store. The remaining area would provide 2 small studio apartments. The refuse servicing would still need to be from street and further carbon intensive demolition and additional structural works would be required to facilitate the residential provision. The public benefit is also outweighed.

For these reasons it is not considered practical to provide housing on-site.



Key

- Indicative location of ground floor only residential
- Indicative location of ground floor residential
- Indicative location of first floor residential

4.6 Landscaping
Summary

Summary

There is currently no green space within 2 Waterhouse Square.

The proposal seeks to add greening through the introduction of terraces along Leather Lane and Brookes Market along with a communal roof terrace at 6th and 7th floor levels.

The courtyard at the entrance threshold is also proposed to be greened with planting and seating.

The applicant has an asipration to work with the BID/ CDA to help create a vision for Beauchamp Square and Brookes Market. The adjacent image shows an indicative proposal for how this area could be improved.

4.7 Entrance

View of New Greville Street Entrance

4.7 Entrance

View of New Greville Street Entrance

4.7 Entrance

The Courtyard

The adjacent view shows the new external courtyard in front of the new reception entrance, looking back towards Greville Street.

The entrance and courtyard are framed by a new arch with bridge above, which refernece the entrance and courtyard sequence employed by Alfred Waterhouse for the main estate entrance from High Holborn.

4.8 Main Reception

View of New Greville Street Entrance

4.8 Main Reception

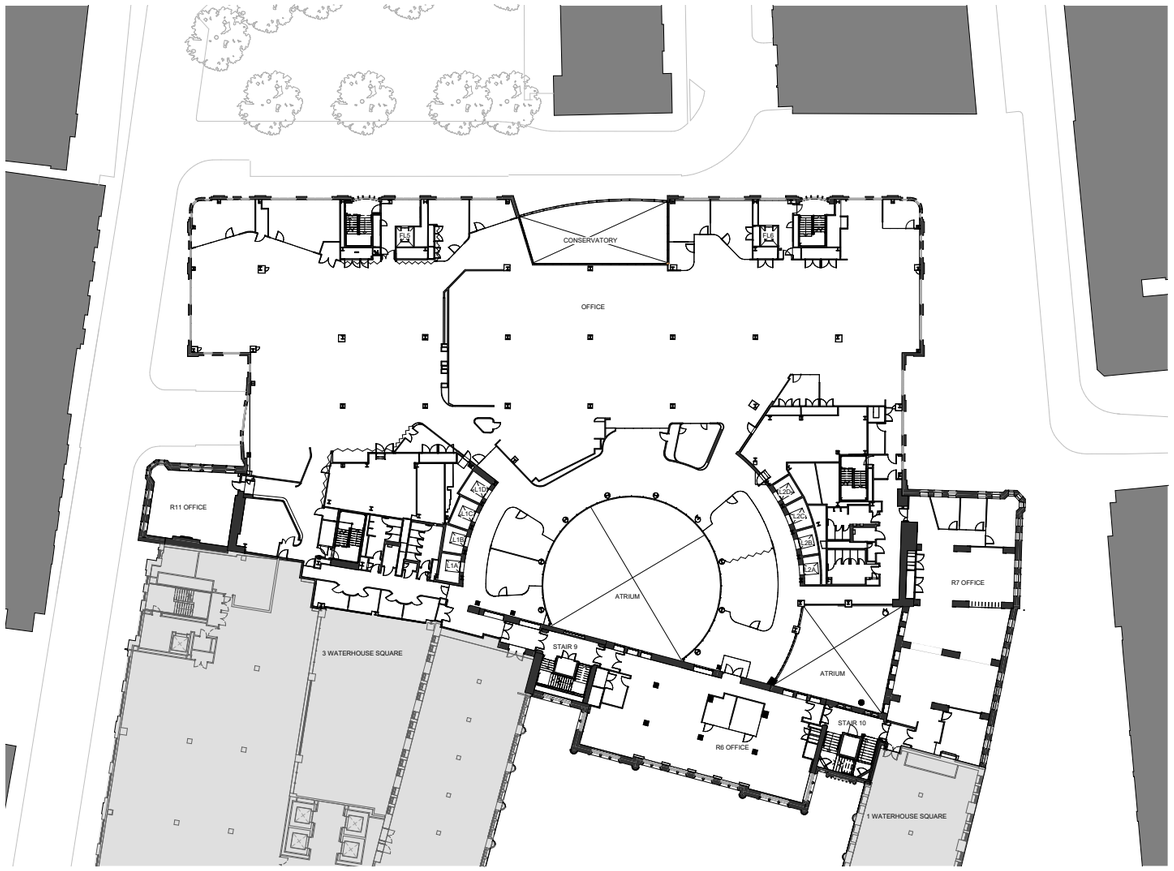
View of base of atrium between reception spaces

