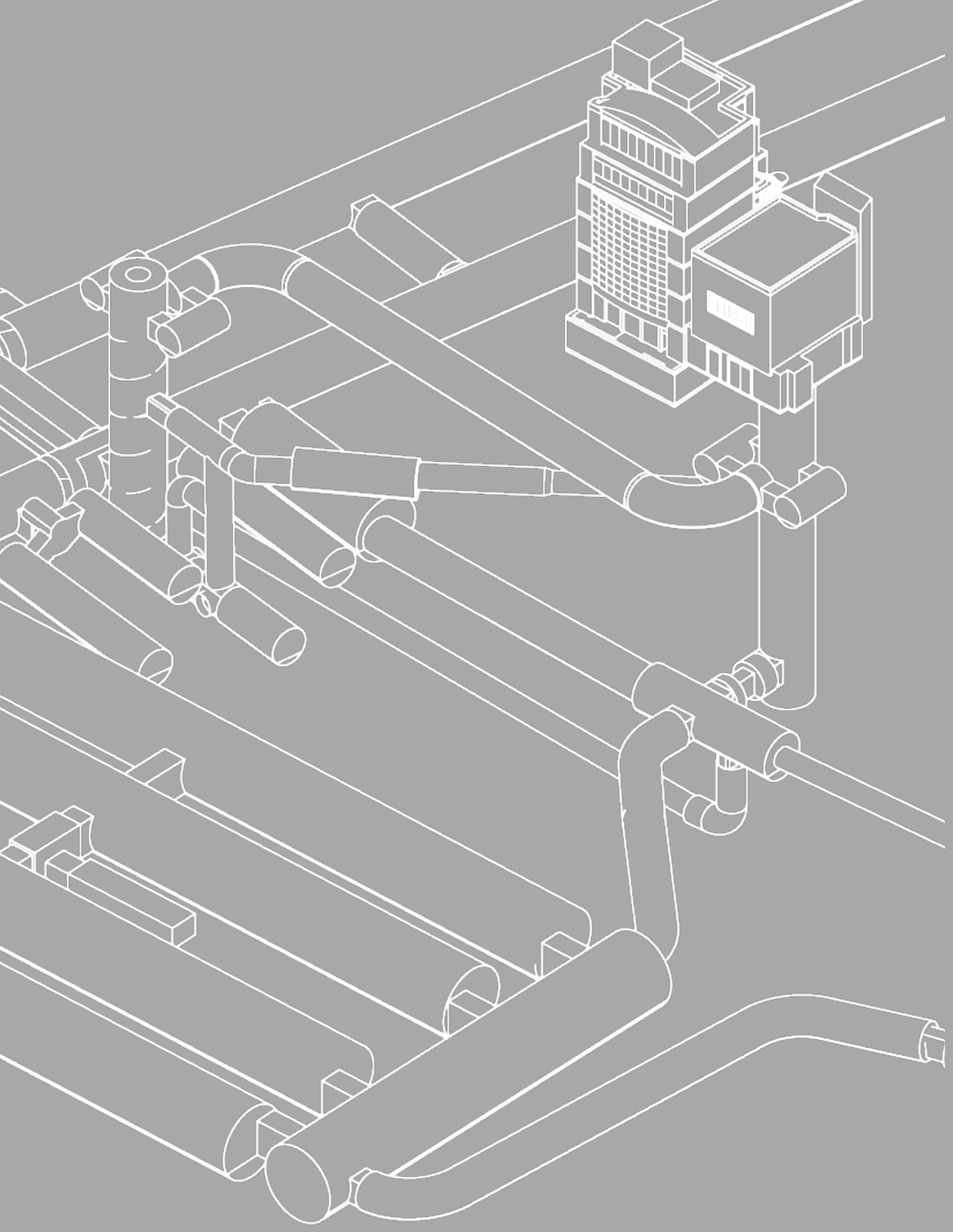


5 Scheme Wide Strategies

5.1 Fire Strategy

Tunnels Evacuation and Firefighting

Public occupants within the tunnels are to have at least two means of escape from each fire compartment. Compartmentalisation is proposed as schematically shown to limit the design of the fire and smoked logged space, enable progressive evacuation, and facilitate effective firefighting.

Pressurized refuge/holding zones and shafts are to be considered at Furnival St and Fulwood Place shafts as places of relative safety. Occupants can queue in the protected refuge areas to evacuate via the evacuation stairs or lifts. The protected refuge areas are to have no fire load and non-combustible linings.

Smart signage and wayfinding are proposed to be installed in the tunnels to assist wayfinding, inclusive of “Exit” and “No Exit” signs that would activate on a cause-and-effect basis and depending on the location the fire is detected. An addressable fire detection system and voice alarm system are also proposed to be installed.

Firefighting Shafts

Furnival St and Fulwood Place shafts are pressurised firefighting shafts with firefighting stairs and lifts. Firefighting outlet connections will be provided in the protected lobby at the tunnel level as well as strategic locations within the tunnels. The water supply for manual firefighting would be the town’s main water network, boosted in pressure by the fire engine.

Rendezvous Point

RVP (rendezvous point) in this building will be the Furnival St building (Euston Fire Brigade Zone).

Output Sequence of the detection system is proposed to be as follows (Per BS 9992):

- Single detector or MCP alarm leads to alert condition through the PA system to staff;
- No further manual intervention for a specific time interval (e.g., 2 minutes), an evacuation message shall be given;
- Staff intervention, a second timed interval for investigation or reset of the system if false alarm is allowed at panel;
- Failure to acknowledge leads to simultaneous Evacuation message;
- Activation of a sprinkler system or two separate detection devices initiates an alarm condition within the timer sequence;

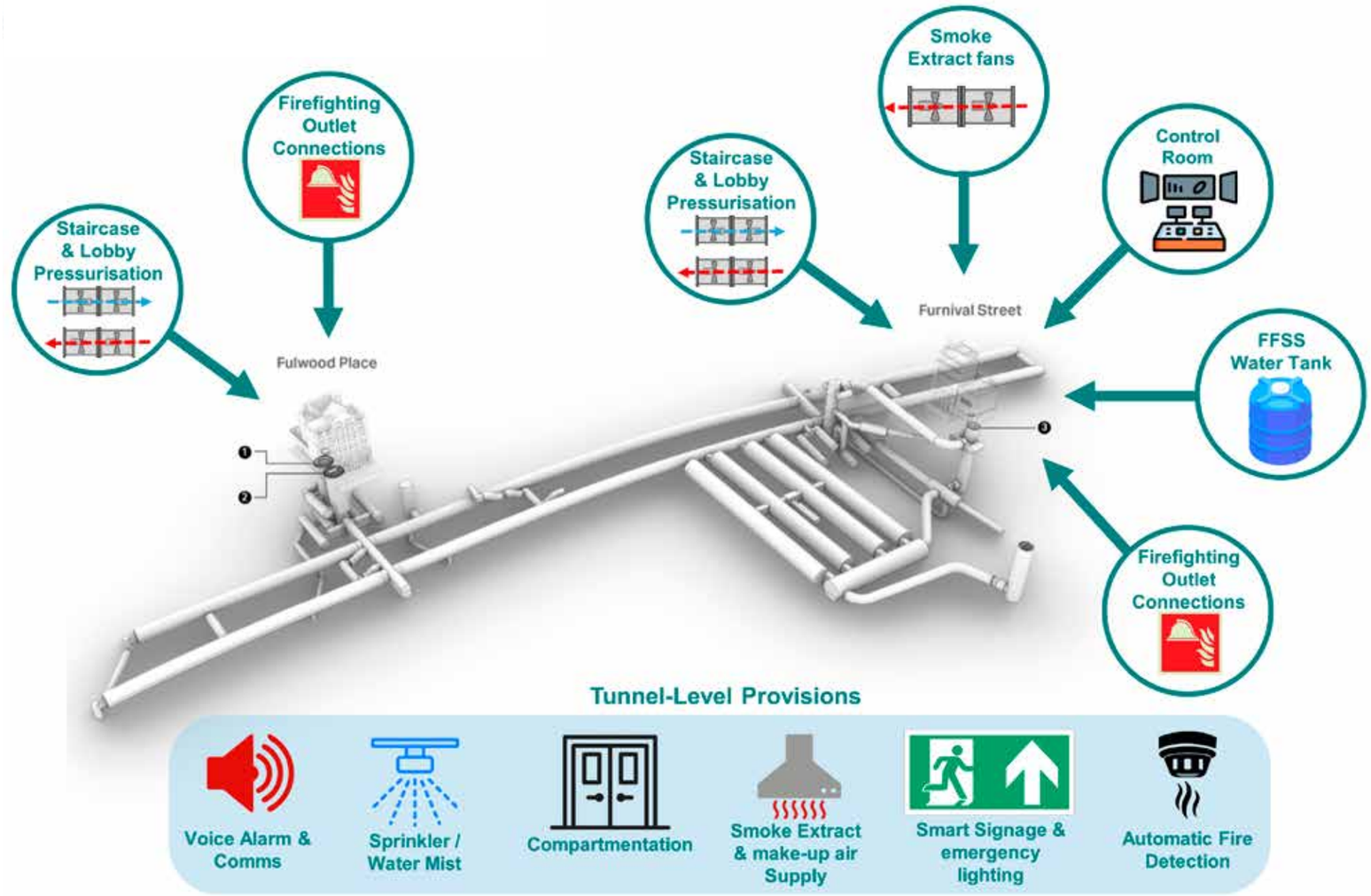


Figure 162. Fire Safety Measures

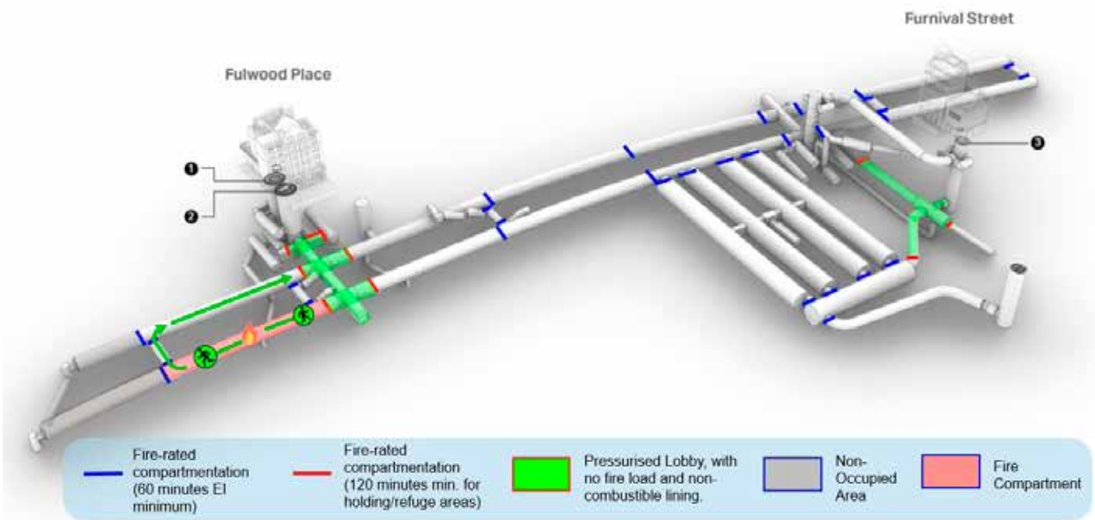


Figure 163. Schematic of a fire scenario within the Bar area demonstrating the alternative means of escape for the occupants to the refuge zone. In case of an unlikely scenario that the pressurization system of the Fulwood Place refuge area does not work as intended, the Furnival St shaft is still available for evacuation

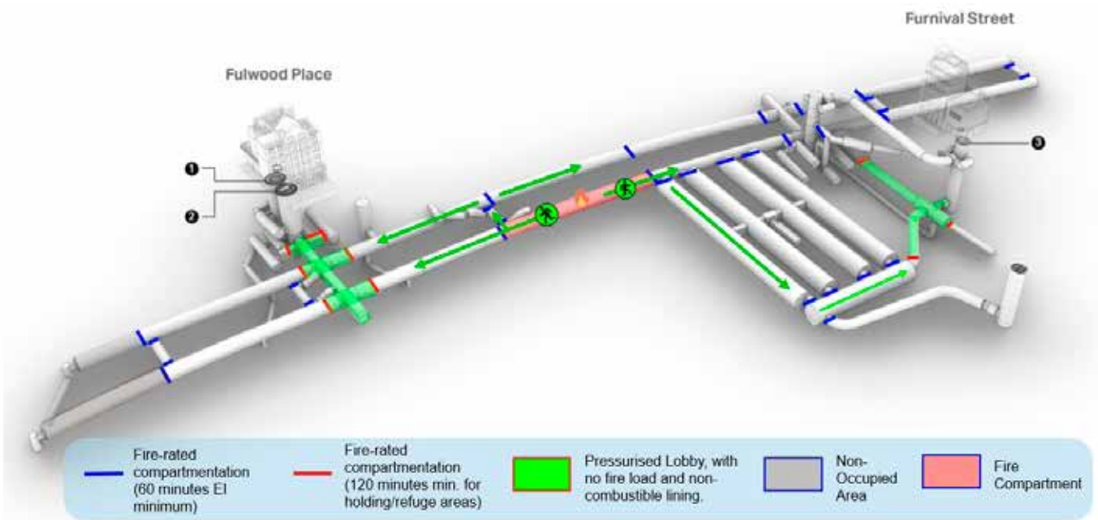


Figure 164. Schematic of a fire scenario within South Street Centre demonstrating how the occupants can diverge from the compartment of fire origin to the place of relative safety in either Furnival St or Fulwood Place refuge zones. In case of the failure of the fire suppression system to control/confine the fire, the fire shutters providing the compartmentalisation and protected shafts (and refuge area) pressurization system would keep the conditions tenable for the occupants queuing to evacuate

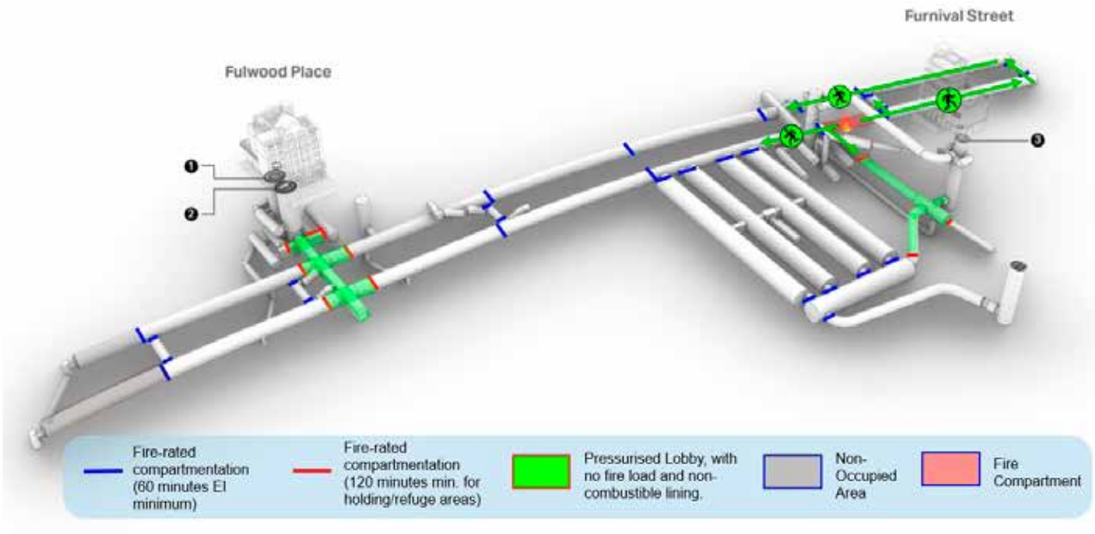


Figure 165. Schematic of a fire scenario within South Street East demonstrating how the occupants can diverge from the compartment of fire origin to the place of relative safety in either Furnival St or Fulwood Place refuge zones. In case of the failure of the fire suppression system to control/confine the fire, the fire shutters providing the compartmentalisation and protected shafts (and refuge area) pressurization system would keep the conditions tenable for the occupants queuing to evacuate

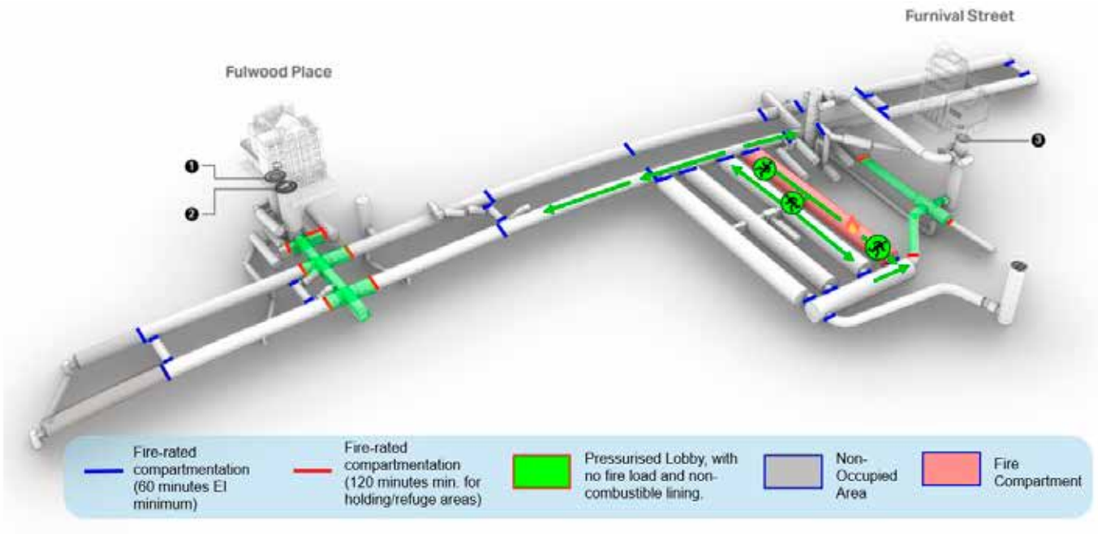


Figure 166. Schematic of a fire scenario within an Avenue demonstrating how the occupants can diverge from the compartment of fire origin to the place of relative safety in either Furnival St or Fulwood Place refuge zones. In case of the failure of the fire suppression system to control/confine the fire, the fire shutters providing the compartmentalisation and protected shafts (and refuge area) pressurization system would keep the conditions tenable for the occupants queuing to evacuate

5.2 MEP Strategy

Building services systems overview

The development presents a unique opportunity for the building services design, especially in the context of current technical and social challenges, as described below.

Energy and carbon performance is critical against the backdrop of current climate concerns. The services proposals not only use the most efficient available solutions and equipment but has been designed in a manner that can take advantage of local climate to operate with minimal energy input for significant periods. For example, chilled beams can provide cooling without the operation of chillers, by operating at a higher temperature and directing waste heat straight to the cooling towers. This takes advantage of the UK's mild climate to cool internal spaces.

The anticipated visitor numbers and exhibition equipment lead to intensive servicing requirements to maintain comfortable and safe conditions for occupants, and this is further compounded by the unique environment presented by the tunnels. These needs have been met by meticulous and innovative design of the ventilation and associated systems. Complex services routes and plant-room layouts have been modelled early in the design. Full minimum fresh air requirements and smoke extract volumes are provided in all compartments, with the ability to adapt locally to current demand.

Fast paced technological developments, especially in field of exhibitions and visitor attractions requires that the services design be flexible enough to accommodate even currently unanticipated technology. Combined with the energy saving measures discussed above, the design allows for significant electrical and cooling loads, enabling a wide range of exhibition types and technologies.

The project is broadly broken down into three main areas with differing functions, as described below.

Efficiency

- When outdoor temperatures are lower than the internal tunnel temperatures the energy efficiency of the cooling is greatly improved.
- Systems operate at lower capacity, dynamically responding to changes in occupancy based on Co2 control, and cooling demand which varies based on the type of event set up (LED vs. Projectors).
- Peak loads on the chillers and cooling towers will only occur when peak occupancy coincides with peak audio-visual loads (some types of events) and peak outdoor, summer temperatures.
- System sized to meet this peak condition using the cooling tower capacity within the acoustic limits.

Mechanical Plant

- 3 No. 600 kW cooling towers at roof level.
- 2 No. 600 kW water-cooled chillers.
- 1 No. 400 kW heat-recovery chiller- utilising waste heat extracted from tunnels to provide heating and hot water.
- 2 No. Chilled water buffer vessels – reducing system cycles, and improving system stability and energy performance.
- 1 No. LTHW buffer vessel - reducing system cycles, and improving system stability and energy performance.
- 1 No. Fresh-air AHU - Furnival Street Level 3.
- Smoke extract and staircase pressurisation fans - Furnival Street Level 3.

Avenues

- Avenues and Streets supplied with minimum fresh air using via smoke control ductwork with supply under the floor and extract in the ceiling.
- Pairs of downflow units located at each end of the Avenues discretely beside the entrance.
- Chilled panels used to cool at ceiling level as well as for night-time cooling.
- Additional chilled panels and fan coil units to be installed if an exhibition includes high density LED screens.
- Local electrical transformers minimise distribution losses and embodied carbon in cabling.

