



THE GOODSYARD

Design and Access Statement

September 2019 - Part 21 of 21



ballymore.



5.0 STEP 3: OPEN SPACE, REMOVAL OF PLOT 9

5.1 STEP 3: REMOVAL OF PLOT 9

5.1.1 Description

Plot 9 was proposed to be a stand alone residential plot that delivered 20 residential units and additional retail/F&B space at platform level.

However, acceptable access (pedestrian, fire, service and maintenance) to Plot 9 was challenging due to the difficulty of the residential buildings sitting on top of the historic arches, with no existing vertical connection from ground to platform level.

The circulation core could not go to ground due to historic fabric of the listed Braithwaite Viaduct arches being retained and undisturbed underneath, which resulted in a unacceptable access route through the communal stairs and lifts within the public realm.

5.1.2 Stakeholder Feedback

Following feedback from the GLA & LPA's and comments from the community during consultation events, it was evident that the requirement for additional green space was a priority, and the removal of Plot 9 should be considered.

Part way through the optimisation study, feedback was provided by Historic England regarding the proposed public stair from Brick Lane up to the platform level. It was decided to remove the proposed stair punching through the historic arches due to the potential harm this may cause to the listed structures. This in turn created further access challenges for plot 9 as the most immediate stair connecting to ground level was no longer proposed.



Fig 5.1.2: Platform Level public realm area with Plot 9 retained

London Borough of Hackney: 3,255m²

London Borough of Tower Hamlets: 8,629m²

Total: 11,884m²

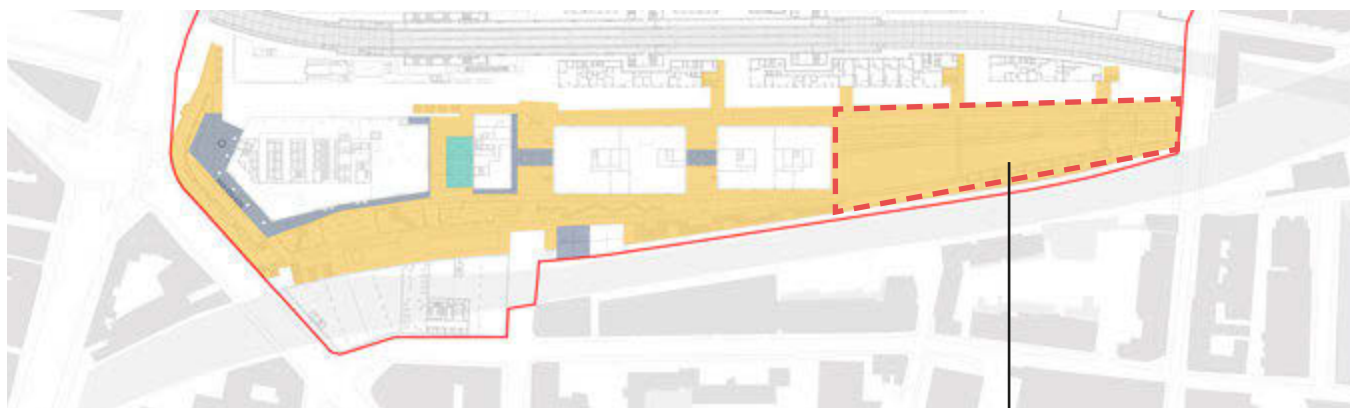


Fig 5.1.1: Platform Level public realm area with Plot 9 removed

London Borough of Hackney: 3,255m²

London Borough of Tower Hamlets: 9,599m²

Total: 12,854m²

Consolidated public realm: 4,353m²



Fig 5.1.5: Illustrative section of platform level with Plot 9 removed



Fig 5.1.3: Illustrative plan of consolidated public realm area at platform level with Plot 9 removed

5.1.3 Increased Public Realm Area

As a response to the stakeholder feedback, the team adjusted the masterplan and Plot 9 was removed for the benefit of creating more public realm. Although this resulted in the loss of 20 residential units, the removal of Plot 9 increased the public realm at platform level by 970m² and provided a larger area of consolidated open space (4,353m²) at platform level to the east of the site.

This gives the scheme a total public realm area at platform level of 12,854m², which is 3,177m² greater than the 2015 scheme.

The illustrative section, plan and precedent images show how this consolidated area of public realm could be utilised to the benefit of the local community.



Fig 5.1.4: Precedent images

6.0 STEP 4: PLOTS 8B & 8C

6.1 STEP 4: PLOT 8B & 8C OPTIMISATION

6.1.1 Plot Description

Plot 8 is located to the centre of the Revised Scheme and is partially sited above the Grade II listed Braithwaite Viaduct. The entire plot sits wholly within the London Borough of Tower Hamlets.

Plot 8 was initially proposed as a 330 bed hotel across plots 8A, 8B and 8C. Two blocks were sitting wholly on top of the Braithwaite Arches and one block was grounding on the west of Braithwaite/Wheler Street (8A).

Hotel use in plots 8B and 8C brings many benefits to the revised scheme. Sitting within an expansive public realm area the hotel will positively contribute to this space, ensuring public use, activity, natural surveillance and animation associated with a hotel, 24 hours per day.

However, following discussions with the GLA and LPA's, it was requested that the opportunity for residential use was to be tested.

6.1.2 Opportunities for Optimisation

The opportunities for intervening with the structurally optimised building footprints are limited. These limitations are explored further in the following paragraphs:

The east west orientation of the blocks also presented a challenge; in order to limit north facing single aspect apartments the residential layouts need to be turned by 90 degrees from that shown for hotel layout. This would reduce the footprint and development area for residential in comparison with a hotel layout

which is not restricted by north facing bedrooms. Plots 8B and 8C are the most significant building structures to be supported by the existing viaduct structures at 4 storeys. The current proposal is for the building to either be supported on a reinforced concrete raft slab to spread the load evenly over the existing arches or support the building on strip footings / pad foundations over the arch supports (fig 6.1.2). For this option columns will be located on the strip footings with a transfer slab at first floor level to allow column positional flexibility to suit hotel room / corridor layouts above. The transfer slab will ensure the main building superstructure loads are transferred to the columns located over the foundations / arch supports.

The calculation opposite demonstrates the assumed vertical design loads applied to the arches from the original 2 storey warehouse and goods station which burnt down in 1964 are of the same order as the proposed new 4 storey (lightweight construction) hotel on building plot 8B & 8C.

The historic design live loads used in the calculations have been derived from Dorman Long and Co Handbook 1895 (along with other relevant publications) which list Warehouses at the time being designed for between 120 to 320lbs per Sqft and machinery warehouses between 250 to 500lbs per Sqft. For calculation purposes an assessment based on the historic usage has been taken of 220lbs per Sqft. (100lbs per Sqft equates to 4.8kN/m²)

The light weight proposals for the design of the hotel is a steel framed building with a 130mm concrete slab cast on metal decking. A concrete framed building which would have acoustic benefits as well as increasing the floor to floor heights has been ruled out due to the increased self-weight dead loads associated with this form of construction which would be transferred to the

supporting foundations over the retained arches.

Based on the loading assumptions shown, whilst the original warehouse potentially applied slightly greater loads to the Braithwaite arches, increasing the number of storeys beyond the current proposed 4 storeys would increase the loads above the assumed combined total warehouse loads.

WSP previously proposed a structural solution to potentially increase the number of floors which was discussed in detail at the Heritage meeting on 4th March 2019. This entailed installing 750mm diameter piles through the grade 2 listed arch supports. This option was not well received by the heritage representatives at the meeting who raised concerns and requested this option be excluded moving forward.

Residential use, incurs the same operational issues as the removed plot 9. This is discussed further in the following pages.



Fig 6.1.1: Aerial view of Historic 2 Storey Warehouse.

