

7. Proposals

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This section provides an overview of the key components of the passenger areas in the BSCU Project and describes the above ground Station Entrance, its layout, scale, appearance, lighting, public realm and way-finding strategy. It then describes the below ground elements in terms of the layout, appearance and lighting.

7.1 Overview of proposals

The key components are described below.

Above ground infrastructure

7.1.4 The above ground infrastructure of the Project comprises of:

New Station Entrance

- A new Station Entrance opening on to Cannon Street at the junction with Nicholas Lane, located above the southern end of the Northern Line platforms. It will provide access to the escalators and lifts. It will also include an accessible toilet, back of house accommodation and plant rooms, as well as provide ventilation for the station.

New Retail Unit

- A space suitable for a ground floor retail unit fronting onto Nicholas Lane but independent of the operation of the station.

Below ground infrastructure

7.1.5 The main below ground components are as follows:

Central Line level

- A new cross-passage linking the centre of the east and westbound Central Line platforms with a bank of triple escalators leading down to the Central Line Link; and
- A new cross-passage between the Central Line platforms at the western end as part of the fire strategy.

Central Line Link

- A new, straight link tunnel with a pair of 95m moving walkways will connect the Central Line area directly to the Northern Line Platform level.

Northern Line Platform level

- A new, wider Southbound Northern Line Platform and railway tunnel freeing up more space for passenger circulation. Four new cross-passages to link this new platform with the existing northbound platform and to provide direct routes to the Central Line, DLR, Station Entrance and passenger lifts;
- Conversion of the existing southbound Northern Line Platform to a new Northern Line passenger concourse to increase circulation and interchange space for passengers using the northbound Northern Line Platform. Three new openings will be provided linking the new concourse with the northbound platform. An existing opening at the southern end of the platform will be widened to improve access to the escalators leading to Monument Station and the District and Circle Lines; and
- An escalator box from the New Station Entrance Hall with two sets of triple escalators leading down to the Northern Line platforms. This escalator box will also include plant areas on three levels, all below street level.

DLR Level

- New triple escalators direct to the Northern Line level;
- Three new cross-passages connecting the platforms with the concourse and improving passenger flows; and
- Relocation of some plant and staff rooms.

Step-free access

- Two new 17 person lifts will be provided in the Station Entrance Hall. One will provide direct access to the Northern Line and DLR Levels, and the second will provide direct access to the Northern Line level only. The first will also be a firefighting and maintenance lift; and
- An existing lift linking the Triplication area and DLR level will be upgraded with an additional stop at the Northern line level to provide secondary step-free access to both Northern line and DLR and improving the resilience of the step free operation.

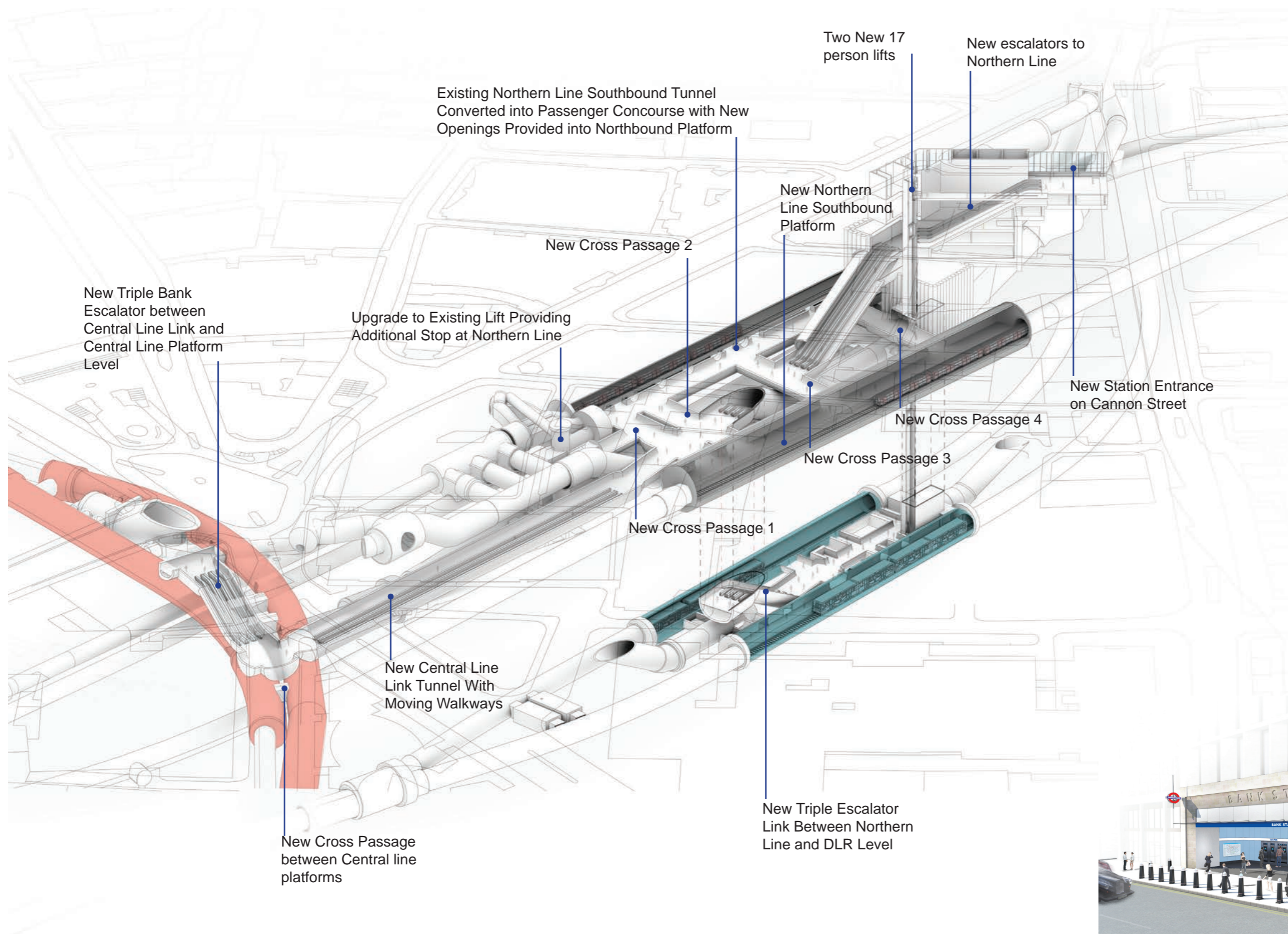


Figure 7.1: Overview of proposals

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Figure 7.2: Visualisation of new Station Entrance

7.2 Above ground

Supporting Bank's public realm

The new station entrance

- 7.2.1 A key benefit of the proposed Station Entrance is the relief of pressure on the congested footways in the area. This is primarily achieved by redirecting passengers that currently use exits at the Bank and Monument Junctions to a new entrance closer to their final destination and so reducing the number of pedestrians at Bank and Monument. The new entrance will be integrated into the existing public realm through a strong street presence and the appropriate design of the public realm directly outside of the station. This supports the aims of the Bank Area Enhancement Study.
- 7.2.2 The Station Entrance location was selected following a detailed analysis of pedestrian modelling data, station entrances and exits and passenger end destination postcode studies. The combined analysis demonstrated that Cannon Street was the optimum location for the largest number of passengers using Northern Line and DLR.
- 7.2.3 Northern Line and DLR passengers currently need to use exits at the Bank or Monument junctions, which are approximately 500 metres apart. These locations experience severe congestion on footways. Figure 7.3 shows the majority of these passengers are heading for the areas shown in red, between these two points.
- 7.2.4 Since the Northern Line and DLR Platforms are located underneath King William Street, many of these locations are physically close to the platforms but require convoluted routes to reach them. By creating a new station entrance at the proposed location, the distance and travel time between the Northern Line and DLR platforms and the end destinations is significantly reduced.

- 7.2.5 The pedestrian modelling and postcode studies concluded that a Station Entrance on Cannon Street would;
- Best serve 62 percent of passengers moving between the Northern Line and their end destinations;
 - Best serve 44 percent of passengers moving between the DLR and their end destinations; and
 - Benefit more people based on their likely end destinations beyond the station exit.
- 7.2.6 Figure 7.3 shows the result of a postcode study showing the concentrated areas of end destinations for passengers. The proposed entrance location means that passengers can exit the Northern Line platforms, get to street and walk to destinations within the 160 metre radius indicated within the time it currently takes to reach an existing exit in the Bank Monument Station Complex.

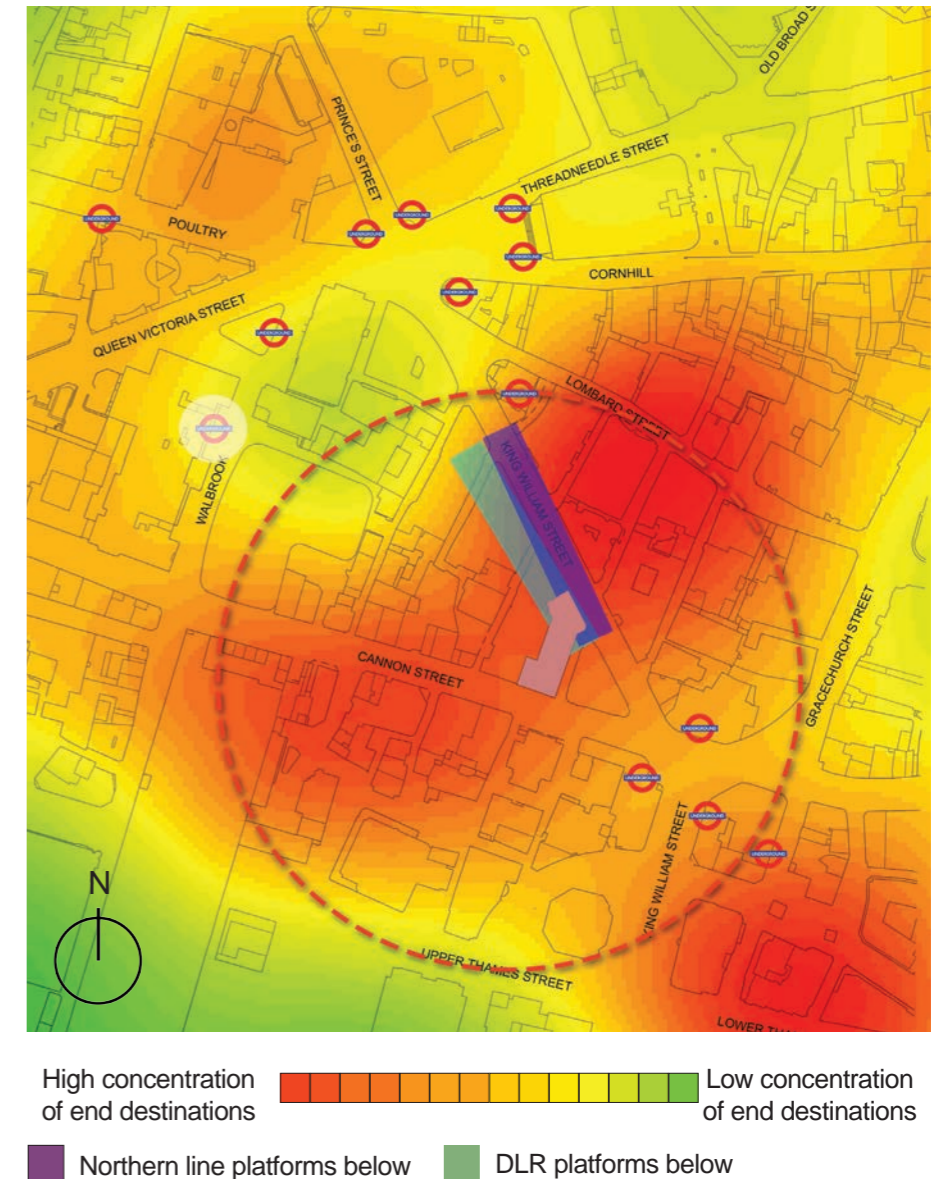


Figure 7.3: Postcode study with 160m radius around the proposed Station Entrance on Cannon Street for exiting passengers from Northern Line & DLR (based on 2008 LUL data)

Public Realm

7.2.7 The design of the public realm directly outside of the station has been guided by the Bank Area Enhancement Study and the principles of TfL's Station Public Realm Guidance. The Bank Area Enhancement Strategy sets out a vision for the 'lanes, alleys and courtyards' including Nicholas Lane and Abchurch Lane. The City of London Corporation's proposals for these lanes, identified as high priority projects, include improved bypass routes, raised carriageways, greenery, lighting and art.

7.2.8 The project supports the City of London Corporation's aspirations and recognises the importance of the public realm to the station. To enable an integrated approach to the public realm as a whole, a series of principles have been identified which should unite the public realm around Bank Station including Nicholas Lane and Abchurch Lane.

7.2.9 The effective design of station public realm requires an understanding of the station, the users, the space and the surrounding context. This understanding should then lead to the development of objectives for the public realm. For this entrance to Bank Station, the following key facts are important for the public realm design:

- Most A.M users will be commuters heading west, north and south from the station entrance and on both sides of Cannon Street. These users will be focussed on getting to their destination by the quickest route;
- The use of Nicholas Lane and Abchurch Lane to get to and from the station will be a key factor in reducing footway congestion and these will need to be made more attractive to pedestrians;
- Recreational users will be unfamiliar with the area and are likely to use the station at quieter times such as evenings and weekend;

- The distance from the gateline to the footway is below normal LUL standards and so the public realm should support the station and be designed to flow into the entrance hall;
- Some street level transport interchange is likely to occur to Cannon Street mainline station and to local bus stops along Cannon Street to the west; and
- Vehicular access will be required at both ends of Nicholas Lane including for the servicing of Phoenix House.

7.2.10 The following objectives of the public realm have been developed:

- Support simple and efficient onward travel for commuters, recreational users and residents, specifically for those travelling to the west along Cannon Street on both sides of the road and north on Nicholas Lane and Abchurch Lane;
- Encourage safe use of Nicholas Lane and Abchurch Lane for all users; and
- Support the legibility and presence of the station within the streetscape.

The following interventions are therefore proposed

Cannon Street

- Simple, high quality and historically sensitive paving in front of the station with no street furniture aside from essential security measures;
- Hostile Vehicle Mitigation bollards positioned to the edge of the footway to avoid impeding pedestrian flows; and

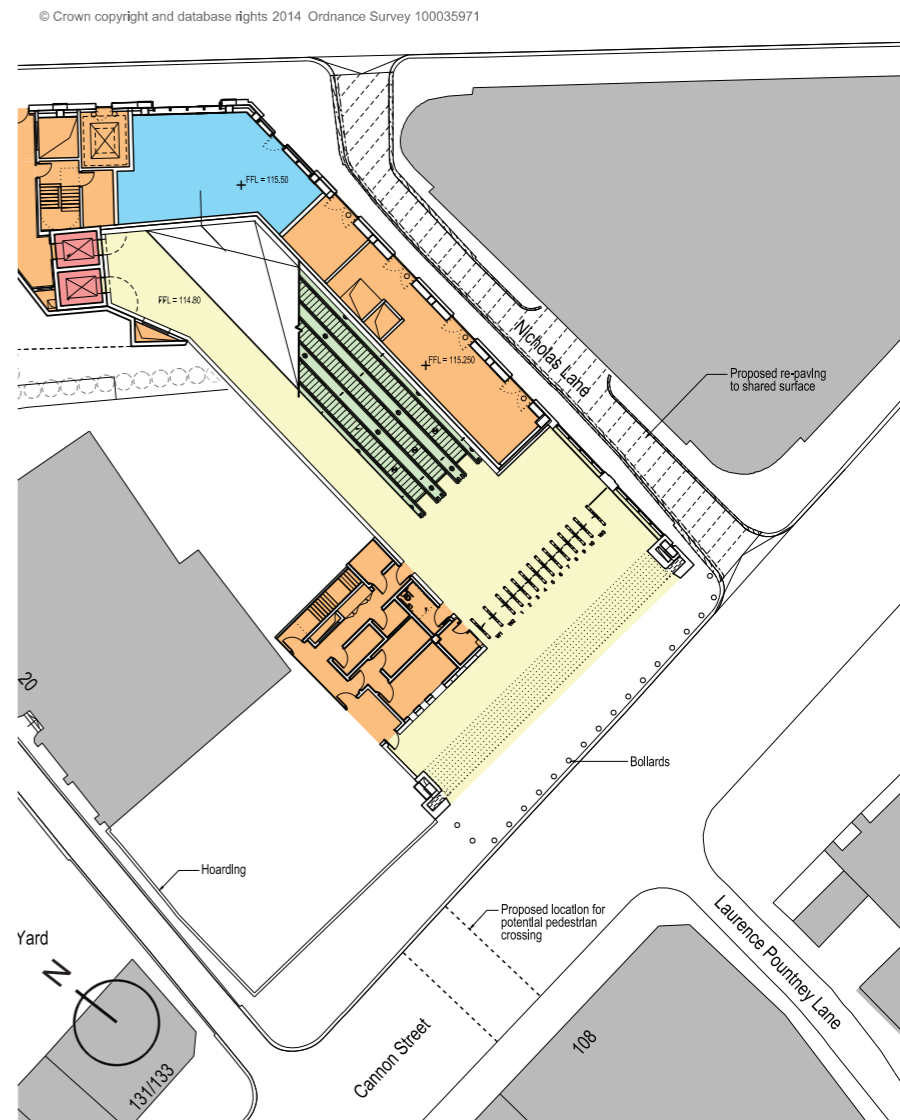


Figure 7.4: Proposed treatment of Nicholas Lane and Cannon Street crossing

- In response to pedestrian and vehicle studies, a new pedestrian crossing on Cannon Street to the west of the new Station Entrance will be provided in the event that no alternative arrangement emerges as a result of area-wide initiatives by the City of London Corporation and/or Transport for London. While a light controlled crossing is included at this stage in the process, the type of crossing will be developed at a later stage in discussion with the City of London Corporation.

Nicholas Lane and Abchurch Lane junctions with Cannon Street

- Design to be developed by City of London Corporation as part of the Bank Area Enhancement Strategy but likely to include a raised carriageway on Nicholas Lane to support pedestrian movement across and along Nicholas Lane.

Nicholas Lane

- Design to be developed by City of London Corporation as part of the Bank Area Enhancement Study recommendations; and
- The design of Bank Station itself will improve the attractiveness of Nicholas Lane by the creation of more active frontages along its edge.

All materials, surfaces and street furniture will be developed further during the detailed design stages and will be specified in accordance with City of London Corporation's guidelines and will be sympathetic and complementary to the station context.



Figure 7.5: Proposed treatment of Nicholas Lane



Figure 7.6: Public realm precedent - St Swithins Lane

Creating a new city block appropriate to the context

7.2.11 The above ground infrastructure will occupy part of the ground floor of the block and will enable the provision of a contextual OSD.

The Station Entrance has been designed to:

- maximise functionality, whilst providing for optimal potential OSD layouts;
- provide the required and necessary Party Wall & security separation between the Station Entrance and any OSD and its service yard;
- be fully operational with a functioning roof slab onto which an OSD could be built at a later date; and
- integrate back of house requirements into an OSD facade on King William Street.