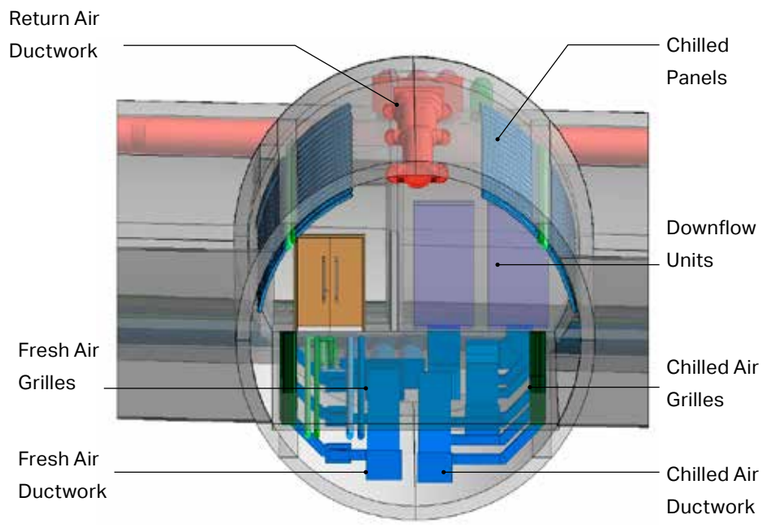


Figure 167. Fig 4 - Supply and Extract AHU, access doors closed

MEP CONCEPTS

Design for Access and Fire Safety

- Environmental Conditions
- Exhibition Equipment loads (e.g. screens)
- Basis of Design (Occupancy)
- Resilience & Life Safety

Design for Ventilation

Design for Thermal Comfort

Design for Lighting & Power

- Building Regs and Code Compliance
- Access and Maintenance
- System Controls
- System Interfaces
- Statutory Authorities (Utilities)

Design for Water Supply and Drainage

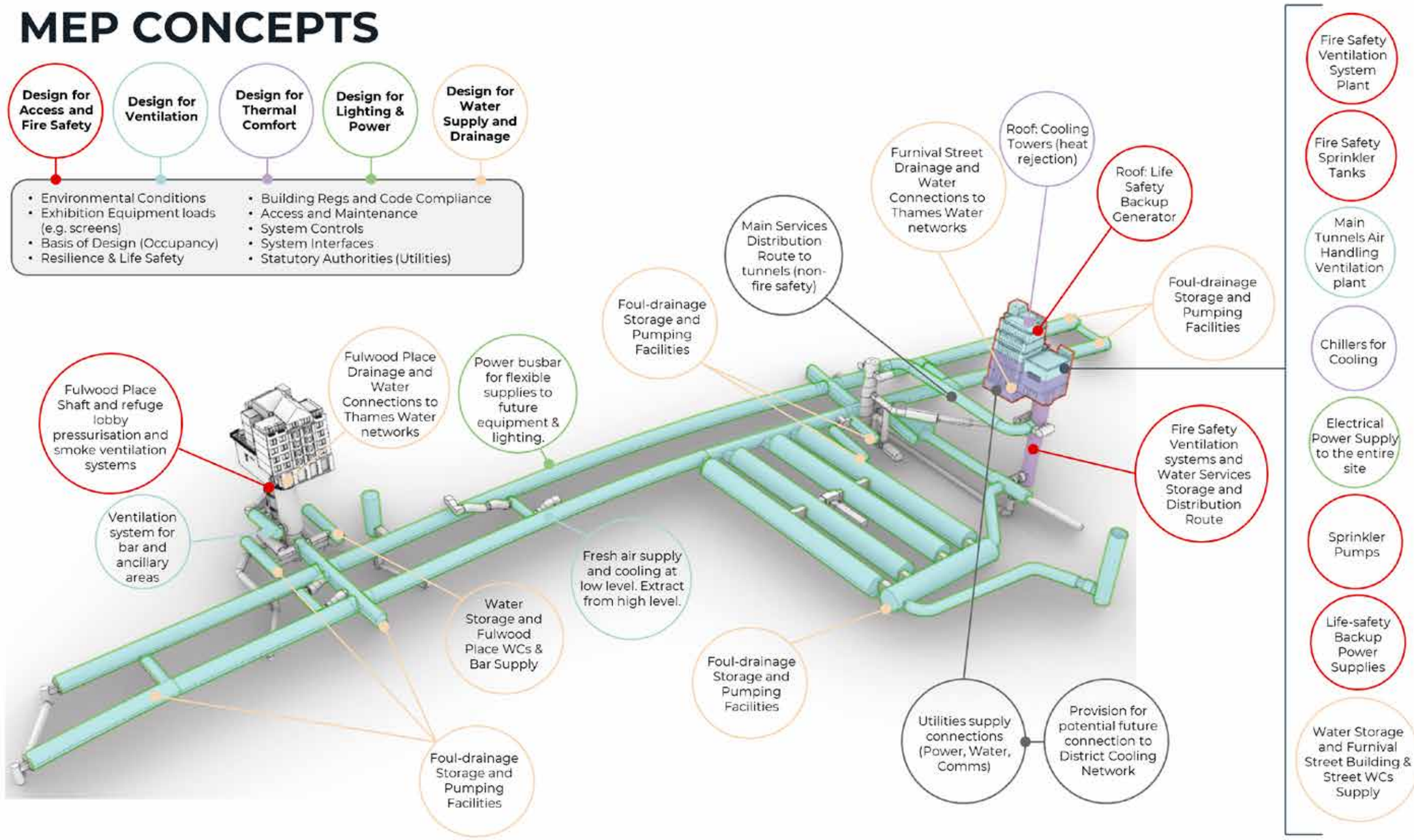


Figure 168. Fig 7 MEP Concepts

5.3 Site Access / Transportation

The Furnival Street and Fulwood Place entrances to the tunnels are well served by public transport, with nearby access to the London Underground, National Rail and TfL bus services. The Public Transport Accessibility Level (PTAL) for the site is **6b** (which indicates 'excellent access') with the site being located in one of the most accessible locations in London. The closest underground station is Chancery Lane which is 130m away from the Furnival Street entrance, with Holborn, Farringdon and Barbican Stations less than one kilometre away. The site also offers easy access from multiple bus stops located on High Holborn and two Santander bike docking stations nearby.

Vehicle access is achieved from Furnival Street, which operates a one-way system from between the Furnival Street / Norwich Street priority junction to the Holborn / Furnival Street priority junction. A highways improvement scheme is proposed to increase the footway width of Furnival Street and raise the carriageway closer to the footway level, which is subject to agreement with City of London as the local highway authority.

Coaches arriving at the site will drop off and pick up in existing bus lane on the northern side of Holborn. Because of restrictions in place, coach drivers will be permitted to wait on Holborn , coach drivers will therefore be required to wait elsewhere in locations where they are permitted to do so in the vicinity. For further information, please refer to WSP's Transport Assessment.

The tunnels have a maximum capacity of 750 people, who will spend an hour in the tunnels. It is estimated that visitors will typically l spend a total of 1 hour and 20 minutes on the site. To calculate the number of two-way visitor trips on the site, the maximum capacity of the tunnels and the capacity of the vertical transportation has been considered. The 4 lifts at Furnival Street have a capacity of 60 people in total. The lift cycle time and unloading time is 5 minutes. This means within an hour, the lift can complete 12 cycles transporting 720 people in each direction per hour, 1,440pp/hr. in total.

What about the comprehensive modelling exercise incorporating of dynamic Legion Modelling of Chancery Lane station and the ground floor of No.40 Furnival Street. A pedestrian comfort level analysis of the footways in the local area has also been conducted. Please refer to WSP Transport Assessment for further visitor analysis.

The existing footways on Furnival Street are approximately 1.5m wide and are and not suited for queuing pedestrians without creating conflict between pedestrians, cyclists, and vehicles routing on Furnival Street. To manage the impact of the development on through traffic on Furnival Street, a footway improvement scheme has been proposed. This Scheme proposes to increase the footway width along the frontage of the development by setting the building line of No.40 Furnival Street back by 2.05m and reducing the carriageway width of Furnival Street by 0.9m. This will provide a 3.6m to 2.1m wide footway along the building frontage whist still maintaining adequate carriageway width for vehicles to manoeuvre along Furnival Street. This level of localised narrowing is consistent with narrowing seen further south on Furnival Street. Please refer to WSP Transport Assessment for vehicle swept path analysis.

Cycle Parking

Cycle Parking has been provided in accordance with the 2021 London Plan (LP) 'D1 Other' parking standards. Secure long stay cycle parking has been provided within the curtilage of No.40 Furnival Street for the 89 members of staff and short stay visitor parking has been provided within the public realm at Fulwood Place and High Holborn. An overview of the cycle parking types is provided:

Long Stay Cycle Parking

- 7 wall-mounted vertical racks.
- 1 Sheffield stands (2 spaces).
- 1 Accessible Sheffield stand.
- 2 folded cycle lockers (stacked).

Short Stay Cycle Parking

- High Holborn- 9 Sheffield stands (18 spaces).
- Fulwood Place- 2 Sheffield stands (4 spaces).

5.5 Security Strategy

Walk Though Scanners

Bag Scanner

Detection:

Bladed weapons

Explosive materials

Protest Materials

Metal Items

The Security Strategy looks at protecting the tunnels from an internal attack within the tunnels (a Person Borne IED or a bladed MTA). Therefore mitigations have featured heavily around the management of visitors into the tunnels and their associated luggage.

CTSA and DOCO engagement has been carried out with both City of London and Metropolitan Police, to inform design and to advise on threat levels.

Robust search and screening will be carried out at both building entrances, a scanner for individuals, supplemented by bag scanning and searching. Security personnel will manage the screening within the reception areas.

All visitors will be required to pre-book, at this point recommendations on luggage and a list of prohibitive items will be provided to help reduce the amount of luggage being brought into the exhibition. Lockers will be available within the Furnival Street reception to secure items that do not need to be taken down into the tunnels.

Visitors will be split into smaller groups who will be escorted at all times and access control will be in place to prevent unauthorised access into back of house areas. The site will benefit from Video Surveillance Systems (VSS) which will be monitored by an on-site Security Control room (SCR).

For visitors just using the bar, Fulwood Place entrance will be used, pre booking will be required and search and bag checks are to be carried out. As the bar will be open outside of exhibition hours, access control will be designed to ensure there is no access from the car to any other areas within the tunnels.

As there will be no queuing on the street (at either entrances) HVM will not be required for this project.

5.4 Waste Management

The waste management strategy has been developed to provide a robust solution to manage the waste generated by the various uses and visitors.

It is proposed to provide three separate waste stores which will be used to hold waste from the following areas:

- Furnival Street (above ground facilities) – at level B1 to service the waste generated by the reception, retail outlet, office and staff changing areas.

- Furnival Street (below ground facilities) – at tunnel level to service the waste generated by the exhibition spaces within the tunnels.

- Fulwood Place (bar area) – at tunnel level to service the waste generated by the cocktail bar.

The location of the waste store for the Furnival Street above ground facilities is shown below:

The waste generated within the site will be transported to the above waste stores by the on-site facilities management (FM) teams on an as and when required basis.

On a daily basis, and outside of operational hours the on-site facilities management (FM) team will transfer the waste from each of the waste stores to the agreed waste presentation areas via the passenger lifts. The waste presentation areas will be provided at ground floor in a location that the appointed waste management contractor can access and will be the location that the bins will be placed by the on-site FM team prior to the agreed collection time.

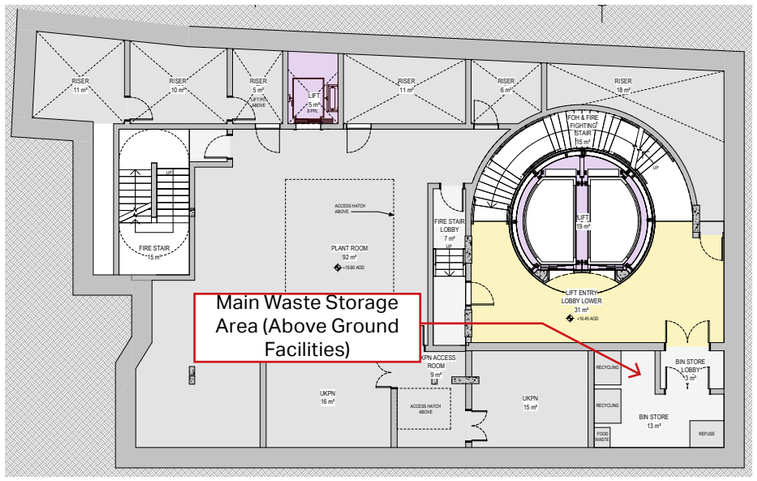


Figure 169. Location of the waste store for the Furnival Street above ground facilities

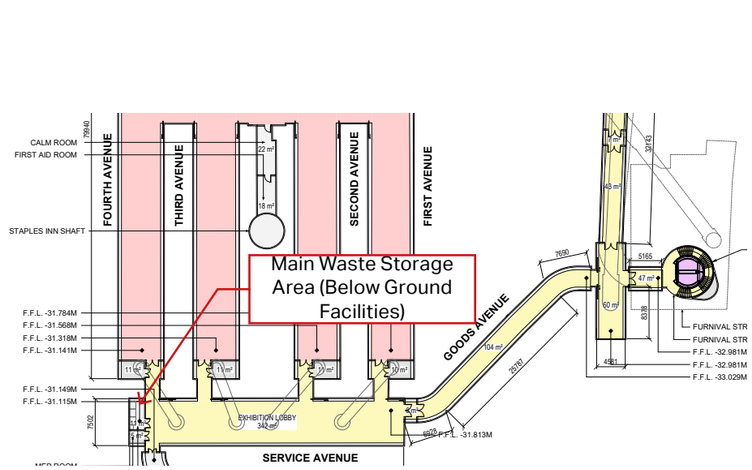


Figure 170. Location of the waste store for the Furnival Street below ground facilities

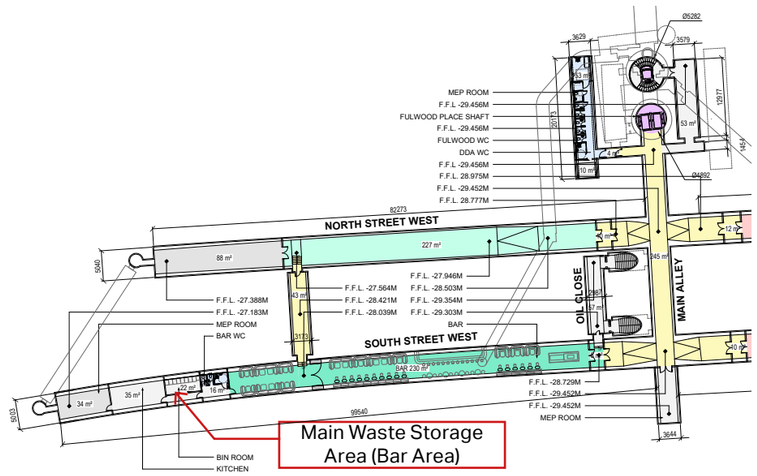


Figure 171. Location of the waste store for the Fulwood Place (bar area) facilities

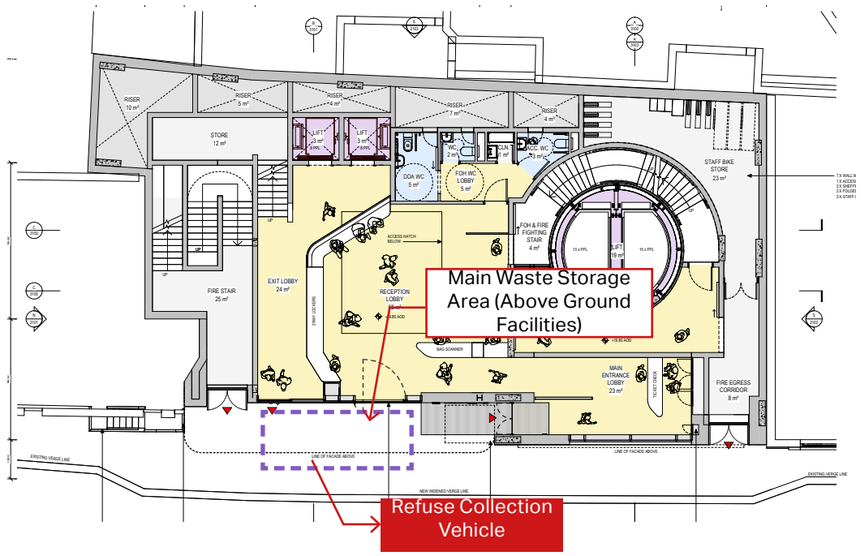


Figure 172. Presentation area and refuse collection at 38-41 Furnival Street

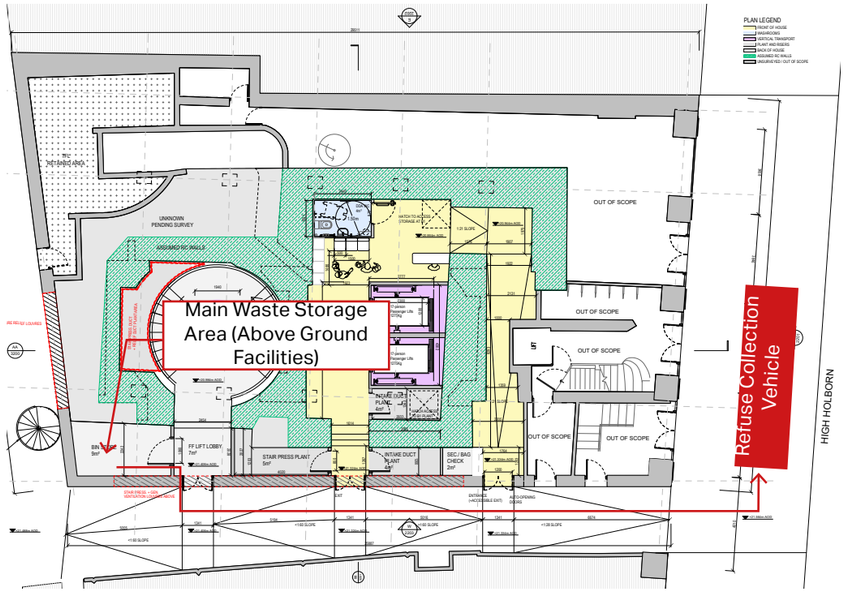


Figure 173. Presentation area and refuse collection at Fulwood Place (31-33 High Holborn)

The presentation area for Fulwood Place will be a waste storage room within the footprint of the building which will be accessible to the waste management contractor using a suitable key, keypad or fob.

The appointed waste management contractor will collect the bins directly from the presentation areas and will transfer them to their refuse collection vehicle for emptying.

Once the bins have been emptied, the appointed waste contractor will return them to their original location and the on-site FM team will return them to the main waste storage areas.

Due to the location of the Fulwood Place entrance being remote from the nearest available parking location for the waste management contractor's collection vehicle, the presentation area will have to be agreed prior to waste collections commencing. The presentation area will either be positioned in Fulwood Place which will require the waste contractor to transfer the bins approximately 30m, or at the kerb of High Holborn immediately adjacent to the collection vehicle in the area used by the existing adjacent businesses.

Once the wastes have been collected, the bins will be returned to the waste stores.

5.6 Construction Strategy

This section should be read in conjunction with the Outline Construction Traffic Management Plan, which also forms part of the current planning application.

Furnival Street

Site Offices and Welfare Facilities

It is proposed that central, good-quality welfare facilities are located on the site, including toilets, washing and changing facilities. These temporary provisions expand to meet the requirements of the anticipated maximum construction workforce numbers. Site offices for the Principal Contractor and sub-contractors are also proposed, allowing space for the Applicant and Consultants.

Site offices and welfare will be located in 40 Furnival Street while 39 Furnival Street is demolished. Subsequently, offices and welfare are located in temporary site cabins. Construction will then occupy the entire site and so it is expected that a nearby office space will be rented until the facilities can be relocated into part of the new buildings.

Temporary connections will be made to existing utility services for temporary accommodation and for construction use where no existing connections exist.

Demolition

The two buildings in Furnival Street – no.s 39 and 40 – are to be demolished. The former is a masonry building constructed in the 1940s or 1950s which houses ventilation equipment for the tunnels and a defunct goods lift. The latter is a concrete-framed building constructed in around 1990. The side facing the street is largely glazed, while the remainder of the building is clad in brickwork.

It is probable that asbestos is present in 39 Furnival Street and this will be removed by a specialist contractor before any demolition takes place. The later date of construction of 40 Furnival Street (and more recent refurbishments) means that the presence of asbestos is unlikely.

Following soft strip and the removal of mechanical, electrical and lift plant, demolition of both buildings is carried out in a traditional way, working from the top downwards and using small plant on the floor slabs to break the concrete and masonry into manageable pieces. These are loaded onto trucks in Furnival Street, covered and removed from site.

Following demolition works it is likely that a temporary structure will cover the site in order to minimise construction noise and dust.

Basement

Both buildings have existing basements which are of insufficient depth for the project, and so they are extended downwards. The site is limited in area and in order to maximise the usable space in the new basement, the following indicative sequence will be adopted:

- Prop existing basement walls.
- Remove ground floor slab.
- Cast a layer of sacrificial concrete against the existing basement walls.
- Core downwards through the thicker wall and install “soft” (bentonite cement) piles into the clay.
- Fill the connection tunnel that is below the south wall of the basement with foam concrete.
- Core downwards between the soft piles and install “hard” (reinforced concrete) piles to full depth. The two sets of piles form a hard-soft secant piled wall and provide a water cut-off.
- Excavate inside the basement, installing temporary props and waling beams to support the walls. The cast iron rings forming the existing lift shaft are removed as excavation proceeds.
- Install the lowest level basement slab.
- Work upwards, installing waterproofing, lining walls and intermediate floors, removing temporary props as construction progresses.

The detail of this sequence will be further developed by the contractor appointed for the works.

Shaft Enlargement

The existing lift shaft beneath 39 Furnival Street is expanded to provide sufficient access to the underground space. Lifts, a spiral stair and ductwork are all contained in the new shaft, which is larger than the existing shaft and ovoid (egg-shaped) in cross section.

It is constructed progressively, starting from the lowest slab level in the basement and working downwards to the tunnel level from the B4 basement slab. Approximately 1m is excavated, the existing shaft rings are moved, a sprayed concrete lining is installed; and the process is then repeated. The excavation is in London Clay which is likely to be self-supporting at each stage. The connections to the tunnels at the base of the shaft are also formed in sprayed concrete. The enlarged shaft extends below the tunnel connection because of the vertical circulation strategy and to accommodate lift pits. Finally, a reinforced concrete base slab is installed.

Superstructure

The superstructure of the new combined building is mainly post-tensioned flat slab construction, with reinforced concrete columns and shear walls. Some elements – the spiral stair and the level 02 gallery – are framed in steel.

Construction is relatively straightforward and will follow normal methods of construction for buildings of this type. It is envisaged that a small tower crane will be positioned in the lift shaft and used to lift reinforcement, the concrete skip, steel elements and formwork.

The indicative construction sequence for the structure is as follows:

- Cast ground floor columns and walls
- Erect falsework and formwork to support level 01.
- Fix reinforcement and pre-stressing tendons
- Pour level 01 slab. The slab is relatively small and it may be sufficient to place the concrete using a skip. Alternatively, to reduce the time taken for the pour, a concrete pump could be positioned in Furnival Street. Tendons are stressed to 50% after the concrete has gained its initial strength (typically the day following the pour) and to their full design stress a few days later. Falsework props are left in place so that level 01 does not carry the full weight of wet concrete from the next pour.
- Cast next lift for columns and walls – double height where required to support the level 02 gallery. Erect the spiral stair with its steel frame from ground level to level 01.

- Erect steel members forming the level 02 gallery. (This could be carried out later but the crane cannot be used to lift the steels after the slab above is constructed).

- Cast level 02 slab in southern (no 39) part of the building. Gallery slab (northern part, no 40) not poured at this stage so that level 03 falsework can pass between the steels.

- Erect the steel frame for the spiral stair from level 01 to level 02.

- Cast columns from level 02 to level 03 in southern part of building. Erect falsework and formwork to support level 03, fix reinforcement and pre-stressing tendons, pour slab, stress tendons, erect the spiral stair.

- Repeat for level 04 (roof of southern part).

- When the concrete at level 04 has reached its full design strength and the tendons have been fully stressed, remove the props from ground floor to level 01 may be removed.

- Repeat for level 05 (roof of northern part).

The detail of this sequence will be further developed by the contractor appointed for the works.

Construction Vehicle Access

Demolition materials are removed, and construction materials are delivered, from Furnival Street. This requires the closure of part of the street, from the site to a point near the junction with Holborn. Managed access will be provided to Westgate House, on the opposite side of Furnival Street, and a footpath will be maintained.