4.9 Heritage Reception

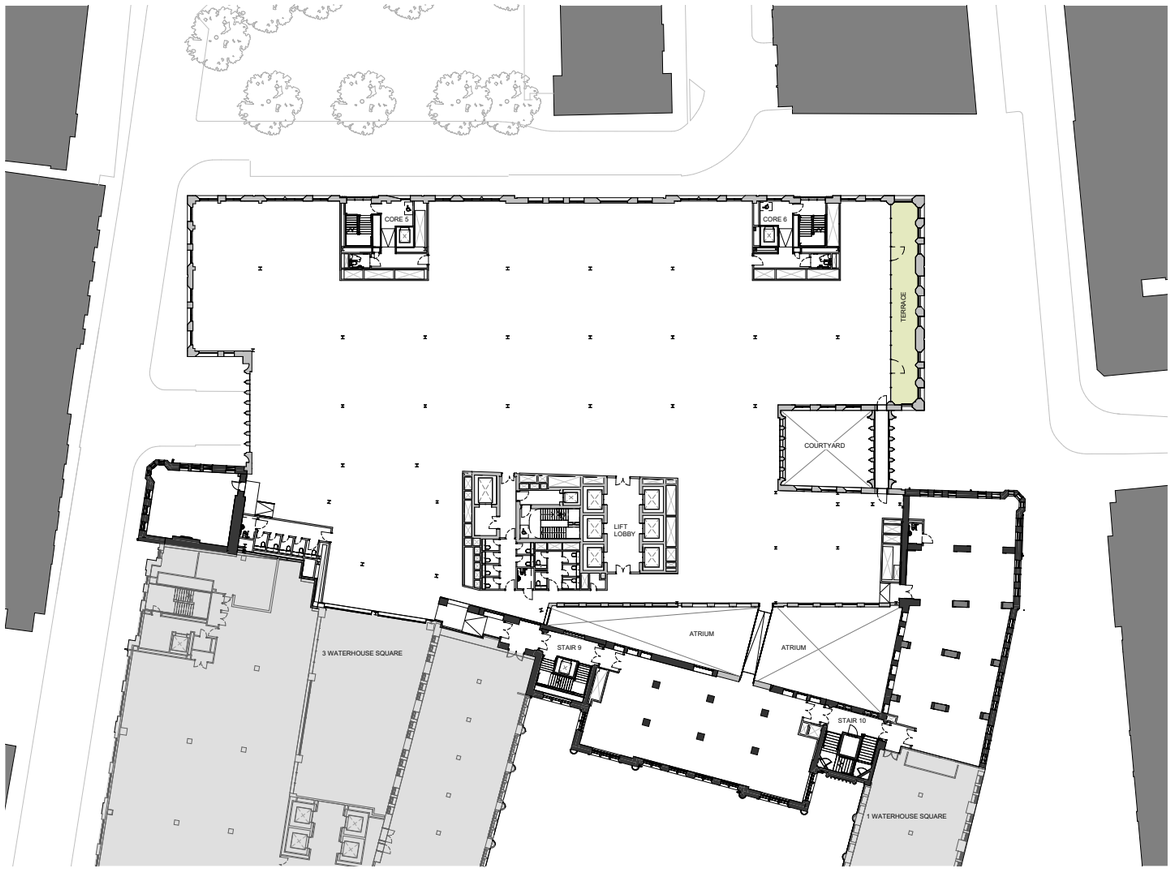
View of New Heritage Reception

4.10 Upper Building

Existing and Proposed Typical Floor Plan



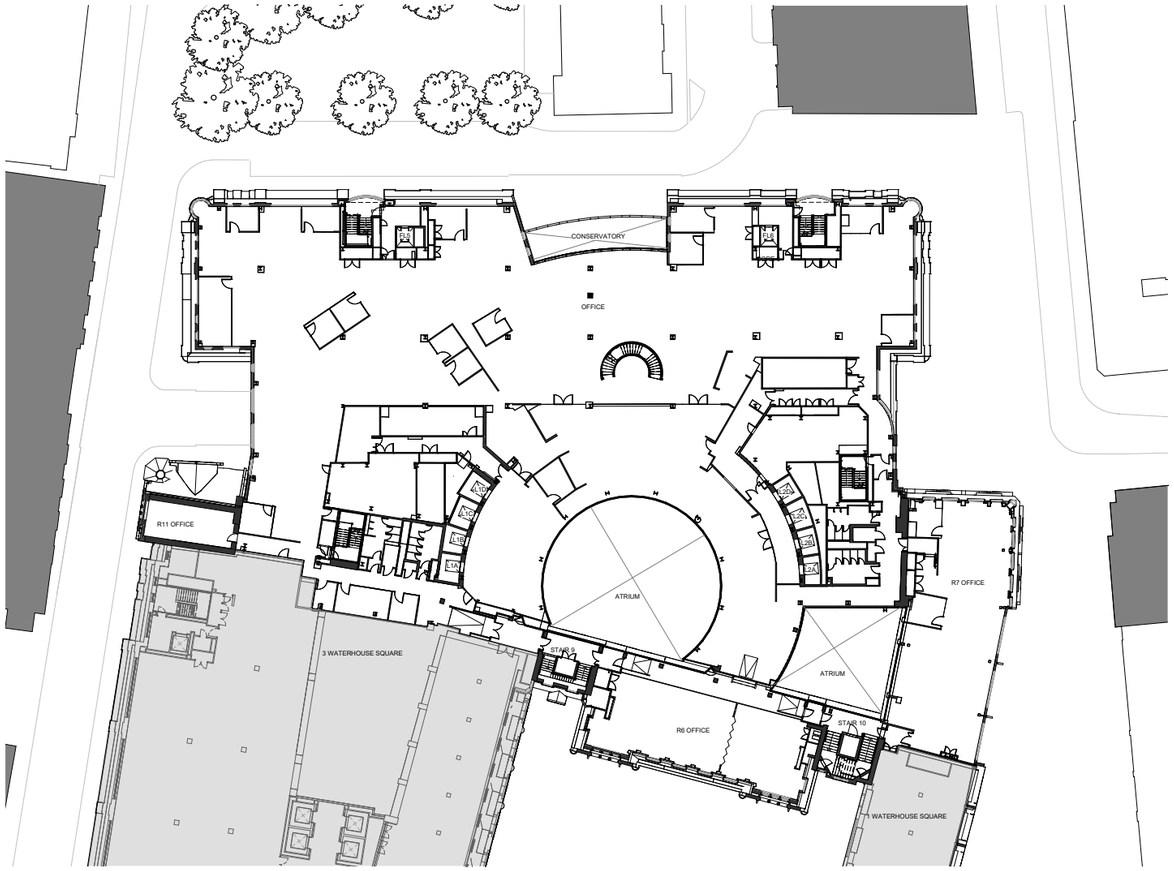
Existing Plan



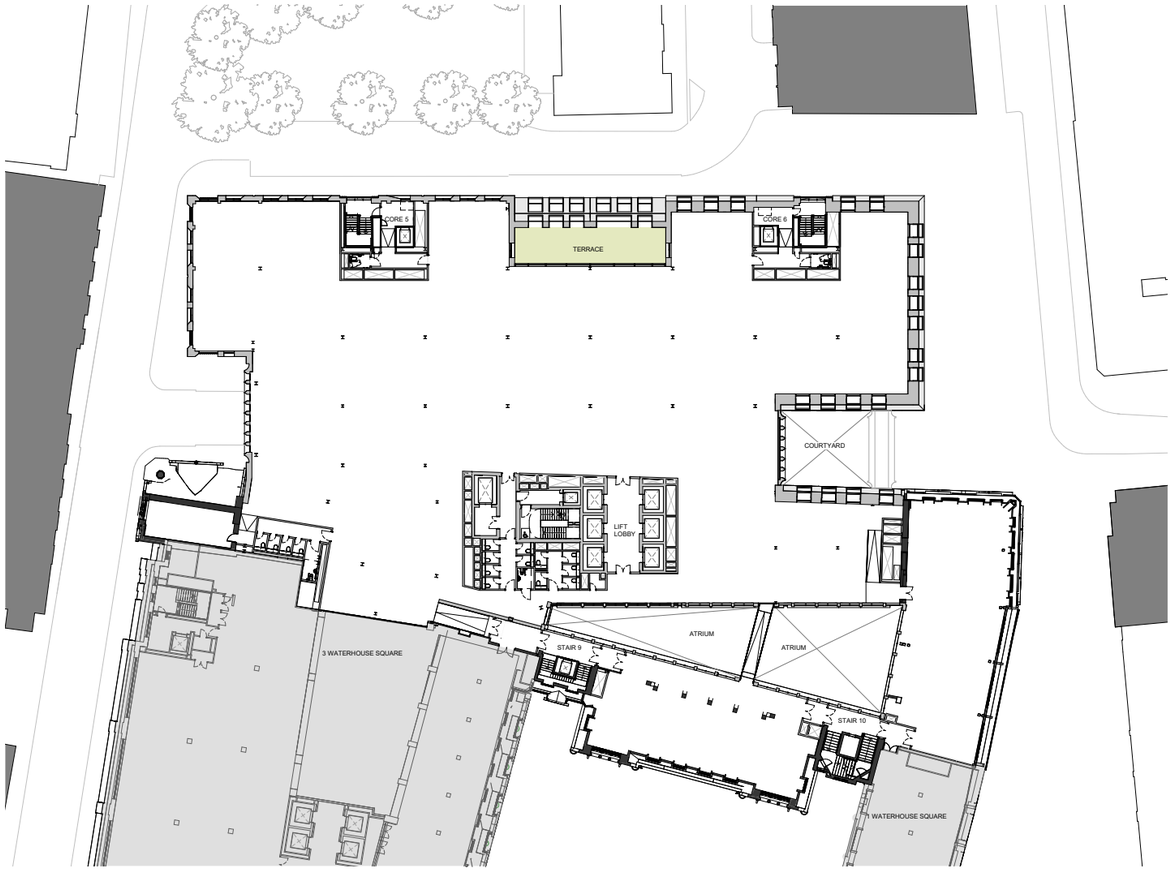
Proposed Plan

4.10 Upper Building

Existing and Proposed 4th Floor Plan



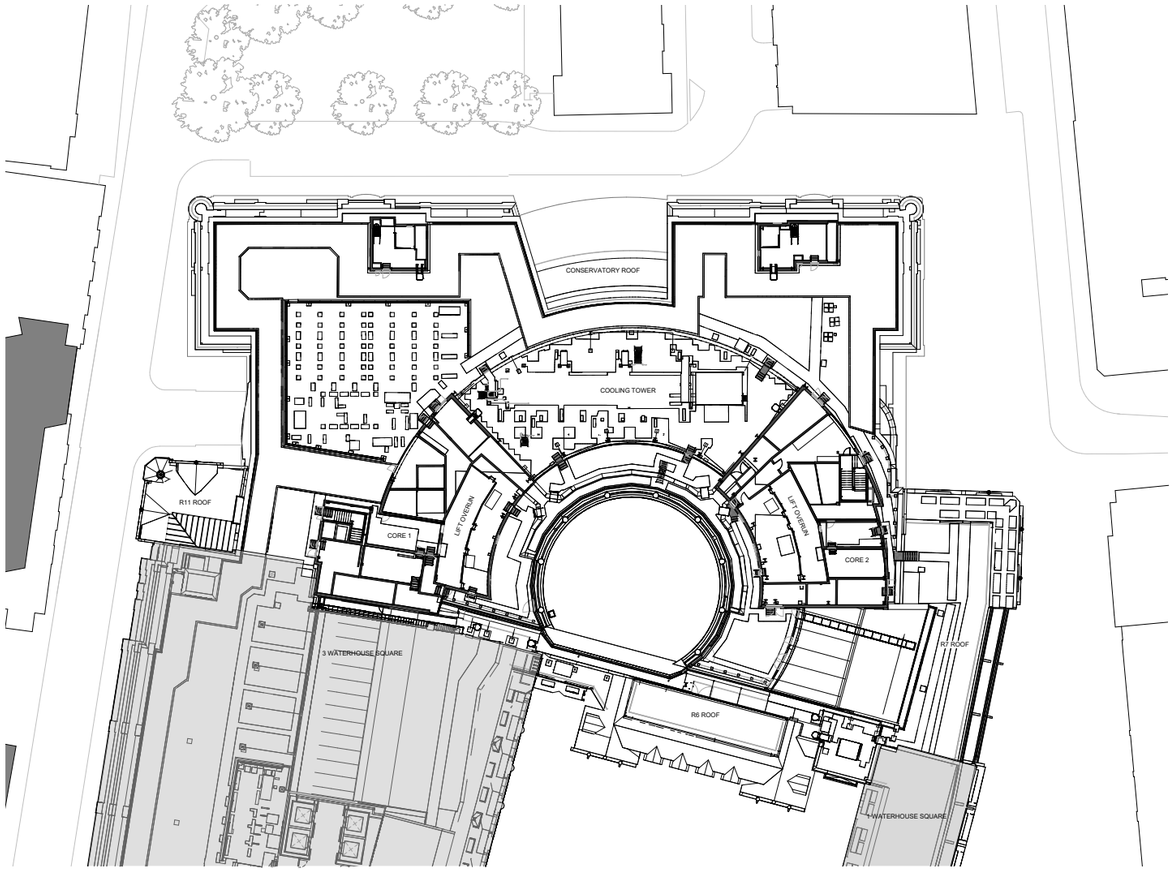
Existing Plan



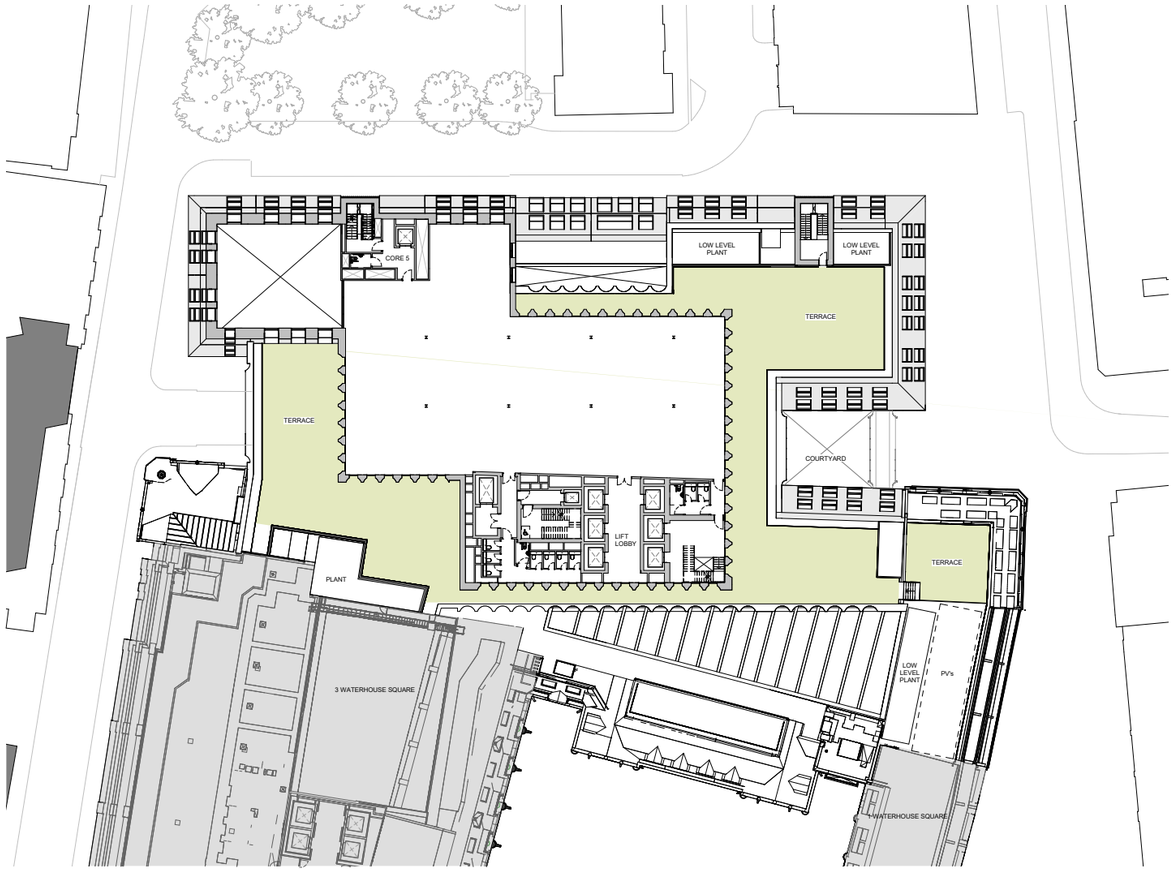
Proposed Plan