7.2.12 A planning application for an OSD comprising a seven storey mixed use development with ground and mezzanine retail units fronting Cannon Street, office uses fronting King William Street and on the upper floors and retention of 20 Abchurch facade was approved by the City of London Corporation in June 2014 (Figure 7.7).



Figure 7.7 Visualisation of approved OSD (shown for information only) and new Station Entrance

Developing a street presence for Bank Station

- 7.2.13 The construction of a major new, additional public entrance on the scale of the BSCU Project is a comparatively rare event. The proposed Station Entrance on Cannon Street will provide a strong visual identity for the station and London Underground at street level. The Station Entrance will be of a high quality, expressive architectural design which will both reflect LUL's ambitions for a 'World Class station', and the 'world class' importance of the Bank area as a historic and financial hub in the City of London (Figure 7.8).
- 7.2.14 Legibility of the proposed Station Entrance is key to ensuring that passengers can easily locate the entrance. There are currently a large number of existing entrances to the Bank-Monument Station Complex in close proximity, often visible from the proposed Station Entrance. Although it is important for the appearance of the Station Entrance to align with the potential OSD, it is key for the Station Entrance to stand alone and have its own presence.
- 7.2.15 The following elements enable the proposed station to provide a distinct presence on the streetscape and can be identified as a LUL Station Entrance from a distance. These include:
- a canopy extending over the pavement;
 - LUL blue fascia spanning the entrance opening;
 - strategically positioned LUL Roundels; and
 - materials that distinguish the station from the OSD.
- 7.2.16 The Station Entrance will comprise a large double height opening with glazing along Nicholas Lane allowing large amounts of natural daylight to enter the space and help create a comfortable passenger environment. The glazing will make the facade as transparent as possible, giving views into the station interior and a connection with the streetscape outside the station.



Figure 7.8: Visualisation of Station Entrance exterior on Cannon Street

- 7.2.17 The Station Entrance will be of a contemporary, simple and uncluttered design to aid the flow of passengers in and out of the station and will be in line with LUL's emerging Station Design Idiom principles.
- 7.2.18 It is assumed that the Station Entrance will be constructed and will be operational before the OSD construction commences, in which case the entrance will appear as a standalone double height station entrance with the remainder of the site (apart from 20 Abchurch Lane) hoarded off with 3.6m high hoardings. The new station infrastructure has been designed to enable the OSD to be constructed whilst the entrance remains open and fully operational.

- 7.2.19 The proposed elevation on Cannon Street is shown in Figure 7.8. Conceptual elevations for Nicholas Lane and King William Street are shown in Figures 7.9, 7.10 & 7.11.
- 7.2.20 The detailed design and materials of the elevations will be approved by the City of London Corporation at a later date.
- 7.2.21 The new Station Entrance on Cannon Street is designed to be integrated into the OSD elevation and to be the most prominent feature. The OSD proposes ground and mezzanine retail uses on the west side of the block in keeping with the general character along Cannon Street. The shopfronts will be broken at mezzanine level with a solid spandrel panel to reduce the visual scale of the facade in this location and to not compete visually with the Station Entrance.
- 7.2.22 On King William Street, new station infrastructure and a proposed retail unit will occupy the northeast corner of the ground floor of the OSD and its façade will draw reference from the existing classical buildings on the street (Figure 7.11).
- 7.2.23 For the Nicholas Lane elevation, the new Station Entrance and its associated infrastructure will take up the full length of the block between King William Street and Cannon Street. The frontage along Nicholas Lane will activate the public realm through a combination of new retail and views into the station.
- 7.2.24 Part of the Nicholas Lane façade will be occupied by plant rooms with bespoke bronze anodised screening. The rest of the façade will be clad in Portland stone with large glazed areas into the Station Entrance hall at the southern elevation and for the proposed retail unit at the northern end where it fronts King William Street.



Figure 7.9: Contextual King William Street elevation of the new Station Entrance at ground level (OSD shown for information only)



Figure 7.10: Contextual Nicholas Lane elevation of the new Station Entrance at ground level (OSD shown for information only)



Figure 7.11: Proposed retail unit on corner of King William Street and Nicholas Lane (OSD shown for information only)

7.2.25 Externally, the Station Entrance will be sympathetic to the heritage of the area and use materials from a palette approved by the City of London. The design aims to create strong visual connections between the Station Entrance and its rich context (Figure 7.12). In accordance with the LUL Station Design Idiom, the station will be designed to be in keeping with the LUL brand and will be clearly identifiable as an LUL asset and reflective of its context.

7.2.26 The three key external materials (Figure 7.13) proposed are:

- Portland stone cladding;
- bronze anodised cladding and detailing; and
- curtain wall glazing.

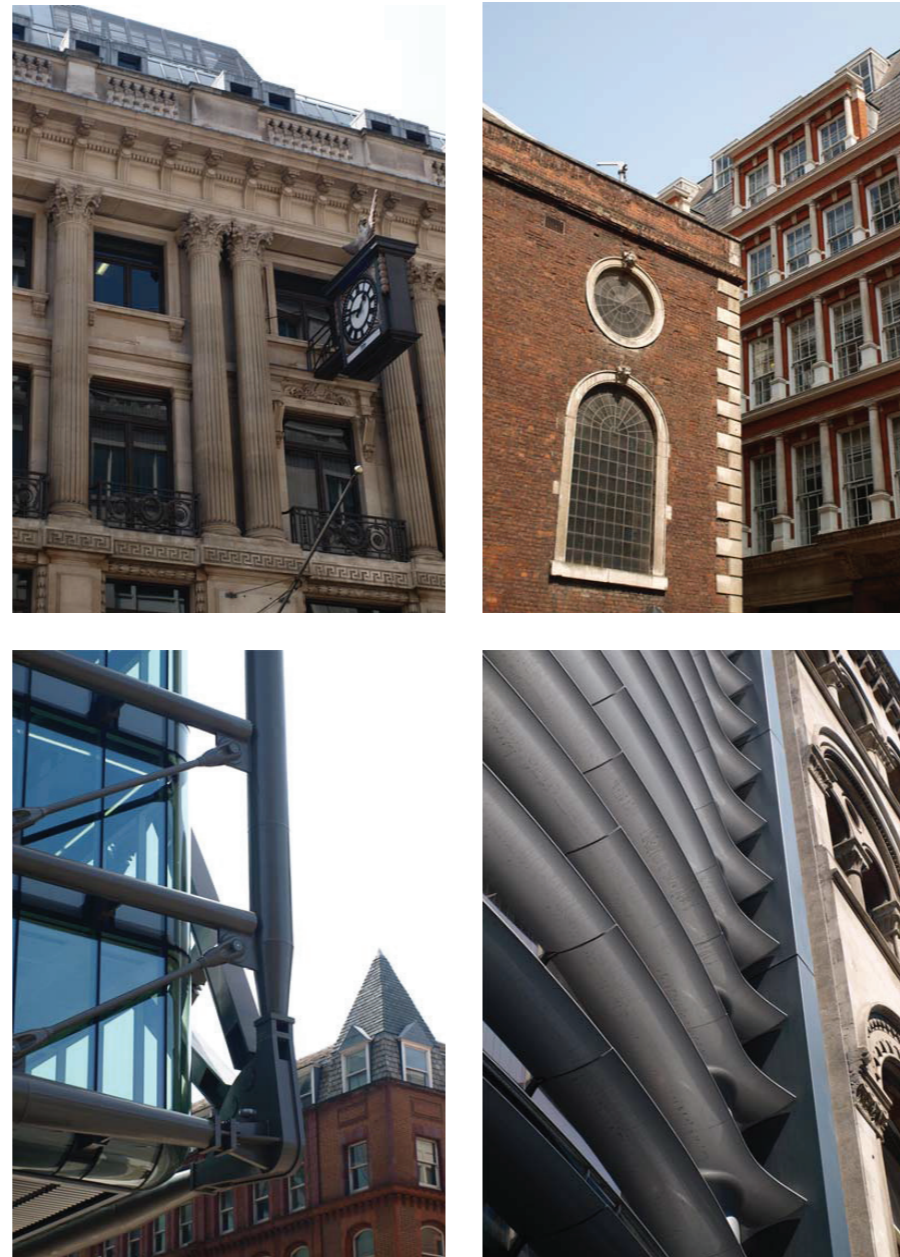


Figure 7.12: Existing local context

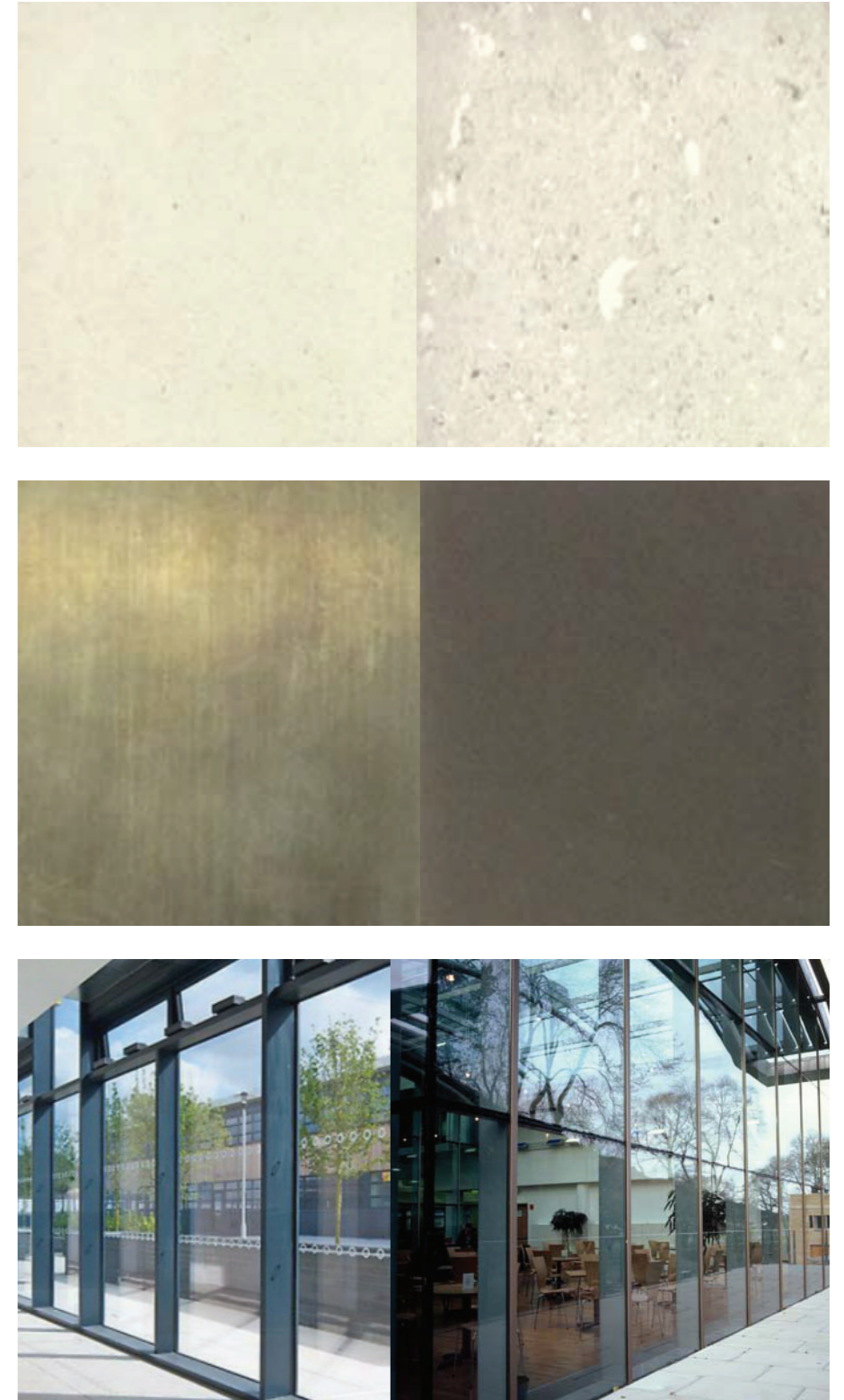


Figure 7.13: Indicative materials to be used - Portland stone, bronze and curtain wall glazing

Improving passenger experience through station design

Layout

- 7.2.27 Figure 7.14 shows the proposed layout of the new Station Entrance and associated infrastructure. Where possible the back of house areas have been located below ground to minimise impact on the facades.
- 7.2.28 The station extent and layout have been defined by the escalators and lifts between Street and Northern Line, with staff accommodation arranged around this in accordance with LUL Standards and functional requirements.
- 7.2.29 The Station Entrance area provides a 'World Class Station' environment for passengers. A key element which defines the Station Entrance is the scale of the entrance opening and the double height interior. The amount of natural light entering into the deeper parts of the entrance are maximised by the large opening as well as a glazed façade looking onto Nicholas Lane.

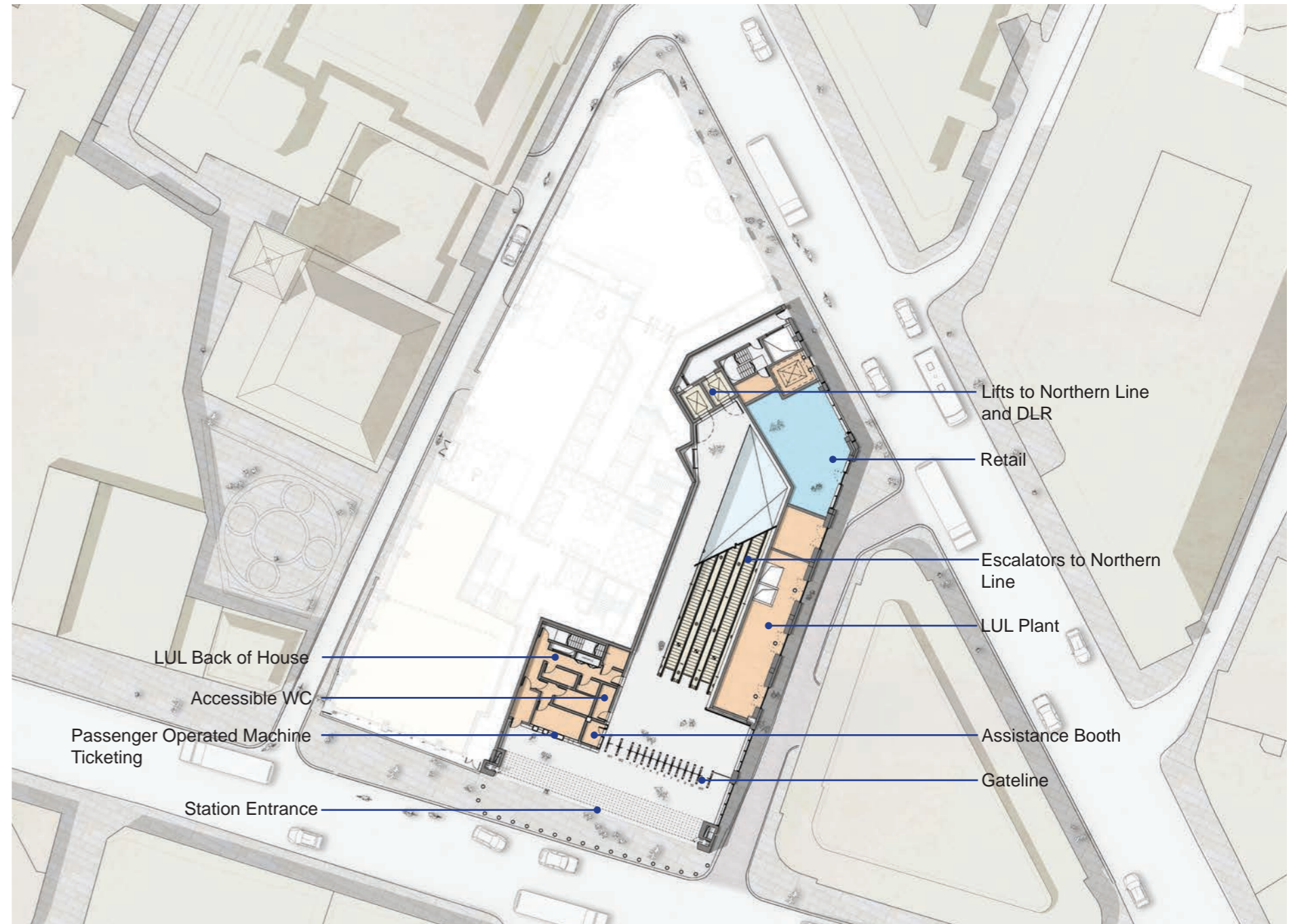


Figure 7.14: Proposed ground floor plan of the Station Entrance Hall on Cannon Street

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7.2.30 The main public entrance to the station will be on Cannon Street and the layout has been designed to create a direct passenger route between the Station Entrance and escalators.

7.2.31 A canopy extending over part of the pavement will increase the visibility of the station from a distance. Each side of the entrance opening will incorporate gate enclosures which allow the Station Entrance to be partially or fully closed by pulling across a series of collapsible gates.



Figure 7.15: Miller Hare Verified View - Cannon Street at Laurence Pountney Lane Proposed (OSD shown for information only)



Figure 7.16: Miller Hare Verified View - Cannon Street at Martin Lane Proposed (OSD shown for information only)

- 7.2.32 HVM bollards are provided in front of the Station Entrance (see section 8.2).
- 7.2.33 A bank of ticket machines will be located adjacent to the gateline, near the Station Entrance. Queuing for the ticket machines will be parallel to the main flow of passengers and away from the ticket gates. The ticket machine area will also accommodate information displays such as route maps and local area information. An assistance booth will be located between the ticket machines and gates.
- 7.2.34 The run off from escalator to gateline is limited to 9m however passenger modelling has demonstrated that this is acceptable subject to maintaining a clear Station Entrance.
- 7.2.35 The ticket gateline consists of thirteen automated ticketing gates including three wide aisled gates. Two wide aisle gates will be positioned on the west side of the gateline, providing a direct route to the step-free access lifts on the paid side of the gateline. The single additional wide aisled gate will be on the far east side of the gateline to reduce cross-flows for passengers who need to use the wide aisled gate but may not need to the step-free access route via the lifts.
- 7.2.36 After passing through the ticket gates to the paid side of the station, a bank of triple escalators will be located directly in line with the gateline, resulting in a direct route from the entrance down towards the trains. The proposed layout of the Station Entrance Hall minimises the number of decision points and reduces congestion. The running direction of the escalators will be defined by the peak travel times. During the morning peak period where the majority of passengers will be exiting the station, two of the escalators will run in the up direction with the third running down.
- 7.2.37 An accessible W.C will also be provided beyond the ticket gates on the west side of the Station Entrance Hall, immediately behind the ticket machines with a door opening into the public area of the station.