Vehicles, supervised by a banksman, reverse into Furnival Street from Holborn. The route via Norwich Street is not practicable because the junction with Furnival Street is too tight for tipper lorries, concrete trucks and other large vehicles. On leaving the site, vehicles will drive out forwards and regain Holborn.

Fulwood Place

Structural Strategy

Structural alterations are limited to the Ground and Basement floors at 31-33 High Holborn. Alterations are required to incorporate new lift and stair landings and enable visitor circulation. Further alterations are required to facilitate the MEP strategy. No alterations are proposed to the building above the 1st Floor.

Alterations to the reinforced concrete structure include openings to be made through the concrete 'Pillbox'/'Bunker' walls and replacement of the concrete floor slabs at a lower level. In addition, openings are required through perimeter load bearing masonry walls. Structural alterations and the relevant temporary works will be designed to minimise the impact on the structure above and adjacent.

Tunnels

It is proposed that two existing shaft structures on the project are altered to provide sufficient access to the underground space they are:

- The existing lift shaft beneath 39 Furnival Street, shown in Figure 5-1, below will be expanded to provide sufficient access to the underground space;

The existing northern shaft beneath Fulwood Place was used as a ventilation shaft, shown in Figure 174.

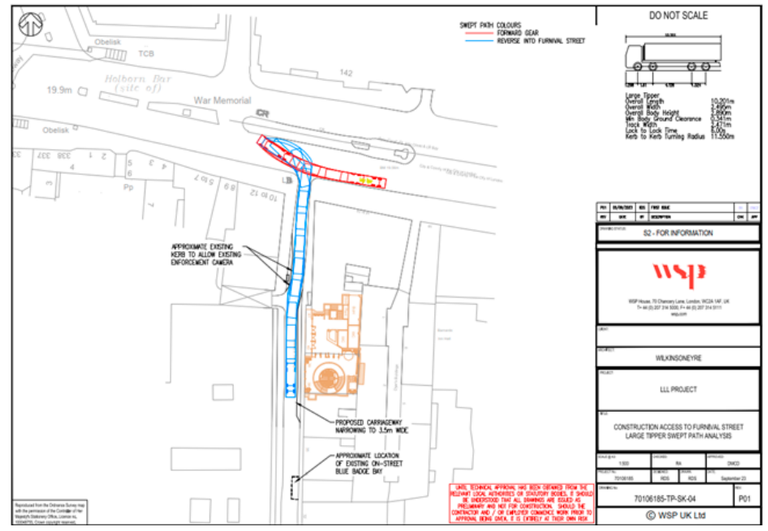
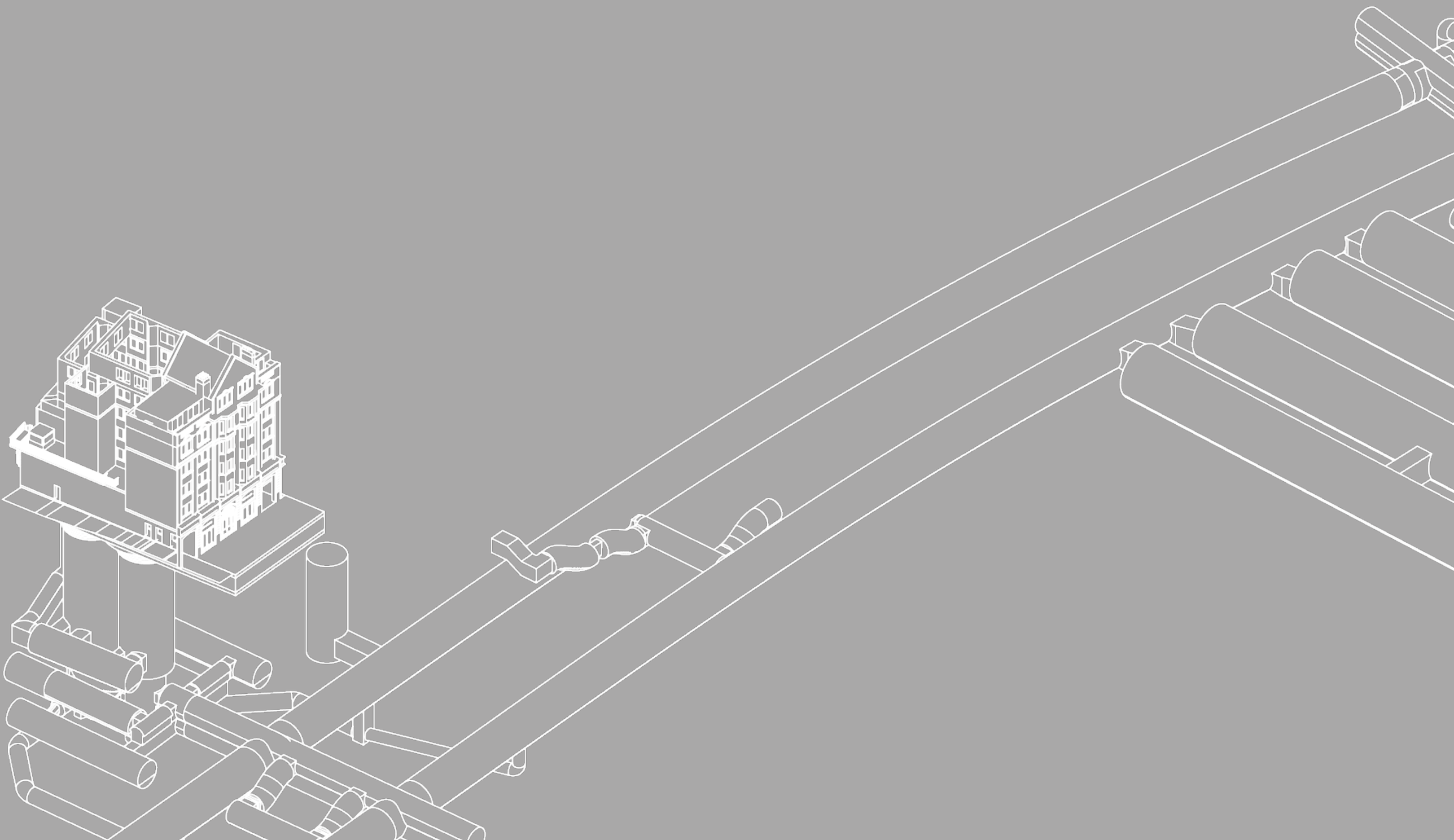
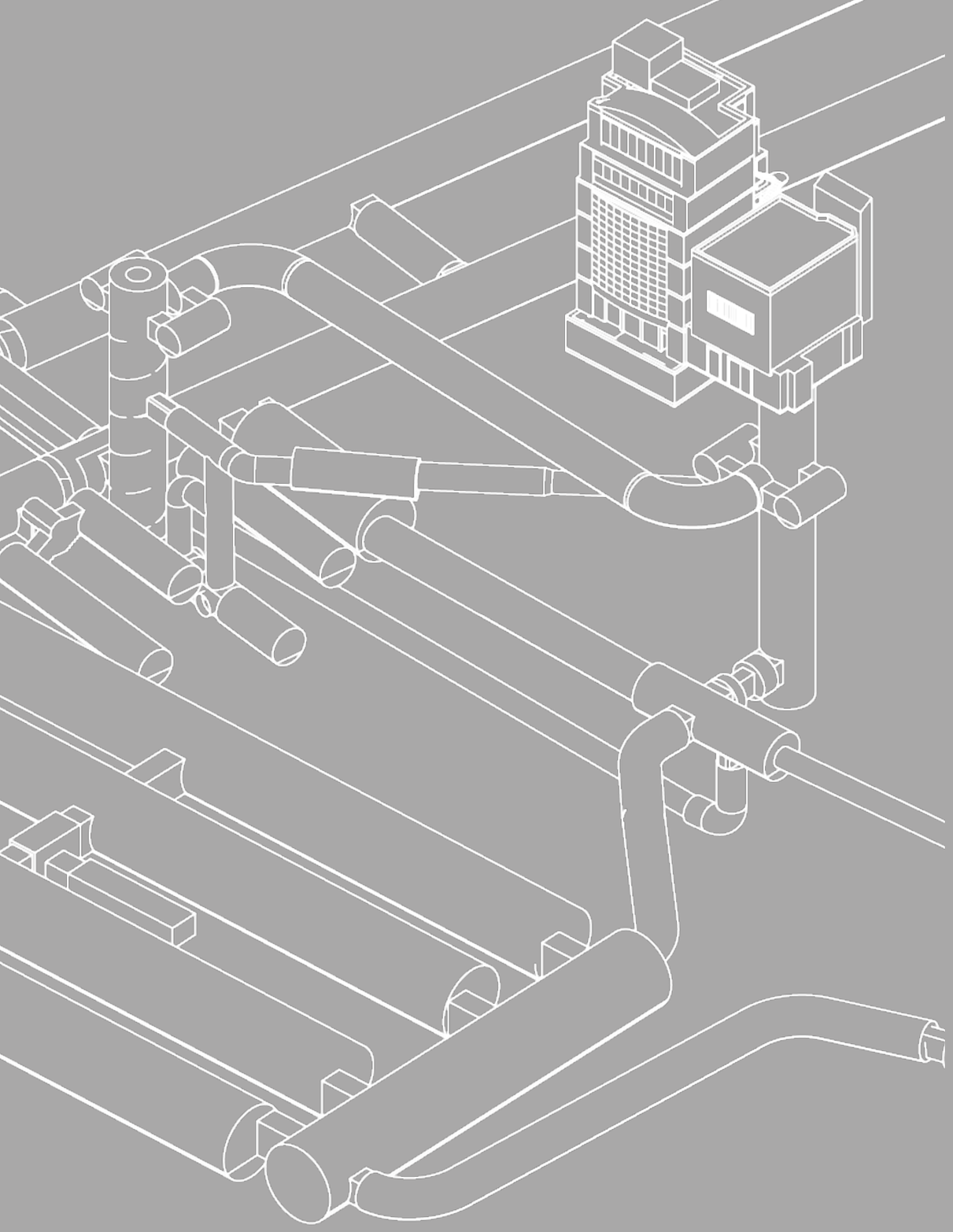


Figure 174. Will be converted and extended to provide fireman's lift access to the underground space





6 Sustainability

6.1 Sustainability Vision

This report summarises the sustainability vision for the Proposed Development, considering the proposed design at RIBA Stage 2 across a number of sustainability themes and describes the initiatives planned to take place during the detailed design and construction stages, see high level summary in Figure 2.

Sustainability Vision

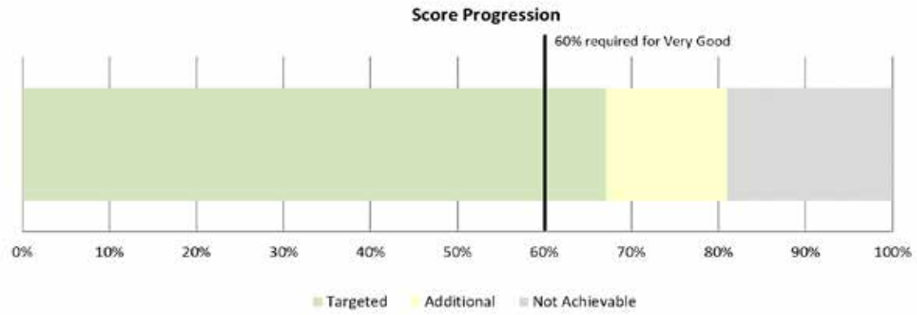
The design process has been developed exploring several innovative solutions to minimise the use of resources. The Proposed Development is a retention led development, which incorporates the following sustainability measures, including:

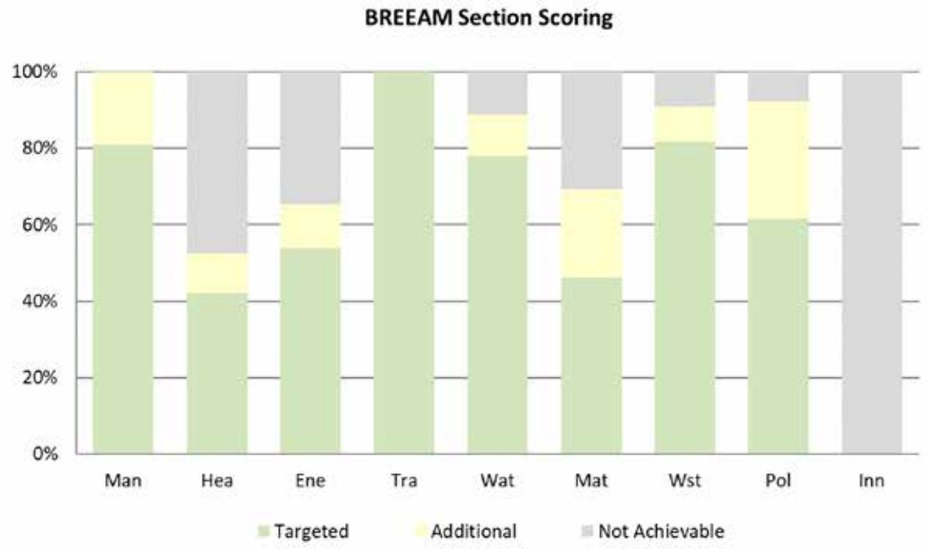
- An energy strategy that follows the GLA energy hierarchy and achieves an overall 41% carbon reduction over Part L 2021 minimum regulated carbon emissions through innovative building services design and low zero carbon technology.
- Targets the BREEAM rating level of "Very Good" for the development.
- A high level of heat recovery is present in the development to ensure a highly efficiency all electric servicing strategy.

The Proposed Development also provide positive contributions to the local community and environment, including:

- A visitor attraction to bring social value to the area.
- Preserving a historic asset and allowing the community to experience the space first hand.
- Collaboration with universities or similar institutions to creative innovative initiatives.

6.2 Preliminary BREEAM Assessment





The aspiration for the Scheme is to achieve a rating of 'high-score Very Good'.

After introducing the bespoke criteria to the strategy discussed before the targeted score is 67.06% (Very good) with a potential to achieve an Excellent rating (>80%).

The additional credits to achieve additional credits has discussed with design team to incorporate into the project cost plan to assess the project costs required to achieve an Excellent rating.

At RIBA Stage 2, BREEAM assessment scoring should allow sufficient margin in targeted credits as the scheme progresses.

6.3 Circular Economy and Whole Life Carbon

The Proposed Development aligns with the GLA's Circular Economy Targets by emphasizing resource conservation, waste elimination, and sustainable waste management:

- 20% of new materials used will contain reused/recycled content.
- 95% of construction & demolition waste will be reused/recycled/ diverted from landfill
- 95% of excavation waste will have beneficial use
- 65% of municipal waste will be recycled by 2030

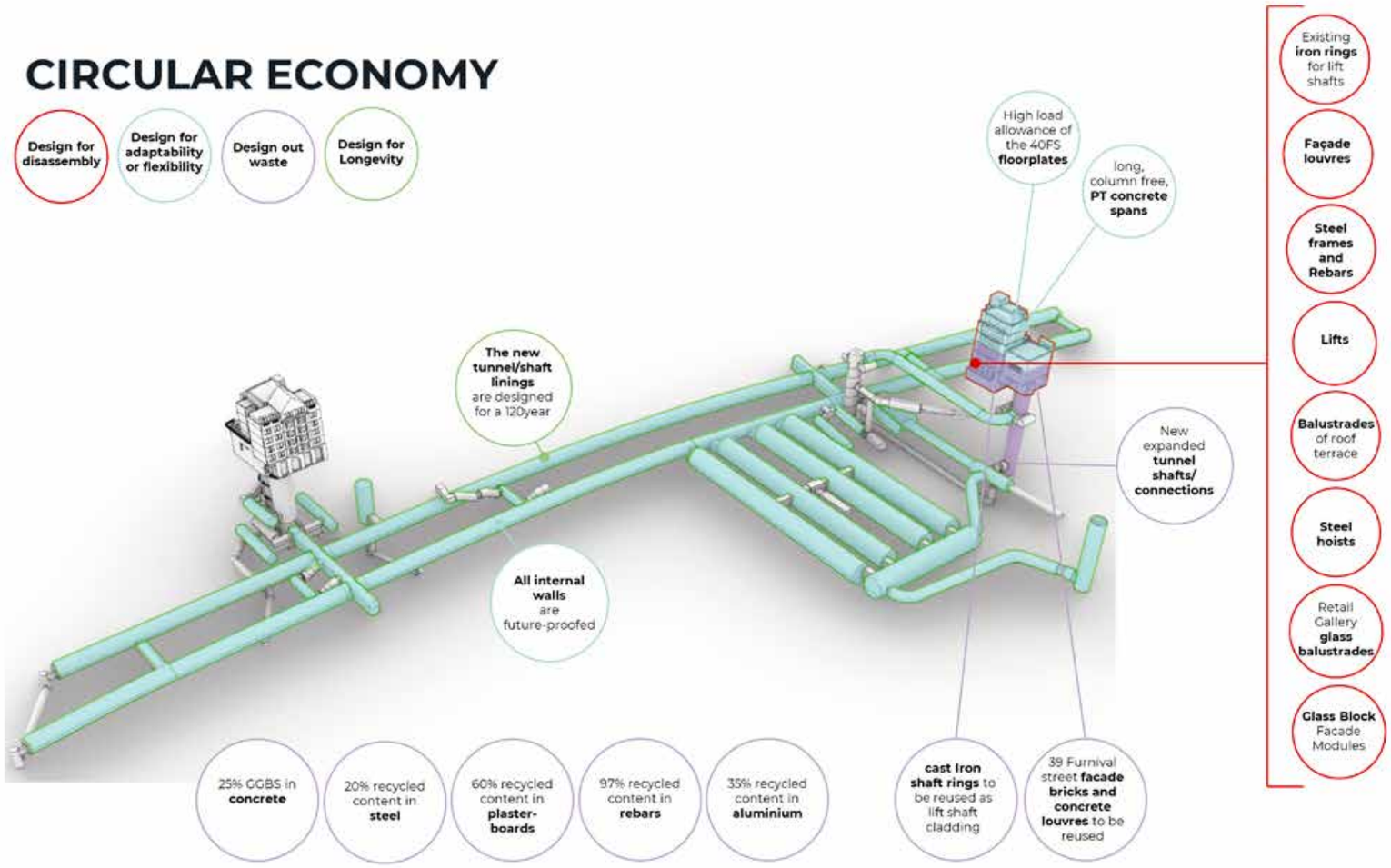
As summarised in Figure 1, various measures are deployed to meet the commitments. These include the design for disassembly, adaptability, and longevity and in general to design out waste.

The proposed development demonstrates a strong commitment to circular economy. Various elements of the building, including lifts, structures, glass balustrades, façades, and steel frames, have been designed for disassembly and recycling. Additionally, it is aimed to extend the lifespan of the structure, to at least 50 years. The project also emphasizes the use of recyclable materials in Mechanical, electrical, and plumbing (MEP) systems. The use of steel frames and easily modifiable internal partitions further emphasizes the building's adaptability. MEP are also designed for easy de-commissioning and recycling.

The project implemented a range of strategies designed to enhance its longevity. Various building elements, including lifts, structures, MEP systems, and architectural components, are designed for disassembly and recycling. In addition, the project focuses on prolonging the building's lifespan to at least 50 years through a combination of long-spanning slabs, flexible floorplates, and adaptable tunnel refurbishments.

To design out waste, the focus has been on optimizing material efficiency, retaining existing buildings and elements as much as possible, and reducing the consumption of raw materials by incorporating recycled content throughout the development.

Due to the Proposed Development being the retention and refurbishment of the tunnel and Fulwood place and new build for 39-40 Furnival Street, different approaches are required for different parts of the development to support the achievement of the Circular Economy principles. Figure 6-1 shows some of the approaches adopted for the new development and Figure 6-2 shows some approaches for existing buildings.



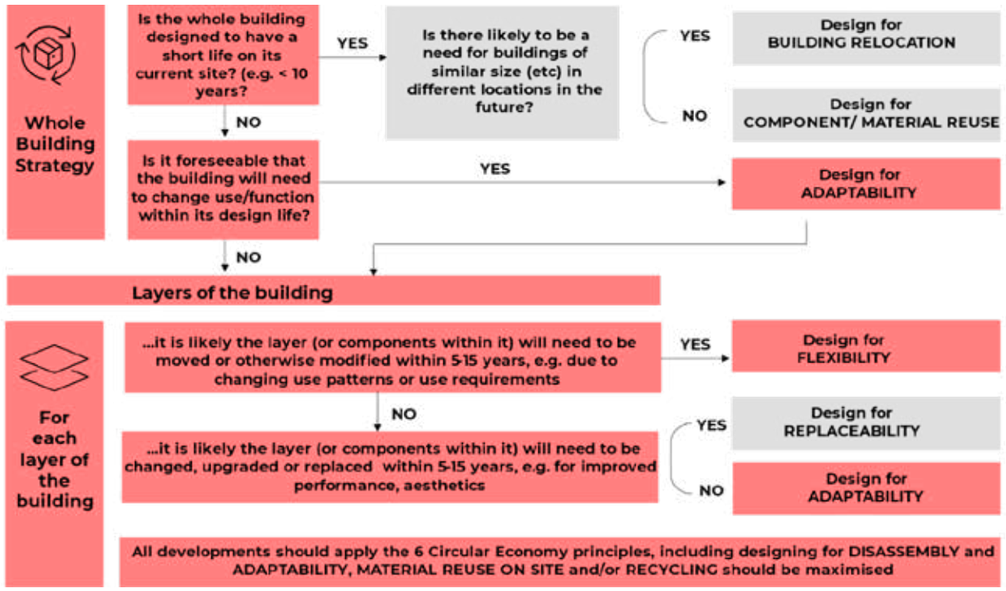


Figure 176. Design Approaches for New Buildings – The London Tunnels (Source: Adapted from the London Plan CES Guidance, March 2022)

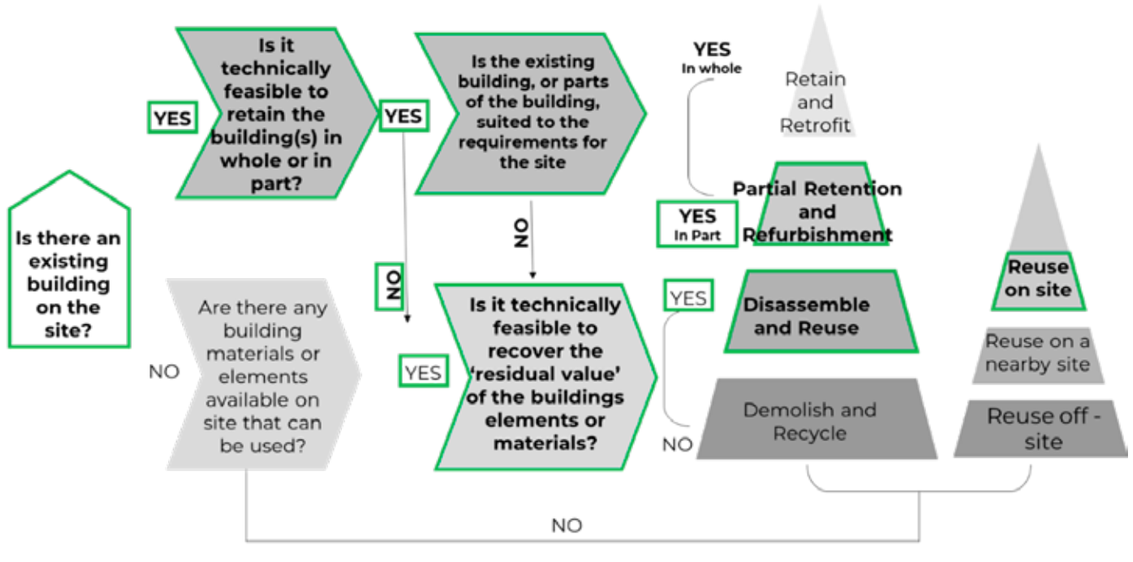


Figure 175. Design Approaches for Existing Structure/Buildings – The London Tunnels (Source: Adapted from the London Plan CES Guidance, March 2022)

In the Whole Life Carbon analysis, three scenarios have been considered to include for current design development and future potential scenarios that may be included in the CAT B design. These are as follows:

- Low Scenario: the baseline-low case scenario represents the base building CAT A design where the building operates with anticipated occupancy and opening hours but there is no energy intensive audio-visual equipment installed.