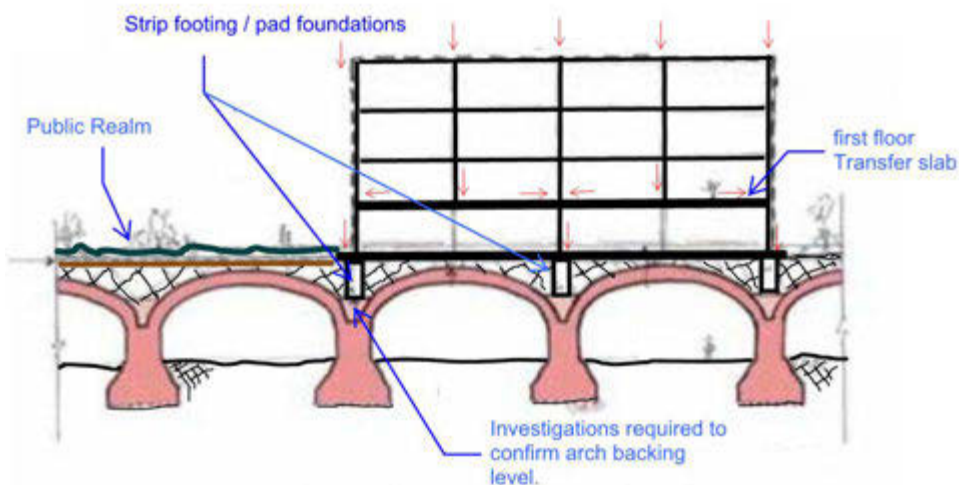


Fig 6.1.2: Proposed building frame arrangement spreading load on raft and strip foundations.

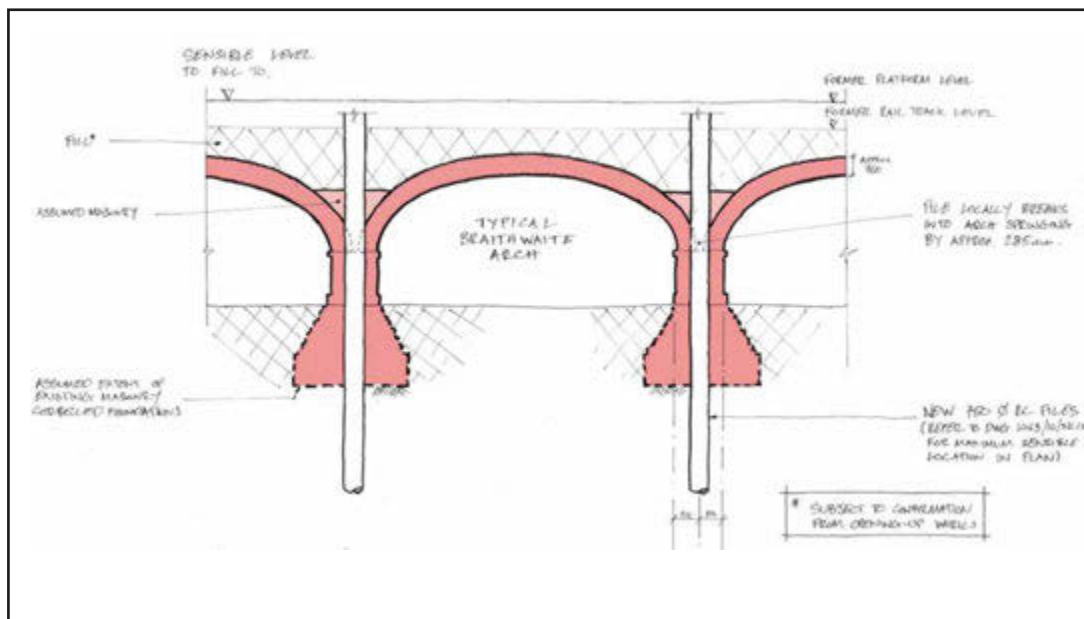


Fig 6.1.3: Sketch showing structural requirement to potentially increase building height (dismissed during heritage consultation)

Historic Warehouse Design Loads

Floor live loads

Ground Floor: 10.6 kN/m² (220lbs/sqft)

First Floor: 10.6 kN/m²

Roof: 1.5 kN/m²

Total live load = 22.7 kN/m²

Historic Warehouse Design Loads

Dead Loads

Ground Floor:

400mm concrete slab: 9.6 kN/m²

First Floor:

300 thick Filler Joist Floor: 4.35 kN/m²

Self wt of Steel frame: 0.35 kN/m²

Partitions: 1.00 kN/m²

Timber floor finish: 0.20 kN/m²

Services 0.3 kN/m²

Total Load 6.20 kN/m²

Roof:

Self wt Steel Frame 0.25 kN/m²

Hot rolled steel purlins 0.15 kN/m²

Services 0.3 kN/m²

Clay sheeting / tiles 1.10 kN/m²

Total Load 1.50 kN/m²

Summary of Warehouse Loads

Total Live Load = 22.70 kN/m²

Total Dead Load = 17.30 kN/m²

Total combined Load = 40.00 kN/m²

Proposed Hotel Design Loading

Floor live loads

Ground Floor: 4.0 kN/m²

First Floor: 2.0 kN/m²

Second Floor: 2.0 kN/m²

Third Floor: 2.0 kN/m²

Roof 1.5 kN/m²

Total Live load = 11.5 kN/m²

Proposed Hotel Design Loading

Dead Loads

Ground Floor:

400mm concrete RC raft slab: 9.6 kN/m²

Typical upper floor (3No):

140mm concrete Holorib slab: 3.10 kN/m²

Self wt of Steel frame: 0.30 kN/m²

Partitions 0.50 kN/m²

Floor finishes 0.35 kN/m²

Services 0.30 kN/m²

Suspended ceiling 0.15 kN/m²

Total Load 4.70 kN/m² per floor

Roof

Self wt Steel Frame 0.20 kN/m²

Cold rolled purlins 0.03 kN/m²

Services 0.30 kN/m²

Standing seam roofing system 0.72 kN/m²

Suspended ceiling 0.15 kN/m²

Total Load 1.40 kN/m²

Summary of Hotel Loads

Total Live Load = 11.50 kN/m²

Total Dead Load = 25.10 kN/m²

Total combined Load = 36.60 kN/m²

Fig 6.1.4: Loadings Comparison and Calculations

6.1.3 Design Response

The team tested indicative residential floor layouts to explore whether residential use were possible, initially putting aside the substantial access and servicing issues.

Similar to the challenges found within plot 9, plots 8B and 8C have no direct access from ground level due one of the masterplan's key principles to not puncture the listed fabric below with a circulation core.

Further, it proved challenging to develop efficient floor and flat layouts with the principle structures being lined up with the supporting arch pier walls below.

Any residential use therefore would be challenging from a pedestrian access, circulation, servicing and property management perspective.

Further, it was considered that public uses at platform level are of critical importance to the success of the public space, meaning residential use would be limited to 3 levels (levels 2-4). The arrangement of the development plots and the requirement to avoid north facing single aspect units limits the amount of residential units to max 4 units per level per block.

In discussions with several RSL and PRS providers the JV is currently partnering with, it was commented that this convoluted arrangement of a small number of units across 3 different cores would create impracticalities in terms of property management and service charge.