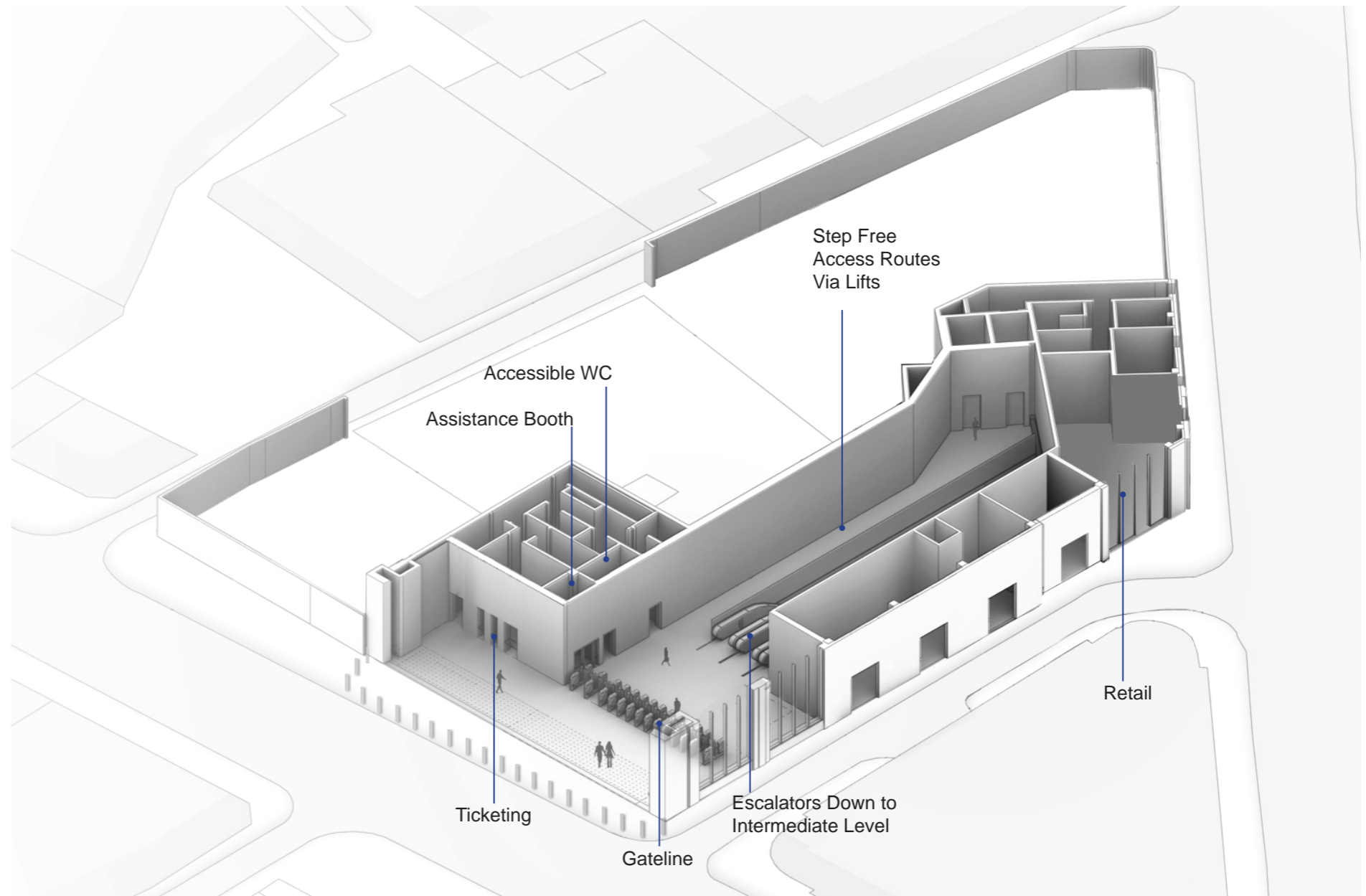


Figure 7.17: Key Passenger interfaces in the proposed Station Entrance

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- 7.2.38 The west side of the paid area will include a direct route towards the lifts. The lifts have been positioned between the existing tunnels to provide direct step free access from street to Northern Line and DLR respectively. The Station Entrance Hall will allow for clear sight lines across all areas, including the lift lobby.
- 7.2.39 The escalator route from the Station Entrance to Northern Line is split into two separate banks to accommodate the direction change required to arrive at the Northern Line Platforms.

- 7.2.40 A retail space is proposed for the north-east corner of the Whole Block Site (Figures 7.10, 7.14 & 7.17), opening out onto Nicholas Lane. The position of the retail space has been aligned with proposed ground floor retail on the corner of the adjacent building Phoenix House.

Internal appearance

- 7.2.41 The large windows and spacious Station Entrance will allow as much natural daylight as possible into the ground level and down the escalators (Figure 7.19-7-20).



Figure 7.18: Proposed Station Entrance Isometric

- 7.2.42 Inside the Station Entrance Hall, all internal walls will be clad with back painted glass to create a clean, high quality appearance. The same cladding will also line the descending escalator box to the intermediate landing level where passengers enter the sub-surface passenger areas and the tunnel network.
- 7.2.43 The lighting within the Station Entrance Hall area will be fully integrated with the design of the soffit. The soffit forms an opportunity for architectural expression in the Station Entrance and is used to create a modern Station Entrance befitting of the LUL brand. The soffit will integrate lighting, PA equipment and other essential services, conceal a soffit maintenance deck and will extend to meet the external canopy on Cannon Street, creating a unified aesthetic.
- 7.2.44 The materials and lighting will be developed in further detail at the detailed design stage, in line with the emerging LUL Station Design Idiom.



Figure 7.19: Visualisation of Station Entrance Hall by escalators, looking out towards the main Station Entrance



Figure 7.20: Visualisation of Station Entrance Hall by escalators, looking towards the escalator box

7.3 Below ground

7.3.1 The main drivers behind the design of the below ground elements were to:

- Maximise benefits to as many passengers as possible; and
- Provide clear and direct passengers routes including intuitive wayfinding.

7.3.2 In terms of benefits to passengers, by focusing on these drivers, the BSCU Project seeks to achieve:

- An improvement in the passenger journey within the station through shorter, quicker or easier routes; and
- A reduction in the number of times that control measures need to be implemented at the station as a result of overcrowding.

Maximising benefits to as many passengers as possible

7.3.3 The main focus of the proposed works is the Northern Line platform area, its interchange with the DLR and Central Line and connection to Street level. 60 percent of all forecast journeys in the Bank Monument Station Complex start or end at either the Northern Line or DLR. These lines exert the greatest pressure on its operating capacity, and works to these areas therefore benefit the station complex as a whole.

7.3.4 69 percent of peak hour passengers will directly benefit from the proposed changes to the station under the BSCU Project, as shown in Figure 7.22. Although, it should be noted that passengers using routes that are comparatively untouched by the BSCU Project, such as routes between the Central Line, Waterloo & City Line and the Bullring entry/exits will still benefit from the overall reduced congestion in the Bank Monument Station Complex. Interchange for Waterloo & City Line passengers will also be notably improved by the new Bloomberg Development Station Entrance, due for completion in late 2015.

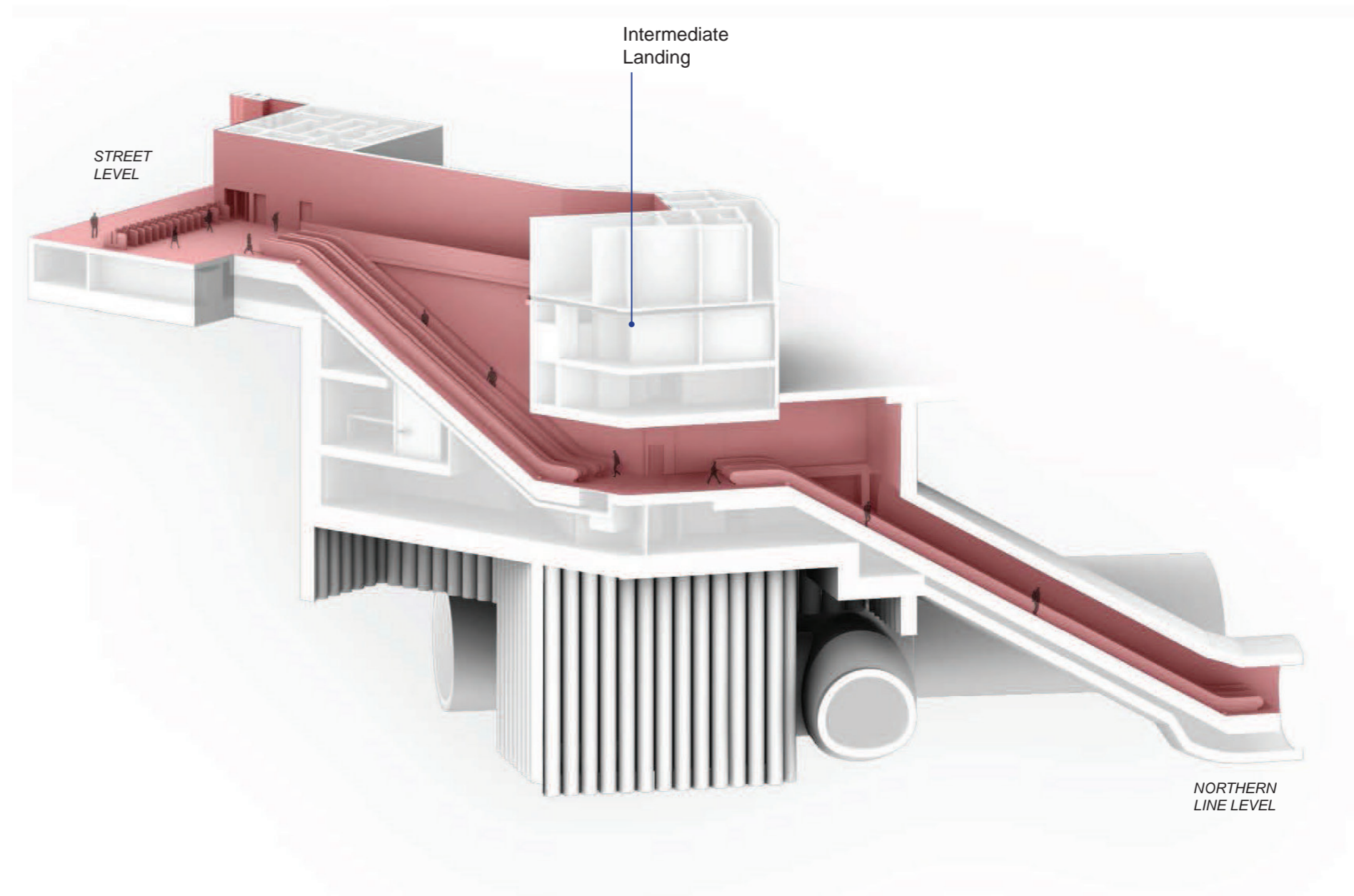


Figure 7.21: Proposed route from the Station Entrance Hall down to the Northern Line level via two sets of triple escalators

7.3.5 There are approximately 81 possible interchange journeys within Bank Station between the different lines and street level. Of these:

- 22 routes will directly benefit from the BSCU Project;
- 26 routes will indirectly benefit with reduced congestion and journey times;
- 15 routes are not logical or typically used routes; and
- 18 routes fall outside the reach of the BSCU Project (e.g. Central Line to Waterloo & City Line routes).

7.3.6 The key to the success of the BSCU Project is to provide the greatest benefit to the greatest number of passengers possible. This is achieved through strategic and targeted interventions that maximise what is achievable:

- a new high-capacity Station Entrance directly linking the street with the Northern Line;
- direct and dedicated interchange routes designed and aligned to shift the busiest transit routes away from existing congestion; and
- the installation of triple escalators in key locations to offer capacity and resilience through the station.

7.3.7 These interventions aim to attract passengers onto new routes through direct and simplified wayfinding, and to remove them from existing routes. This would result in reducing the severe congestion seen in the TriPLICATION area today.

7.3.8 Of those who are considered to be within the influence of the BSCU proposals, an overwhelming majority will benefit directly from improvements that drastically improve their journey time and environment. Furthermore, there will be a strong interdependence within the station – direct changes affecting one area will offer significant benefit to others. The remainder will benefit indirectly through significantly reduced cross flows and congestion in existing areas of the station. Of all passengers affected by the BSCU proposals, the proportion of those directly and indirectly benefitting is shown in Figure 7.23.

7.3.9 In terms of forecast passenger numbers (for year 2026) in a typical three-hour weekday morning peak almost 59,000 passengers will experience a vastly improved station environment with less congestion and faster journeys.

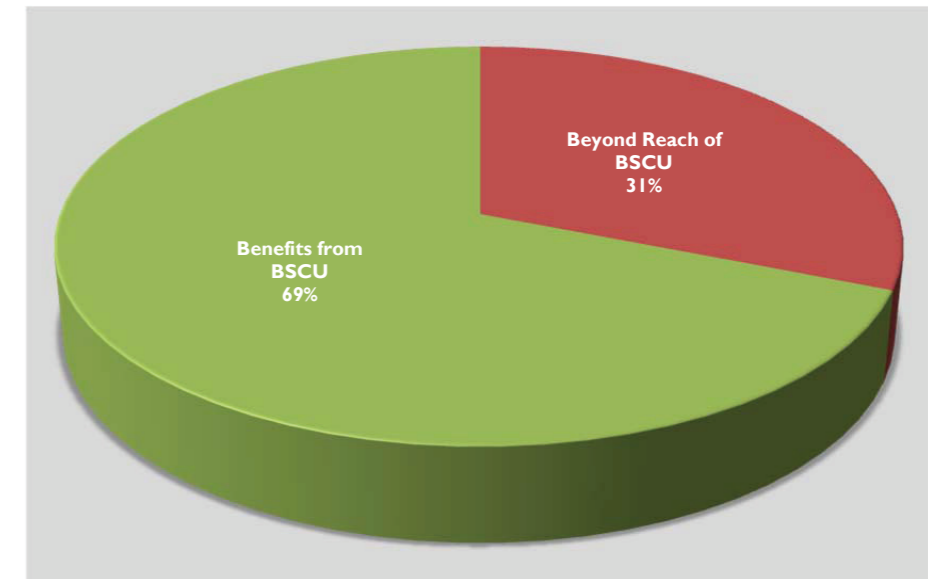


Figure 7.22: Percentage of peak hour passengers benefiting from the proposals in the Bank Monument Station Complex

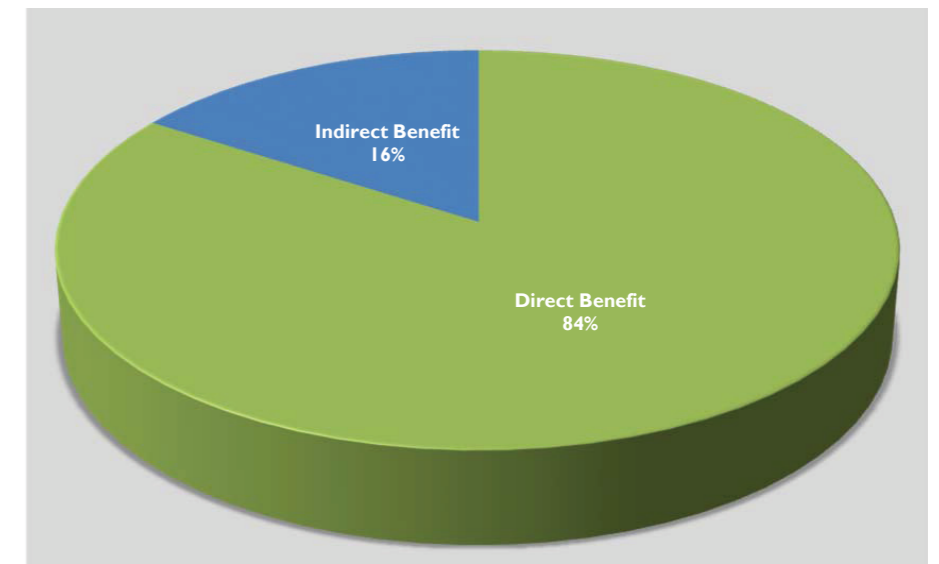


Figure 7.23: Percentage of those benefiting from the BSCU Project directly and indirectly

Providing clear and direct passenger routes

7.3.10 The winning scheme focuses on improving the following in-station journeys as they are the most congested and most popular interchange routes:

- 1) between the Northern Line and street level;
- 2) between the Northern Line and Central Line; and
- 3) between the Northern Line and the DLR.

7.3.11 The winning scheme used detailed pedestrian modelling to simulate how individual people move through the station, reacting to the layout and to other people. This modelling has been central to the design approach and has led to the BSCU Project focusing on the three routes identified above by:

- Providing a clear and direct route between the Northern Line and street level which bypasses the TriPLICATION area and routes to/from Monument Station (Figure 7.24). To be attractive to passengers, this route will offer significant journey time savings compared to existing routes, take them closer to their intended destination at street level, and provide a better in-station experience.
- Providing dedicated passenger routes to serve the key interchange flows between the Northern and Central Lines and the Northern Line and DLR, therefore reducing cross-flows of passengers and reducing congestion during peak periods.
- Creating operational resilience by providing triple escalators throughout to offer greater capacity to accommodate passenger flows.

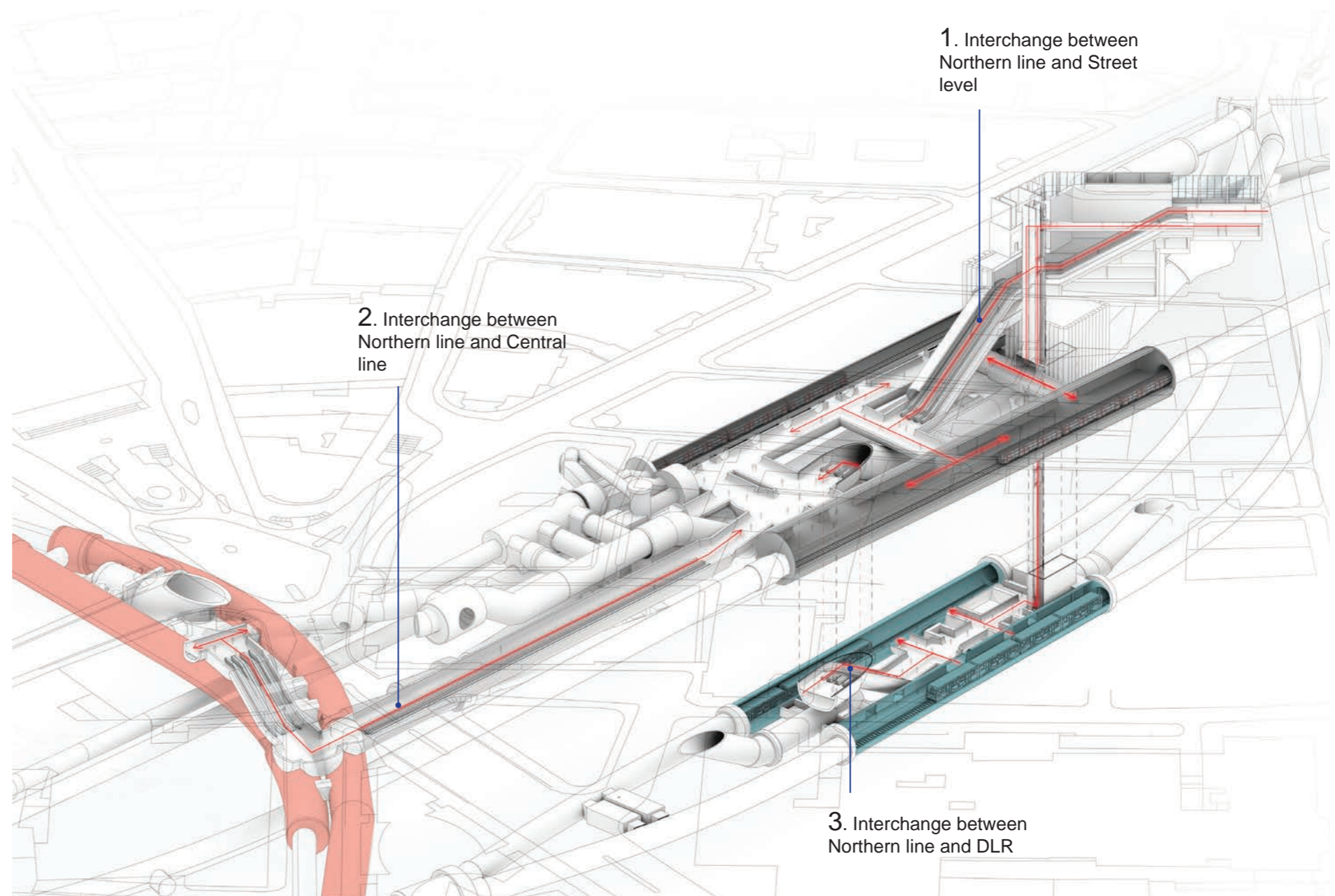


Figure 7.24: Winning scheme highlighting improved passenger routes

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- 7.3.12 By focusing on these proposed design changes to the key interchange routes, congestion within the station would be relieved and therefore reduce the number of times control measures have to be implemented as a result of station overcrowding. It is important to note that the key below ground interchanges will be brought into use in 2020 before the Station Entrance opens in 2021, delivering congestion relief for the benefit of passengers.
- 7.3.13 In providing a clear and direct route between the Northern Line and street level, one of the objectives of the winning scheme team was to enable escalators to be provided directly from the Station Entrance on Cannon Street down to the Northern Line level. This would also provide a Fire Protected route direct from the Northern Line and DLR levels to the new Station Entrance.
- 7.3.14 Two banks of escalators are necessary to transport passengers to the underground platforms from the Station Entrance because the level difference between the street

level and Northern Line level is 30m and LUL standards restrict the maximum rise of a single escalator to 18m. It was also a design priority for the escalator to the Northern Line to land in a cross-passage located parallel centrally along the platforms to enable a good flow of passengers onto and off the platforms. The landing points and lengths of the escalators determined that the Station Entrance would be best located within the Whole Block Site and that the optimum Station Entrance would be in the south-east corner of the site.