- Medium Scenario: For the medium Scenario, the AV system is assumed to be mostly projectors with some screens, equivalent to roughly 50% AV coverage of the high scenario. This scenario lines up with the Medium Scenario in the Be Seen energy analysis.

- High Scenario: the high scenario is based on anticipated occupancy and opening hours with a higher proportion of the tunnels containing AV equipment. The AV system in this case is assumed to be mostly LED screens with some projectors. This scenario lines up with the High and Worst Scenario in the Be Seen energy analysis.

The Whole Life Carbon for these three scenarios have been considered and is reported in the Whole Life Carbon report. The screens and the projectors are the highest contributors to both upfront and whole life carbon emissions. As can be observed, modules B-C are significant contributors to the carbon, consisting predominantly of life cycle stage B4 (replacement) accounting for approximately 50% of WLC emissions for the medium scenario, with A1-A3 materials being the second largest contributor to this. However, the efficient use of materials in addition to designing out waste throughout the design and construction process has led to significant reductions in embodied emissions which can be observed throughout this report. Various scenarios have been investigated as outlined above and the impact of screens has been acknowledged by the design team and will be taken into consideration when developing the CAT B design through product selection, compensating measures in other areas and optimised AV design.

Although The London Tunnels has been compared against the GLA retail benchmarks (as this is the most applicable GLA benchmark available), this comparison is not necessarily the most appropriate due to the bespoke nature of the project with proposed uses as a museum & event space. As a result, TLT has also been compared to other retention focused cultural developments in London such as the Museum of London and Liverpool Everyman Theatre, comparing both kg CO2e/m2 and kg CO2e/visitor.

6.4 Energy

The energy strategy has been structured in accordance with GLA's energy hierarchy: Be Lean, Be Clean, Be Green and Be Seen. The Proposed Development has been developed to achieve an energy an efficient and sustainable development.

The Proposed Development will be designed to achieve optimum energy performance, and will incorporate the following design features:

Be Lean

- During design development, significant consideration has been given to how the building fabric will respond to its environment in order that the energy consumption of the building is reduced as far as possible through passive means.

- The vast majority of the project makes use of existing structures. The project has some design constraints due to its heritage and bespoke nature.

- The tunnels have a high level of insulation and thermal mass as result of the surrounding soil which encapsulates all external surfaces of the tunnels.

- Passive design measures will be incorporated into the design to reduce energy demand and the risk of overheating in the above ground buildings.

- A high-performance building services solution is proposed for the Proposed Development.

Be Clean

• WSP has been in contact with the local heat network provider regarding a proposed District Heat Network. It has been determined that at the time of the submission it is not possible to connect to a planned District Heat Network. Conversations with the nearby DHN provider are ongoing;

• Subject to future legal and technical agreements, the plant space will be designed to be adaptable for future connection into the district heating network;

Be Green

- Terminal units are designed to achieve a specific fan power in operation lower than the Part L 2021 limiting SFP;

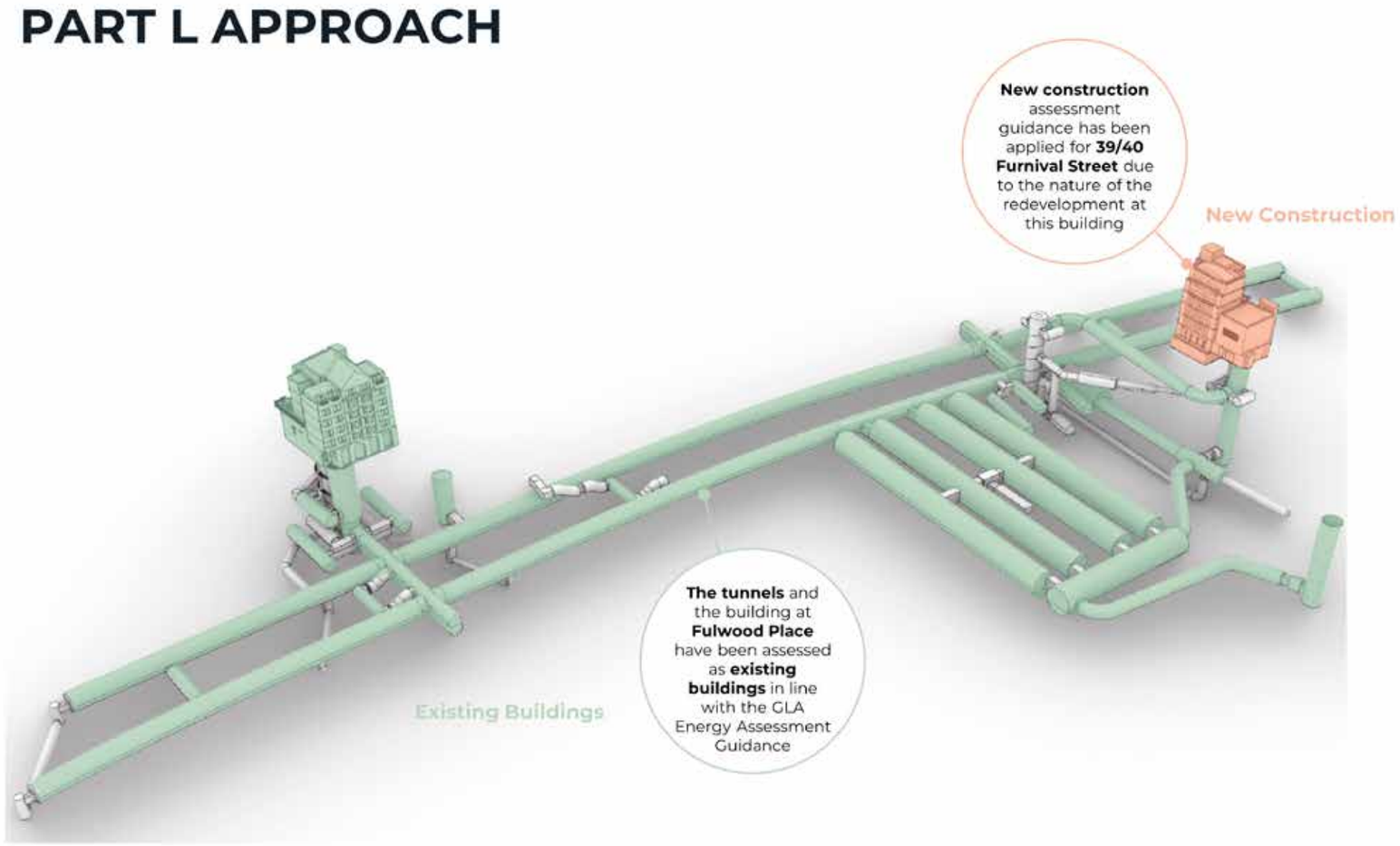


Figure 177. PART L APPROACH

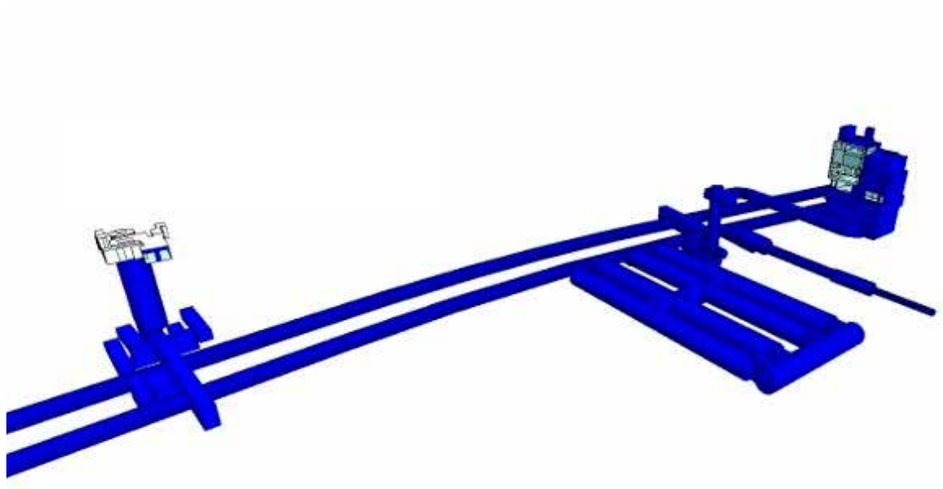


Figure 178. Site Wide Axonometric Showing Part L Approach

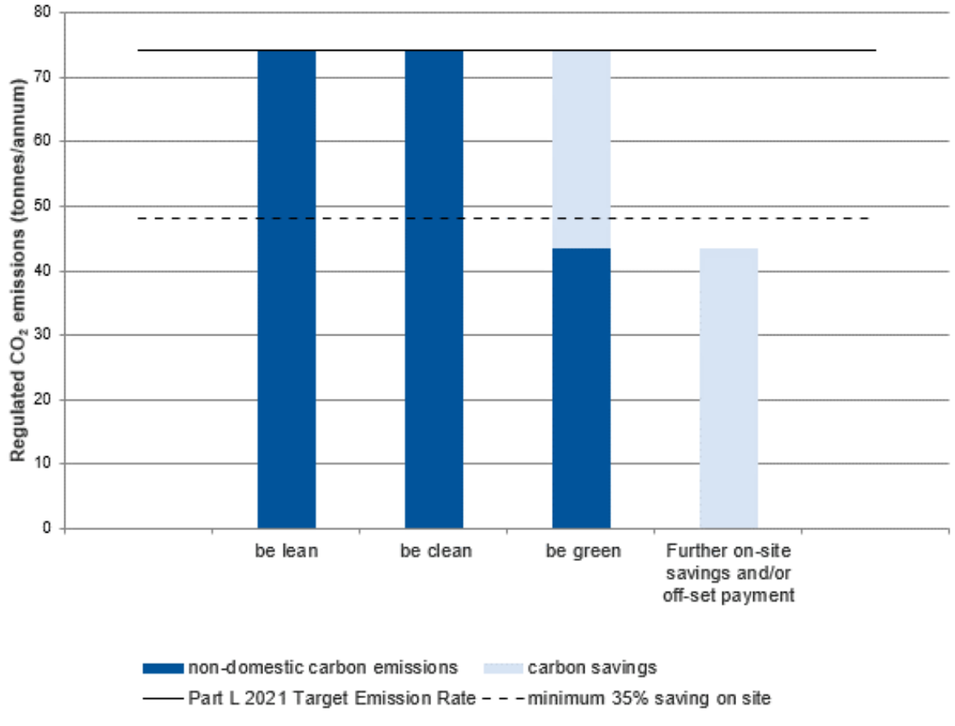


Figure 179. Carbon emissions savings bar chart

- All spaces will include 100% low energy lighting. Lighting controls will be specified as appropriate across the development; and
- Heat recovery heat pumps will allow for simultaneous heating and cooling through an all-electric low-carbon hot water.
- A high level of heat recovery is present in the design with heat recovery chillers.
- Highly efficient water cooled chillers will provide cooling.

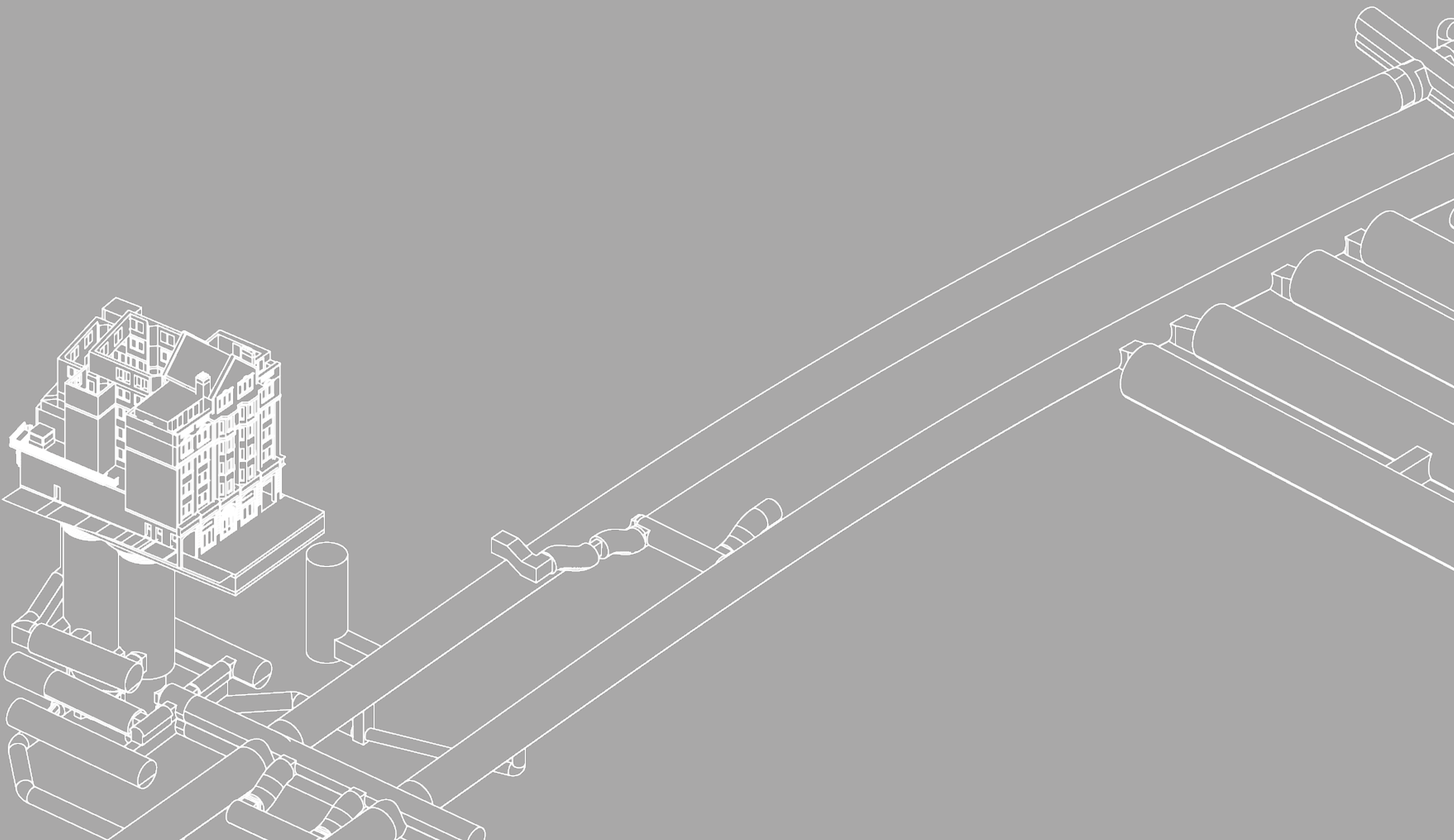
Be Seen

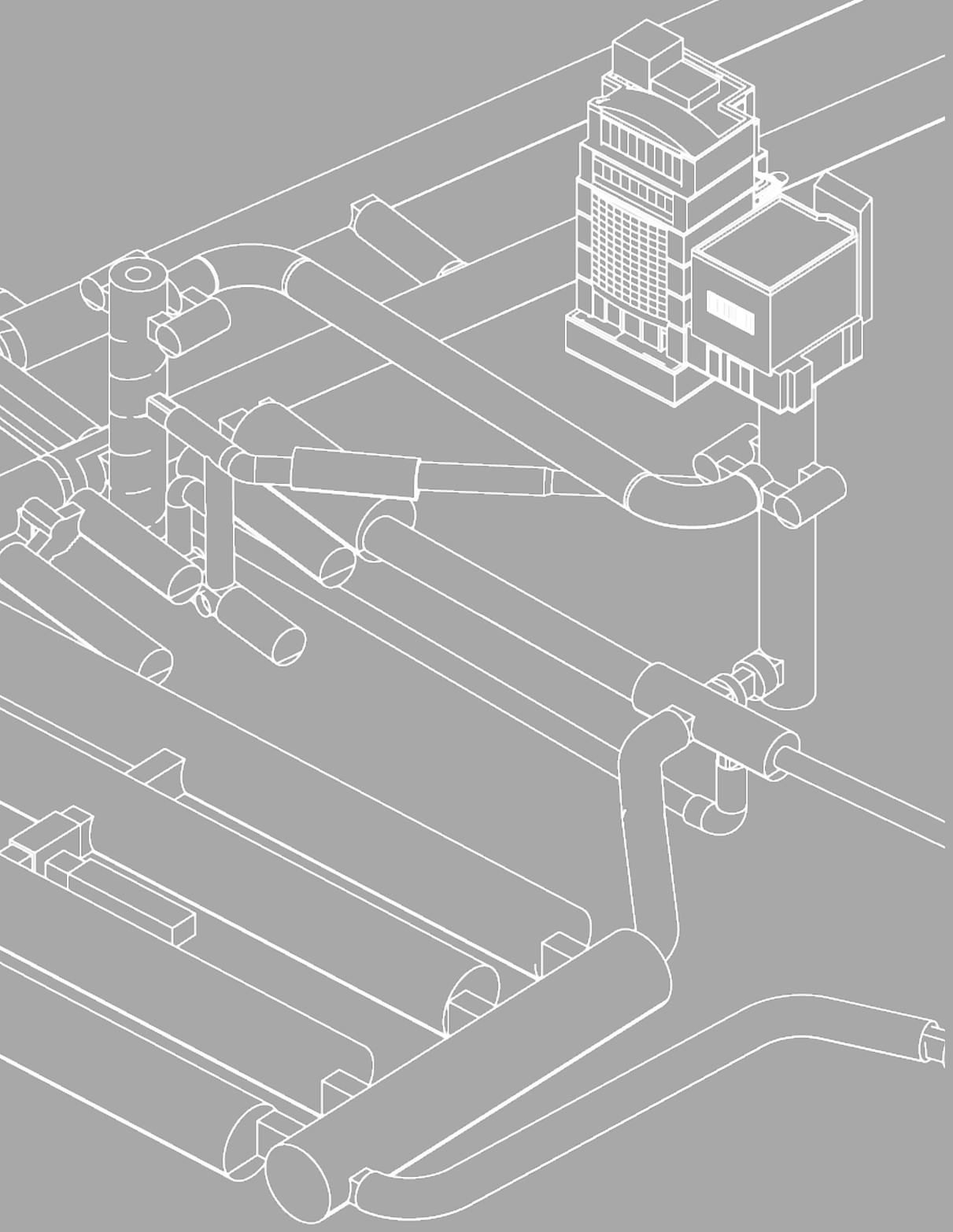
- A detailed TM54 operational energy analysis has been carried out based on four different use scenarios.

RESULTS

WSP utilised a dynamic simulation software package, the Virtual Environment (VE) suite from Integrated Environmental Solutions (IES), image below.

The carbon emission reduction of the proposed development has been maximised to achieve the largest improvement possible on site. While the development falls short of the 35% reduction, all buildings (including tunnels) achieve Building Regulations Part L compliance.





7 Accessibility

7.1 Introduction

The scheme

The London Tunnels project will convert a series of disused WW2 / Cold War era tunnels into a subterranean visitor and cultural attraction. Access to the Tunnels from street level is via either 38-41 Furnival Street or Fulwood Place. The existing buildings on Furnival Street will be demolished and replaced with 2no new buildings (main entrance to the Tunnels and retail / offices above ground); Fulwood Place will be renovated to provide a secondary entrance (School groups / access to the bar) and emergency exit.

Purpose of the report

David Bonnett Associates (DBA) was appointed on behalf of The London Tunnels PLC as Access Consultant to The London Tunnels design team. DBA has carried out an access review of the proposed new/refurbished above ground buildings and the proposed renovation of the Tunnels.

This Accessibility Statement has been prepared to accompany the planning application of the proposed London Tunnels across the City of London and London Borough of Camden, and is based on a review of the proposals by WilkinsonEyre.

Method of review

The Accessibility Statement describes the access provisions using a journey around the Proposed Development as follows:

- Arrival at the Site;
- Approaches to the buildings;
- Entrance ways;
- Horizontal and vertical circulation;
- Access to facilities;
- Sanitary provision; and
- The emergency evacuation strategy.

Step-free external and internal routes, lifts, stairs, WC.s and other access features are highlighted on access overlays throughout this Accessibility Statement.

The statement does not describe or evaluate any part of the development that is used solely for inspection, repair or maintenance of any service or fitting, in accordance with Approved Document M. If a disabled person requires access to these areas as part of their work then their employer is expected to take all reasonable steps to ensure that there are no barriers to them carrying out their work. Any building adjustments that are required would be carried out at that time.

The Accessibility Statement describes how the Scheme will be progressed with consideration of the principles of inclusive design.

The report considers the requirements of all visitors, staff and wider community including:

- People with mobility impairments;
- People with vision impairments;
- People with neuro-diverse requirements;
- Deaf people;
- Older people; and
- Small children.

The meaning of 'disabled' in this Accessibility Statement is as defined by Equality Act 2010.

The standards and policy

The access provisions are reviewed against the access regulations and standards that apply, which are identified below.

National Regulations

The Building Regulations 2010, Approved Document M (Access to and use of buildings) Volume 2: Building other than dwellings, HM Government, 2015 edition incorporating 2020 amendments. (Hereafter referred to as AD M Vol.2).

The Building Regulations 2010, Approved Document K (Protection from falling, collision and impact), HM Government, 2013 edition. (Hereafter referred to as AD K).

The Building Regulations 2010, Approved Document B (Fire safety) Volume 2: Buildings other than dwellings, HM Government, 2019 edition incorporating 2020 and 2022 amendments. (Hereafter referred to as AD B Vol.2).