4.10 Upper Building

Existing and Proposed 6th Floor Plan



Existing Plan



Proposed Plan

4.11 Structural Approach

Underground Infrastructure

Crossrail

Crossrail tunnels pass directly below the northern extent of Waterhouse Square. The design team have been in contact with the Crossrail asset protection team who are expected to request a GMA to be carried out to justify that the loads from the proposals will not adversely affect their assets.

BT Tunnels

The design team have been in contact with the BT asset protection team who have confirmed that their tunnels are sufficiently far away from the proposed development to not be of concern.

Royal Mail

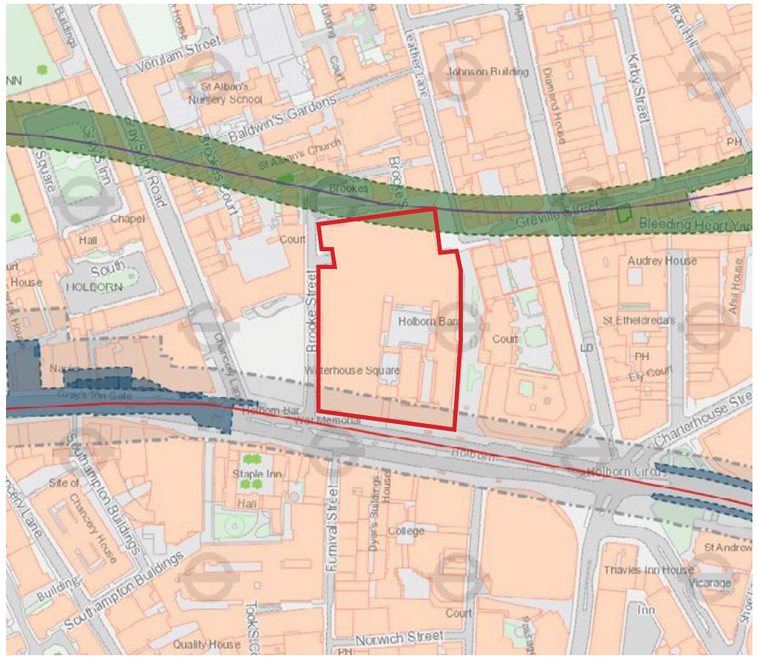
The design team have reviewed detailed Mail Rail tunnel location maps which show their tunnels to be sufficiently far away from the proposed development to not be of concern.