- 7.3.15 Studies concluded that this layout provided the most direct and shortest route from the Station Entrance to the Northern Line and DLR, reducing the potential for congestion which can be created by multiple changes in direction for passengers. This layout also has the escalators wholly contained within the Whole Block Site, minimising the impact on existing utilities for neighbouring buildings and uses.

- 7.3.16 The remainder of this section focuses on how the BSCU Project improve the congestion within the station by following the routes between:
- 1) the New Station Entrance Hall and the Northern Line;
 - 2) the New Station Entrance Hall and the DLR;
 - 3) the Northern and Central Lines;
 - 4) the DLR and the Northern Line; and
 - 5) the DLR and the Central Line.
- 7.3.17 The existing routes shown are the most direct. Passengers may elect to use alternative routes or may be directed as operational requirement dictate.

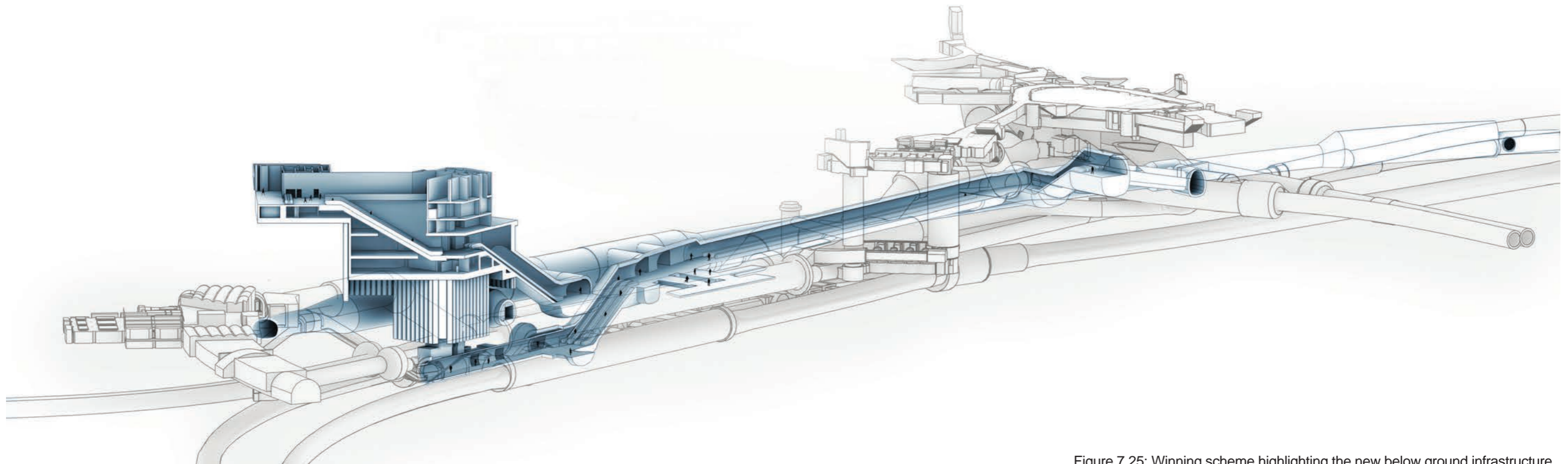


Figure 7.25: Winning scheme highlighting the new below ground infrastructure

Route 1: The new Station Entrance Hall and the Northern Line

Existing Layout and Journey

- 7.3.18 The Northern Line level is currently the most complex in the station, connecting to all other levels via escalators or stairs. The overall strategy of approach to the Northern Line level is to provide the shortest possible routes for passengers, to reduce congestion and to reduce conflict between the flows of passengers moving between destinations within the station.
- 7.3.19 At present, passengers reach the Northern Line level via indirect routes from the Central Line ticket hall and Bullring, Lombard Street ticket hall or the District Line ticket hall at Monument Station. These routes involve a number of changes in direction and levels, and combinations of stairs, escalators or lifts as shown in Figure 7.26.

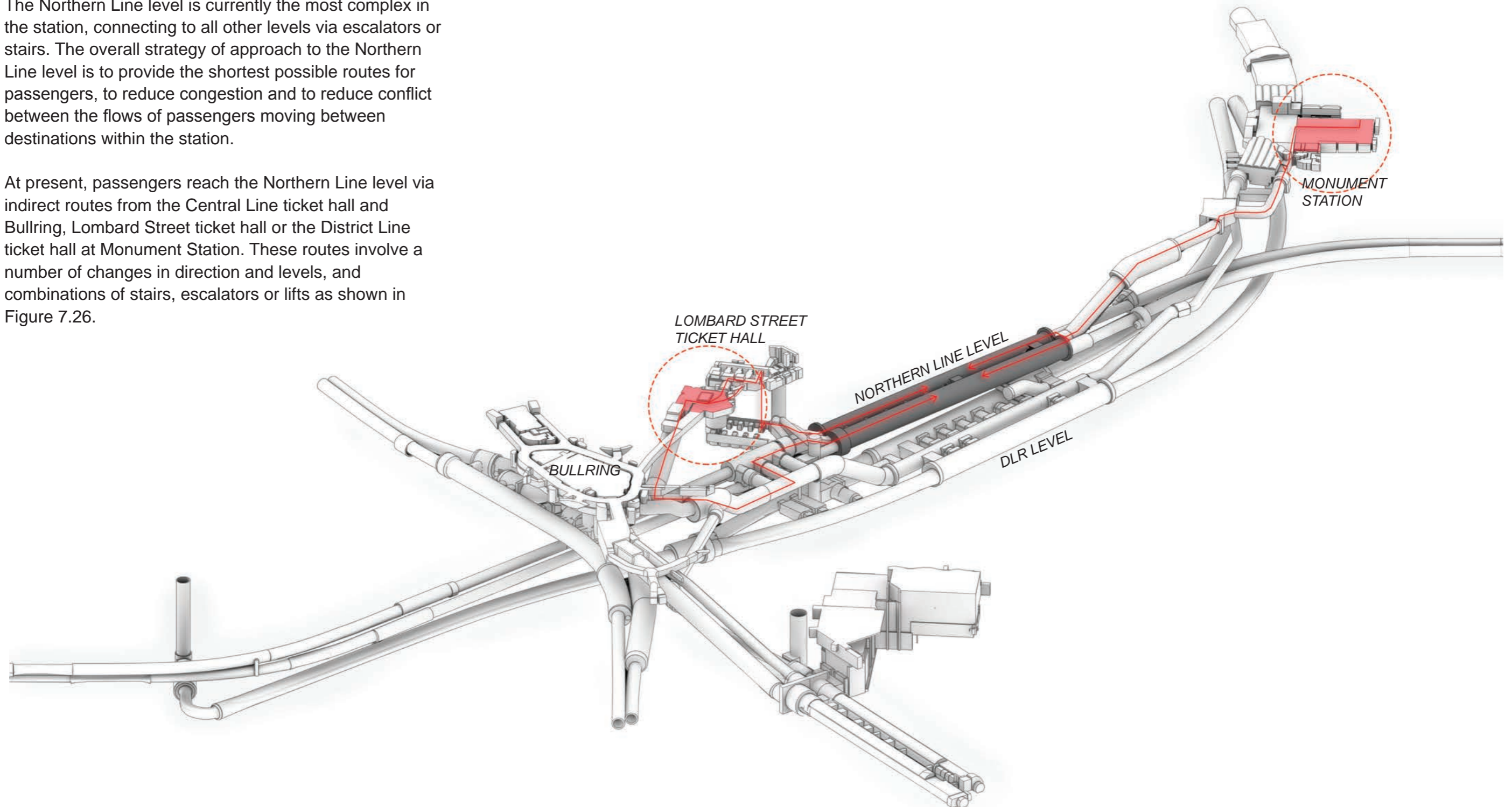


Figure 7.26: Existing passenger journeys between street level (Lombard Street ticket hall and Monument Station) and the Northern Line level

Proposed Layout and Journey

7.3.20 The proposed passenger concourse for the northbound platform and the new southbound platform will provide more space for passenger circulation, enabling passengers to enter and exit trains more easily, thus reducing congestion. Each of the new cross-passages will provide dedicated routes, thus reducing conflict between different flows of passengers:

- cross-passage 1 – to the Central Line;
- cross-passage 2 – to the DLR;
- cross-passage 3 – to the new Station Entrance; and
- cross-passage 4 – to the lifts up to the new Station Entrance and DLR and to Monument District and Circle Lines.

7.3.21 The proposed passenger journey to/from the new Station Entrance and the Northern Line level is illustrated in Figure 7.27 and will be a direct and intuitive route for those wishing to use the Northern Line or to exit the station from Cannon Street.

7.3.22 This new direct route will incorporate a 45 degree angled landing between the two sets of triple escalators to provide clear sight lines for passengers travelling from the new Station Entrance Hall down to the Northern Line and vice versa. Once on the Northern Line level, there will be more circulation space for both platforms, helping to relieve congestion.

7.3.23 This new route will be significantly more direct and shorter in terms of walking distance than the current route to the Lombard Street or Monument exits. Step free access will be provided for this journey, see 7.3.47.

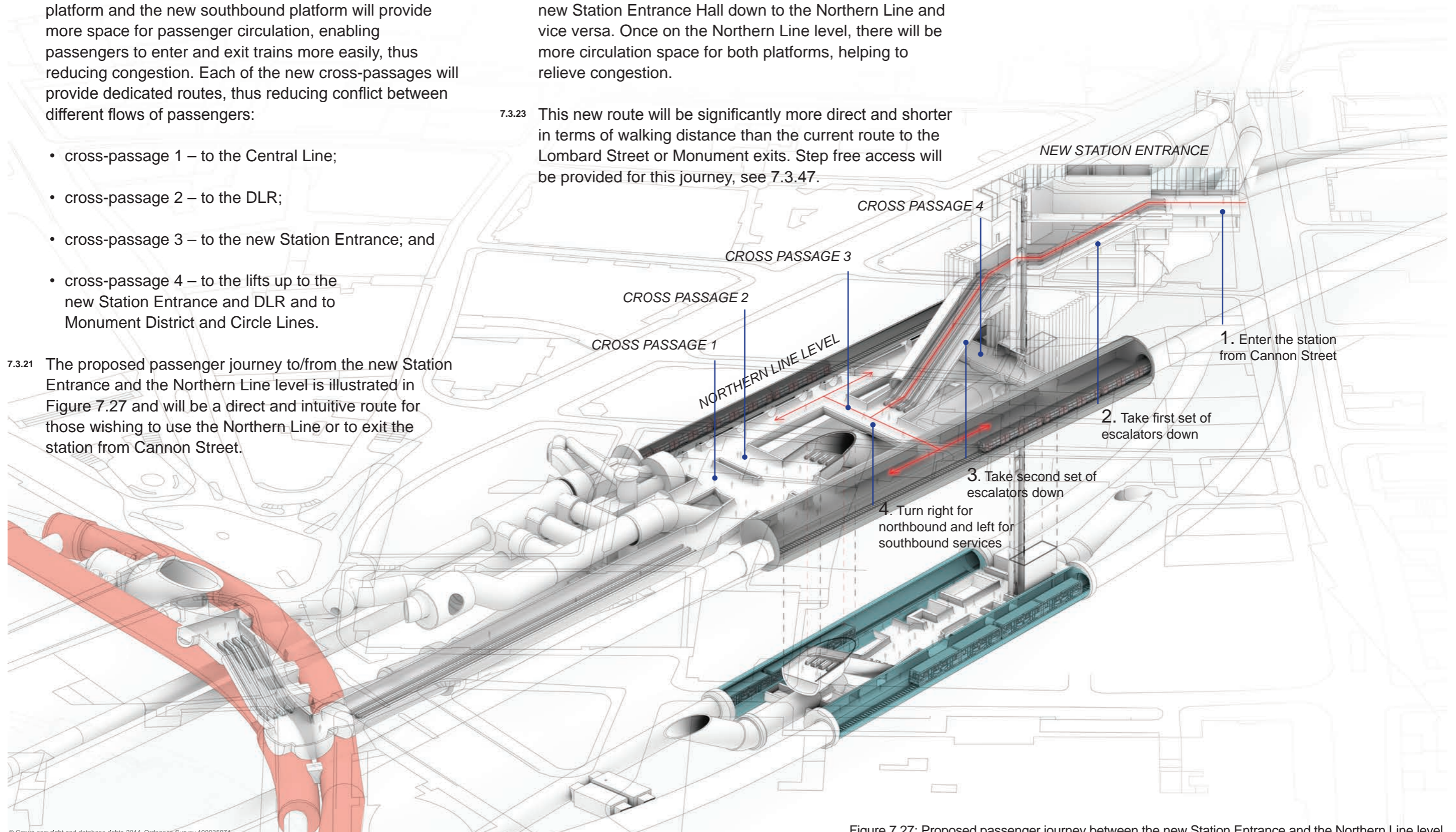


Figure 7.27: Proposed passenger journey between the new Station Entrance and the Northern Line level

Route 2: The new Station Entrance Hall and the DLR

Existing Layout and Journey

7.3.24 At present, as with passengers wishing to use the Northern Line, passengers entering Bank or Monument Stations from street level can take a number of indirect routes to the DLR. These routes involve numerous changes in direction and transfers from stairs to escalators and lifts (Figure 7.28).

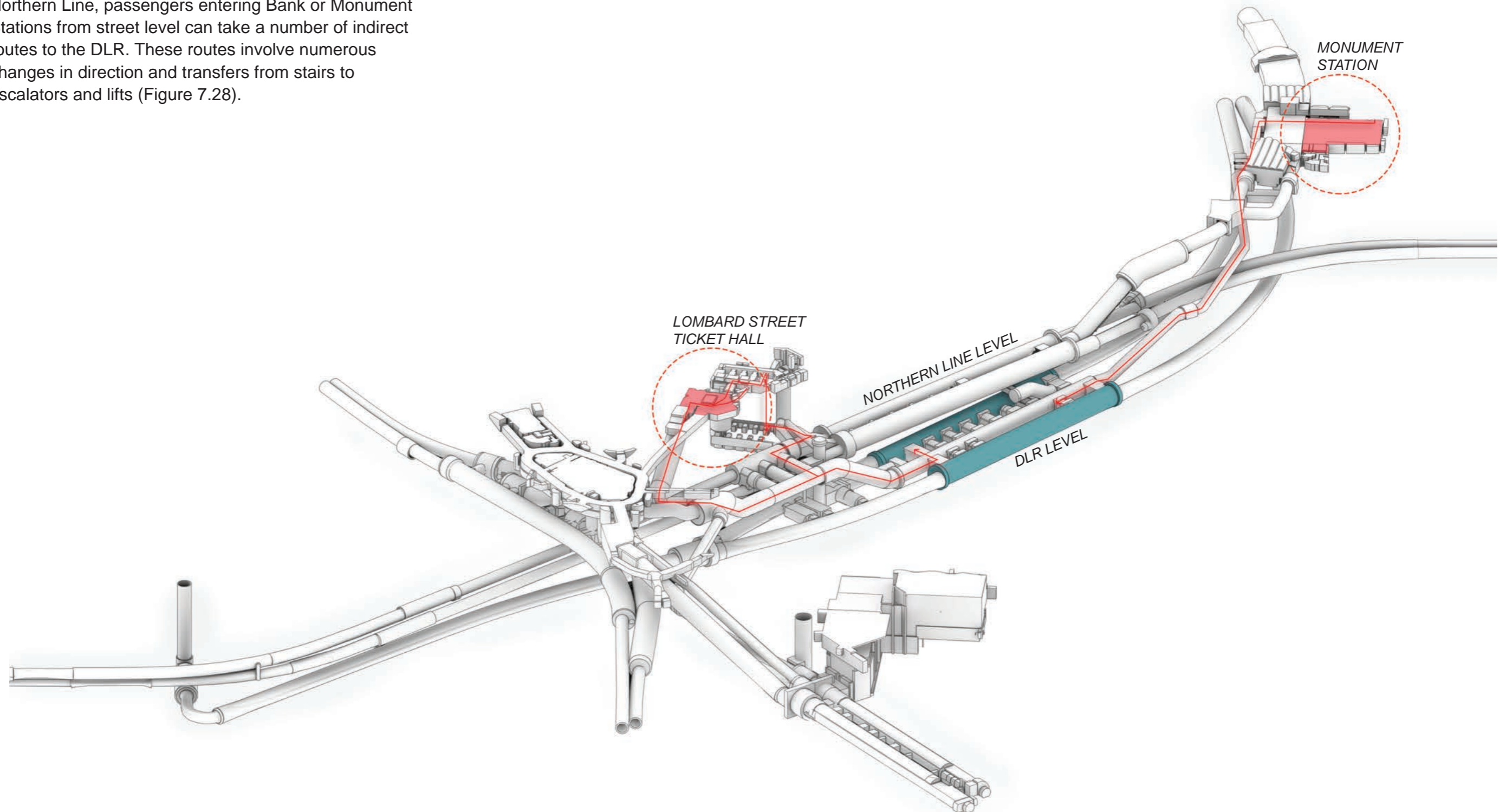


Figure 7.28: Existing passenger journeys between street level (Lombard Street ticket hall and Monument Station) and the DLR

Proposed Layout and Journey

- 7.3.25 The proposals for the DLR level include a new bank of triple escalators at the midpoint of the platforms, leading directly up to the Northern Line level and beyond to the Station Entrance on Cannon Street. These new triple escalators will provide a more direct route to the Northern Line from the DLR and provide operational resilience as it enables at least one escalator running in each direction to always be in operation.
- 7.3.26 The escalators will be capable of carrying a greater number of passengers than the existing escalators to the Triplication area or the stairs to the Northern Line level. Both the existing escalators and stairs will be maintained under the proposals and will provide a greater choice of routes for passengers leaving the DLR level.
- 7.3.27 The proposed triple escalators land in the centre of the DLR concourse, providing a central outlet for DLR passengers and reducing walking times.