Best Practice

British Standard 8300:2018 Design of an Accessible and Inclusive Built Environment,
Part 1: External Environment - Code of Practice,
Part 2: Buildings - Code of Practice,
British Standards Institution, 2018. (Hereafter referred to as BS8300-1:2018 or BS8300-2:2018).

British Standard 9999:2017 Code of Practice for Fire Safety in the Design, Management and use of Buildings, British Standards Institution, 2017.

National Planning Policy

National Planning Policy Framework (NPPF), Department for Levelling Up, Housing and Communities, 2023.

London Planning Policy

- The London Plan: Spatial Development Strategy for Greater London, Mayor of London, March 2021.

The London Plan (2021) is part of the statutory development plan for London, meaning that the policies in the Plan should inform decisions on planning applications across the capital. Relevant policies relating to access and design standards are summarised in the SPG guidance below.

- Social Infrastructure Supplementary Planning Guidance May 2015, London Plan 2015 Implementation Framework, GLA, 2015.

Local Policy

- City of London Local Plan, January 2015.
- Camden Local Plan, July 2017.

- Access for all, Camden Planning Guidance, March 2019.

A full list of references and a description of relevant legislation, regulations, standards and guidance are detailed in section 7.7 of this Statement.

Note:
DBA provides guidance and advice as access consultants. The consultancy does not officially approve designs, nor does it provide confirmation that a design complies with statutory standards. This remains the responsibility of the designers and the approvals authority.

Interpretation of the standards

Approved Documents M, K and BS 8300:2018 provide general access advice, but refer to other standards and regulations about specific aspects of buildings and their immediate surroundings. Therefore, several separately authored documents are referred to, including good practice guidance books written by specialists. Refer to Appendix 1 for more details.

There are no national regulatory controls governing extended external spaces and landscaping other than Best Practice Guidance. For primary routes and approaches to buildings Approved Documents M are taken as a bench mark for determining accessibility. With regards to streetscape and pavement design, guidance is provided by the Department for Transport's Inclusive Mobility Guide and Transport Notes and BS8300:2018, Part 1: External Environments.

Access standards are in a continuing state of development because of changing expectations and legislation. The nature of these changing requirements and standards can result in anomalies and contradictions. Therefore it is important that access and inclusivity are considered and refined throughout the design process. The design of the scheme should seek to interpret these standards to provide the best possible level of inclusive design and this Accessibility Statement describes situations and solutions where interpretation may be necessary.

The Equality Act

Statutory consents

When considering a reasonable adjustment to a physical feature , the Equality Act does not override the need to obtain consents such as planning permission, building regulations approval, listed building consent, scheduled monument consent and fire regulations. If the consent is not given, there is still a duty to consider a reasonable means of avoiding the feature.

Note that the Public Sector Equality duty requires public bodies to show evidence that they have considered how their decisions affect people with protected characteristics under the Equality Act.

Refer to section 7.7 of this Statement for further information.

Design Standards

Service providers and public authorities carrying out their functions do not have to remove or alter a physical feature of a building for a period of 10 years from construction or installation if it accords with the relevant objectives, design considerations and provisions in Approved Document M. They may still need to consider a reasonable means of avoiding the feature if it presents a barrier to inclusion.

Management and maintenance

Once building works are complete, full accessibility will rely on effective facilities management.

Management items will range from provision of a good quality website, effective maintenance and staff training. Inspection of specialist devices and training of staff should become a regular element of facilities management. Access Management Plans can form part of a building operator's on-going duties and may be required as part of the planning process.

Project constraints

The London Tunnels has several constraints that have required an innovative or managed approach to access including:

- Limited footprint of Furnival Street;
- Existing levels and structure of Fulwood Place;
- Structural constraints and conservation of the existing Tunnels;
- Existing levels in the Tunnels;
- Operational challenges derived from security requirements.

Interpretation of the standards will be required to address these constraints and will be further explained in this Accessibility Statement.

Consultation

A number of parties have been consulted during the design process as follows:

- Public consultation through a variety of channels, including meetings, in-person events, a consultation website, digital and hard copy survey and telephone and email.
- Pre-application meeting with CoL Accessibility Officer on 7 November 2023.
- Engagement meeting with CoLAG (City of London Accessibility Group) scheduled for 29 November 2023.

Feedback from the public as well as access experts and representative groups has been, and will continue to be, incorporated into the proposals.

7.2 Overview of proposals

Access aims

The Proposed Development is designed to be as inclusive as possible so that it can be comfortably and independently used by people working in and visiting the development, and the wider community.

The Development has the potential to meet the guidance of Approved Document M Volume 2, and the access and inclusive design policies of the Greater London Authority as a minimum.

Designing Inclusively is defined by The Commission for Architecture and the Built Environment (CABE) as:

- Placing people at the heart of the design process;
- Acknowledging diversity and difference;
- Offering choice where a single design solution cannot accommodate all users;
- Providing for flexibility in use;
- Providing buildings and environments that are convenient and enjoyable to use for everyone.

Where possible the design of the Proposed Development has also considered and incorporated the following:

- Design guidance stated in relevant British Standards and other current good practice guidance about meeting the requirements of disabled people; and
- Contemporary requirements and expectations.

Summary of access provisions

The proposals for the development at this stage demonstrate that a good level of inclusive design will be achieved by the finished Scheme, given the constraints of the existing structures.

The key access provisions for the Proposed Development include:

- Incorporation of the principles for inclusive design wherever possible, following most recent good practice guidance;
- Accessible routes to all connections with local pedestrian routes and public transport;
- Pedestrian approaches to the entrances that are safe, segregated from vehicle traffic;
- Secured accessible cycle parking for staff at ground floor of Furnival Street, in line with policies of the London Plan. Visitor cycle parking will be provided on the public realm in Holborn and Fulwood Place;
- Step-free access to all publicly accessible parts of the buildings. Step-free access for staff use of the roof terrace in Furnival Street;
- Large passenger lifts with capacity to accommodate Type C mobility scooter access to the retail floors of Furnival Street and the Tunnels;
- Wheelchair-accessible sanitary facilities for visitors upon arrival and to serve the retail areas in Furnival Street, and within the Tunnels, including provision of a Changing Places toilet in line with AD M Vol. 2;
- Welfare facilities for visitors such as wheelchair-accessible baby changing facilities at Furnival Street and in the Tunnels. Quiet spaces, a first aid room and seating will be provided in the Tunnels;
- Wheelchair-accessible sanitary and refreshment facilities to serve the staff areas in Furnival Street;
- Evacuation lifts for the safe and dignified evacuation of disabled users.

7.3 Arrival

Public transport connections

The Proposed Development is designed to be as inclusive as possible so that it can be comfortably and independently used by people working in and visiting the development, and the wider community.

Accessible transport facilities are key elements of urban developments. Urban areas are more likely to be well served by a choice of connections.

The Proposed Development Site has a Public Transport Level (PTAL) of 6b which is defined as having Excellent access to public transport.

The PTAL is an indication of the frequency, reliability and distance of public transport services close to a site; it does not take the accessibility of transport services into account. However, the PTAL is important to the Access Strategy because it is used to evaluate the reliance on cars that current and future users of the building are likely to have, with the implication that less reliance on cars corresponds to a greater reliance on public transport.

Since the public transport is not accessible for all, the development has made the following provision for alternative means of access to the Site, which are described in the sections that follow:

- Drop off opportunities on Holborn and Furnival Street;
- Accessible cycle storage for staff and visitors.

Buses

All areas of the development have convenient access to accessible public bus services.

Fulwood Place: Stops located in front of the Site within a maximum distance of 100m from the entrance are served by bus routes 8, 59, 133, N8, N25, and N242. Additional bus routes along Gray's Inn Road, with stops located up to 250m from the Site.

Furnival Street: Stops located on Holborn within a maximum distance of 110m from the entrance are served by bus routes 17, 46, 8, 59, 133, and N242. Additional bus routes along Gray's Inn Road, with stops located up to 250m from the Site.

All London buses (except two 'heritage' routes) are accessible buses that 'kneel' to minimise height differences between the bus floor and pavement, and have ramps and space inside for wheelchair and pushchair users. However, not all disabled people can use them and therefore setting-down bays for taxis and private cars are essential.

Rail services

Farringdon Station is 700m from the entrance to Fulwood Place and 600m from the entrance to Furnival Street, served by Thameslink, Elizabeth, Circle, Hammersmith & City and Metropolitan lines. Farringdon Station has step free access from street to the trains for the Elizabeth and Thames link trains from Zone C. Staff assistance is required at the platform level for other Thameslink services and underground lines.

London Underground

Tottenham Court Road Station is a 19 minute walk from the entrance to Fulwood Place and a 22 minute walk from the entrance to Furnival Street, served by the Elizabeth, Central, and Northern lines. Tottenham Court Road Station has step free access from street to the trains for the Elizabeth and Northern lines. Staff assistance is required at the platform level for the Central line.

Holborn and Chancery Lane stations do not provide step-free access from the street to the platforms.

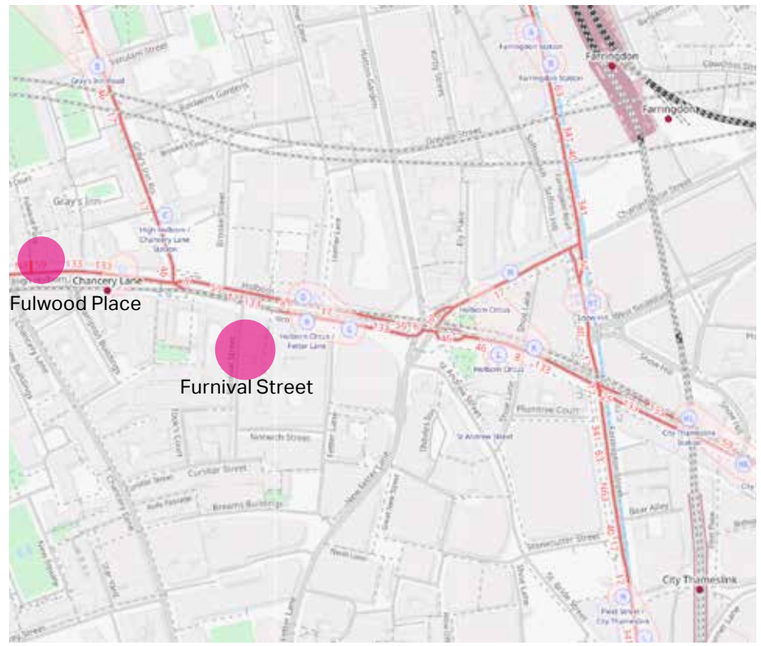


Figure 180. Transport Plan

Drop-off points

Community transport and taxis

Some users will rely on community transport, taxis or mini cabs.

Taxis and private vehicles will be able to drop on Furnival Street or Holborn as per existing highway restrictions. Coaches will drop off / pick up on Holborn.

Furnival Street is proposed to have 100mm high kerbs on both sides, to enable adapted taxis to deploy access ramps with safe gradients.

Car parking

The development will be car-free in line with local planning policies.

Due to the limited footprint of the building on Furnival Street and Fulwood Place, it is not feasible to provide on-site accessible car parking. Accessible car parking for Blue Badge holders is available on-street.

In the City of London, Blue Badge holders can park on designated disabled bays for up to four hours on weekdays, and with no time limit on weekends. The Blue Badge scheme does not fully apply in the City of London, but allocated parking is provided for holders of the Red Badge, run by the City of London Corporation.

In the London Borough of Camden, Blue Badge card holders can park on any disabled bays, and on any park and display bay for unlimited time for free in single and yellow lines, they can park for up to three hours displaying the clock, except for the Green Badge zone. In this area, a Blue Badge is only valid with a Green Badge. Green Badges are available to Blue Badge holders who live, work or study in Camden in the green badge zone.

The Blue Badge bays closest to the development are on Furnival Street (40m away from the main public entrance via Furnival Street building) and on Southampton Buildings (located across High Holborn and approximately 150m away from the secondary entrance via Fulwood Place).

Cycle parking

A total of 12 long-stay cycle parking spaces will be provided in a secure and sheltered store at ground floor of Furnival Street, accessed directly from the emergency exit and via a 1400mm wide fire egress corridor. Long-stay cycle parking is intended for staff use only, and will include 2 accessible Sheffield stands.

Short-stay parking will be provided in High Holborn's central reservation (18 spaces) and in Fulwood Place (4 spaces). Visitor cycle parking will be provided in the form of Sheffield stands, installed 1.2m apart, with space for larger / adapted cycles at the ends of the rows, in line with the London Cycling Design Standards as required by the London Plan.

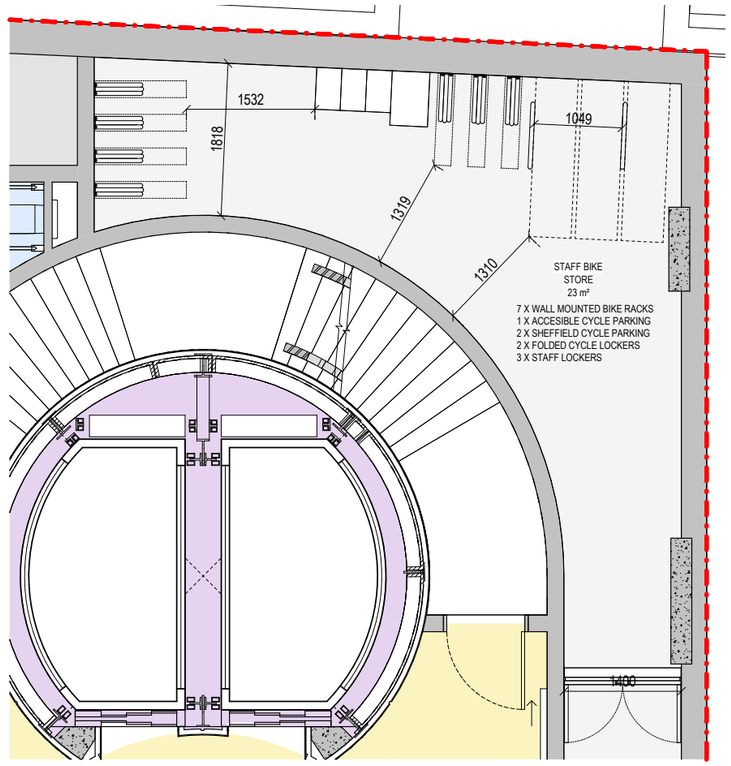


Figure 181. 39-40 Furnival Street - Ground Floor Bike Store

Pedestrian access

Description of Site - terrain

The London Tunnels Site is located between the London Boroughs of City of London (Furnival Street) and Camden (Fulwood Place).

The Tunnels sit approximately 40m below ground and have a level drop of 7.1m along 420m from west to east.

Approaches to entrances

The two buildings that provide access to the Tunnels are approached from existing public pavements.

The main public entrance, located on 38-41 Furnival Street, is accessed from Furnival Street, a one-way road with approximately 1.2m wide pavements to both sides. The proposed new building will have a recessed facade, providing ample manoeuvring and queueing space over 3m wide in front of the entrance. The section of pavement running in front of the facade is mostly level.

The existing building on Fulwood Place provides a secondary public entrance and emergency exit to and from the Tunnels. Fulwood Place is a pedestrianised street, accessed from High Holborn through an alleyway. The entrances to Fulwood Place building are located in the aforementioned alleyway, which is over 2.5m wide and slopes down from High Holborn with a series of 1:21 gradients. Level landings of at least 1.5x1.5m will be provided in front of the accessible entrance, with a gradient no steeper than 1:60.

The design intent is to provide doors that are recessed into the façades to avoid projections into access routes that create a hazard for visually impaired users. However, if required, guarding will be incorporated and detailed at the appropriate design stage.

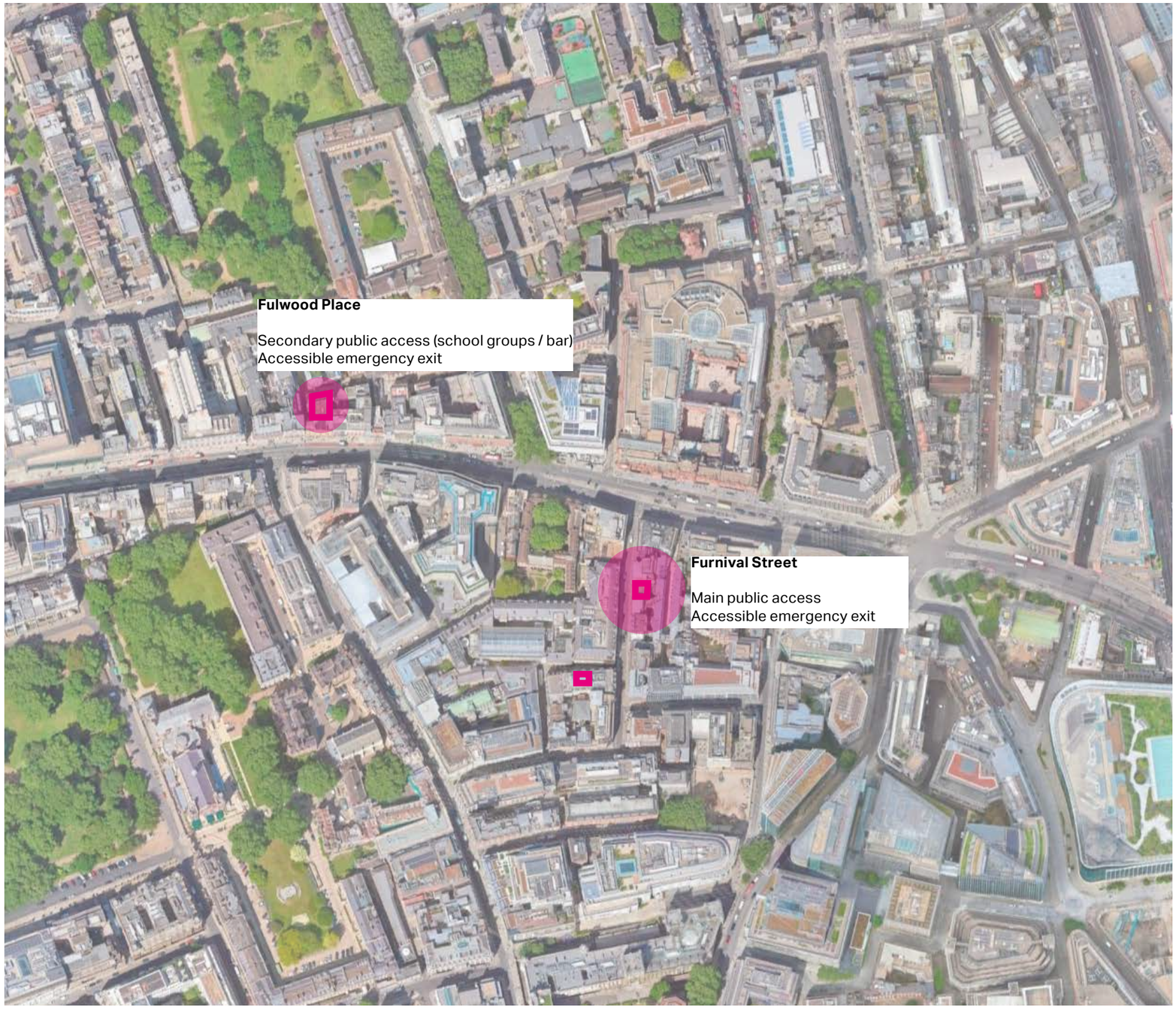


Figure 182. Aerial view of the development above ground level

7.4 38-41 Furnival Street

38-41 Furnival Street is a proposed new building in the Site of two existing buildings that are to be demolished. It will provide the main public access point to the Tunnels from street level, and retail space and staff facilities at upper levels. 38-41 Furnival Street will also house significant plant space at basement levels and level 3.

Entrances

Public access will be made from Furnival Street. The entrance will be fitted with an automated hinged door. A one-way circulation route is proposed for public access into Furnival Street, with a separate exit that doubles up as emergency egress.

In addition, there will be a dedicated exit from the retail and staff floors, fitted with an automated sliding door.

A secondary set of stairs will lead from the basement plant rooms to ground level and discharge to Furnival Street. A separate escape stair will lead from the above ground levels and also discharge to Furnival Street.

Public entrance doors will provide a clear opening width of at least 1m. The facade is recessed and all entrances are covered by the building overhang. Accessible exits will provide a minimum door clear opening width of 800mm through at least one leaf. Entrances will be designed to meet the guidance of AD M Vol.2, including nominally level thresholds (or a maximum upstand of 15mm if raised thresholds are unavoidable).

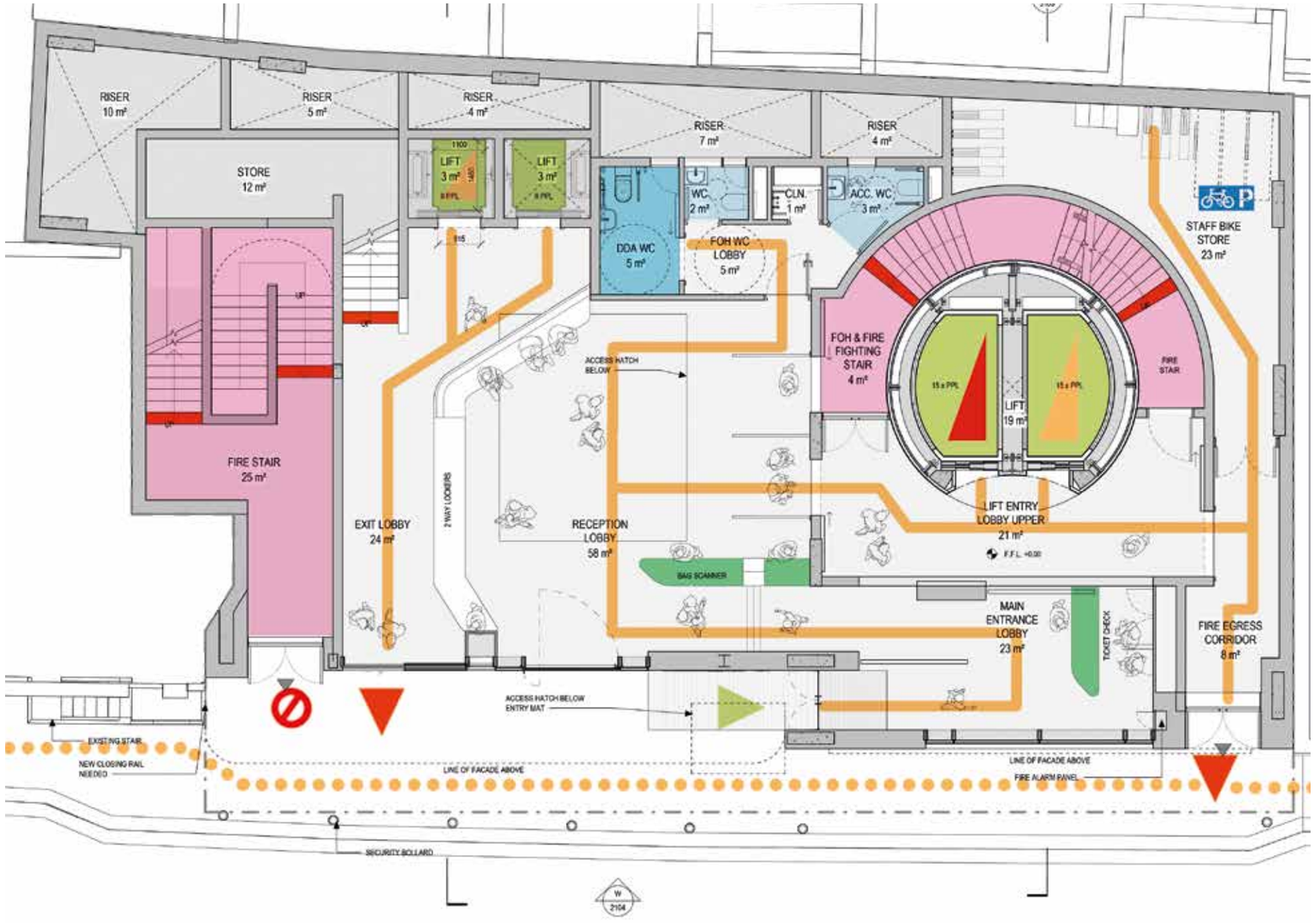
Lobby and reception

The principal public entrance leads into the main entry lobby. A ticket check desk will be located immediately in front of the entrance, from where visitors will proceed through the security gate and bag scanner.