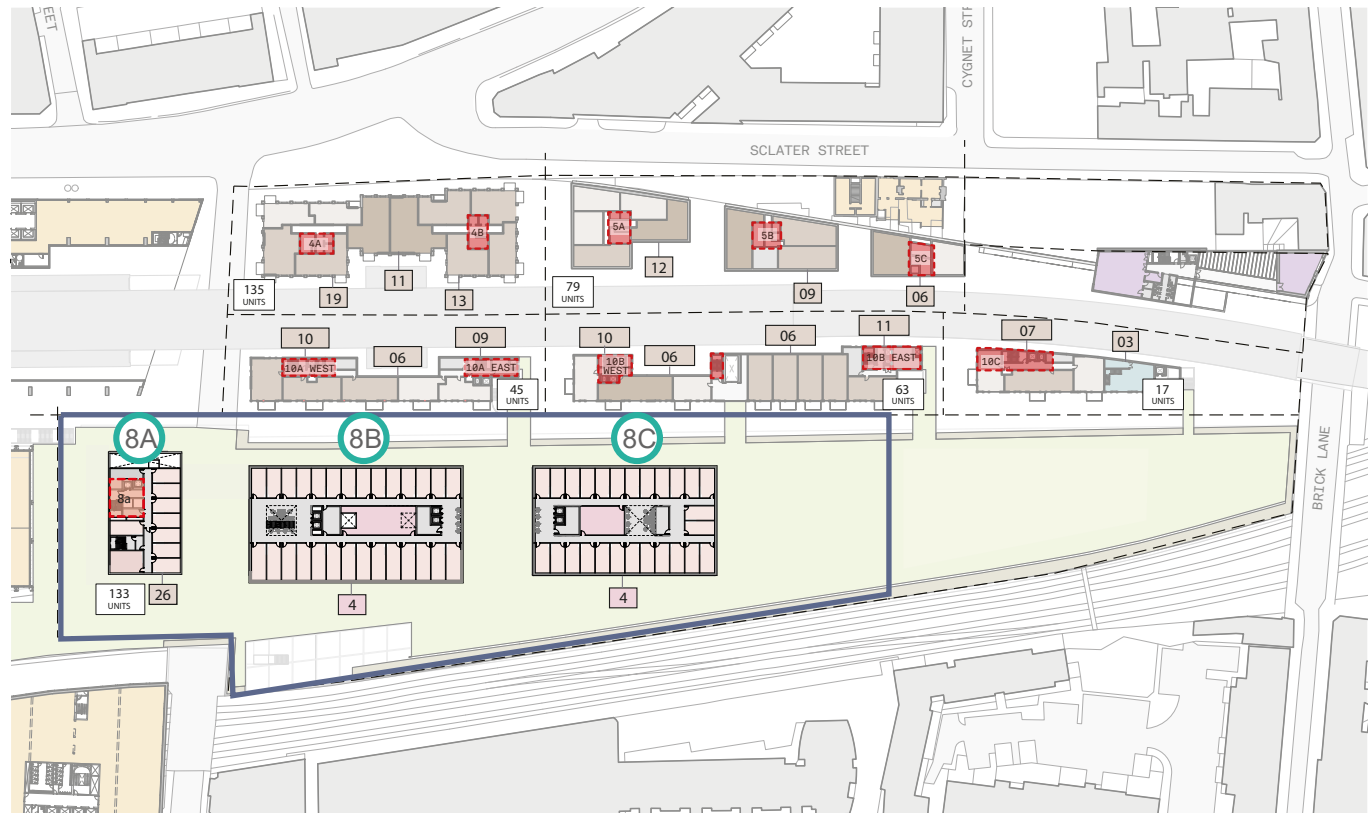


Fig 6.1.5: Masterplan typical upper floor (servicing and access)

6.1.4 Optimisation Analysis

The following section tests pedestrian access and circulation to both plots, along with servicing and property management issues.



6.1.5 Residents' Access & Circulation

1. Arrive at main entrance super lobby at ground floor
2. Take lift to second floor residential podium (one level above platform public realm)
3. Walk through residential courtyards and over a bridge spanning between 8B & 8C to residential block entrance
4. Pass second access control point into block core and take lift up to fourth floor

Unresolved Issues;

Walking distance from ground floor lobby to flat door.

Passing from inside space to outside space to back inside.

Complicated entry sequence due to challenging access and circulation from single core.

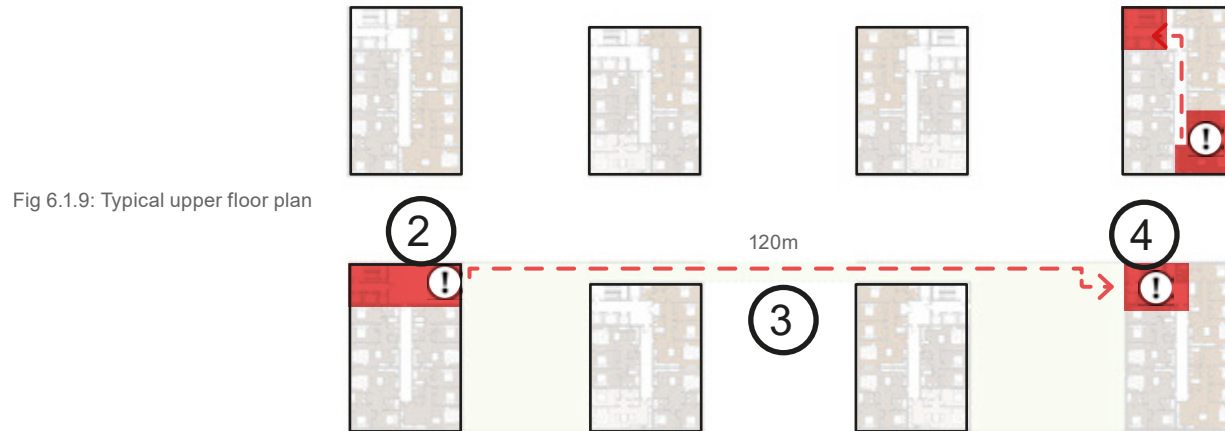


Fig 6.1.9: Typical upper floor plan

Fig 6.1.8: Residential podium floor plan

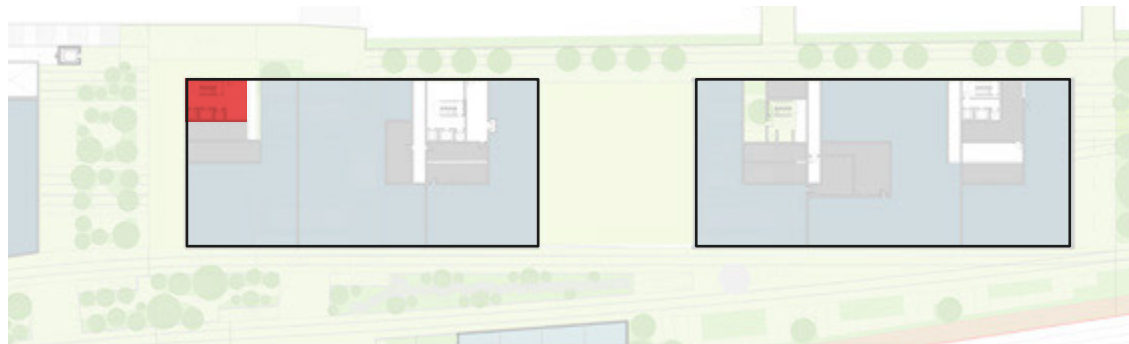


Fig 6.1.7: Public podium floor plan

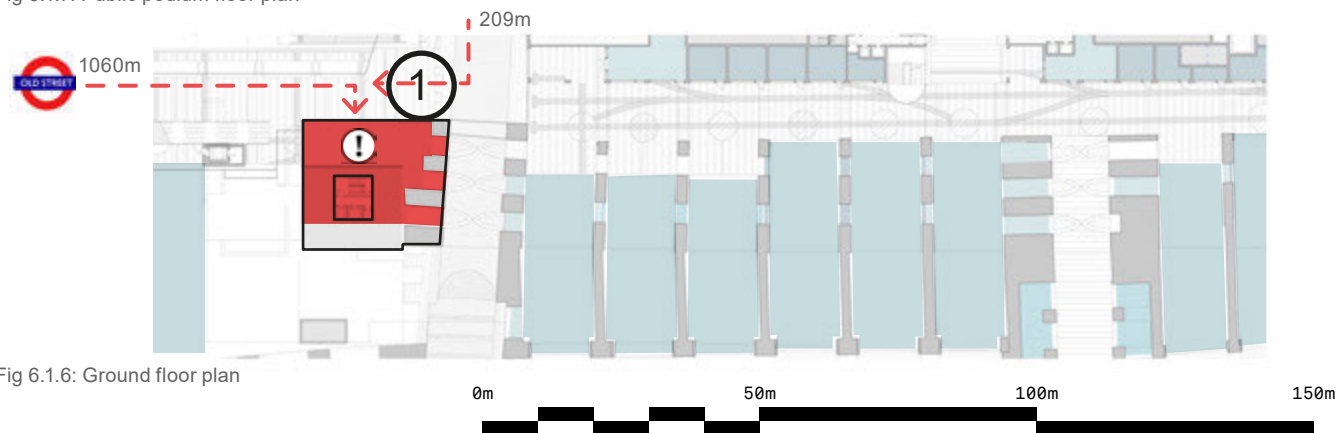





Fig 6.1.6: Ground floor plan

-  Access Control
-  Residents Lobby
-  Residents route

6.1.6 Deliveries & Property Management

1. Delivery lorry arrives at service yard.
2. Management company/concierge service would need to be based in block 8A to manage deliveries.
3. Management company trolleys furniture from ground floor lobby to second floor residential podium and 120m across residential gardens
4. Arrive at block entrance lobby. Trolley furniture into lift and up to fourth floor; along corridor and into flat

Unresolved Issues:

Unknown deliveries throughout the day will arrive to service yard, therefore a full time concierge would be necessary.