7.3.28 Figure 7.29 illustrates the proposed passenger journey from the new Station Entrance to the DLR using the escalators. After reaching the Northern Line level, passengers will be directed north along the new passenger concourse towards the second cross-passage to the triple escalators leading 10m down to the DLR level. These escalators will land at a cross-passage at the middle of the DLR concourse. Step free access will be provided for this journey, see 7.3.48.

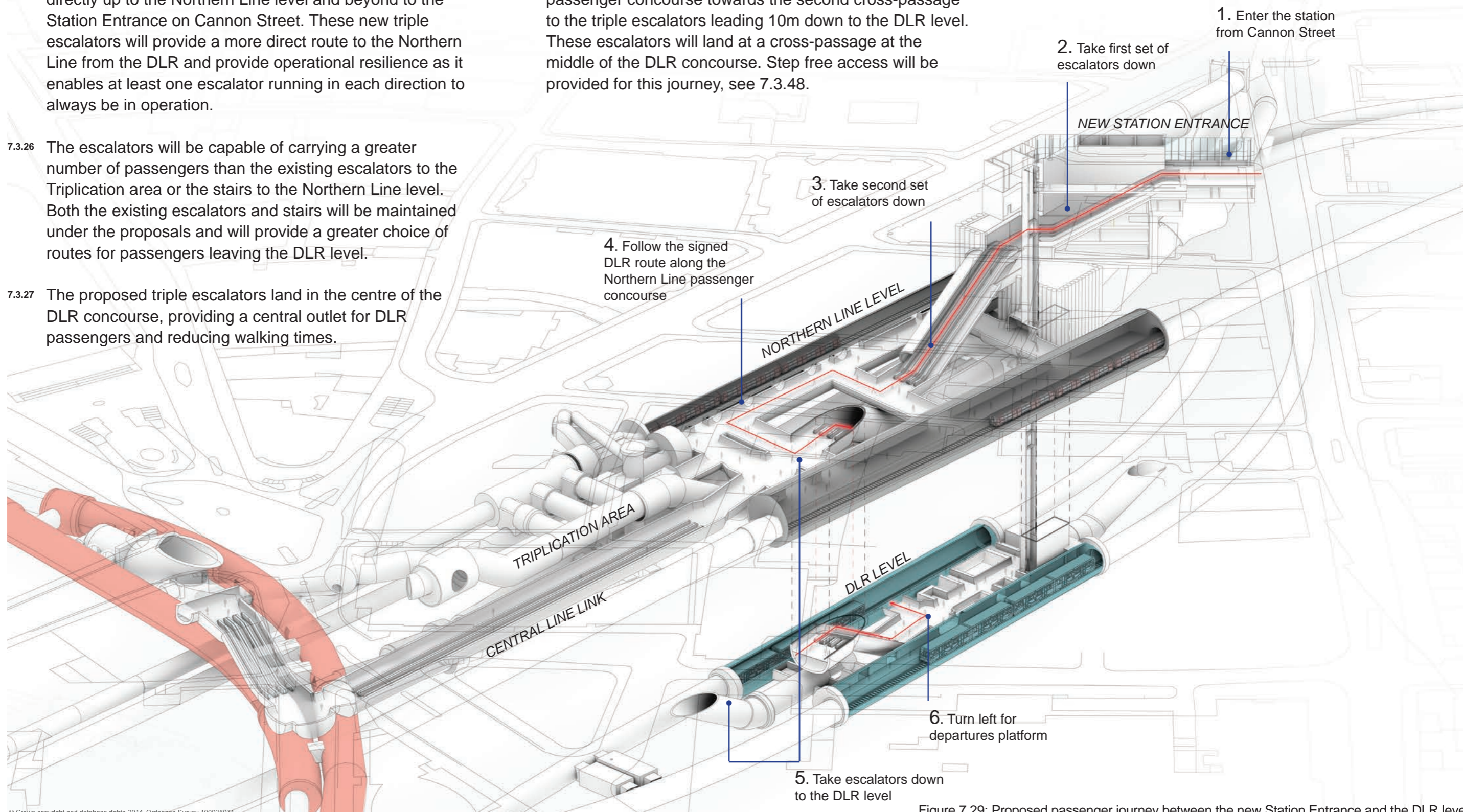


Figure 7.29: Proposed passenger journey between the new Station Entrance and the DLR level

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Route 3: The Northern and Central Lines

Existing Layout and Journey

7.3.29 At present, passengers interchanging between the Northern and the Central Line must pass through the Northern Line level, the Triplication area and the Cruciform area, which are all heavily congested during peak periods. The interchange routes involve a number of level changes and a combination of stairs (including spiral staircases) and banks of double escalators as shown in Figure 7.30. This means that passengers have to walk a considerable distance depending on the route.

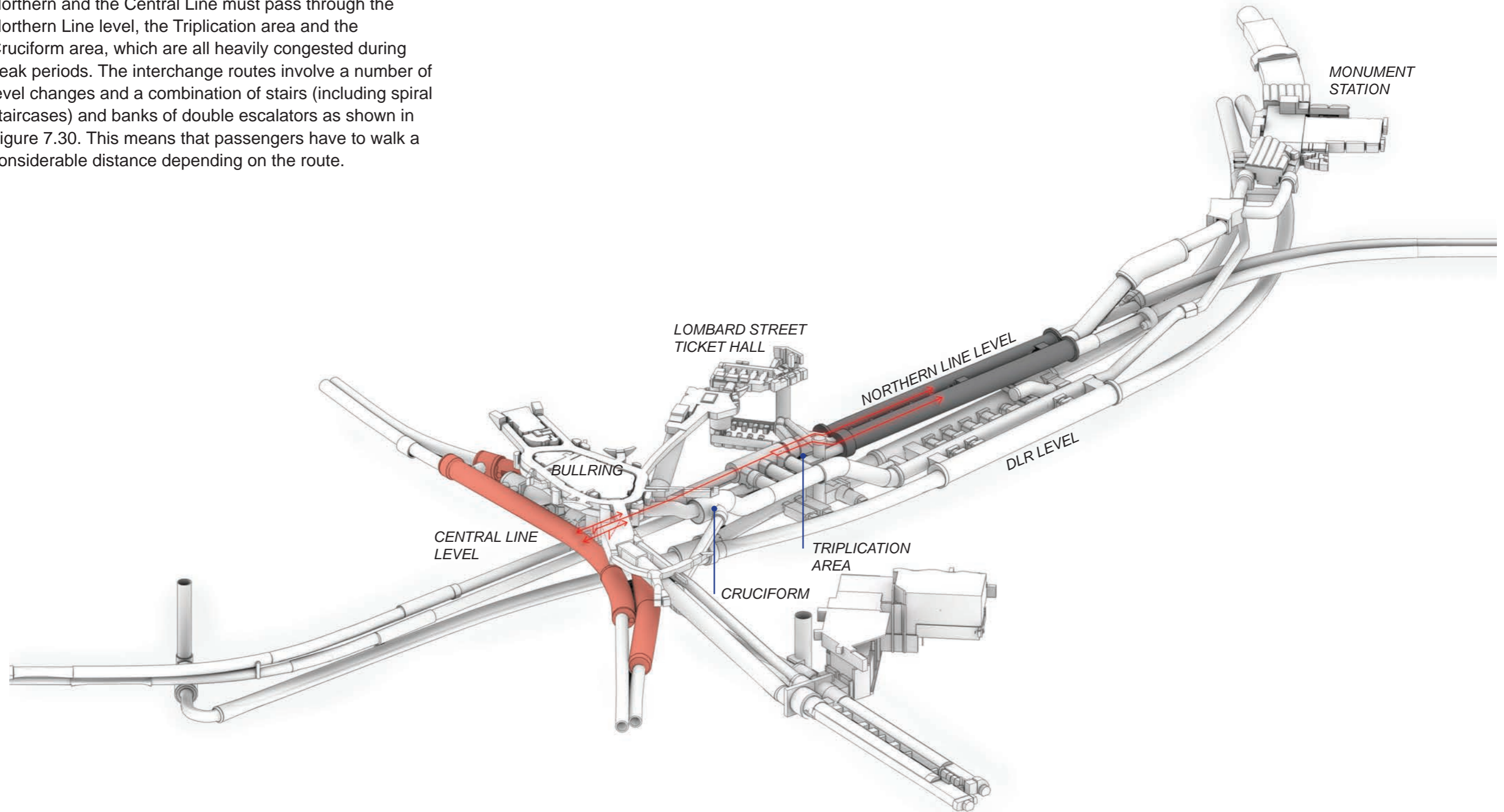


Figure 7.30: Existing passenger journey between the Northern Line and Central Line

Proposed Layout and Journey

7.3.30 The improved passenger journey for those changing between the Northern and the Central Line in the upgraded station is illustrated in Figure 7.31. This new route will be more direct for passengers and will alleviate congestion on the existing route via the Triplication and Cruciform areas.

7.3.31 Passengers from the Northern Line will be directed towards the northern end of the platforms to a cross passage where the southern end of the new Central Line Link begins. Passengers will be able to walk or use one of the two moving walkways to the northern end of the straight passageway, and then up via a new bank of triple escalators up to the centre of the Central Line platforms.

7.3.32 From the Central Line, passengers will be directed towards the middle of the platforms to the new bank of triple escalators leading down to the Central Line Link and then directly on to the Northern Line level.

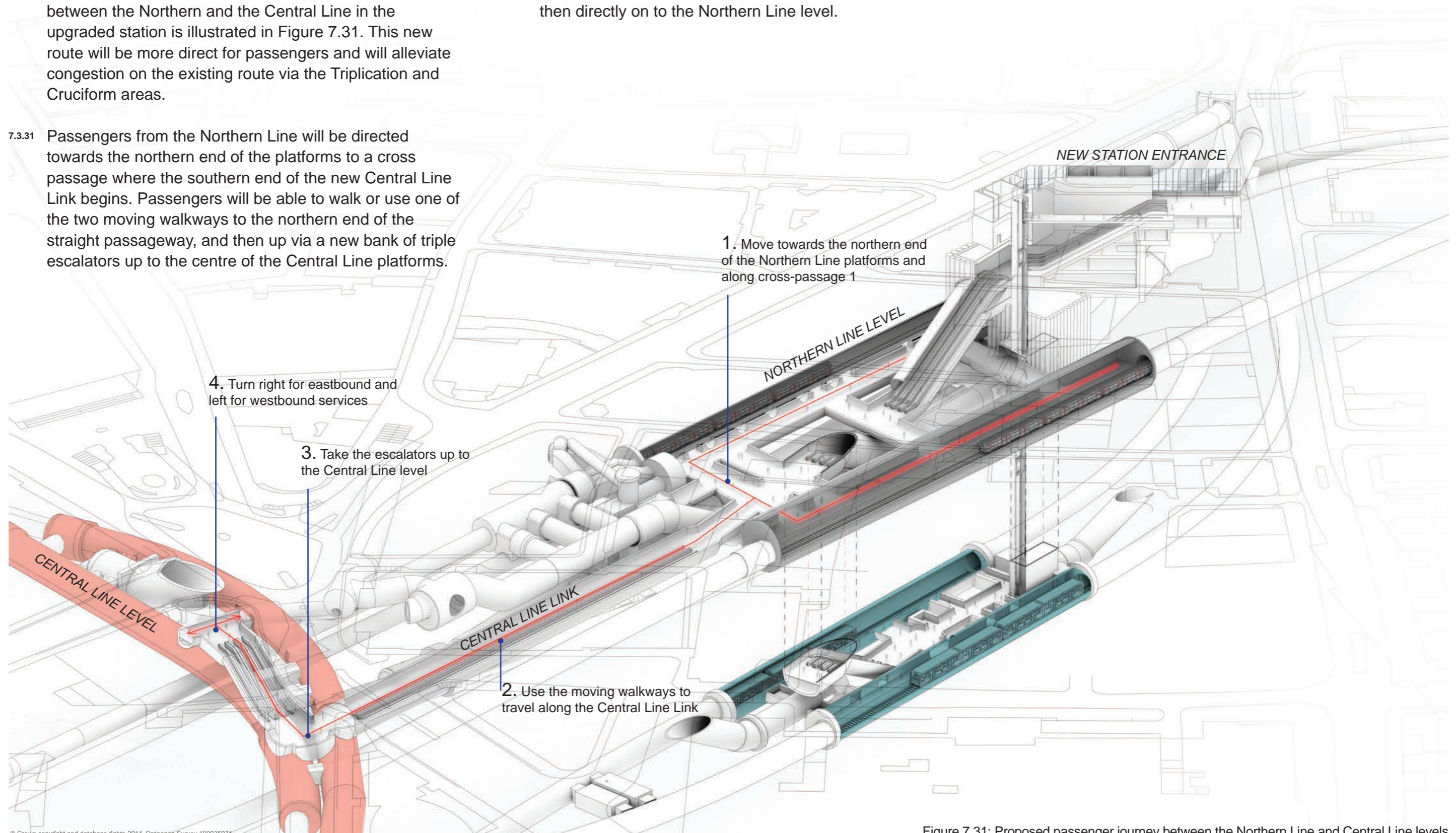


Figure 7.31: Proposed passenger journey between the Northern Line and Central Line levels

Route 4: The DLR and Northern Line

Existing Layout and Journey

7.3.33 The Northern Line level sits above the DLR level. At present, passengers have to use the narrow stairs at the southern end of the DLR platforms to reach the Northern Line level directly, or take an escalator at the northern end of the DLR platforms up to the Triplication area and then, turning back on themselves, take another escalator back down to the Northern Line platforms (Figure 7.32).

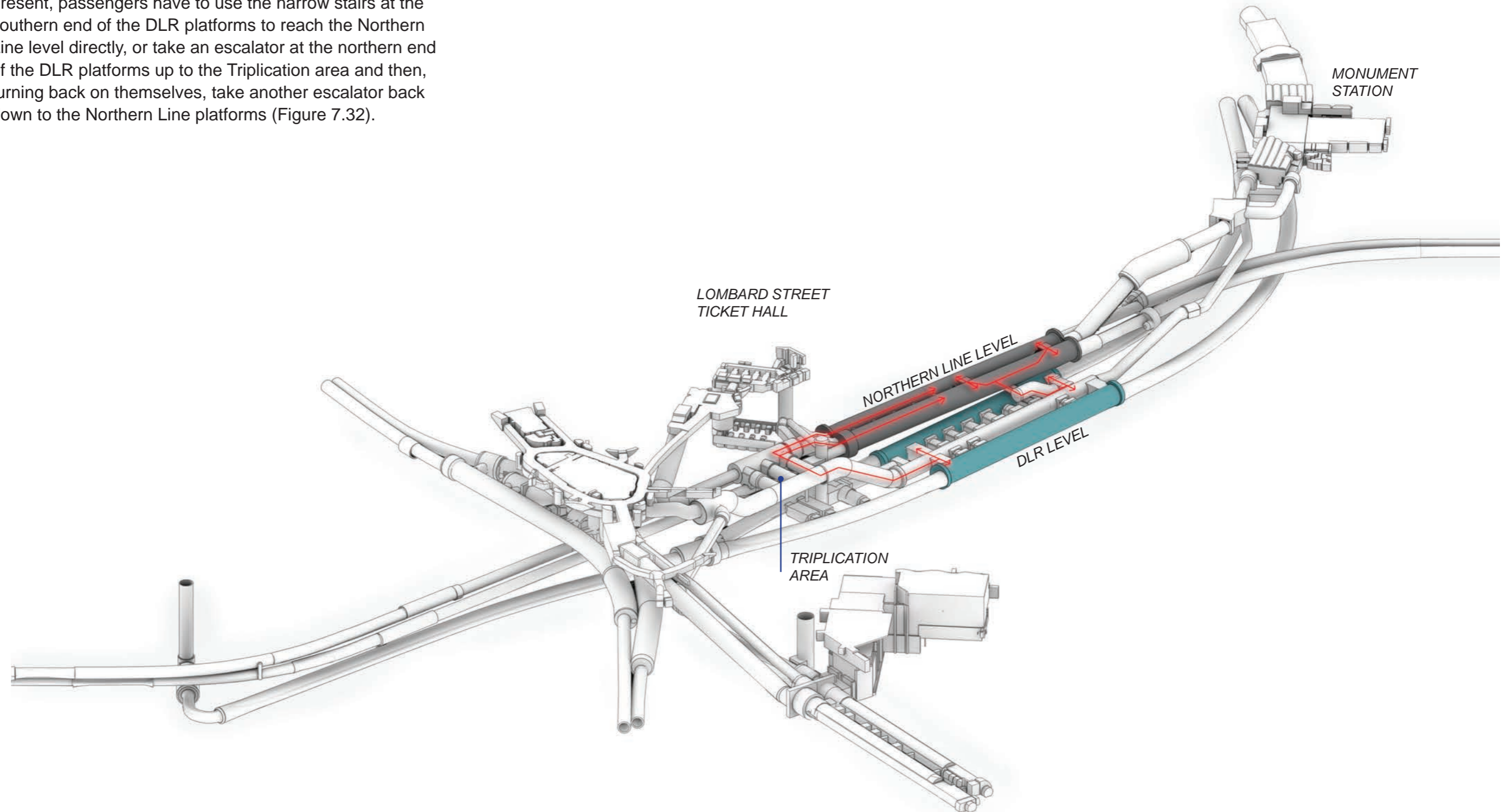


Figure 7.32: Existing passenger journeys between the DLR and Northern Line

Proposed Layout and Journey

- 7.3.34 As part of the BSCU Project, passengers arriving at the DLR Platform will be directed towards the middle of the platforms to a bank of triple escalators in the central concourse which will rise 10m directly to the Northern Line level (Figure 7.33).
- 7.3.35 From the Northern Line, passengers will be directed towards the northern end of the platforms to reach the bank of triple escalators leading directly down to the DLR.
- 7.3.36 The proposed changes will reduce the distance travelled by passengers interchanging between the two lines and improve the journey experience by use of an escalator rather than two sets of stairs.