The counters of the ticket check and bag scanner will be designed to meet AD M Vol.2 including, but not limited to, the provision of a fixed hearing enhancement system at each desk and a lower section of desk that is permanently accessible to wheelchair users.

Once visitors have gone through the security checks, they arrive into the reception lobby, a space with seating and lockers that leads to the lifts to access the Tunnels. A unisex toilet area is directly accessed from the reception lobby, and includes a wheelchair-accessible WC.

The retail lobby leads directly into the retail and staff lifts.



39-40 Furnival Street - Ground Floor Plan

bicycle parking
external wheelchair accessible route
internal wheelchair accessible route
public accessible entrance
accessible emergency exit
stepped entry / exit
passenger lift
passenger / evacuation lift
fire-fighting lift
platform lift
accessible WC
accessible WC/shower
WC
changing rooms/showers
BC baby changing
CP changing places
step
escape stairs
safe refuge
ramp (≤ 1:20)
gradient (≥ 1:21)
counter
waste storage

Horizontal circulation

Two open plan retail floors are proposed at levels 1 and 2. Visitor toilets to serve the retail floors are proposed to the south-west of the floorplates. At level 4, welfare facilities for staff are proposed to include a function room, kitchen, toilets and a shower, with access to a roof terrace. Basements levels B1-B3 and level 3 will be occupied with plant rooms and other back of house service areas such as bin stores.

Each level of the building has circulation routes that are step-free and reached from the ground floor via lifts (or stairs).

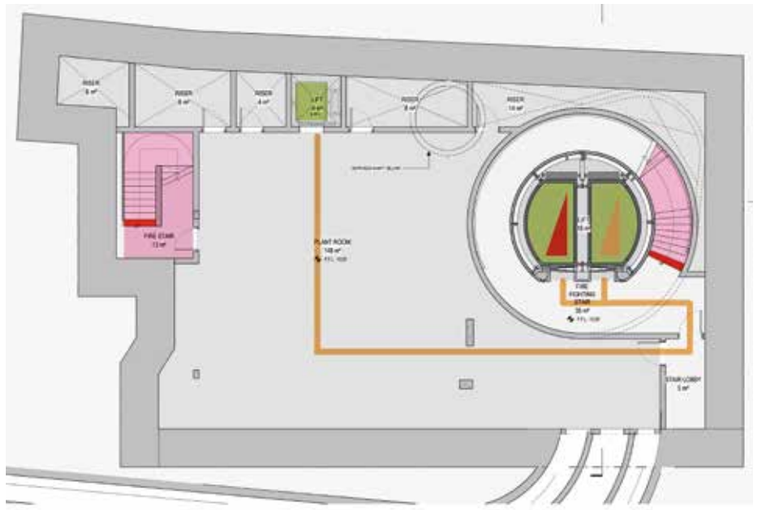
Corridors to access the lift lobbies and toilets will be minimised. Corridors will generally be wider than 1500mm, and no less than 1200mm wide in any case. Passing places 1800mm wide x 1800mm long will be provided at junctions in corridors that are less than 1800mm wide.

Internal doors will have a minimum clear opening width of 800mm through a single leaf door, or one leaf of a double leaf door; and will have 300mm clear space to the leading edge on the pull side of the doors.

Internal lobbies will be dimensioned to accommodate wheelchair users clear of door swings.

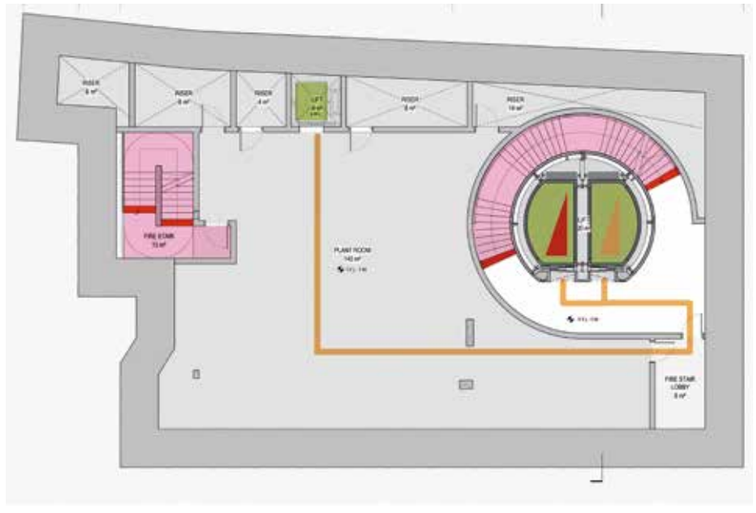
Elements of horizontal circulation will be designed to meet the guidance of AD M Vol.2; good practice recommendations of BS 8300-2:2018 will be also be considered.

Consideration will be given to materials and finishes at the appropriate stage of design development in order to avoid the use of visually and acoustically reflective surfaces and the use of bold patterns that could create visual confusion or be mistaken for changes in level. Secure access controls, where provided, will be designed to be accessible.

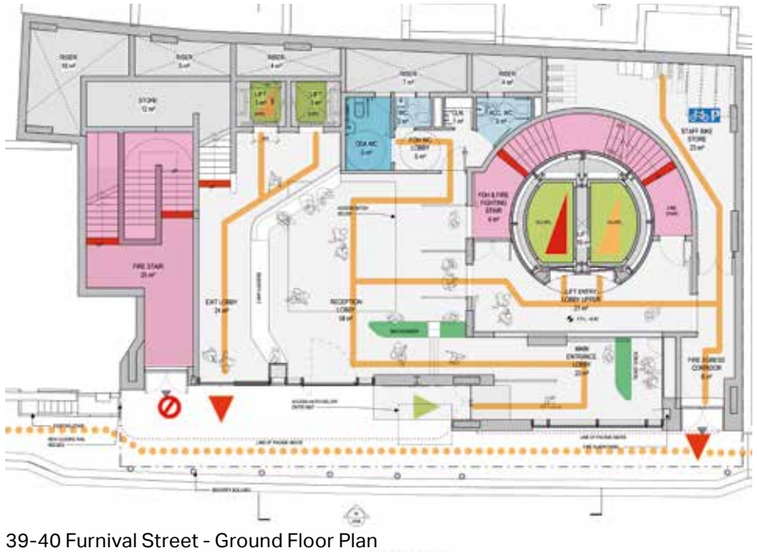


39-40 Furnival Street - Level B3 Floor Plan

39-40 Furnival Street - Level B1 Floor Plan



39-40 Furnival Street - Level B2 Floor Plan



39-40 Furnival Street - Ground Floor Plan

Vertical circulation

Lifts

There are two lift cores in the proposed building:

A bank of two 30-people, double-decker (15 people per deck) passenger lifts that connect the ground floor of Furnival Street with the Tunnels, and run up to level 2 to serve the retail floors.

A bank of two 8-people passenger lifts, one for staff use that runs between basement level B3 and level 2, and other for visitor use between ground floor and levels 1-2, which also provides staff access to levels 3 and 4.

Users of outdoor mobility scooters (Type C) will be allowed to use the 15-people lifts to enter and exit the Tunnels and Furnival Street.

Details of lifting devices will be developed at a subsequent stage of design development, however lifts will be designed to meet the guidance of AD M Vol.2, and, for passenger lifts, BS EN 81-70.

Stairs

An helical stair wraps around the main lifts to the Tunnels, and will be used by able-bodied visitors to access the lower level of the double-decker lifts from level 1. This stair also serves for escape purposes and connects all levels between the Tunnels and level 2 of Furnival Street.

A second escape stair is provided in the fire-fighting core and connects all floors of Furnival Street from basement level B3 to level 4. Two secondary sets of stairs are provided: One connecting from B3 to GF and the second one Connecting from L4 down to GF.

In addition, a general access stair is provided between ground floor and retail level 1. Another general access stair connects the gallery space at L2 to L1.

All internal stairs will be designed to meet the requirements of Part K for ‘general access stair’ and will be 1200mm wide. Stairs will be detailed at a later stage, including step dimensions that suit ambulant disabled people, tonal contrast to aid people with impaired sight, and handrails that extend 300 mm beyond the top and bottom riser.

Access to facilities

Facilities for staff at level 4 include a function room with bar and kitchen, and access to an external terrace over the roof of 39 Furnival Street.

Shared refreshment facilities will be designed to meet the guidance of AD M Vol.2 including worktop surfaces 850mm AFFL with knee clearance beneath of at least 700mm AFFL and 800mm wide, and the provision of taps that are easily operable one-handed using a closed fist.

Bar / cafe counters will include the provision of a fixed hearing enhancement system at the reception desk and a lower section of desk that is permanently accessible to wheelchair users, as well as accessible pay points.

As a good practice measure, the provision of choice of seating—some with arm and back rests and some without arm rests—will be considered during the fit-out.

Details of the terrace will be further developed at the next stage of design development, including accessible door thresholds, access route widths, and surfaces. The good practice guidance of BS 8300-1:2018, including provision of a variety of seating, will be considered. Terrace fit-out will need to consider circulation and manoeuvring spaces.

Sanitary accommodation

The following provisions will be made in the Front of House areas for visitors' use:

- Ground floor - Unisex block with 3no. standard WC. cubicles and a wheelchair-accessible WC. located off the reception lobby.

- Levels 1 and 2 - Female (level 1) and male (level 2) toilet blocks, including wheelchair-accessible baby changing facilities and a unisex wheelchair-accessible WC. on each floor.

The proposed Back of House sanitary accommodation includes:

- Level 4 - Unisex toilet blocks including 4no. self-contained WC. cubicles and a wheelchair-accessible WC. / shower compartment.

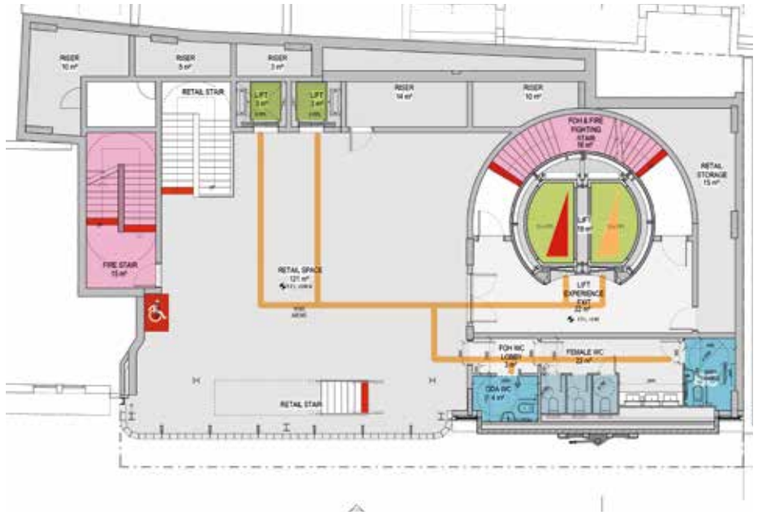
Provision will be made for a wheelchair accessible WC. within 40m of all areas of the floorplates. Doors along the route to the accessible WC.s will be minimised/held open where possible. Wheelchair accessible WC.s will be provided with both right-hand and left-hand transfer layouts at consecutive levels and at locations where more than one accessible compartment is provided.

All standard washrooms will include an ambulant disabled cubicle with outward opening door and grab-rails within. Enlarged cubicles will be provided in facilities with four or more cubicles, for the benefit of guide dogs users, people with luggage or with children who require assistance.

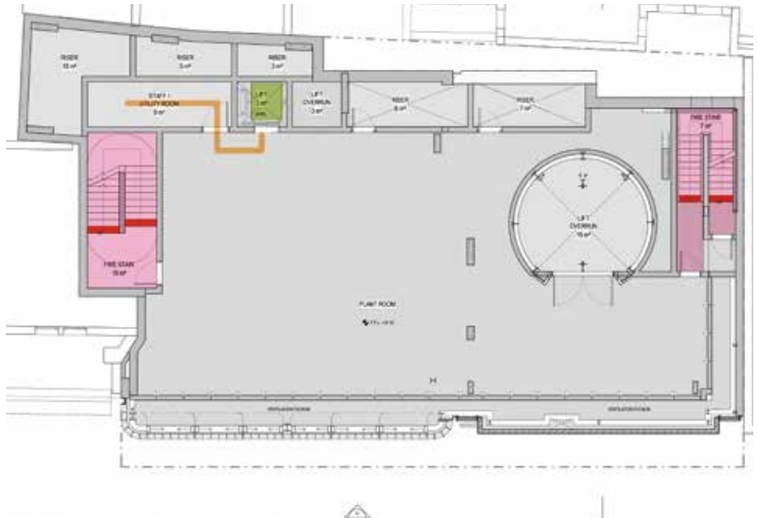
All doors to sanitary facilities will have a clear opening width in line with Table 2 of ADM Vol.2 and will be capable of being opened outward, from the outside, in an emergency.

Standard and accessible WC.s and other sanitary facilities will be designed in accordance to AD M Vol.2 requirements, including the provision of fittings, grab-rails, tonal contrast, emergency assistance alarms, etc.

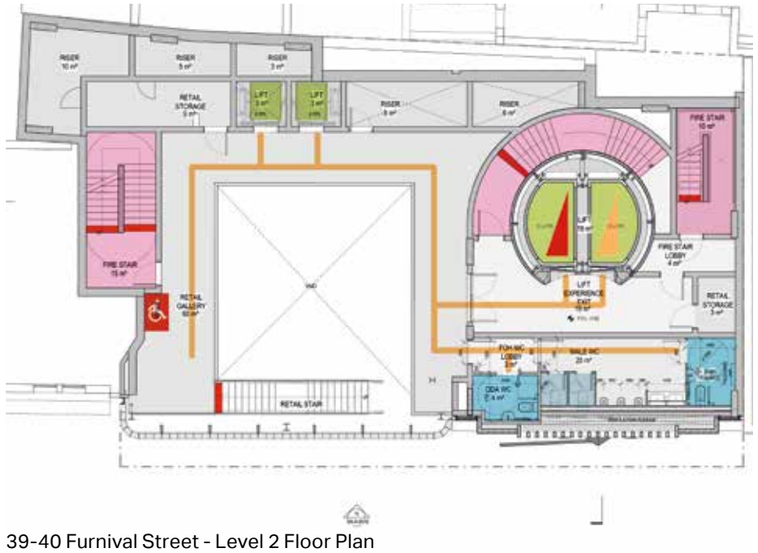
Wheelchair-accessible baby changing facilities will be detailed to meet good practice guidance of BS 8300-2:2018.



39-40 Furnival Street - Level 1 Floor Plan



39-40 Furnival Street - Level 3 Floor Plan



39-40 Furnival Street - Level 2 Floor Plan

39-40 Furnival Street - Level 4 Floor Plan

bicycle parking
external wheelchair accessible route
internal wheelchair accessible route
public accessible entrance
accessible emergency exit
stepped entry / exit
passenger lift
passenger / evacuation lift
fire-fighting lift
platform lift
accessible WC
accessible WC/shower
WC
changing rooms/showers
BC baby changing
CP changing places
step
escape stairs
safe refuge
ramp (≤ 1:20)
gradient (≤ 1:21)
counter
waste storage

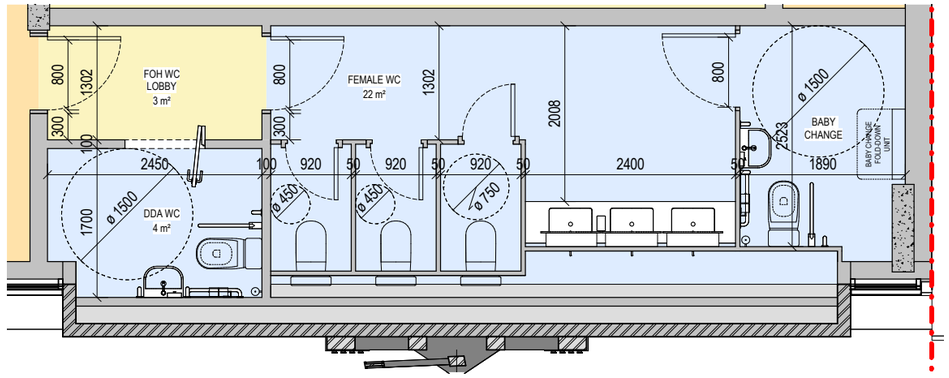


Figure 184. 39-40 Furnival Street - Level 1 Female Toilets

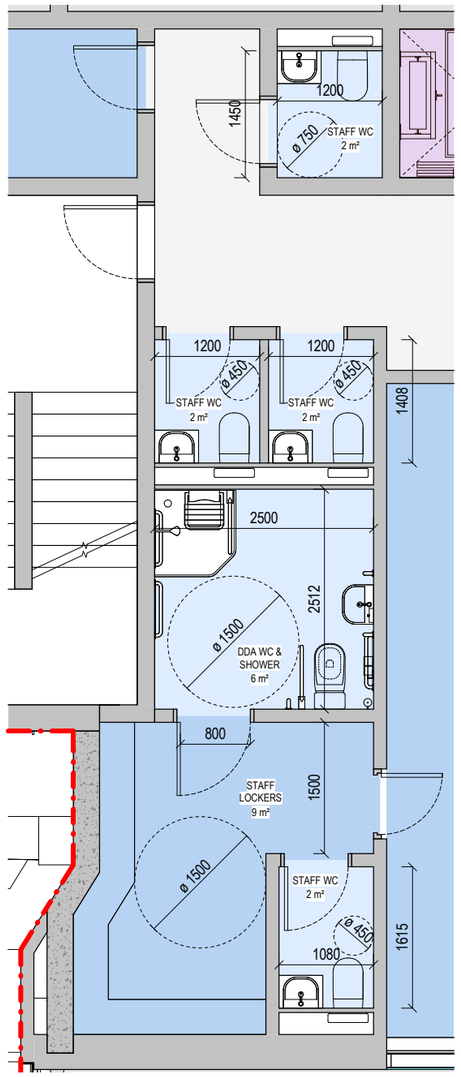


Figure 186. 39-40 Furnival Street - Level 4 Staff Toilets

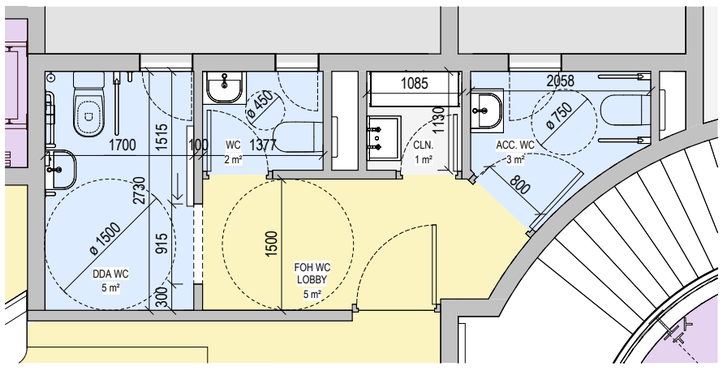


Figure 183. 39-40 Furnival Street - Ground Floor Toilets

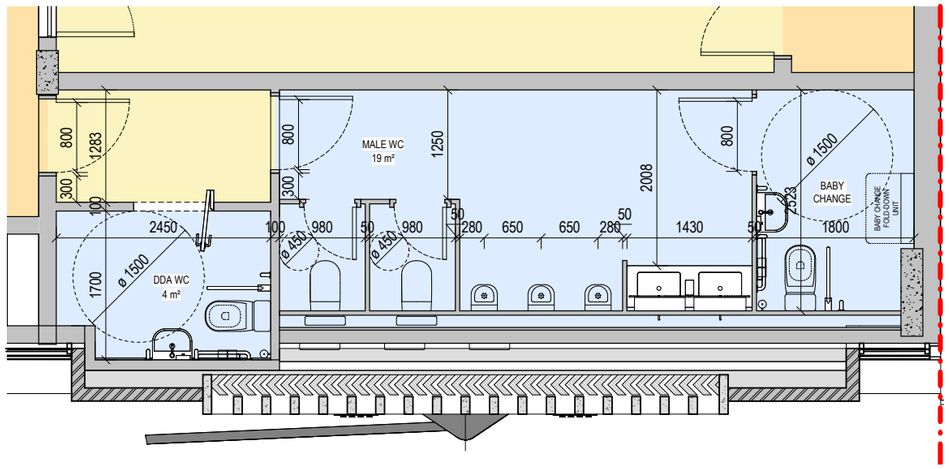


Figure 185. 39-40 Furnival Street - Level 2 Male Toilets

Emergency egress

The fire strategy for The London Tunnels will take precedence over this section. The strategy should include best practice procedures for the evacuation of disabled people from all parts of the buildings, based on BS 9999:2017 and Regulatory Reform (Fire Safety) Order Supplementary Guidance.

The following measures for the evacuation of disabled staff and visitors should be considered:

- Designated escape routes from each part of the building that allow wheelchair users and others to reach a safe area to await assistance;
- Provision of safe refuge with a two-way communications system, within reach of a wheelchair user, to allow direct communication with the fire controlling authority in accordance with BS 9999:2017;
- Alarm systems that provide visual as well as audible signals in isolated locations such as WC.s;
- Use of lifts as part of the evacuation strategy in line with The London Plan 2021 (Policies D5 Inclusive Design and D12 Fire safety). The round lifts will serve the Tunnels and levels 1 and 2, while one of the 8-people passenger lifts will be used for evacuation from level 4;
- Management procedures that include the appointment and regular training of staff to assist with the evacuation of disabled people.