Logistics of the sequence of cores and access control points.

Travel distance with no direct access to ground from the individual buildings

Similar issues for food shopping deliveries and take away deliveries for residents.








-  Access Control
-  Furniture delivery arrival
-  Furniture delivery route
-  Communal Lobby
-  Management route
-  Worst Case Apartment Example
-  Residents route



Fig 6.1.13: Typical upper floor plan

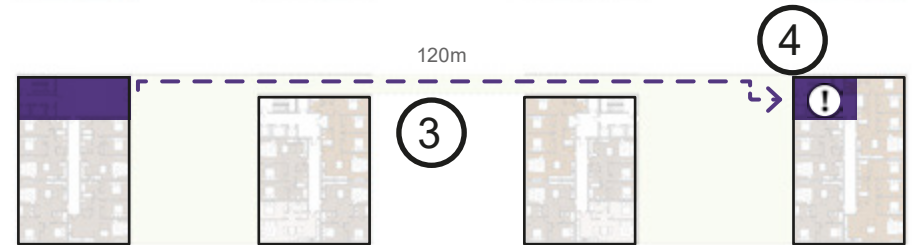


Fig 6.1.12: Residential podium floor plan

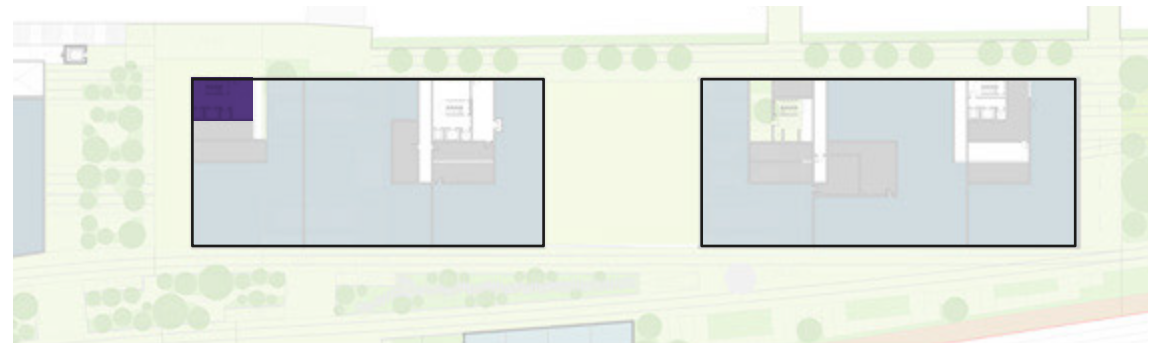


Fig 6.1.11: Public podium floor plan

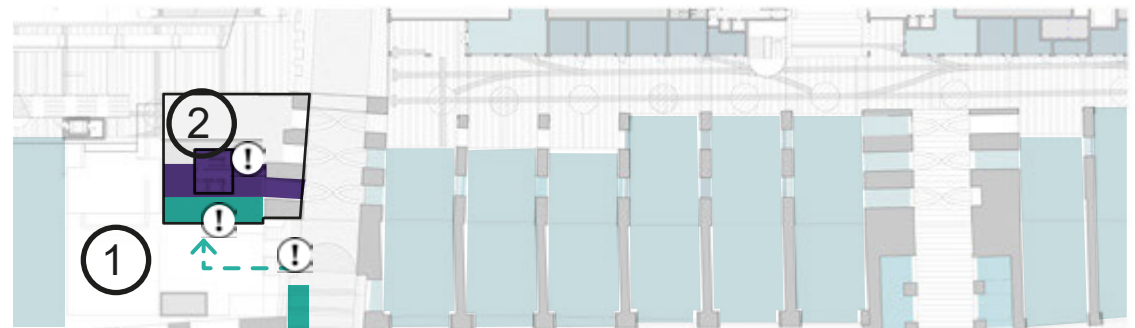


Fig 6.1.10: Ground floor plan

6.1.7

Summary

Providing residential on the platform level with no direct access to ground creates a challenging unusual arrangement from a pedestrian, servicing and property management perspective.

This has been reviewed by both Ballymore's and Hammerson's internal property management and estate teams. Both companies manage their own estates on completion of the build programme. It has been discussed and tested with several RSL & PRS providers the JV partner with on other schemes.

Based on the above constraints and the very challenging nature of accessing and servicing any apartments that could be constructed on top of the arches, the JV do not consider the delivery of residential in this location to be feasible or practical as part of the wider masterplan.



Fig 6.1.17: Typical upper floor plan

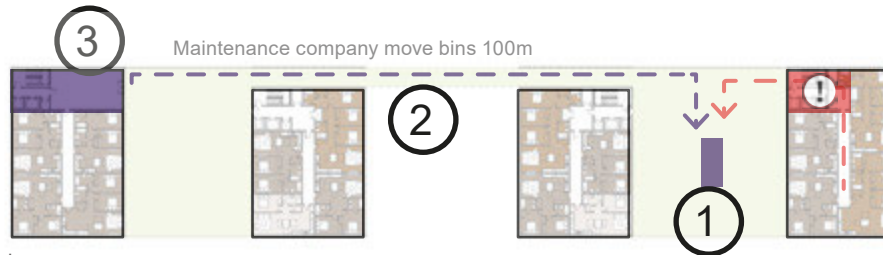


Fig 6.1.16: Residential podium floor plan



Fig 6.1.15: Public podium floor plan

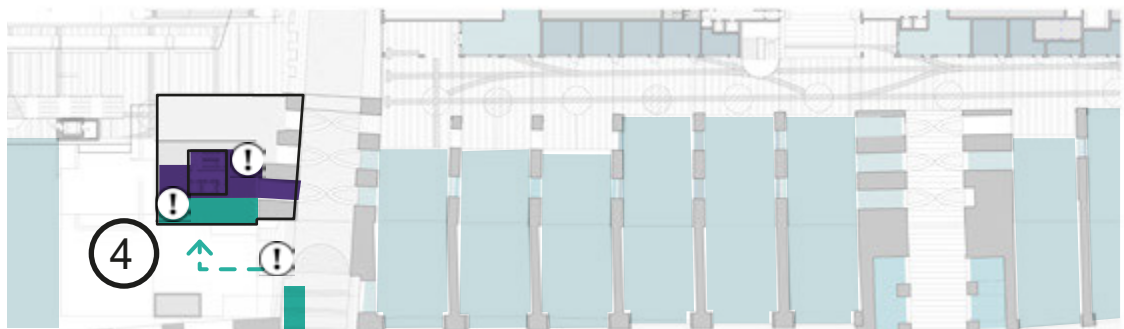


Fig 6.1.14: Ground floor plan



7.0 STEP 5: PLOT 8A

7.1 STEP 5: PLOT 8A OPTIMISATION

7.1.1 Plot Description

Plot 8A was initially proposed as a 14 storey tower accommodating hotel use only. Following discussions with the GLA and LPAs to increase the number of residential units in the block, the team have explored a hybrid hotel and residential building.