Thames Water

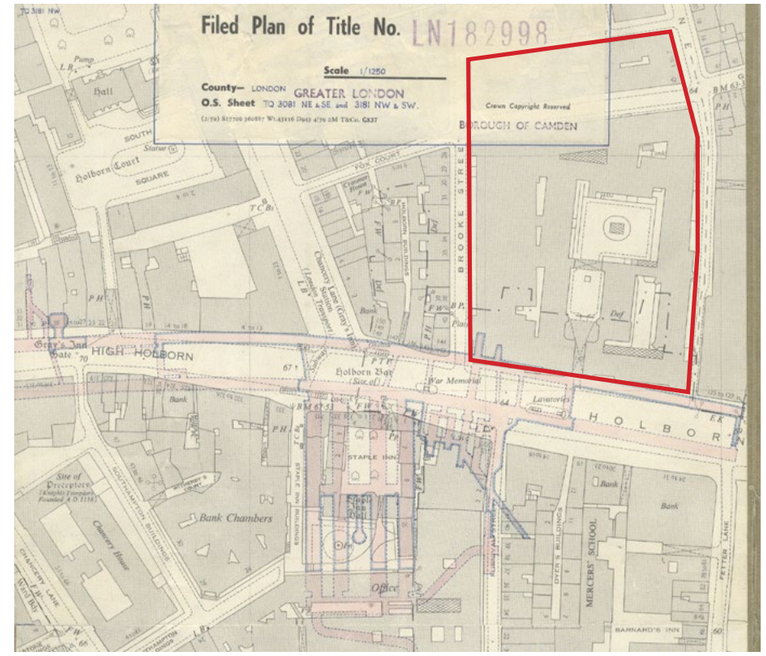
The design team have reviewed Thames Water asset maps which show their tunnels to be sufficiently far away from the proposed development to not be of concern.

LUL

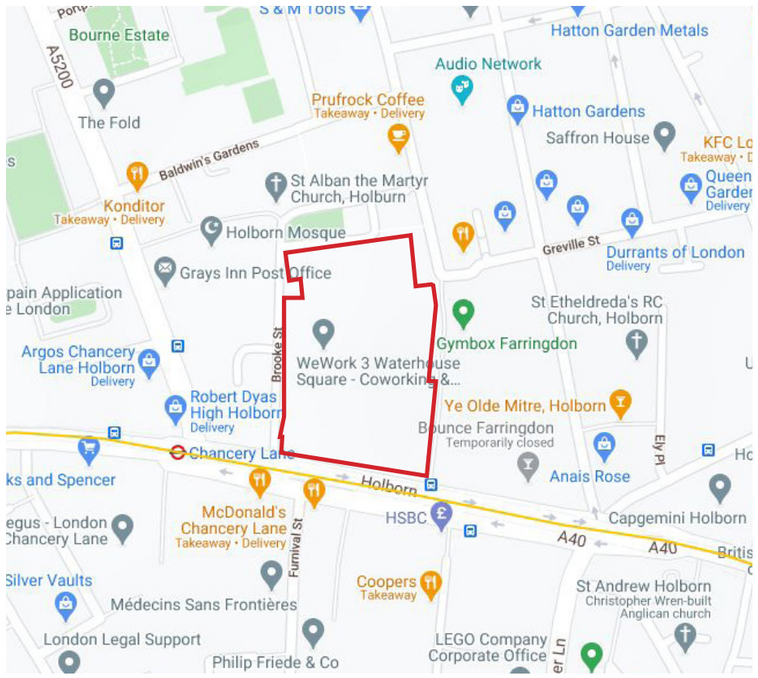
The design team have reviewed LUL asset maps which show their tunnels to be sufficiently far away from the proposed development to not be of concern.



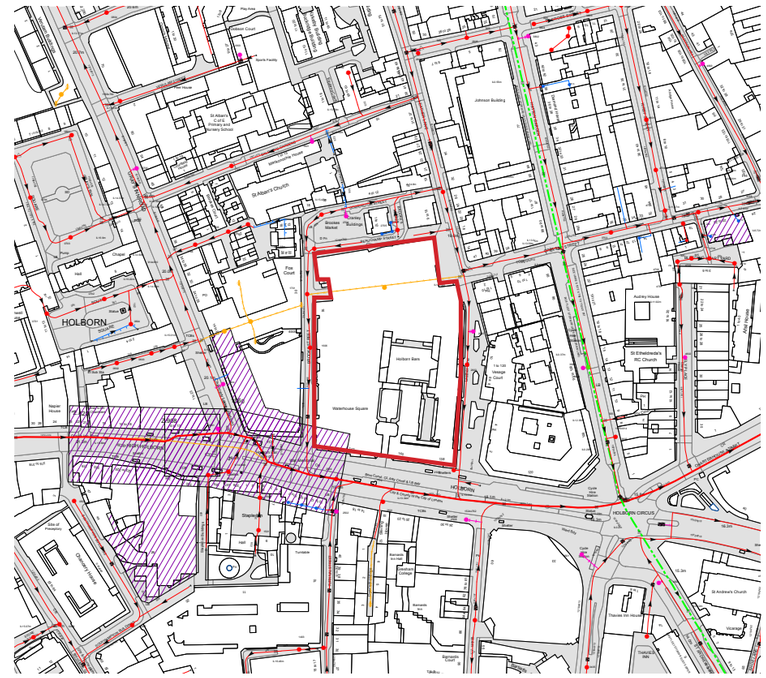
London underground lines showing Central & Elizabeth Lines