The use of suitable warning systems, such as vibrating pagers may be considered for individual members of staff, following a Personal Emergency Egress Plan (PEEP) assessment.

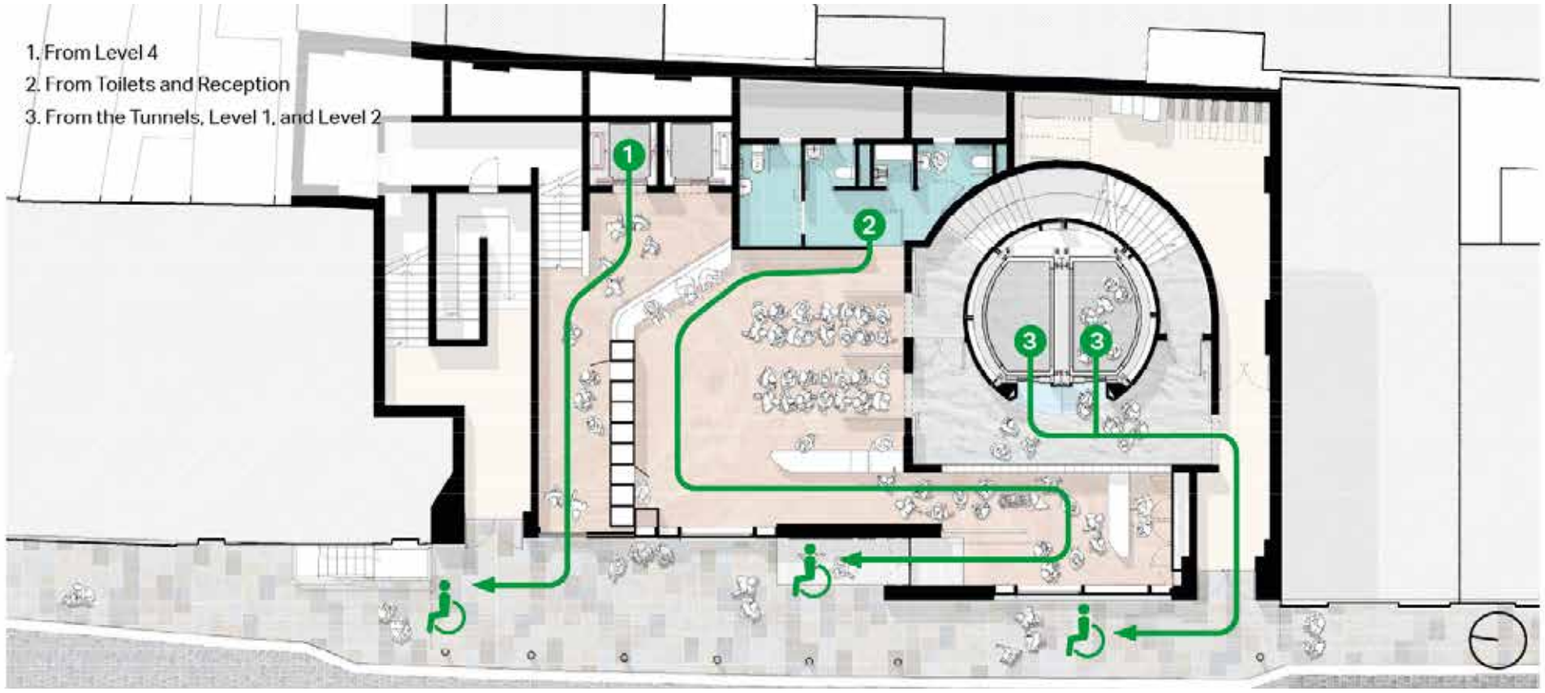


Figure 187. 39-40 Furnival Street - Accessible evacuation routes

7.5 Fulwood Place (31-33 High Holborn)

The existing Fulwood Place building is proposed to be refurbished at ground floor to provide public access to the Tunnels (e.g. school groups) and most direct access to the proposed underground bar. Fulwood Place will also work as emergency exit from the Tunnels. The existing residential floors above ground level will remain unchanged and do not form part of the planning application.

Entrances

Three existing doors are accessed from Fulwood Place under a covered alleyway that connects with High Holborn.

The public will access the building from the doors located closest to the corner between Fulwood Place and High Holborn, and exit through the central set of doors. The main entrance will be accessible, while the public exit contains steps to resolve the change of level between the lift lobby and street level. Although the main flow of visitors will follow a one-way route in and out of the building, people who cannot negotiate steps will be directed through the accessible entrance when leaving the building.

A third set of doors provides access to an existing fire-fighting shaft with stair and lift for exclusive use by the fire brigade.

All entrances and exits have existing double-leaf doors that provide a clear opening width of 1200mm through both leaves. Doors at the accessible entrance / exit will be automated and, as a result, exceed AD M Vol.2 requirement for a clear opening width of 1m. All entrance / exit doors will be covered. Entrances will be designed to meet the guidance of AD M Vol.2, including nominally level thresholds (or a maximum upstand of 15mm if raised thresholds are unavoidable).

Lobby and reception

A security / bag check desk is proposed immediately inside the public entrance doors.

The counter will be designed to meet AD M Vol.2 including, but not limited to, the provision of a fixed hearing enhancement system at the desk and a counter designed to be accessible to both standing and seated users.

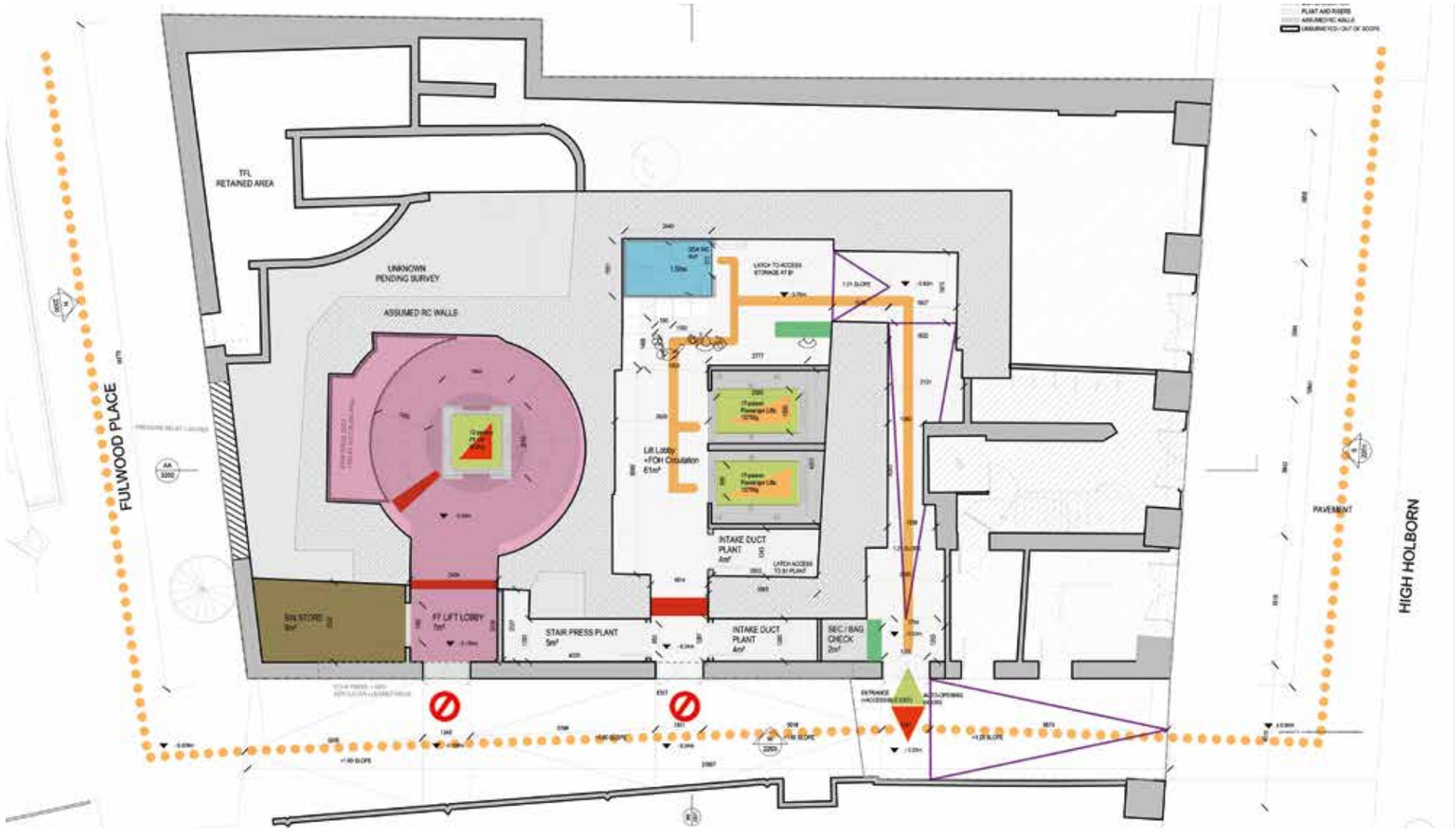


Figure 188. Fulwood Place - Ground Floor Plan

Internal circulation

The public entrance leads into a sloping corridor with gradients no steeper than 1:21 and a level landing at the change of direction. The corridor runs between existing walls and its width is generally over 1.8m, except for a 2.3m long narrowing with a minimum clear width of 1m, due to the position of existing walls (to be assessed on site).

Elements of horizontal circulation will be designed to meet the guidance of AD M Vol.2; good practice recommendations of BS 8300-2:2018 will be also be considered. Consideration will be given to materials and finishes at the appropriate stage of design development in order to avoid the use of visually and acoustically reflective surfaces and the use of bold patterns that could create visual confusion or be mistaken for changes in level. Secure access controls, where provided, will be designed to be accessible.

Lifts

There are two lift cores in the refurbished building:

A bank of two 17-people passenger lifts that connect the ground floor of Fulwood Place with the Tunnels.

A fire-fighting lift with direct access from the alleyway, for exclusive use by the fire brigade.

Details of lifting devices will be developed at a subsequent stage of design development, however lifts will be designed to meet the guidance of AD M Vol.2, and, for passenger lifts, BS EN 81-70.

Stairs

A flight of three risers links the lift lobby with the public exit.

The fire-fighting shaft contains an helical stair that wraps around the fire-fighting lift and connects the Tunnels with the street level for fire-fighting / escape purposes.

All new and refurbished internal stairs will be designed to meet the requirements of Part K for 'general access stair' and will be at least 1200mm wide. Stairs will be detailed at a later stage, including step dimensions that suit ambulant disabled people, tonal contrast to aid people with impaired sight, and handrails that extend 300 mm beyond the top and bottom riser.

Sanitary accommodation

A unisex wheelchair-accessible WC. will be provided off the reception lobby at ground floor of Fulwood Place.

The accessible WC. will be designed in accordance to AD M Vol.2 requirements, including the provision of fittings, grab-rails, tonal contrast, emergency assistance alarms, etc.

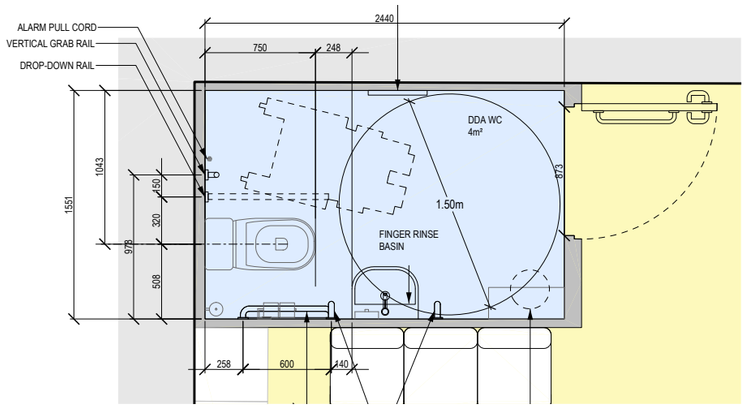


Figure 189. Fulwood Place - Ground Floor Toilet

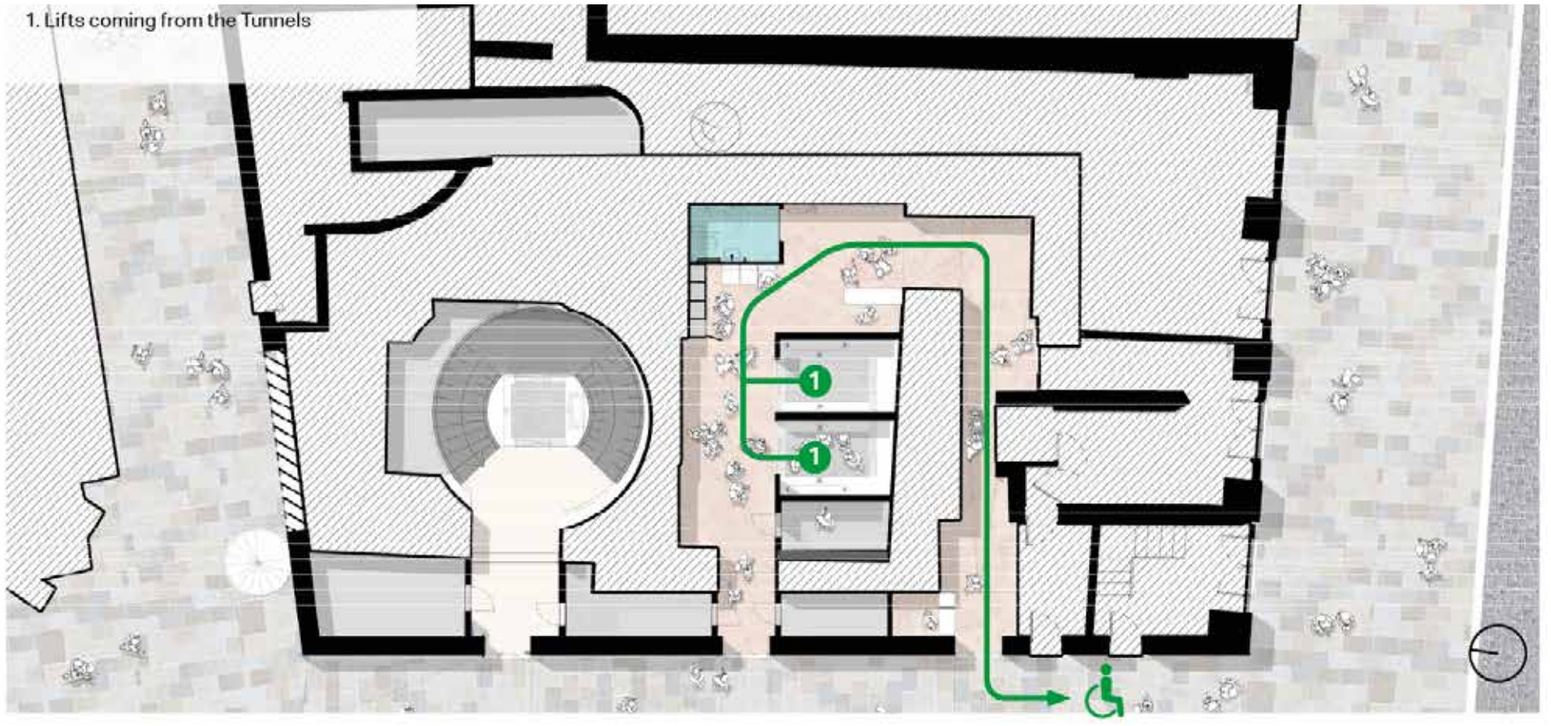


Figure 190. Fulwood Place - Accessible evacuation routes

7.6 The Tunnels

The existing network of Tunnels will be refurbished to provide a cultural and tourist attraction with exhibition spaces and a bar.

Horizontal circulation

Publicly accessible Tunnels vary in width between 3m and 7m, providing sufficient space for two wheelchair users to pass each other in all cases. Corridors to access facilities such as toilets will be no less than 1.2m wide. A 1.5m wide manoeuvring area will be provided outside of wheelchair accessible WC.s.

Internal doors will have a minimum clear opening width of 800mm through a single leaf door, or one leaf of a double leaf door; and will have 300mm clear space to the leading edge on the pull side of the doors. Secure access controls, where provided, will be designed to be accessible.

Internal lobbies on accessible routes will be dimensioned to accommodate wheelchair users clear of door swings.

New elements of horizontal circulation will be designed to meet the guidance of AD M Vol.2; good practice recommendations of BS 8300-2:2018 will be also be considered.

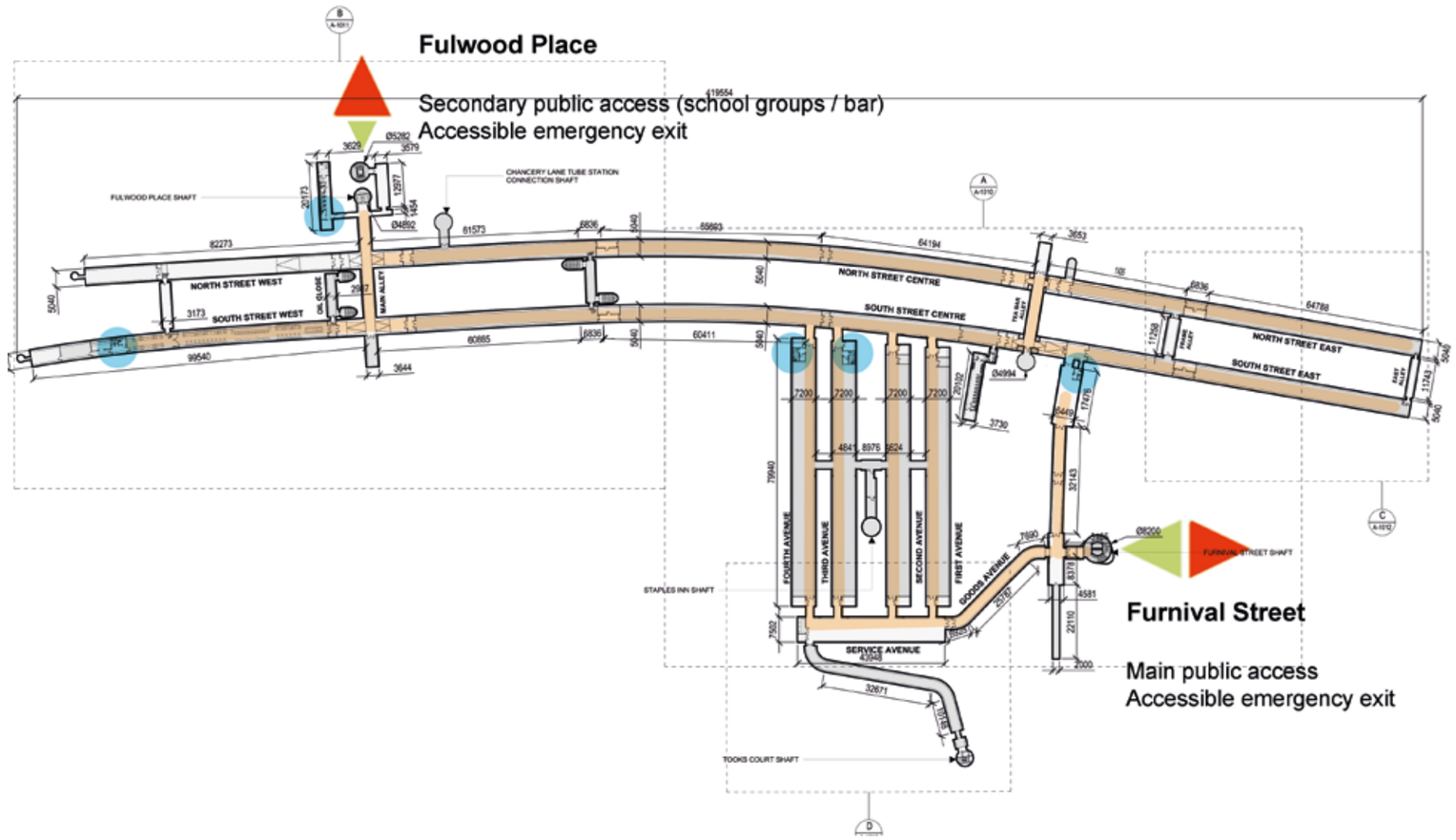


Figure 191. Plan of the Tunnels below ground level

Vertical circulation

The Tunnels are level for the most part, with some sloping / ramped sections. Wherever possible, slope gradients will be refurbished to comply with part K (to be assessed on site at the next design stage).

Routes to some restricted access areas are stepped, as well as the route to the eastern WC. block (only standard cubicles are accessed via steps; the wheelchair-accessible WC. will be provided on an accessible route nearby).

All steps will be refurbished to meet the requirements of Part K for 'general access stair' wherever possible, including provision of handrails and visually contrasting nosings.