Block 8A is the only location where a new building can come to ground, west of the historic arches, that allows for a taller super structure, as well as providing entrance lobbies for both uses from the street. For this reason, the lower portion of the block will remain as hotel use, as the conduit to ground level entrance and servicing.

The ground floor will integrate with the listed viaduct and utilise the cross vaults as entrances to separate lobby spaces for hotel and residential.

7.1.2 Opportunities for Optimisation

Plot 8A presents an opportunity for residential optimisation both within its current footprint and by increasing the height of the block. The plot is already orientated such that residential units could be organised around a core avoiding north facing single aspect flats.

The additional height was considered to be most appropriate on plot 8A due to its central location within the masterplan and therefore limited impact on townscape and the relationship with the surrounding plots.

The building footprint of plot 8A has been moved as far as possible to the east but without affecting the Grade II listed Braithwaite arches

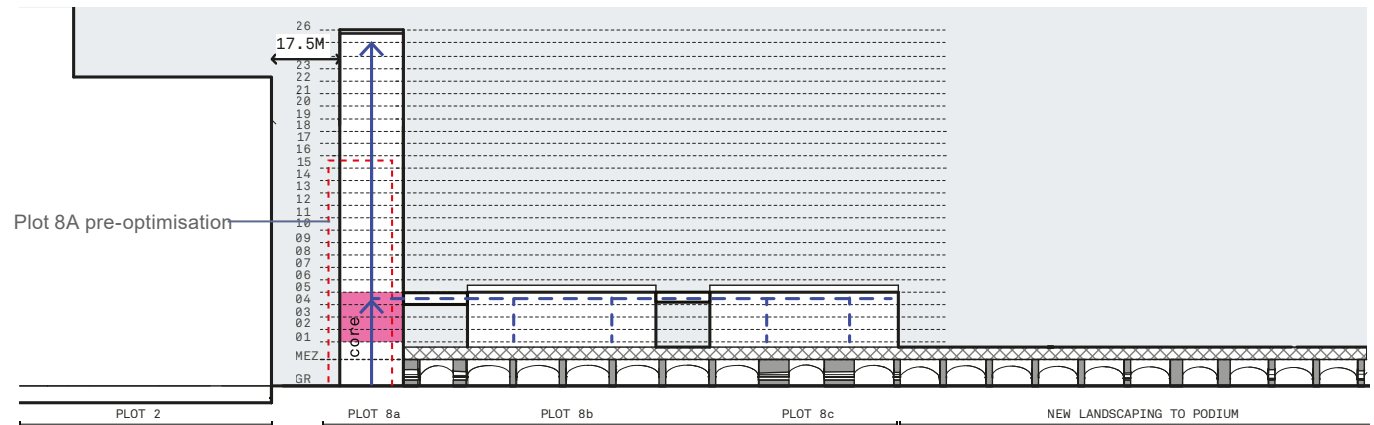


Fig 7.1.1: Section through Plot 8 (hotel and residential) -proposal

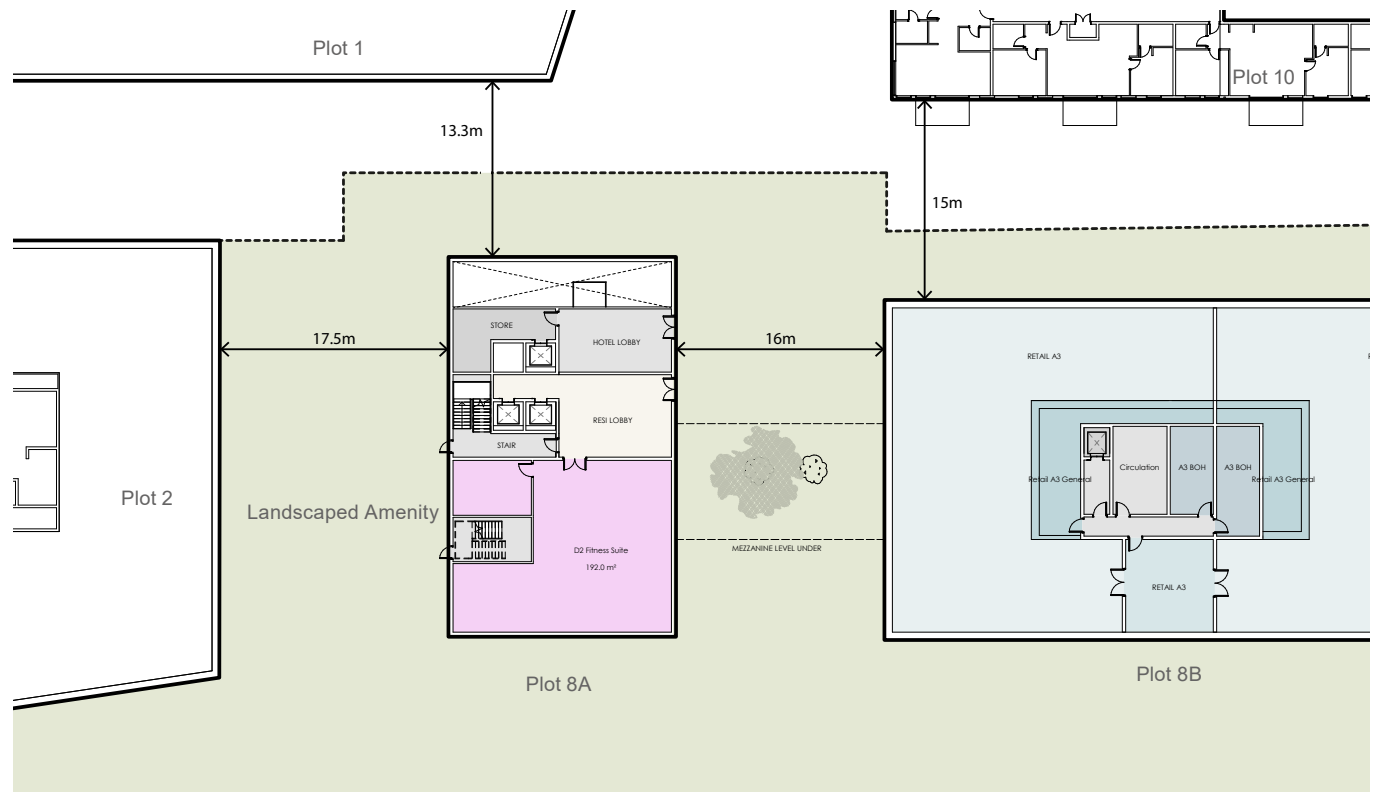


Fig 7.1.2: Hotel / Residential platform plan

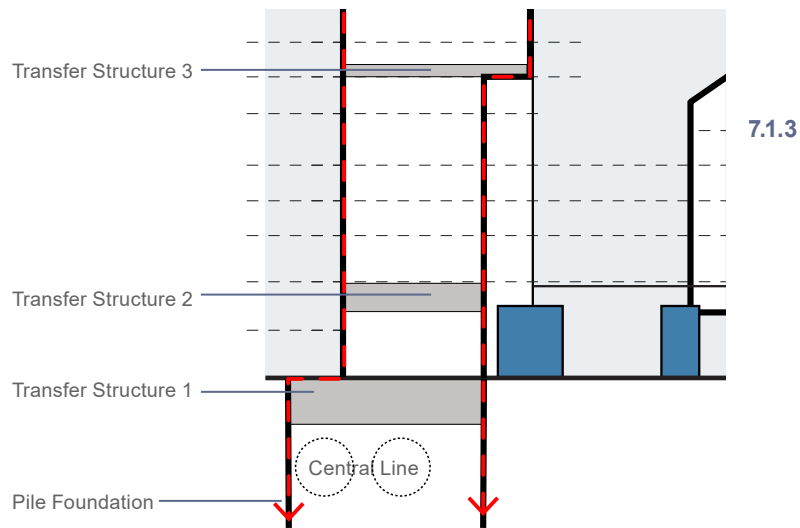


Fig 7.1.3: Diagrammatic structural section through Plot 8A.