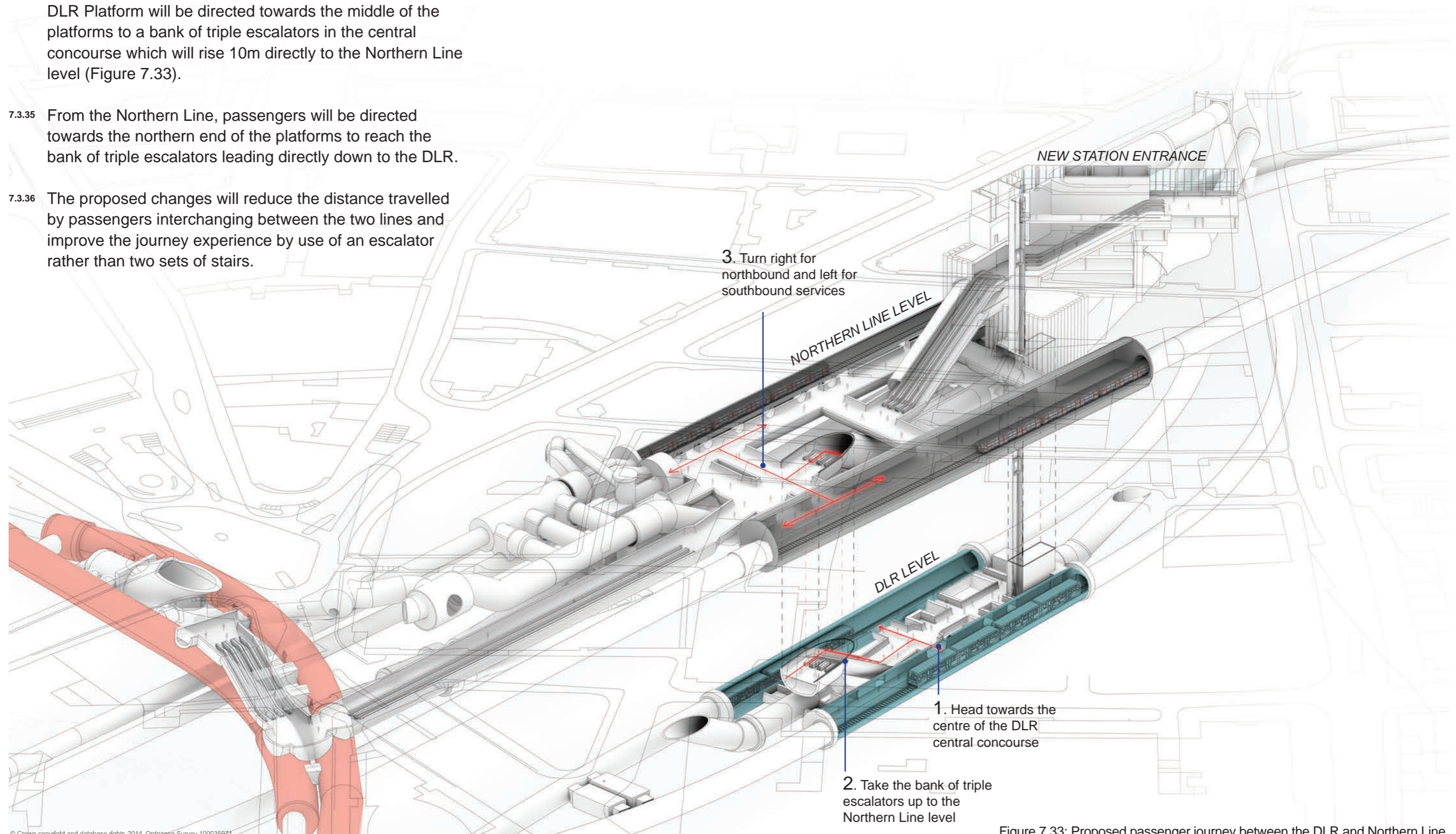


Figure 7.33: Proposed passenger journey between the DLR and Northern Line

Route 5: The DLR and Central Line

Existing Layout and Journey

- 7.3.37 As the DLR level sits directly below the Northern Line level and is connected by a bank of triple escalators. These escalators land on the Northern Line level directly opposite the southern end of the Central Line Link.
- 7.3.38 Passengers currently take one of a pair of double escalators at the northern end of the DLR platforms – which often experience queuing at peak periods – up to the congested TriPLICATION area, and then another set of double escalators up to the Cruciform area which connects to the Central Line platforms (Figure 7.34).

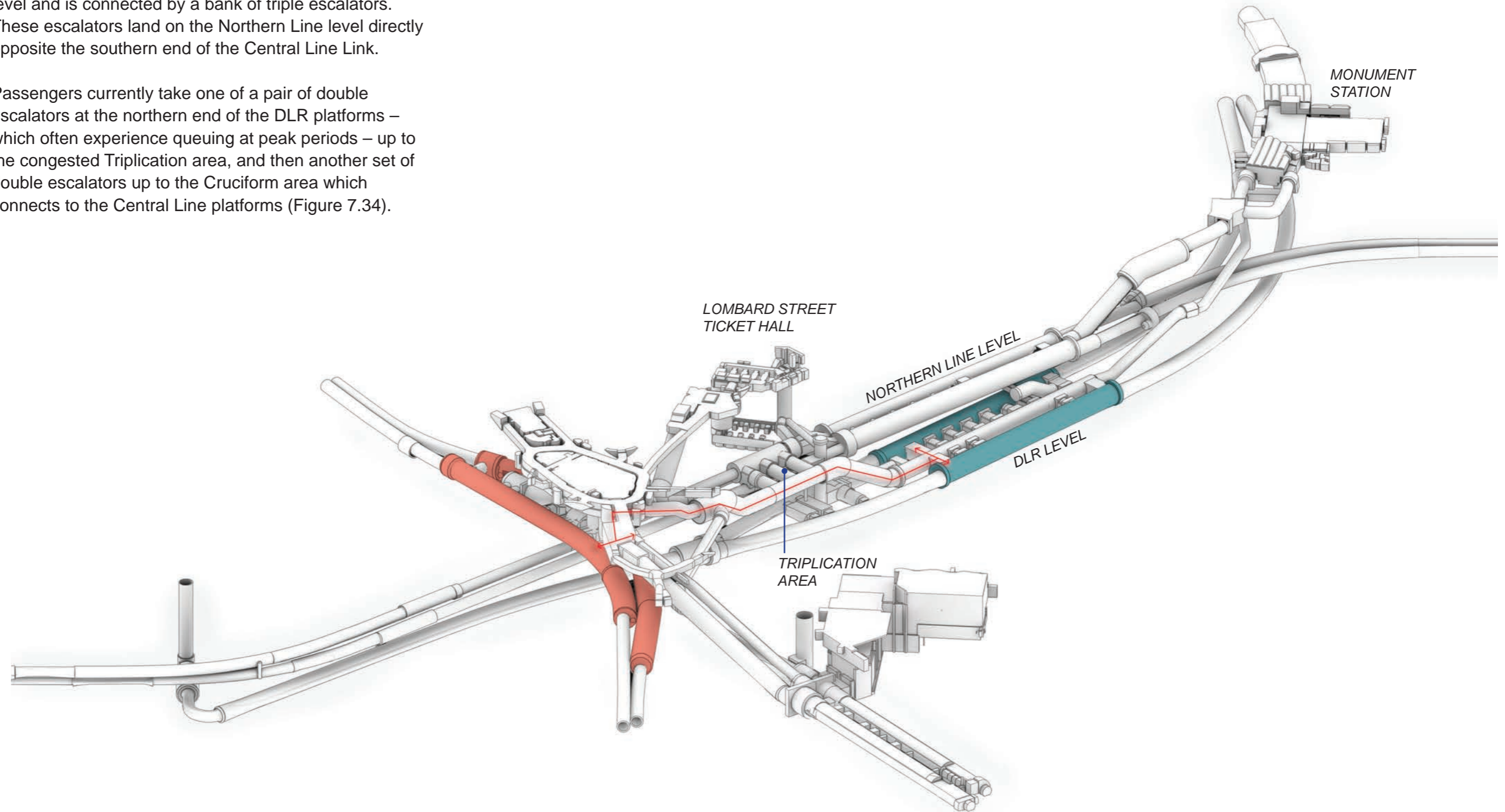


Figure 7.34: Existing passenger journey between the DLR and Central Line

Proposed Layout and Journey

7.3.39 As part of the proposed BSCU Project, passengers arriving at the DLR level will be able to either:

- take the triple escalators up to the Northern Line level and then use the moving walkways directly ahead of them to access the Central Line (Figure 7.35); or
- follow the existing route to the Central Line via escalators to the Triplcation and then Cruciform areas at the northern end of the DLR platform. This existing route will be maintained under the new project and will benefit from a significant reduction in use and congestion. Way-finding along this route will remain as it is today.

7.3.40 By offering two routes between the DLR and the Central Line, conflicting flows of passengers on the DLR arrivals platform can be minimised. Signage and way-finding will enable passengers to move forward onto a route as quickly as possible from whichever train carriage they alight from.

7.3.41 The proposed route between the two lines will be more direct than the current route, involving fewer directional changes, two escalators, a moving walkway and an overall shorter journey.

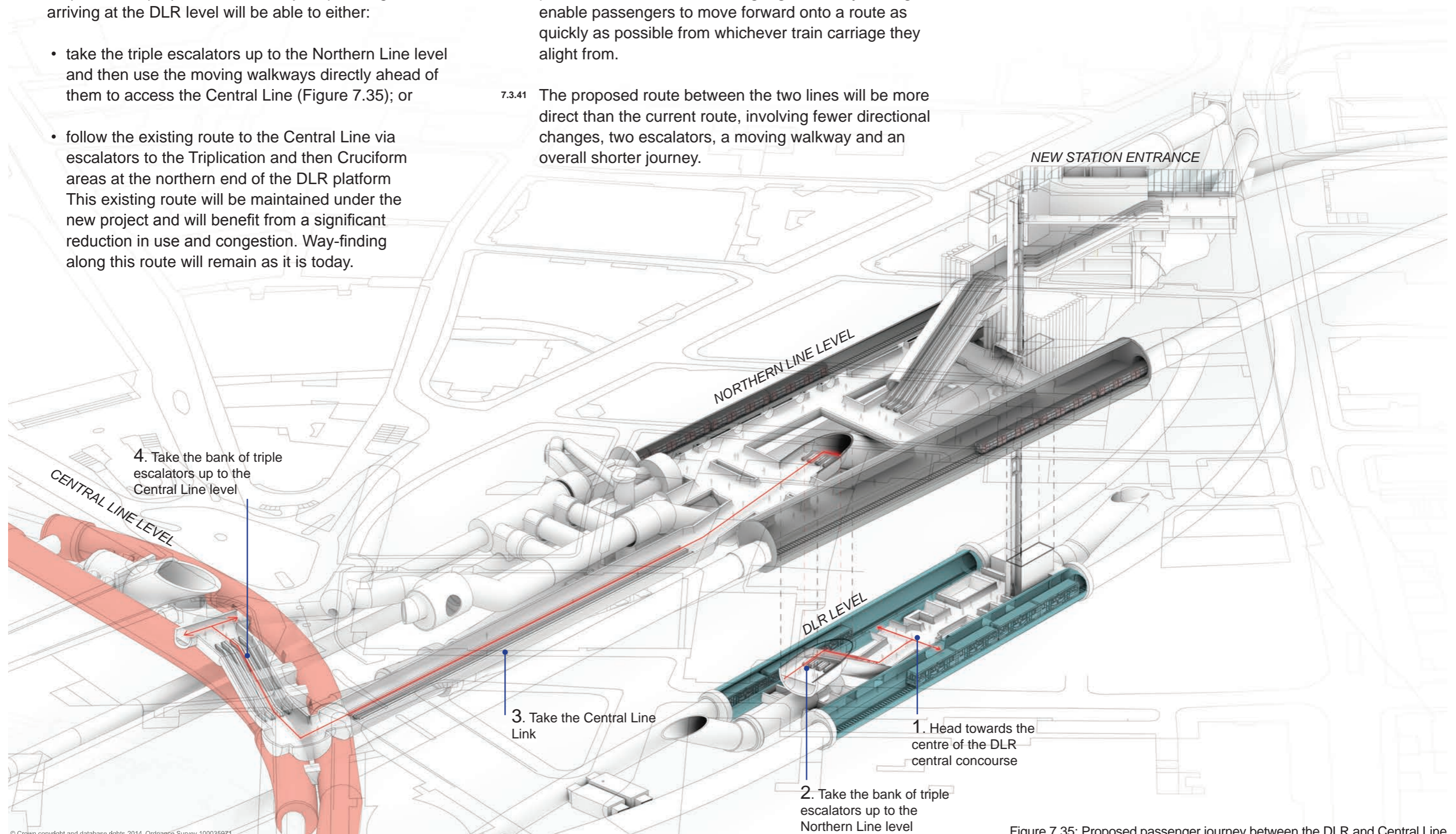


Figure 7.35: Proposed passenger journey between the DLR and Central Line

Improving the passenger environment

7.3.42 The BSCU Project will create new passenger areas below ground. As is indicated in the accompanying visualisations, all these areas will be significantly more spacious than the existing tunnel environment. The design will create an improved ambience and character in line with the emerging LUL Design Idiom. Figures 7.36-7.39 illustrate the general feel of the tunnel environment, details of the materials and design will be developed further in subsequent design stages.



Fig 7.36: Visualisation of new southbound Northern Line platform and tunnel



Fig 7.37: Visualisation of new Central Line Link



Fig 7.38: Visualisation of new Northern Line passenger interchange tunnels at Northern Line level



Fig 7.39: Visualisation of Northern Line level concourse

Enhance Accessibility

7.3.43 At present, only the DLR has step free access at Bank Monument Station Complex, via an indirect route from street level. The station is also very congested in certain areas during morning and evening peaks, which creates particular problems for passengers with mobility and sensory impairments.

7.3.44 The existing Bank Station layout is spread over a wide area creating complex passenger journeys. Key decision points in interchanges at the station, such as the Triplication and Cruciform, are not easy to navigate especially when crowded. Certain interchanges also require walking along the Northern Line platforms, which are narrow and very congested in peak hours.

Inclusive Design

7.3.45 Table 7.1 shows the key accessibility features of the BSCU Project. During the detailed design stage, the following will be designed to optimise accessibility:

- accessible W.C;
- ramps;
- corridor widths;
- passenger help points incorporating induction loops;
- seating;
- ticket machines;
- wide aisled ticket gates;
- colours, finishes and glazing manifestations;
- tactile surfaces on stairs and to platforms and level access to Northern Line trains; and
- accessibility for LUL staff.

Feature	Description	Accessibility benefit
Improvements to Circulation Space	<ul style="list-style-type: none"> • New dedicated interchange route between the Northern Line and Central Line via moving walkways and escalators • New dedicated interchange route between the Northern Line and DLR via a bank of triple escalators • Increased circulation space and alternative routes for passengers to exit Northern Line platforms and the station • New concourse area between the existing Northern Line northbound platform and a new southbound platform 	These provide benefits for all passengers, but particularly those with visual and mobility impairments, who may experience difficulties moving through crowded environments
Step-free access between street, Northern Line and DLR level	<ul style="list-style-type: none"> • Two new passenger lifts directly serving the new Station Entrance, Northern Line and DLR levels at the southern end of the platforms • Upgrade of an existing passenger lift between the Triplication area and DLR platforms and provision of an additional stop at Northern Line level 	Step-free access for passengers with a mobility impairment, including wheelchair users and those with heavy luggage
Stair-free access between Central Line and Northern Line	<ul style="list-style-type: none"> • New interchange route between the Northern Line and Central Line via moving walkways and escalators 	This delivers stair-free access and reduced walking distances between the Central Line and the Northern Line/DLR for passengers with mobility impairments (once at the Northern Line platform concourse, lift access is available to street and DLR levels)
Simplified station layout	<ul style="list-style-type: none"> • Provision of the most direct and shortest route possible from street level to the Northern Line and DLR using two banks of escalators from a new Station Entrance • Simplified route between Northern Line and DLR platform concourse areas using a new bank of escalators • Simplified route between Northern Line and Central Line platforms, using a moving walkway and a new bank of escalators 	Simplified way-finding will assist all passengers, especially those with visual or cognitive impairments, without requiring passengers to circulate along the Northern Line platforms
Station entrance	<ul style="list-style-type: none"> • Provision of wide access gates at station entrance gateline • Dedicated route to passenger lifts direct to DLR and Northern Line 	Dedicated routes for passengers with restricted mobility provide a safer, less congested route between the lifts and gateline in the station entrance.
TfL Signage	<ul style="list-style-type: none"> • LUL standard wayfinding signage and information displays in new station areas delivered by the BSCU Project • Updated signage in other station areas, to take account of new station layout and improved accessibility 	This will assist passengers with cognitive impairments through use of symbols and text together, for those with reading difficulties, plain language in signs, with simple and as few words as possible, and repetition and redundancy in signage.

Table 7.1: Accessibility benefits

New passenger lifts

7.3.46 The BSCU Project will introduce two new lifts and upgrade an existing lift to provide step-free access including:

- **Lift L1** - a 17-person passenger through-lift which is also a fire-fighting lift. This will provide passenger access to/from the Station Entrance (street level), the Northern Line and DLR levels;
- **Lift L2** - a 17-person passenger through-lift which is also a maintenance lift providing passenger access to/from the Station Entrance (street level) and Northern Line level; and
- **Lift L3** - upgrade of an existing lift to a 10-person passenger through-lift with an additional stop added at the Northern Line level. This will provide passenger access to/from the TriPLICATION area, Northern Line and DLR levels and will give resilience to the step free access within the station.

Each passenger lift lobby will accommodate the required fixtures and fittings including help points and seating, which will be developed at detailed design.



Figure 7.40: Example step-free access via platform hump

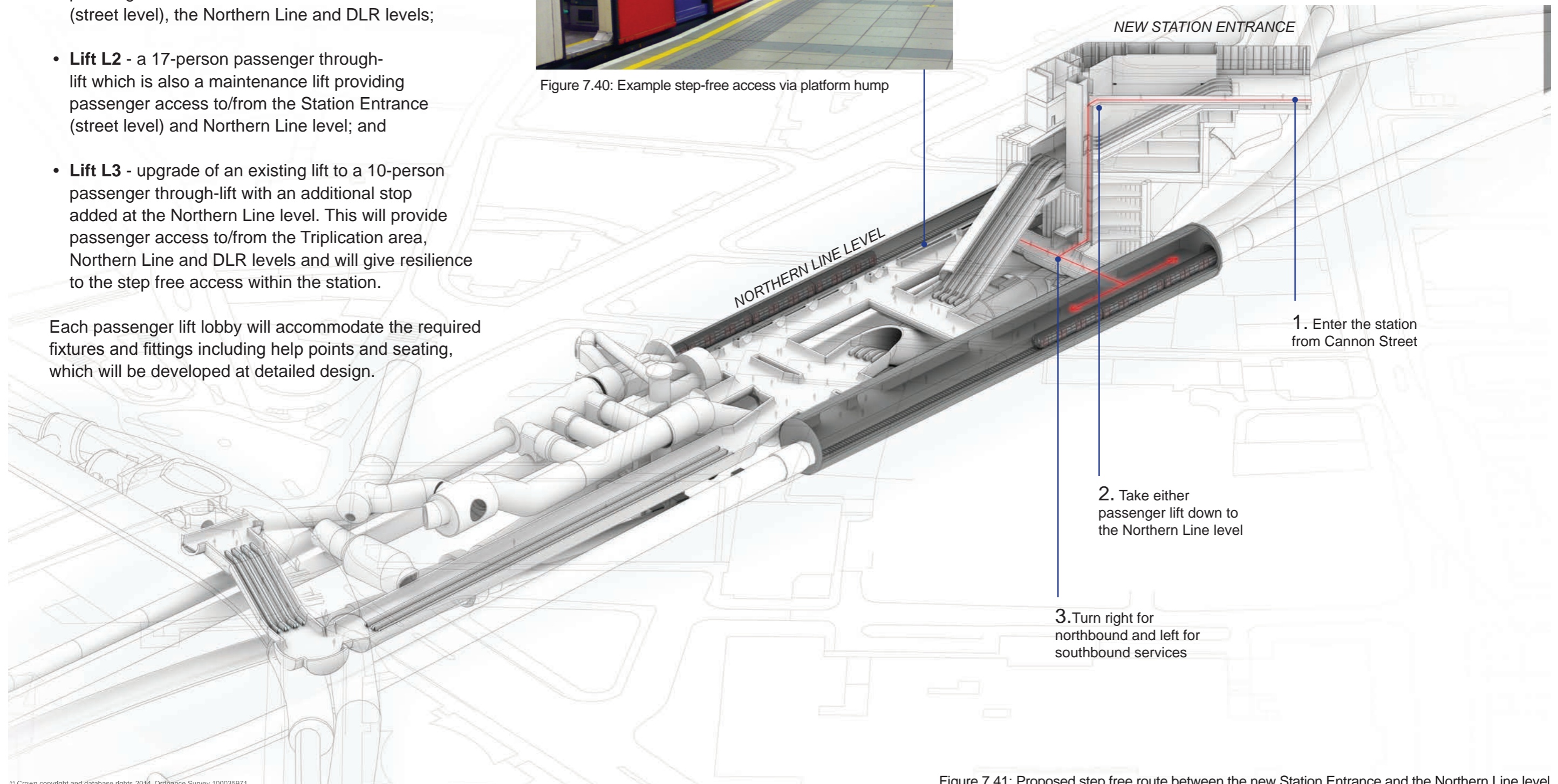


Figure 7.41: Proposed step free route between the new Station Entrance and the Northern Line level

Providing Step Free Access

7.3.47 Figure 7.41 shows the step free route between the new Station Entrance and the Northern Line level. The lifts to/ from the New Station Entrance Hall will land at the southern end of the Northern Line Platforms off a new cross-passage connecting the north and southbound platforms.