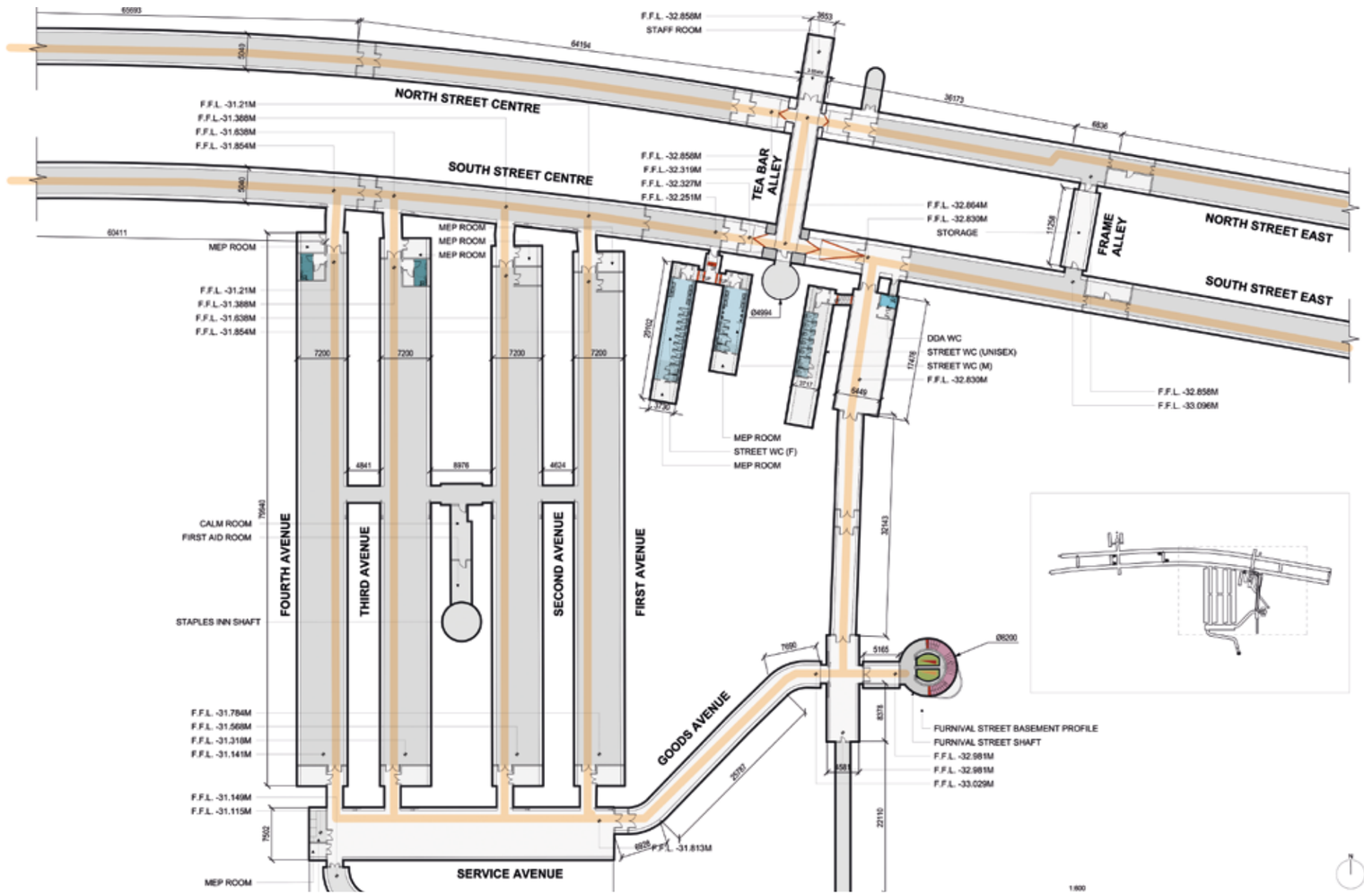
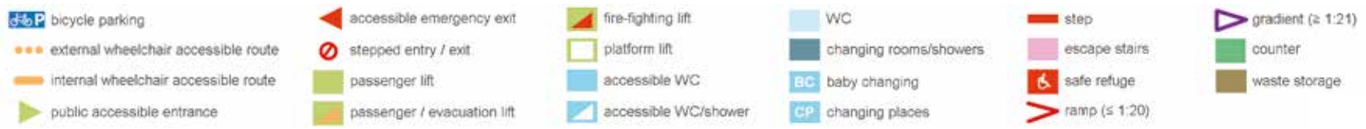


Figure 192. The Tunnels (east) and Furnival Street



Access to facilities

Most of the Tunnels' area will be used as cultural / exhibition spaces. Consideration will be given to materials and finishes at the appropriate stage of design development in order to avoid the use of visually and acoustically reflective surfaces and the use of bold patterns that could create visual confusion or be mistaken for changes in level.

The new bar is proposed on the western ends of the Tunnels. Bar / cafe counters should include the provision of a fixed hearing enhancement system at the reception desk and a lower section of desk that is permanently accessible to wheelchair users, as well as accessible pay points. Seating arrangements will be carefully designed at the appropriate design stage to accommodate wheelchair and mobility scooter manoeuvring.

Seating will be provided at regular intervals in the Tunnels offering resting opportunities alongside the visitors' itinerary.

As a good practice measure, the provision of choice of seating—some with arm and back rests and some without arm rests—will be considered during the fit-out.

A quiet room will be provided in the Avenues for the benefit of people who experience sensory and neurological overload. The good practice guidance of BS 8300-2:2018 will be considered for the fit-out of this space.

A medical room is proposed in the Avenues adjacent to the quiet room.

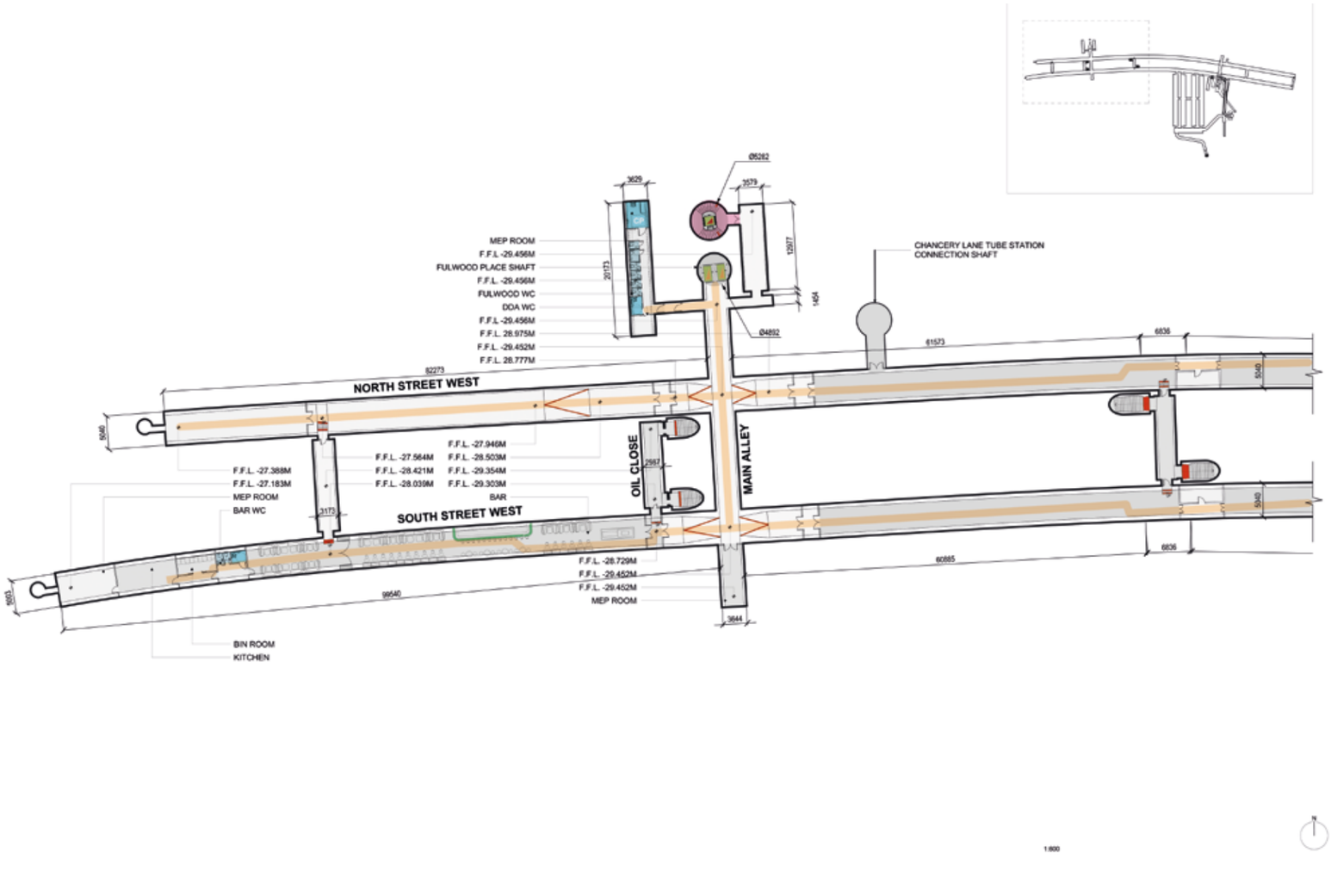


Figure 193. The Tunnels (west) and Fulwood Place

Sanitary accommodation

Toilet provision will be made within the Tunnels, distributed as follows:

- Near Furnival Street access point to the east - Separate-sex toilets accessed via steps, and a unisex wheelchair-accessible WC. on a step-free area within approximately 20m;
- Two unisex wheelchair-accessible WC.s in the Avenues;
- Near Fulwood Place access point on North Street West - Large unisex facility comprised of a series of self-contained toilets, a wheelchair-accessible WC. and a Changing Places toilet;
- Adjacent to the bar on South Street West - Small unisex facility comprised of three self-contained toilets, one of them wheelchair-accessible;

Provision will be made for a wheelchair accessible WC. within 40m of areas where people are stationary. The travel distance to a wheelchair-accessible WC. from other parts of the Tunnels exceeds 40m; however, travel distances will not exceed 100m, as recommended by good practice guidance of BS 6465-1 for assembly buildings.

Doors along the route to the accessible WC.s will be minimised/held open where possible. Wheelchair accessible WC.s will be provided with both right-hand and left-hand transfer layouts at consecutive levels and at locations where more than one accessible compartment is provided.

All standard washrooms will include an ambulant disabled cubicle with outward opening door and grabrails within. Enlarged cubicles will be provided in facilities with four or more cubicles, for the benefit of guide dogs users, people with luggage or with children who require assistance.

All doors to sanitary facilities will have a clear opening width in line with Table 2 of ADM Vol.2 and will be capable of being opened outward, from the outside, in an emergency.

Standard and accessible WC.s and other sanitary facilities will be designed in accordance to AD M Vol.2 requirements, including the provision of fittings, grabrails, tonal contrast, emergency assistance alarms, etc.

The Changing Places toilet will be designed in line with the guidance of Changing Places website and BS8300-2:2018. At the appropriate design stage, management procedures will be developed to allow public access to the CP toilet.

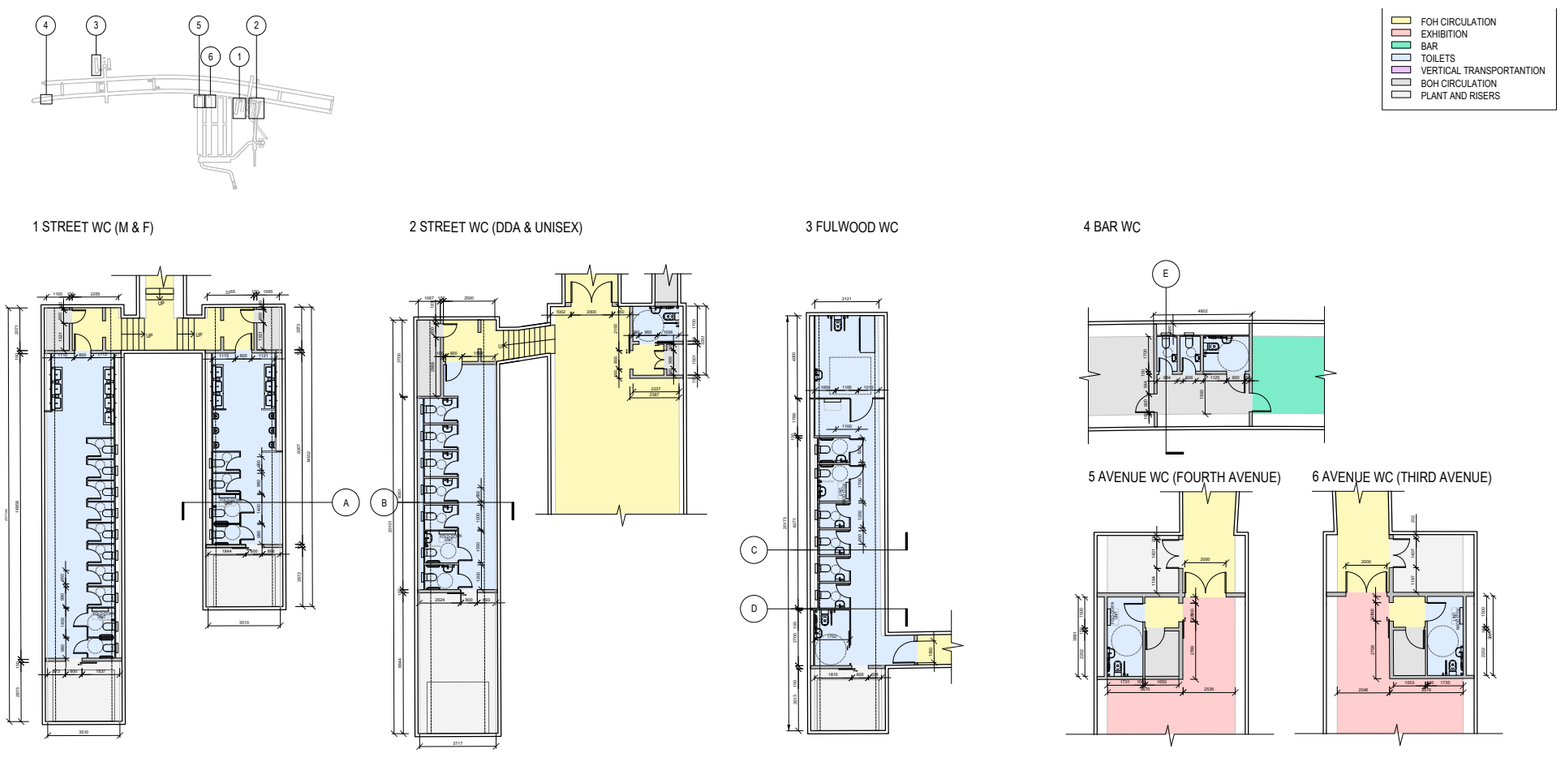


Figure 194. Sanitary accommodation in the Tunnels

Emergency egress

The fire strategy for The London Tunnels will take precedence over this section. The strategy should include best practice procedures for the evacuation of disabled people from all parts of the buildings, based on BS 9999:2017 and Regulatory Reform (Fire Safety) Order Supplementary Guidance.

The following measures for the evacuation of disabled staff and visitors should be considered:

- Designated escape routes from each part of the building that allow wheelchair users and others to reach a safe area to await assistance;
- Provision of safe refuge with a two-way communications system, within reach of a wheelchair user, to allow direct communication with the fire controlling authority in accordance with BS 9999:2017;
- Alarm systems that provide visual as well as audible signals in isolated locations such as WC.s;
- Use of lifts as part of the evacuation strategy from all publicly accessible parts of the Tunnels, in line with The London Plan 2021 (Policies D5 Inclusive Design and D12 Fire safety); and
- Management procedures that include the appointment and regular training of staff to assist with the evacuation of disabled people.

The use of suitable warning systems, such as vibrating pagers may be considered for individual members of staff, following a Personal Emergency Egress Plan (PEEP) assessment.

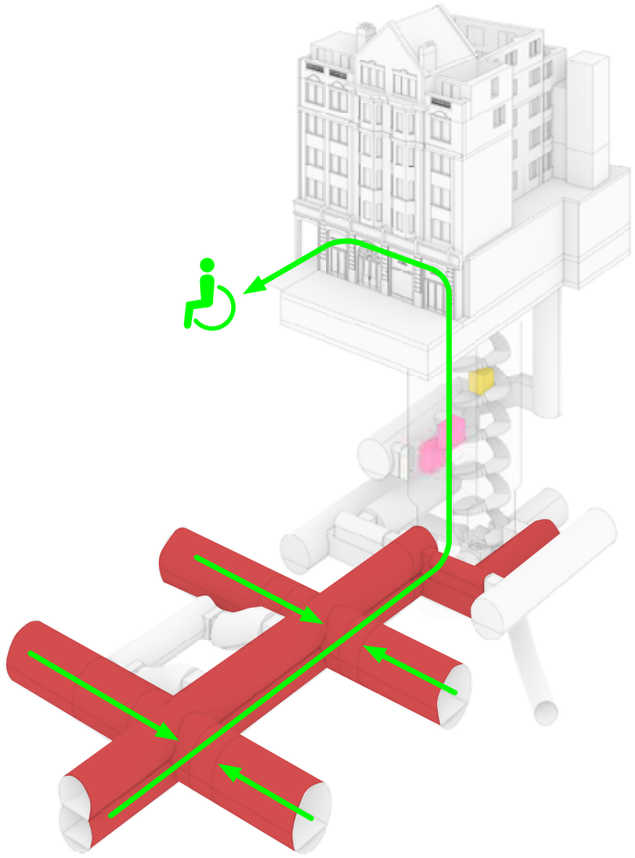


Figure 196. Evacuation strategy via Fulwood Place

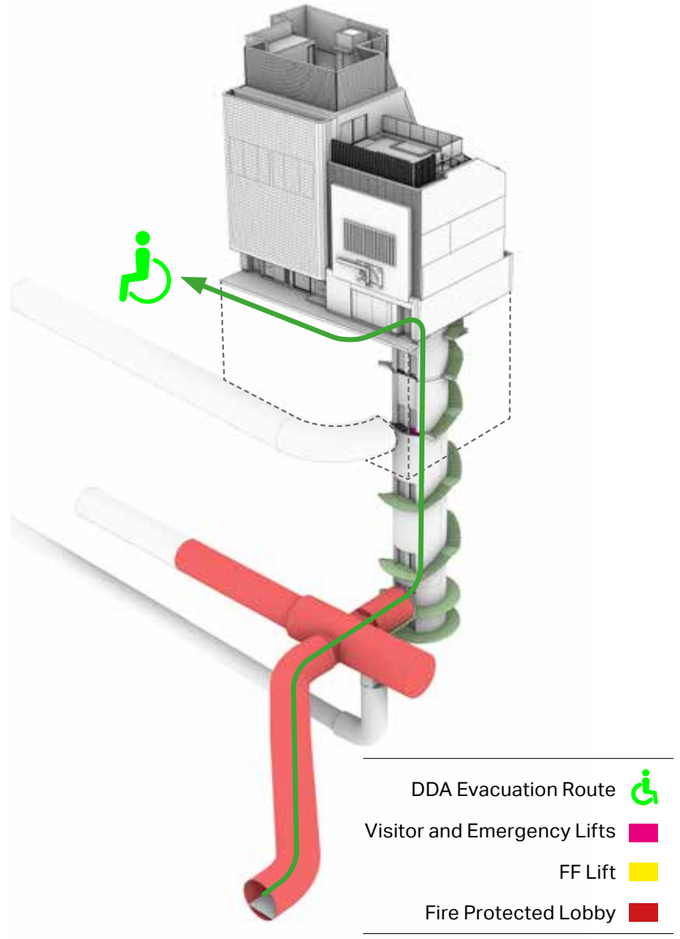
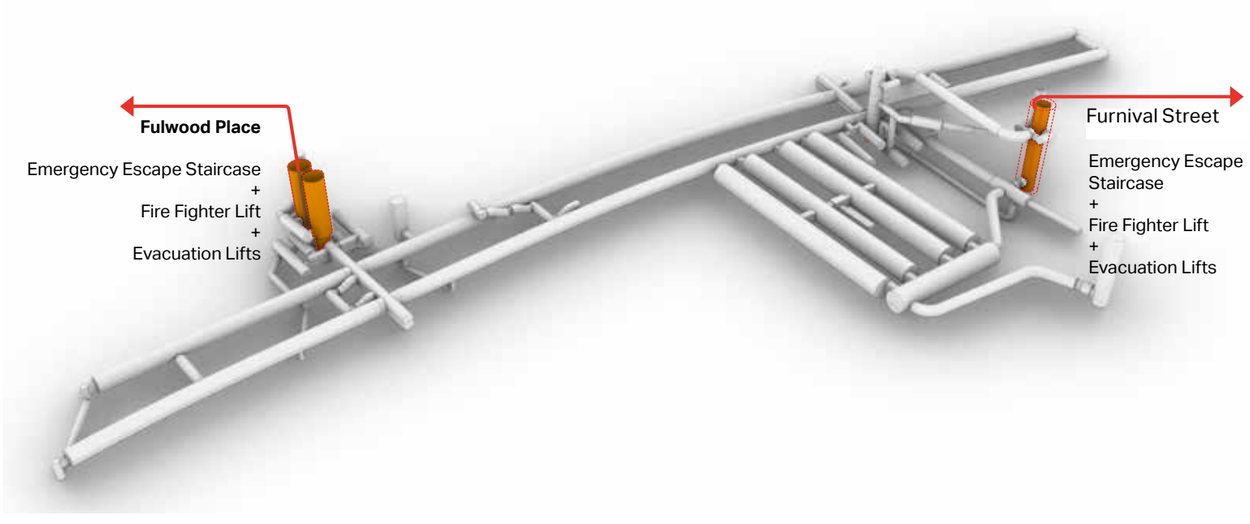


Figure 195. Evacuation strategy via Furnival Street



7.7 Appendix 1 - References for inclusive design

Legislation

Equality Act 2010

The Equality Act 2010 ('the Act') combines and supersedes previous separate discrimination legislation (including the Disability Discrimination Act 1995 as amended ('the DDA') and the disability discrimination provisions of SENDA 2001 for England, Wales and Scotland. People are protected from discrimination and harassment based on 'protected characteristics'; victimising anyone as a result of action taken in connection with the Act is also unlawful. There are nine different protected characteristics under the Act which have different levels of protection depending on the context (such as employment, provision of goods and services or the provision of education). This Access Statement focuses on the protected characteristic of disability; the definition of disability is essentially the same as under the DDA.

The types of discrimination that can arise in relation to disability are:

- Direct disability discrimination;
- Indirect disability discrimination;
- Treating disabled people unfavourably because of something arising in consequence of their disability without justification; and
- A failure to make reasonable adjustments for disabled people ('the RA duty'). The RA duty works in different ways depending on who requests the reasonable adjustments to be made, for example an employee or a member of the public.

The Act also provides protection for people who are treated less favourably because of their relationship with a disabled person (such as a carer) or for people treated less favourably because they are mistakenly believed to be disabled. A disabled person can always be treated more favourably than a non-disabled person.

If an employer is a listed public authority (such as a local authority) they will be subject to the public sector equality duty. If the employer is not a public authority but carries out a public function as part of its work, it will be covered by the general part of the equality duty in relation to the exercise of that function.

The public sector equality duty seeks to promote equality from within an organisation and the general duty requires the organisation to have due regard to the need to:

- Eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by the Act;
- Advance equality of opportunity between persons who share a relevant protected characteristic and those who do not; and
- Foster good relations between persons who share a protected characteristic and those who do not.

Due regard must be given to these three aims when undertaking procurement and to comply with procurement law, consideration must be given to the extent to which equality considerations are relevant and proportionate to the subject matter of the contract.

Most of the listed public authorities are also subject to the specific duty (which operates slightly differently in England and Wales). This involves reporting requirements to demonstrate compliance with the three aims of the general duty. The public sector equality duties are relevant both to the design and the management of the built environment.

The Reasonable Adjustment Duty and specific building provisions

The Equality Act does not contain any specific requirements for the built environment and therefore has no relevance to 'compliance' in respect of physical building standards.

Statutory Consents

When considering a reasonable adjustment to a physical feature, the Act does not override the need to obtain consents such as planning permission, building regulations approval, listed building consent, scheduled monument consent and fire regulations. If the consent is not given, there is still a duty to consider a reasonable means of avoiding the feature.

Regulations and Standards

Building Regulations 2010

- The Building Regulations 2010, Approved Document M (Access to and use of buildings) Volume 1: Dwellings, HM Government, 2015 edition incorporating 2016 amendments. (Referred to as AD M Vol.1).
- The Building Regulations 2010, Approved Document M (Access to and use of buildings) Volume 2: Building other than dwellings, HM Government, 2015 edition incorporating 2020 amendments. (Referred to as AD M Vol.2).
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