BT Tunnels - Kingsway tunnel



Royal Mail tunnel (yellow) map



Thames Water asset map

4.11 Structural Approach

Existing Structure

Sub-structure

The existing building has a single storey RC basement and a partial mezzanine level at lower ground floor. The basement box is formed using secant piled retaining walls propped by a 1200mm thick RC raft at basement level and 600mm RC slab at ground floor. RC liner walls have been built against the secant piled walls and the archive information show that a drained cavity is formed behind non-load-bearing blockwork.

RC columns support the loads from the superstructural steel columns above, and a number of additional vertical RC elements exist to support local loads at ground and lower ground floors. A lighter weight concrete encased steel frame and metal deck slab is used for the lower ground floor mezzanine which exists to the west and east of the basement. A 1200mm thick RC raft provides a foundation for the building.

Super-structure

The existing superstructure consists of Holorib metal deck slabs working compositely with a steel frame. The slab thicknesses vary from 130mm (levels 1-5) to 220mm (laid to falls at level 6/roof). The column grid is generally 9x7.5m with secondary beams at 2.5m centres. The facade line transfers inboard at levels inboard at levels 4 and 5 to create a stepped massing and a series of transfer beams support discontinuous columns at these levels.

A large circular atrium is present in the centre of the existing frame. The structure around this area is supported on a radial arrangement of steel beams and columns. The roof of the atrium is glass on circular hollow section steel trusses to provide a column free naturally lit space throughout the lower floors.

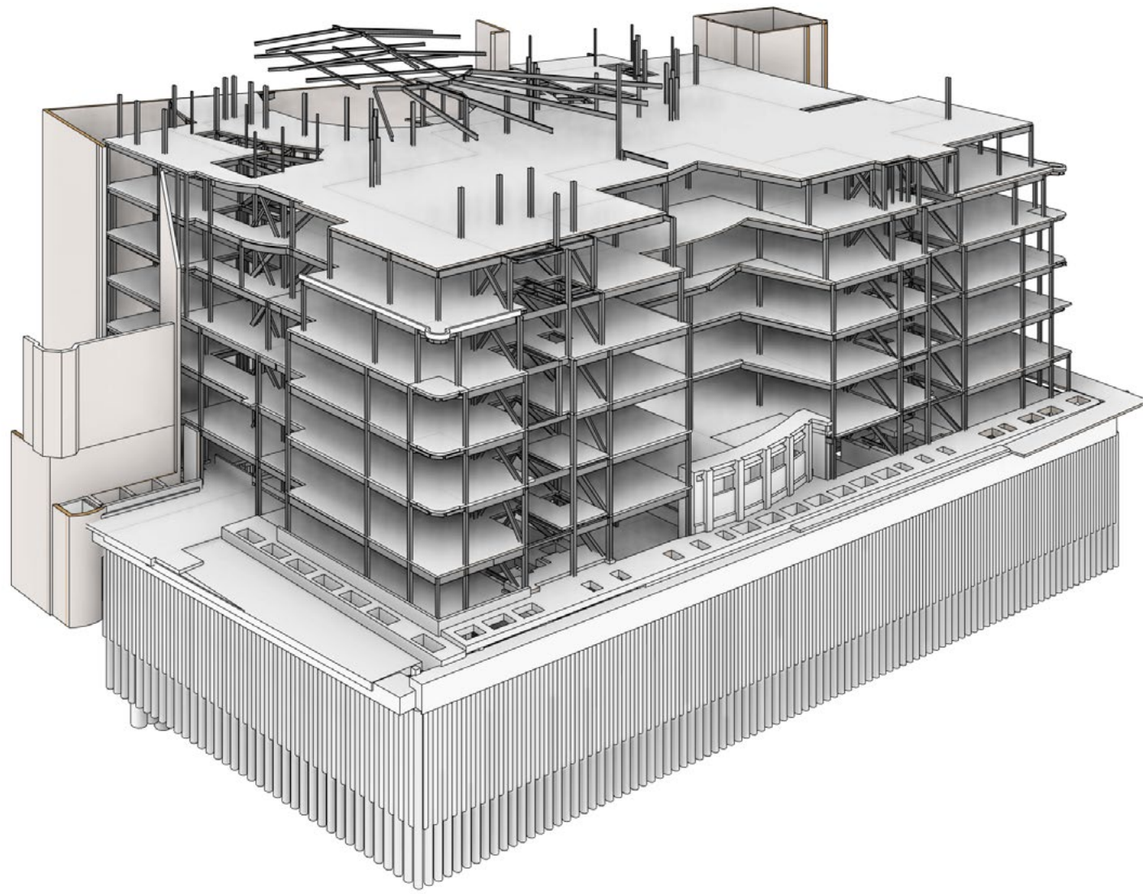


Illustration of existing building structure

4.11 Structural Approach

Proposed Demolition

Demolition

The design team has looked to retain as much of the existing structure as possible whilst both providing the architecturally desired floor plate and maintaining future flexibility. Several aspects of the existing structure are incompatible with the architectural proposals, which has led to the requirement for much of the structure below gridline D to be demolished.

A new atrium is being proposed (between grids 8/9 and E/F) which necessitates the removal of the structural floor and steel frame within that area. The final key area of demolition is to the western and northern extents of 5th and 6th floors. This requirement has arisen from the squaring off of, and the vertical extension to the existing stepped facades which currently are supported by transfer structure in two planes. The design team will explore opportunity to reduce the extent of demoltion as the detailed design develops.