7.3.48 The new southbound platform will be designed to achieve direct level access on to the train whilst the existing northbound platform will be modified with a hump to achieve direct level access on to the train. This hump will be located in line with a prescribed train carriage that matches other Northern Line platform humps at adjacent stations. The hump will be clearly signed from the lifts towards the southern end of the platform.

7.3.49 For passengers requiring step-free access to the DLR from the new Station Entrance, as with the Northern Line passengers, a lift will be provided from street level, which will stop at the Northern Line level before proceeding down to the DLR. The lift will land at the southern end of the platforms on the central DLR concourse and passengers will see the departures platform directly ahead of them. This step free route is direct and deliberately located away from the busy area around the triple escalators which lead up to the Northern Line and the new Station Entrance (Figure 7.42).

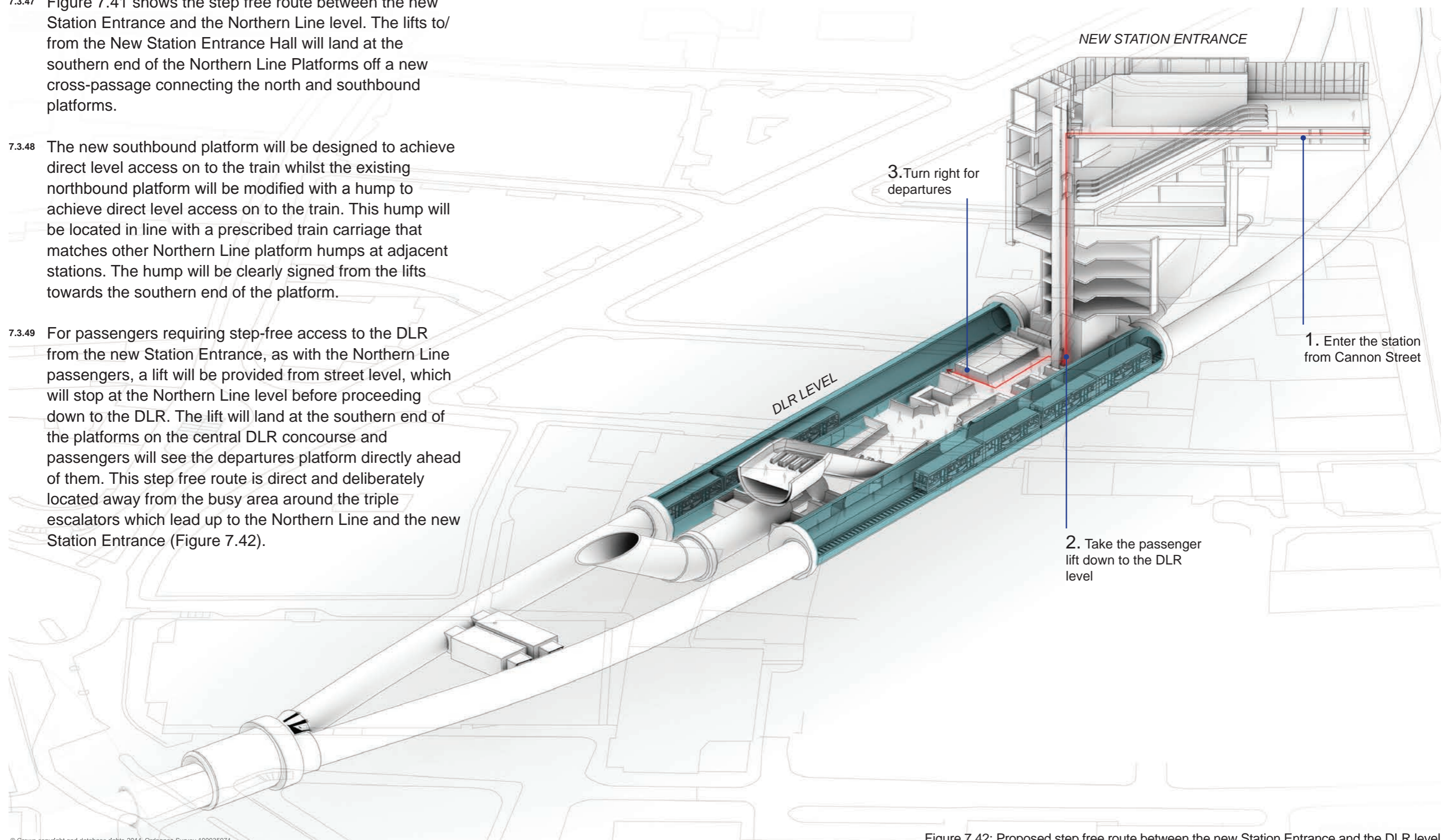


Figure 7.42: Proposed step free route between the new Station Entrance and the DLR level

Emergency evacuation

7.3.50 Although compliant with the standards of the time of construction, the existing Bank Station layout is now not fully compliant with LUL's current Standards and guidelines with respect to means of escape. Two of the key objectives of the BSCU Project are:

- to improve the emergency fire and evacuation protection measures for the Northern Line and DLR passengers; and
- to provide an approved safe means of escape for PRMs, and the ability to provide assistance to PRMs during any evacuation.

Means of escape from Bank Station

7.3.51 In the event of a station fire, the additional exit capacity provided by the new entrance, multiple banks of triple escalators and the moving walkways in the Central Line Link will provide a more resilient fire strategy for the Northern Line and DLR areas in particular and the station complex as a whole.

Means of escape from the Northern Line level

7.3.52 In the event of a train fire on the Northern Line, passengers will exit via cross passages leading from the platforms to a new concourse adjacent to the northbound Platform, from where they will join protected escape routes from each end of the concourse, or via the up escalators. The escape routes will be protected by new fire doors (held open during normal use). From this point passengers can proceed to a final exit at street level by several routes:

- the triple escalators via the new Station Entrance;
- the existing stairs via the Monument Station ticket hall;
- the existing stairs and escalators via the Lombard Street ticket hall; or

- the new Central Line Link.

7.3.53 All of these routes will be protected by fire and smoke-stop doors designed to offer protection for a minimum period of 30 minutes which will be released to close following the alarm signal.

Means of escape from the DLR level

7.3.54 In the event of a train fire, the means of escape from each of the DLR Platforms will be via cross-passages protected by proposed new fire and smoke-stop doors (held open during normal use), into a protected central concourse. From here, passengers can proceed to a final exit at street level by several routes:

- the new escalators via the Northern Line level;
- the existing stairs via the Northern Line level;
- the existing stairs and escalators via the Monument ticket hall; or
- existing stairs and escalators via the Triplication level.

7.3.55 All of these routes will be protected by fire and smoke-stop doors designed to offer protection for a minimum period of 30 minutes which will be released to close following the alarm signal.

Safe means of escape for PRMs and the ability to provide assistance to PRMs during an evacuation

7.3.56 The BSCU Project have been designed to be fully compliant with British Standards, using the criteria agreed with the London Fire Brigade. The proposed PRM evacuation lift, and protected stair shaft accommodates a refuge space for two wheelchairs at Northern Line level, and one at DLR level.

7.3.57 The refuge lobbies at the Northern Line and DLR level will contain a help point, providing a direct link to the Station Operations Room to allow additional assistance to be provided if required. For this purpose station staff have a safe access route to the lobbies using the associated protected stair.

Additional evacuation measures

7.3.58 A public address system will be provided for all areas to enable safety and evacuation instructions to be delivered when necessary. Flashing lights will be provided in the W.C for people with restricted hearing.

7.3.59 Staff will undertake a methodical sweep of all areas of the station to ensure that all persons are safely evacuated in accordance with LUL established operating procedures.

Fire fighting access

- 7.3.60 The proposed new fire fighting lift (which is dual purpose with the PRM evacuation lift) and protected stair access route will serve both the Northern Line and DLR levels. It will be protected by a smoke lobby at each level it passes through, and will be designed and installed in compliance building regulations and British/European Standards. A fire main will run down the firefighting shaft with fire main outlets at each level and will also serve the Northern Line Platforms.
- 7.3.61 There will be a protected route to the lift and stair for firefighters accessed directly from the fire brigade access point in the street at ground level (where the fire main inlet will also be located) (Figure 7.43).

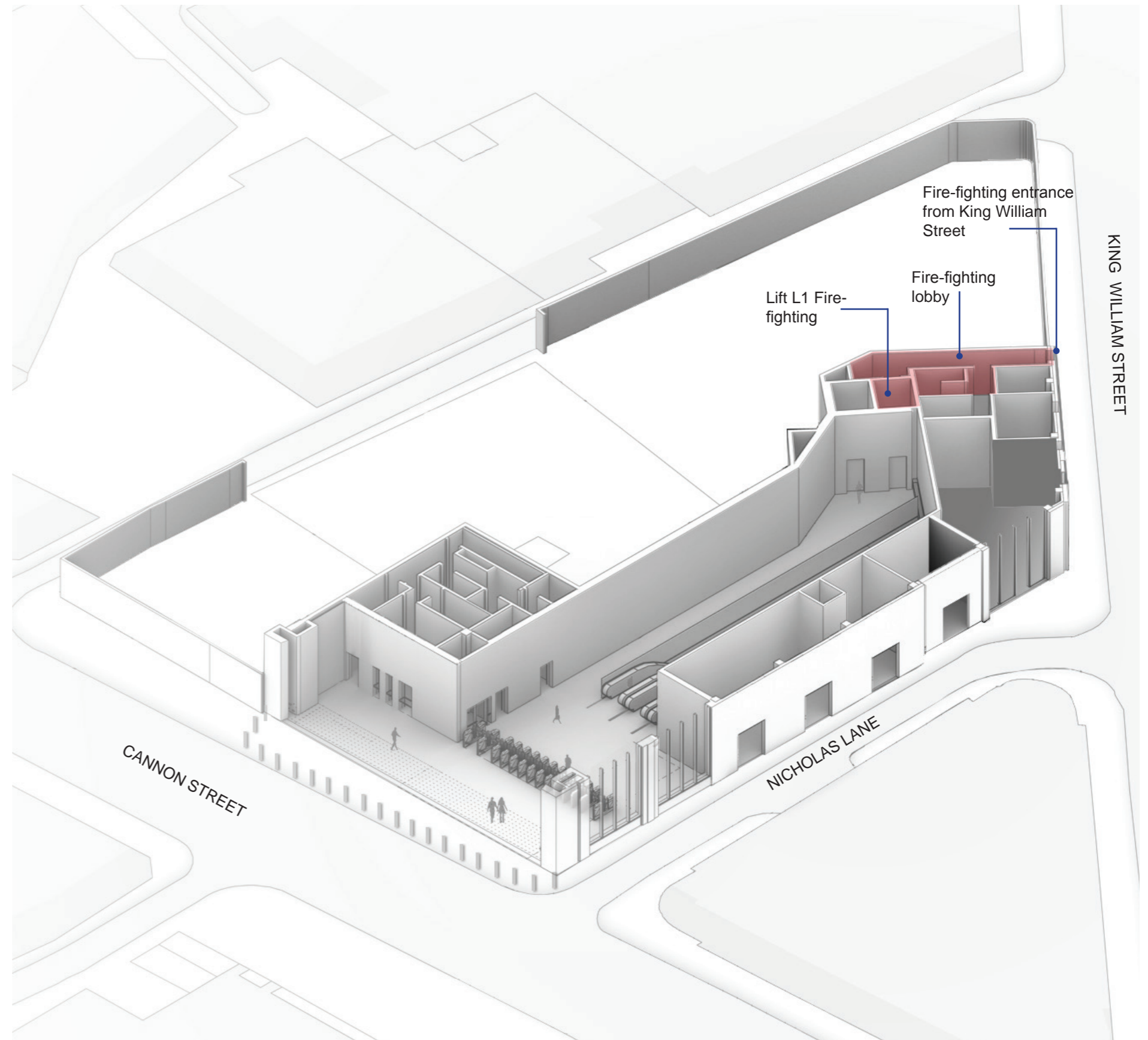


Figure 7.43: Isometric view of proposed fire fighting entrance at ground floor

8. Technical Design

8. Technical Design

This section provides further information on the design of the entrance level back of house facilities, safety and security measures, acoustics, cleaning and maintenance, and sustainability and climate change.

8.1 Back-of-house facilities at entrance level

8.1.1 The following back-of-house facilities are required at street level (shown on Figure 8.1):

- Ticket Issuing via Passenger Operated Machine (POM) Suite: secure lobby, paper store & POM room;
- Accessible WC (for public use);
- Staff uni-sex WC;
- Cleaning services stores;
- Bin store;
- Gateline attendants point; and
- Collapsible gates (to close the Station Entrance).

8.1.2 The back of house rooms are located on the west side of the Station Entrance Hall as a block of accommodation. Access to the majority is via a back of house circulation corridor, inaccessible to passengers. The entry to this area away from the passenger routes allows staff to function efficiently and not impact on passenger flows. In addition to the back-of-house facilities, the public areas of the station allow for a number of spaces for gateline/ Station Entrance staff to stand without conflicting with the passenger flows.

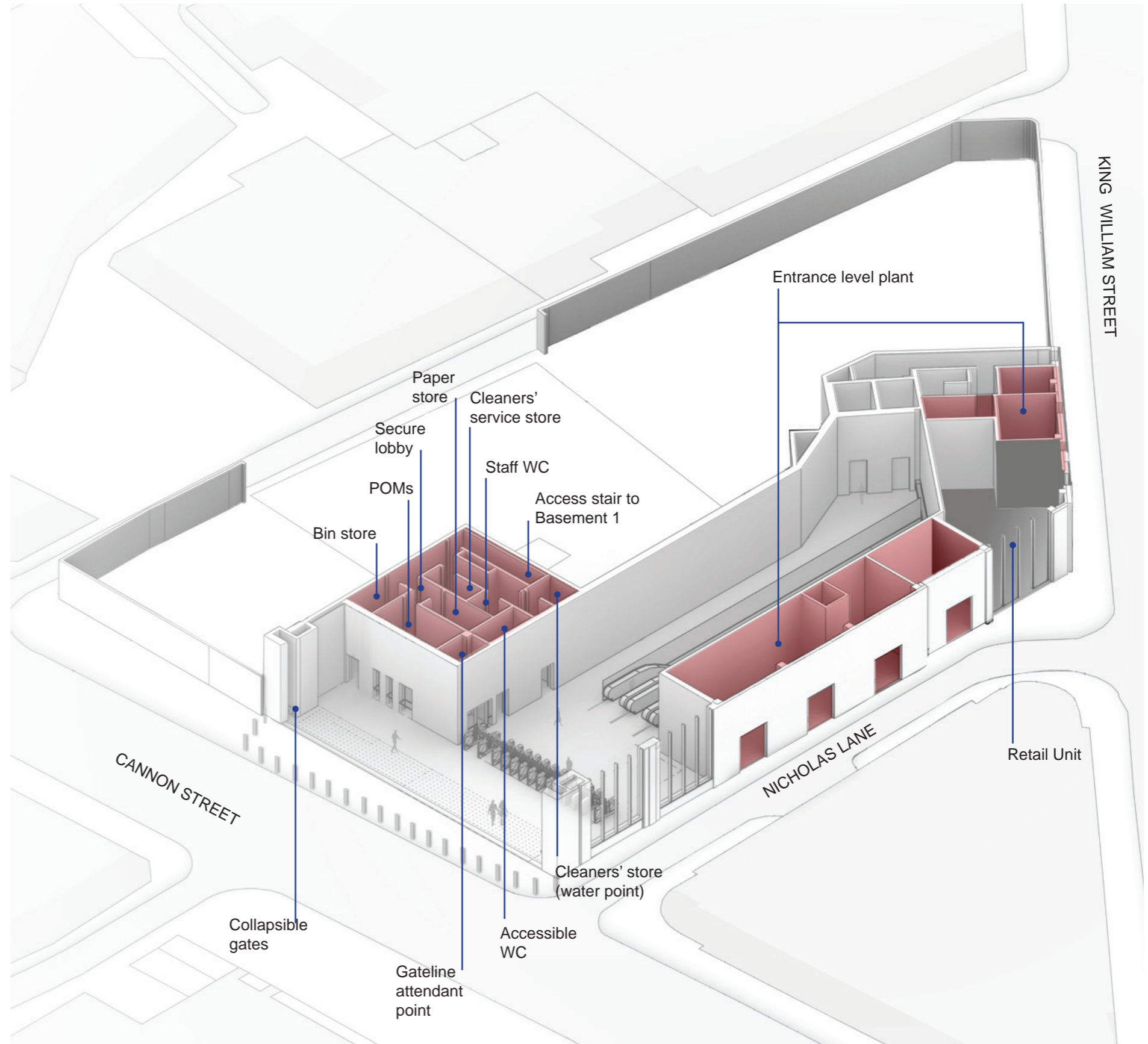


Figure 8.1: Isometric view of proposed Station Entrance ground floor showing back-of-house facilities

8.2 Safety and security

8.2.1 The safety and security of passengers and staff has been an important consideration in the design of the new station infrastructure. The proposals will improve on the existing situation at the Bank Station in a number of ways:

- Layout – improved sight lines, reduction of blind corners and recesses and greatly improved passenger space;
- Lighting – improved uniformity and colour rendering;
- Closed Circuit Television (CCTV) – improvements to system and coverage;
- Signage – improved consistency and clarity; and
- Passenger Help Points - will be installed across the station rather than primarily station platforms.