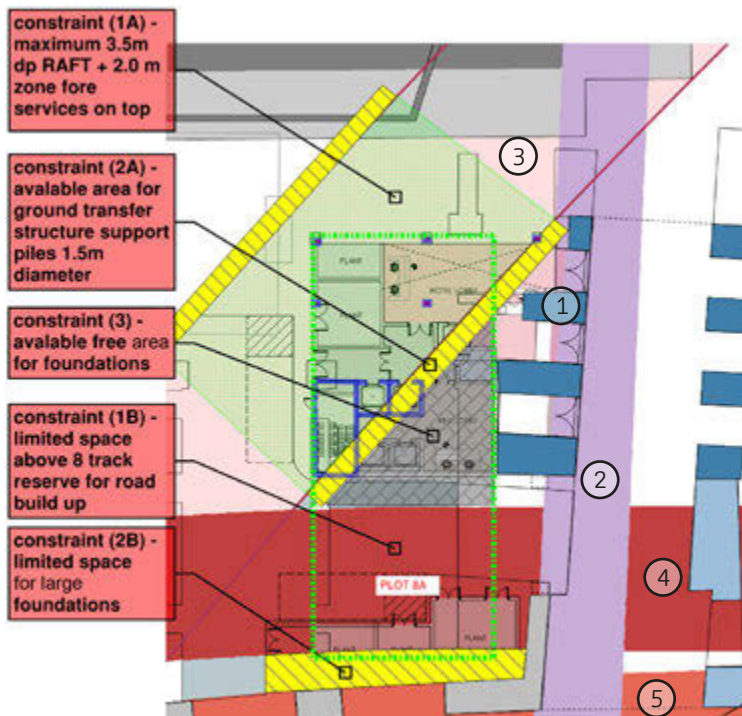


Fig 7.1.4: Plot 8A Structural Design Constraints Plan

adjacent, to maximise the separation distance from plot 2.

7.1.3 Structural Constraints

The increase in building height however has structural implications due to a challenging number of challenging constraints that exist both below and above the ground including:

1. Grade II listed Braithwaite Arches
2. The BT Tunnel
3. The Central Line
4. 8 Track Reserve
5. SLT (Suburban Line Tunnel)

These constraints leave limited area and scope for foundations and therefore have implications on the maximum height and footprint of plot 8A.

Building 8A sits above the central line tunnels and the 8-track reserve, this limits the available area for siting foundations and therefore requires significant transfer structures.

Plot 8A is 26 storeys and shares a common mezzanine level with plots 8B & 8C. Lateral stability of the building will be achieved by utilising the proposed reinforced concrete lift and stair cores. Approximately 30% of the building footprint including the stability cores are located over the Central line tunnels and will need to be supported on transfer structures at ground floor level. The transfer structure will be at least 3.5 metres deep with the top of the transfer structure set 2.0 metres below ground level to allow for services and lift pits.

The transfer structure spans over the central line tunnels and is supported on 1500mm diameter pile foundations positioned as close to the in close proximity to the central line tunnels.

An additional constraint is towards the southern edge of the building where a limited space is available between the 8-track reserve and the Suburban line to position piled foundations. The space available only allows for a single row of piles which limits the load and in turn height of building that can be supported.

An increased depth in the transfer structures resulting in deeper excavation above the Central line tunnels is likely to cause excessive / unacceptable movement around the tunnels.

The corner of the building footprint critically must avoid the crossing of the central line and 8 track reserve tunnel which lies immediately to the west of the plot. The eastern edge of the building sits on top of the existing arches which have limited load bearing capacity.

The main load from has to be transferred from the upper residential element, at level 5, stepping west to avoid the listed structures at ground.

A transfer structure is also introduced to span over the central line and allow for service yard access from Wheler Street.

7.1.4 Design Response

The ground floor of Plot 8A sits below podium level integrating with the existing Braithwaite Viaduct and the feature cross vaults which are open to Braithwaite Street. The northern edge of the plan faces the proposed public street that runs east to west through the site.

Access at ground level is through 3 entrance points located within the existing vaults. The two most northern entrances serve the hotel and lead to a modest double height lobby area. The most southern entrance provides private access to a lobby for the residential component. By accessing lobbies through the existing arches the entrance sequence will be unique to the scheme.

At platform level, a second hotel lobby area is located north of the residential lobby along with a small storage area. The level 01 lobby over looks the double height main lobby space below. A platform lift located within the void provides access between the two spaces.

The second and third floors are dedicated to the hotel accommodation.

Level 04 is also dedicated to the hotel. The floor is accessed from the hotel lobby located at ground level via a dedicated lift within Plot 8A. This level accommodates the main hotel reception along with open plan lounge, bar and spa facilities that face south out over the park and city beyond.

Level 05 accommodates plant equipment for the residential use within the building. All levels above this comprise residential units.

A typical upper floor accommodates one 2 bed unit and six 1 bed units. The mix is distributed according to a policy compliant site wide offer. There is flexibility within the illustrative scheme

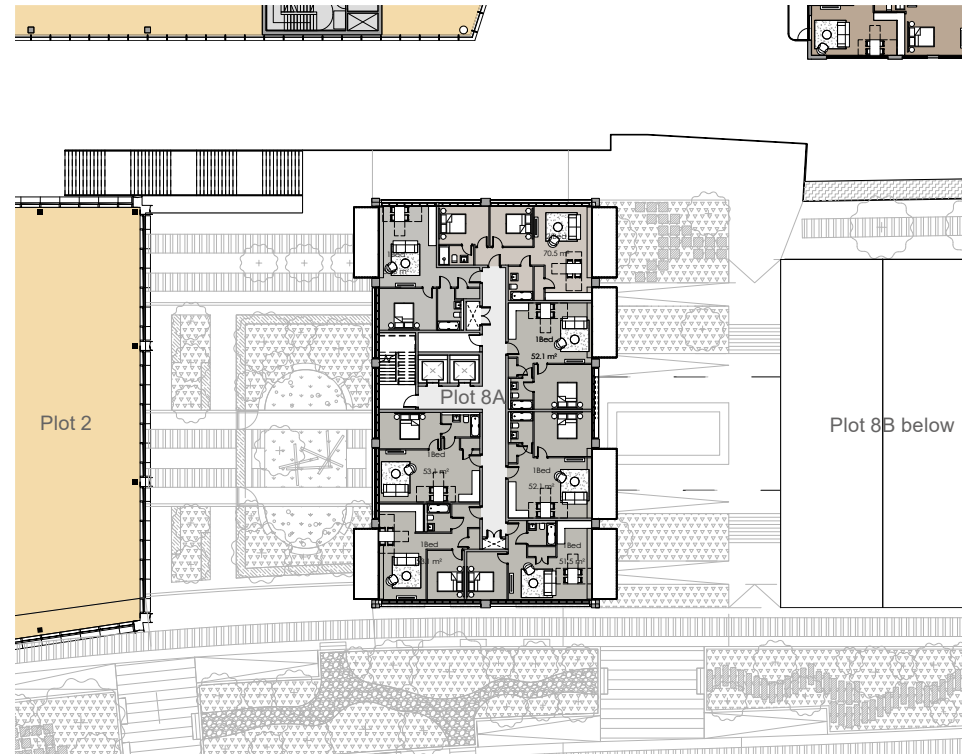


Fig 7.1.5: Plot 8A - Typical upper illustrative residential floor plan

to vary the mix.

Projecting balconies are located on the eastern and western facades and are accessed from living areas.

Two bed units will be positioned in the corners of the plan, providing dual aspect living and dining spaces.