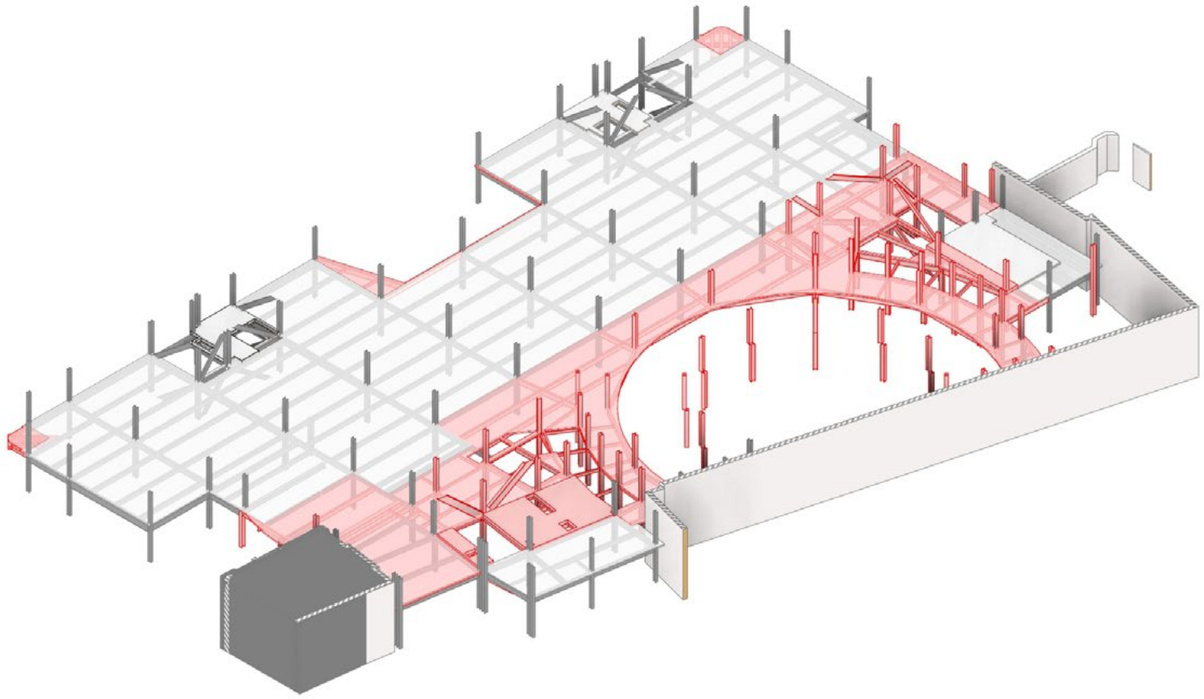


Diagram showing the extent of demolition on a typical floor

4.11 Structural Approach

Proposed Structure

Infills to existing floor plate

To replace structure that has been demolished and to infill existing voids, new steel frame and metal deck slab is proposed.

Extension

New steel frame and metal deck slab is proposed to provide the additional vertical massing. Generally, we have been able to maintain existing lower floor columns lines throughout the building, however in several locations this has not been possible and transfer structures are required to support discontinuous columns.

Due to the increased loads that the existing columns will experience due to the vertical extension, a strengthening regime to columns and their splices will need to be proposed. The detailed extent of column/splice strengthening will be developed in Stage 3, but it is likely to take the form of bolting or welding plates to the existing column flanges.

Atriums

New atriums are required to provide day light and flexibility for storey linkages in the proposed scheme.

New core

A new RC core is to be constructed which will provide the majority of the circulation via lifts and staircases for the building, along with most of the service risers. The core will be designed to supplement the lateral stability provided by the two retained steel braced cores. All new RC is to be specified with 50% GGBS cement replacement to help reduce the embodied carbon of the proposed scheme.