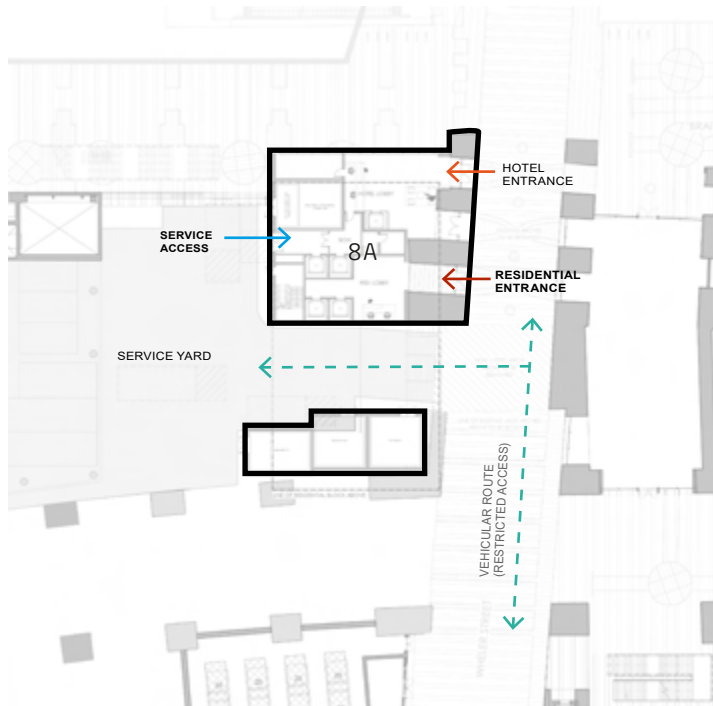


Fig 7.1.6: Level 00 - Plot 8A Service Yard Access

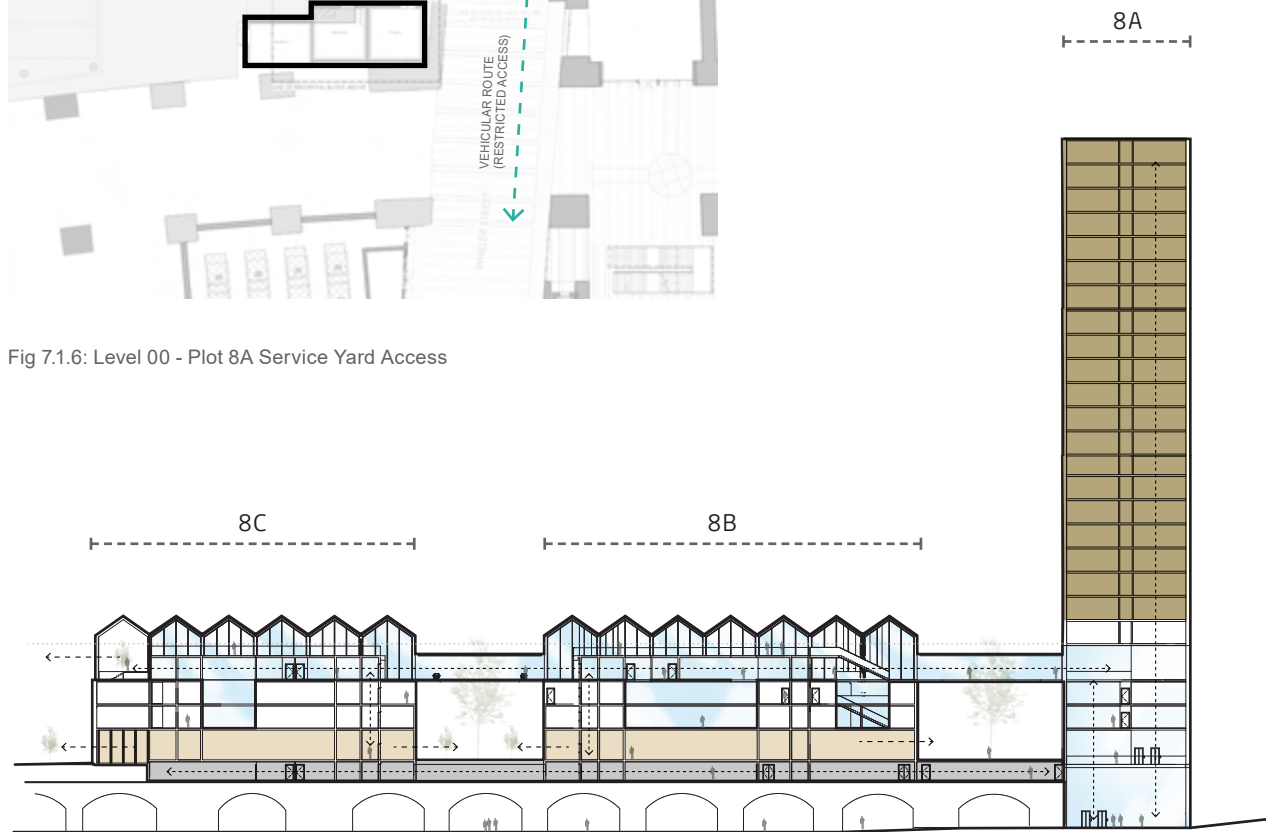


Fig 7.1.7: Long Section - Circulation Strategy

7.1.5 Optimisation Analysis

The design team believe that the optimisation of plot 8A is a positive addition to the masterplan. Increasing the distance to plot 2 has provided a greater landscaped area at platform level, but also allowed better daylight conditions to the residential units facing west. These have been limited in the illustrative layout through positioning the core on the west face.

The strategy to retain hotel use at the lower 4 levels also helps with providing daylight levels to residential. By proposing residential from level 6 upwards, plot 8A has the potential to provide excellent daylight amenity to most of the units.

7.1.6 Access and Servicing Strategy

Plot 8A is served from the service yard between plots 2 and 8. Additional bin stores for the residential component will be included at level 05.

7.1.7 Unit Numbers

As part of the outline scheme, parameter plans set out the maximum and minimum height, width and length of development plots.

The difference in height between the maximum and minimum is 7 residential storeys, which represents an AOD increase of 22.4m. The associated maximum residential and hotel room numbers are shown below.

Maximum Height Room Numbers		
Plot 8A	(residential)	133
Plot 8B & C	(hotel rooms)	150

8.0 CONCLUSION

8.1 SUMMARY AND CONCLUSIONS

In reviewing the options available, and following discussions with the GLA, LBH and LBTH, it is the JV's and its professional team's opinion and best judgement that an optimised residential scheme would be as follows:

Sclater Street is an excellent residential location. Entrance and core arrangements are good, and building efficiency is good. With a small number of north facing apartments, an additional 54 units can be provided in plot 4 and 5, bringing up the total amount to 214 within the illustrative scheme. We believe that further increases of height would undermine our intent to deliver an appropriate scale for Sclater Street and would be contrary to the feedback we received at public consultation, where some concerns were raised by the proposed optimisation set out in this study.

Plot 10 has a very narrow plot depth and therefore delivers relatively low numbers of units. Building very tall in this location results in very inefficient residential layouts, however height has been increased around the cores where an increased plot depth allows for a more efficient layout. Entrance locations have been located off the secondary north south public routes with lobbies at ground level. The strategy to push circulation cores and ancillary spaces to the north of the plot reduces the effect of the proximity to the London Overground viaduct at lower levels and provides single aspect south facing units and dual aspect units with very good daylight potential and views facing south over the generous public realm.

The narrow depth of the plot presents a further challenge with regards to the proposed unit mix. However this can be met as a site wide offer.