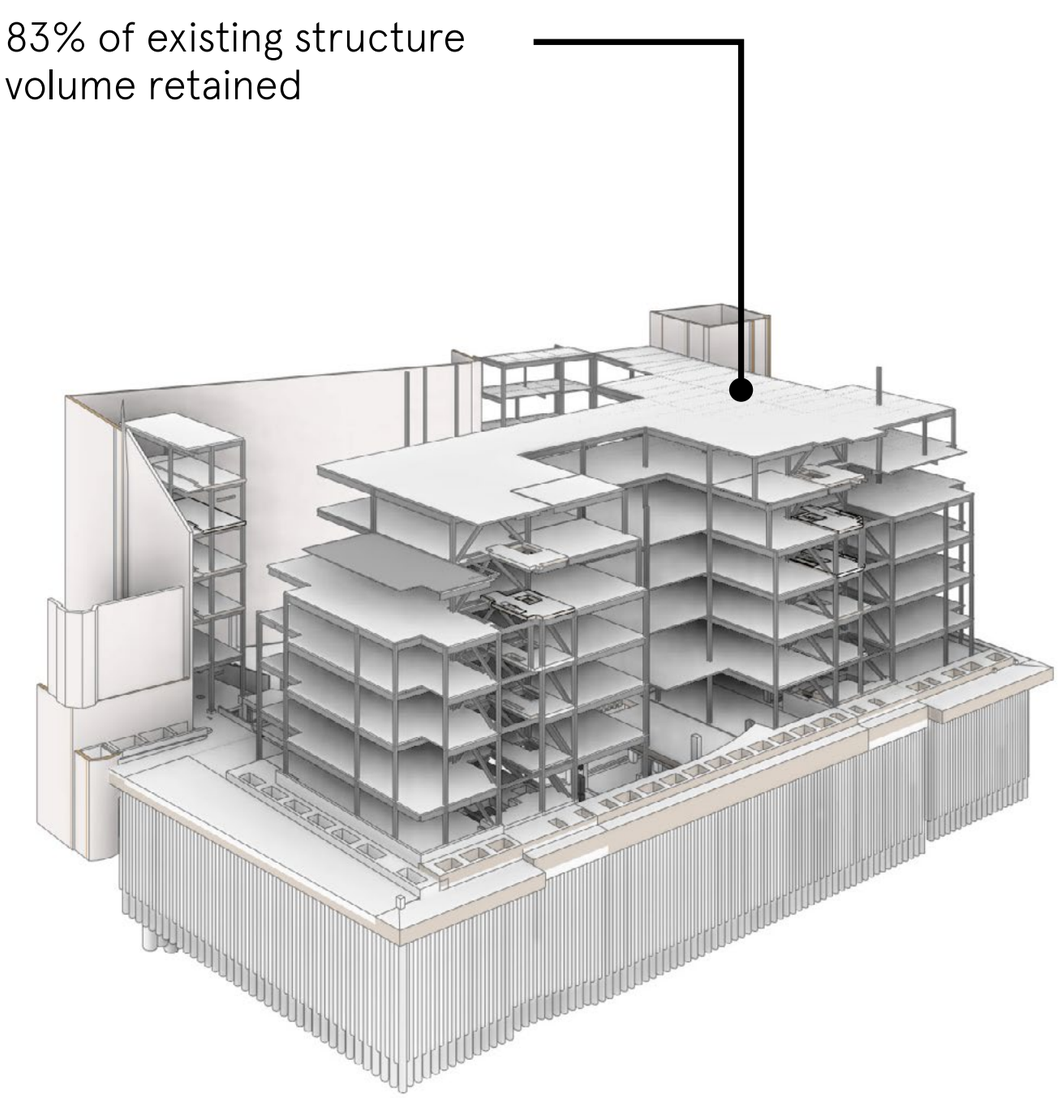


Illustration of the existing building structure after demolition

4.12 Services Strategy

Overview

Heating & cooling

Heating to the building will be provided by Low Temperature Hot Water (LTHW). The existing building is provided with an LTHW service via Plate Heat Exchangers (PHEs) from the Waterhouse Square central gas fired boilers in building 2. The gas fired boilers also serve buildings 1 and 3. The LTHW pipework distributes from boilers into a basement plant area. This plant area consists of plate heat exchangers (PHEs) and associated common headers, meters and valve arrangements. The heat exchangers provide hydraulic separation between the primary and individual building heating networks.

As part of building 2 redevelopment, the existing gas fired boiler plant will be replaced with an all-electric Air Source Heat Pump (ASHP) system to provide both heat and chilled water. The new plant will be installed on the roof of Building 3 and be sized to provide for the needs of the whole site, as well as any future development of the DeVere & Building 1 south areas. The new plant will be connected into the existing shared headers and commissioned before removing the existing gas fired boilers and progressing with refurbishment of building 2.

The new ASHPs will provide 'low grade' 40C water which will be pumped to a set of Water Source Heat Pumps (WSHP) located in a new Lower Ground Plant room in building 2. The WSHPs will boost the temperature to 'high grade' 85C LTHW, which is compatible with existing systems in building 1 and building 3.

Building 2 will be equipped with a new Secondary LTHW circuit separated from the primary by PHEs.

Pressurisation units, Expansion Vessels, pump sets and controls will be located in a new LTHW plant room in Building 2 basement. The new circuit will serve the AHUs in the basement, the AHUs at roof level for R6 and all FCUs across the floorplates.

Cooling to the building will be provided by Chilled Water (CHW). The existing Waterhouse Square estate has central CHW plant in building 2 that serves all three buildings. Plant comprises water cooled chillers and pumps in Building 2 basement with associated cooling towers at building 2 rooftop.

The existing building is provided with a CHW service via Plate Heat Exchangers (PHEs) from the Waterhouse Square central chiller plant. The CHW pipework distributes into a basement plant area. This plant area consists of plate heat exchangers (PHEs) and associated common headers, meters and valve arrangements. The heat exchangers provide hydraulic separation between the primary and individual building cooling networks.

The new ASHPs will provide CHW water at 5C which is compatible with existing systems in building 1 and building 3. Building 2 will be equipped with a new Secondary CHW circuit separated from the primary by PHEs. Pressurisation units, pump sets and controls will be located in a new CHW plant room in Building 2 Lower Ground floor. The new circuit will serve the AHUs in the basement, the AHUs at roof level for R6 and all FCUs across the floorplates.

Ventilation strategy

General ventilation to the building will be provided by air handling units (AHUs) located in basement plant rooms. For office and common areas the air intake for the AHUs will be at roof level and ducted down risers within the cores. The basement AHUs supplying basement plant rooms, shower area will have intakes at ground level provisionally on the North façade. The exhaust will be provided by a common plenum ducting up to the loading bay area and discharging at high level towards the vehicle entrance at Brooke street.

Supply and extract ductwork will be extended from the basement up the building through dedicated ventilation risers in the main core, as well as cores 5 and 6.

The R7 area on the East of the site will be served via an AHU located in the lower ground R7 plant room, with supply and extract risers extending up through R7. The intake and exhaust for this plant is via existing plenums linked to existing louvres set into light wells below street level on the Leather Lane façade.

Electrical systems

The site will be served by the existing 400V low voltage (LV) electricity supply, taken from the Independent Distribution Network Operator's (IDNO) HV/LV transformer. From there, the supply will be routed into the basement and terminate in a fused cut-out in the dedicated plantroom.

From the LV switchboard, the building electrical network up to all the office floor distribution boards, will form part of the landlord installation.

The LV supply will be distributed from the transformer to the summation meter and into the landlord LV panel. From the landlord LV panel, a metered common supply for the office floors will be distributed up to the electrical riser via a common busbar using a tap off unit which will in turn serve the tenant distribution board.