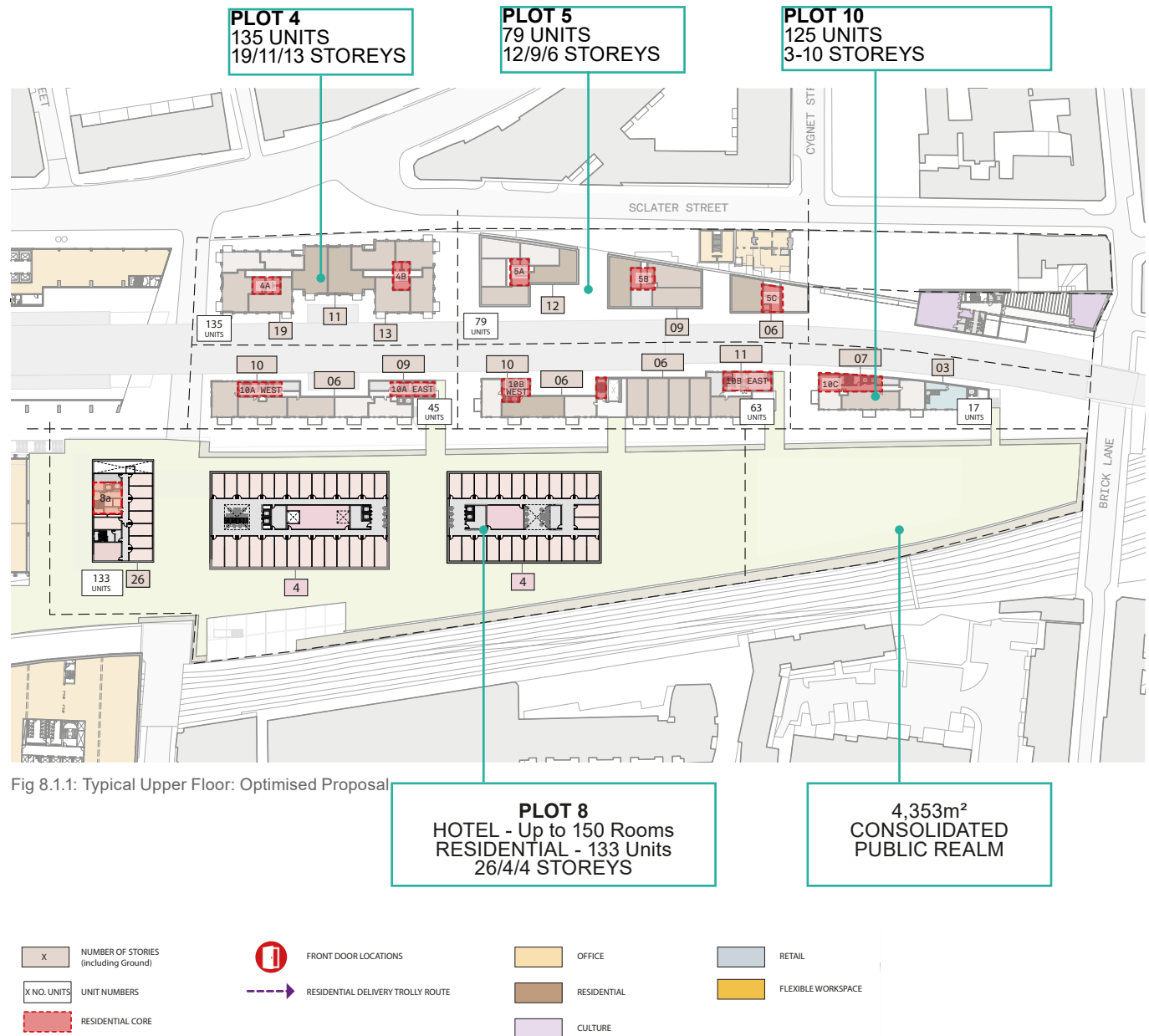


Fig 8.1.1: Typical Upper Floor: Optimised Proposal

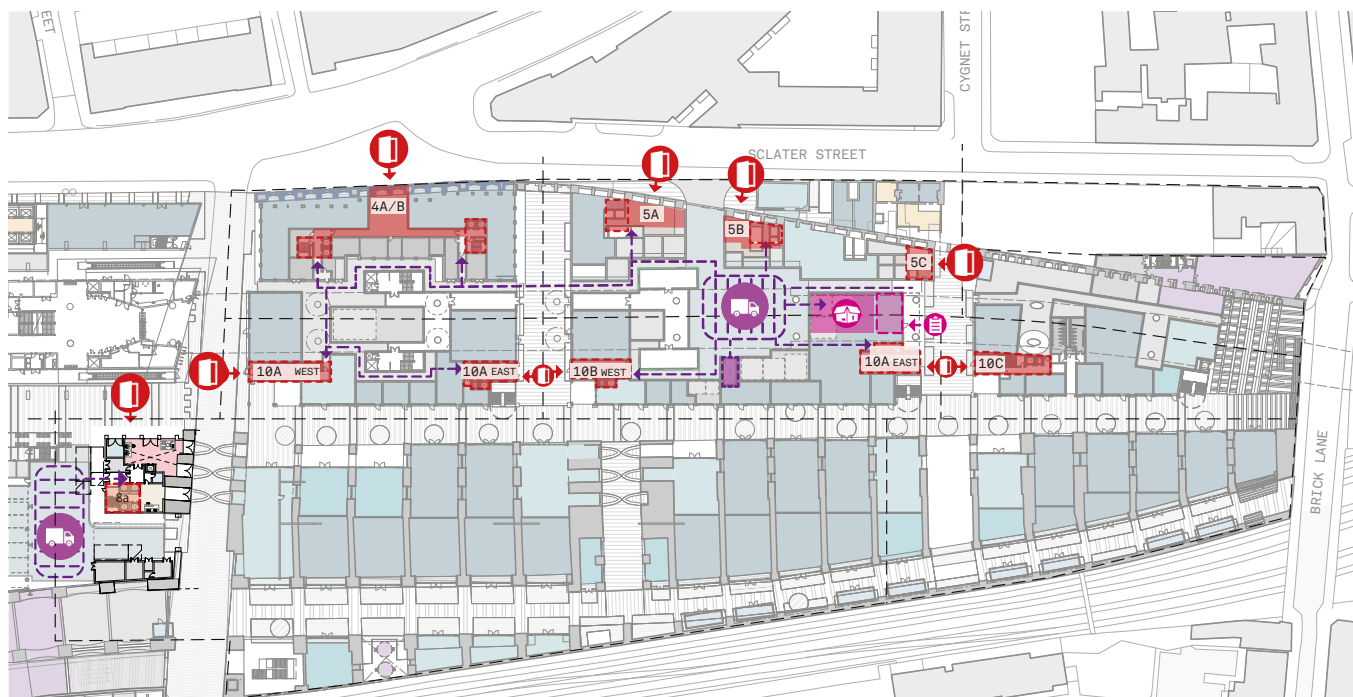
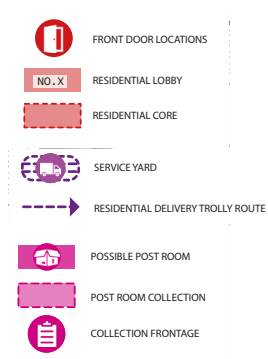


Fig 8.1.2: Optimised Proposal: The proposed residential entrances



2018 Starting Position	180
Plot 9 (Removal)	(-20)
2019 Residential Optimisation	
Sclater Street (Enhancement)	214
Plot 8 (resi/hotel hybrid)	133
Plot 10 (Enhanced)	125
Total Illustrative	472
Additional Site-wide Efficiencies	+28
Maximum Total	500

Table 8.1.1: Optimised Proposal: Unit Summary

Plot 8 delivers 133 residential units within the illustrative scheme, plus up to 150 hotel bedrooms. This composition of various uses has been heavily supported in consultation with statutory (Met police) and local stakeholders due to creating benefits of better natural surveillance and increased day and night activity at podium level. The increased height of plot 8A has made a positive contribution to the massing composition of the revised scheme and the residential layouts will achieve excellent daylight levels with unobstructed views to the south and east.

The removal of Plot 9 will allow for more open space at platform level creating additional area and consolidated open space of 4,353m² at the eastern end of the platform. This would deliver one of the key objectives of LBTH as part of their policy requirements.

When compared to the LBTH target unit mix, there remains a larger proportion of 3 and 4 bed apartments within the Illustrative Scheme. However, it is anticipated that during the detailed design of the residential plots to come forward at Reserved Matters stage, further site-wide efficiencies and adjustment of the mix, this would allow for up to 500 units to be delivered.

As a result of the extensive residential optimisation study, and taking on board the feedback from the GLA, LPAs and local stakeholders, the maximum number of residential units provided within the proposed scheme has increased from 180 to 500.

The table adjacent (8.1.1) summarises the starting point and final position with regards to an optimised residential offer within the Revised Scheme.

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Hammerson