Layout

8.2.2 New elements of the Bank Station layout have been designed so that spaces are open with clearer sight lines to make passengers and staff less vulnerable to personal security threats and feel safer. Blind corners and recesses will be avoided to remove potential hiding places for an attacker, whilst glazing in the station at ground floor level will help provide natural surveillance inside and outside of the station.

Lighting

8.2.3 Lighting will cover all public areas including station platforms, walkways, escalators and the entrance hall, utilising energy efficient lighting sources with good colour rendering and levels. It will provide good illumination for signage and information points and support the functioning of the CCTV system by enhancing image quality. The lighting will be designed to enhance safety and security of passengers and staff.

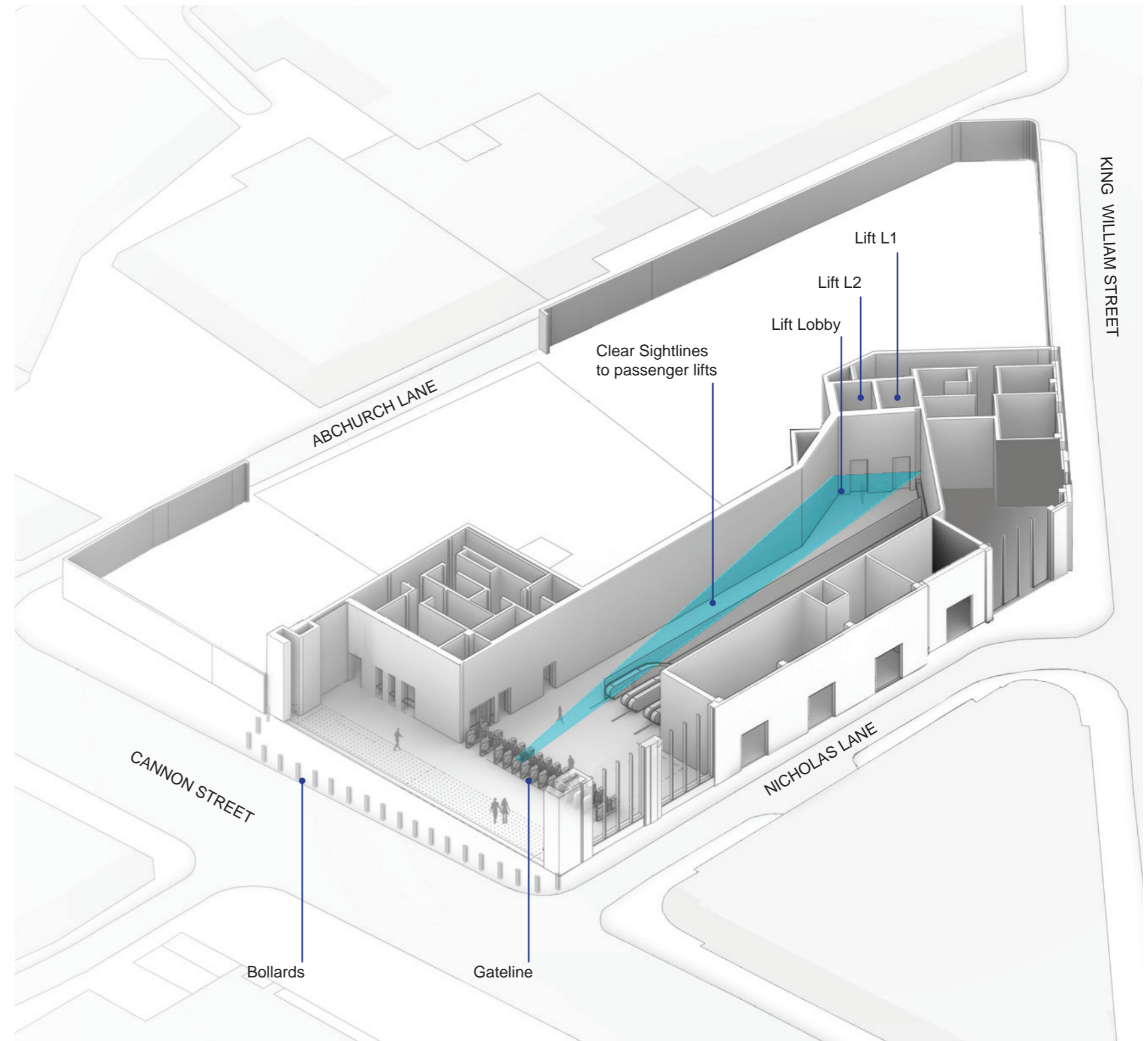


Figure 8.2: Isometric view of sightlines between the gateline and the passenger lifts

Closed Circuit Television (CCTV)

8.2.4 The purpose of the CCTV system is to provide visual surveillance facilities, manage the station and improve the safety of passengers and staff. The CCTV system will aid monitoring and crowd control throughout the station and will be installed and managed in compliance with the Government’s CCTV Code of Practice and Data Protection Act and London Underground station surveillance CCTV standards.

8.2.5 The prime purpose of the CCTV system is to assist in the safe operation and management of the station; in particular monitoring and crowd control. The CCTV will also be used to record criminal and anti-social behaviour as recommended by the British Transport Police.

8.2.6 The CCTV system will be designed to meet the following objectives:

- enable the safe operation and management of the station;
- act as a deterrent to prevent criminal and anti-social behaviour, thereby enhancing passenger and staff safety;
- enable internal areas to be monitored to enable a swift response to anti-social behaviour, crime or threats to passenger and staff; and
- enable video footage to be reviewed (post event) to analyse incidents and to provide evidence.

8.2.7 As noted in Section 4.2, a major investment project is currently underway to improve the operation systems throughout the Bank Monument Station Complex including the CCTV system. The CCTV system will be designed with the following features:

- at least 95 percent coverage for all public areas to a height of 2 meters from floor level;
- minimal blind spots;

- cameras located to prevent them being damaged, obscured or evaded and to be clearly visible to passengers; and
- public awareness monitors at the gate lines so passengers can see their own images as they pass through barriers.

Signage within the station

8.2.8 The Bank Station layout is designed to be easy to navigate with clear wayfinding and signage designed to aid the free movement for all through the station.

Passenger Help Points

8.2.9 As part of the current investment programme in the station systems, an upgraded Passenger Help Point (PHP) system is being installed. Each PHP has a sign above so that it can be clearly seen in crowded areas.

8.2.10 The PHP’s contain three buttons: red for fire alarm, green for emergency and blue for passenger information, as well as an induction loop. The green button connects directly to the control room in Monument Station or the police (if the control room staff are not available to deal with the call within 30 seconds). When a button is pressed a CCTV camera is activated so control room staff can see the person who they are communicating with.

Back of House areas

8.2.11 Doors into back of house areas will meet appropriate security standards to minimise unauthorised access.



Figure 8.3: Passenger Help Point

Hostile Vehicle Mitigation

8.2.12 The Bank Station Entrance has been designed having regard to Secure by Design principles and security recommendations. It is identified as a high risk security target. This has resulted in the inclusion of a number of measures in the design of both the station and OSD to separate them in security terms, including:

- Placement of the OSD main office entrance on King William Street, the opposite side of the block from the new station entrance;
- A 300mm concrete party wall between OSD and Station Entrance - including at basement level and as crash deck at first floor level; and
- Location of the OSD service yard away from Station Entrance party wall (separated by the office core).

8.2.13 Regarding the Station Entrance in particular: the design reflects the security recommendations to incorporate hostile vehicle mitigation (HVM) around the entire external perimeter (including party wall) as follows:

- On the King William Street and Nicholas Lane elevations HVM, in the form of concrete upstands is incorporated into external cladding and will not be visible from outside;
- On Nicholas Lane all plant room door openings within the façade that are wider than 1200mm will incorporate removable HVM bollards behind the doors i.e. within plant rooms and not visible from outside; and
- On the Cannon Street side HVM, in the form of bollards is required to protect the very wide Station Entrance on Cannon Street whilst facilitating the free movement and high footfall of passengers entering and exiting the new station entrance.

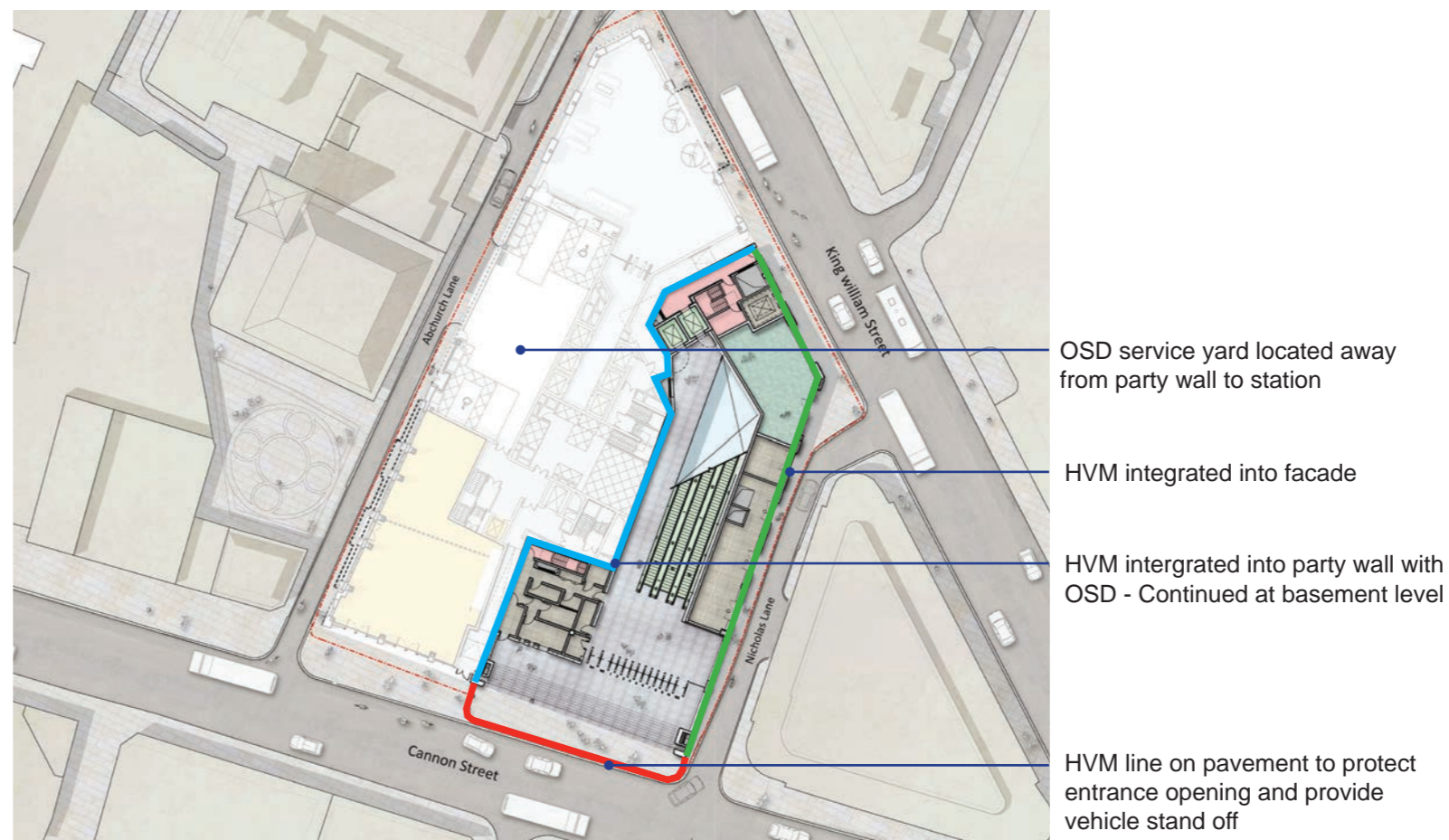


Figure 8.4: Hostile Vehicle Mitigation Strategy

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8.2.14 The bollards on the corner of Nicholas Lane and Cannon Street also perform a highway safety function, protecting pedestrians from turning vehicles.

8.2.15 There is insufficient space to include the HVM Bollards within the station footprint on the Cannon Street side of the station due to the highly constrained site. This, along with the need to accommodate the Bostwick gates, flood barrier and mat well results in a reduced run-off to the top of the escalators.

8.2.16 Therefore it is proposed to locate the bollards in front of the Station Entrance, close to the edge of pavement, to maximise vehicle stand-off and minimise corresponding blast impact on the fully open entrance leading to the open escalator box - directly linked to platforms below.

8.2.17 The project considered a number of alternatives to the provision of bollards - such as incorporating HVM into heavy sculptural blocks/ seating/ planters - but the conclusion was that there was insufficient space for anything other than bollards.

8.3 Acoustics

8.3.1 Three levels of acoustics measures are proposed:

- For Northern Line southbound passengers the smoother alignment of the new tunnel and platform will minimise screech by eliminating check rails. This will provide a more pleasant journey experience for those on the train and platform, as well as the Northern Line level generally;
- For passengers in the new areas of Bank Station, acoustic treatment will be incorporated where required so that acoustic levels are comfortable for all passengers in the new public areas, including the particular needs of the hearing impaired; and
- For plant rooms in the Station Entrance, noise attenuation measures will be incorporated as necessary.

8.4 Cleaning and maintenance

8.4.1 Robust materials and finishes will be specified for ease of cleaning and minimum maintenance.

8.4.2 Two new cleaners' stores have been incorporated into the BSCU Project at ground and Northern Line level. The bin store within the Station Entrance at ground floor level is accessible from both the unpaid side of the gateline and the paid side, via the back of house corridor. This allows for a separate route for staff taking waste to the bin store and the access for refuse collection. Refuse collection will be from Cannon Street.

Maintenance

8.4.3 The Northern Line level will be accessed via a maintenance lift, which will be a shared passenger lift in the main shaft proposed as part of the BSCU Project. This lift will be sized to allow the majority of major plant equipment to be transported with the maintenance lift rising to street level where plant will then be moved out of the Station Entrance Hall via an access door onto King

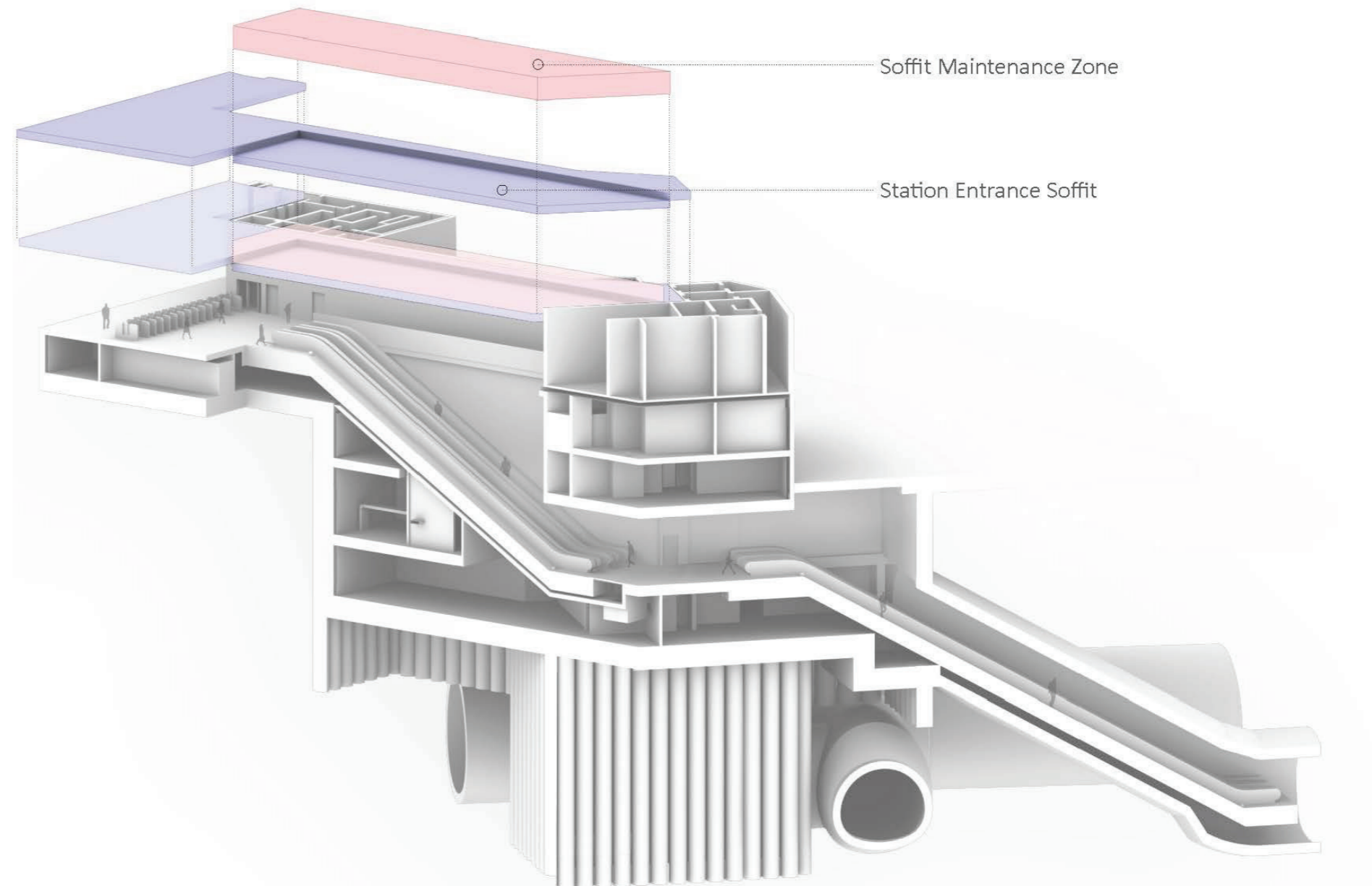


Figure 8.5: Isometric view of proposed soffit maintenance zone in the Station Entrance Hall

William Street. Items too large or heavy for the maintenance lift will be transported into the station via goods train or a dedicated hatch within the Station Entrance Hall, accessed from King William Street.

8.4.4 A soffit maintenance zone (Figure 8.5) above the ceiling finish will be incorporated to provide safe access to maintain high level equipment including lighting and other services without the need to disrupt the operation of the escalators.

8.5 Way-finding strategy at street level

8.5.1 The approach to legibility and way-finding is a two stage process. The first stage has been to design the layout and design of internal spaces, external architectural, public realm, entrance location and the relationships with the wider areas to be as intuitive and easy to navigate as possible. The second stage is then to apply a clear signage strategy that provides appropriate information while minimising clutter.

8.5.2 The design optimises the legibility of the new entrance in the following ways:

The station in its context

8.5.3 For passengers travelling from east and west along Cannon Street to Bank Station, the station will be highlighted by use of the functional LUL blue freeze, a projecting canopy and the use of appropriately sized and positioned 3D roundels orientated perpendicular to the building line. The scale and dimensions of the station opening relative to any OSD will also highlight the station entrance within the streetscape.

8.5.4 For passengers travelling along Nicholas Lane and King William Street, the station will be highlighted by the removal of the existing protruding corner on the junction with King William Street, the activation of the public realm using active frontages, and the creation of views into the Station. An appropriately sized and positioned Roundel will also over sail Nicholas Lane at the station entrance.

Internal spaces

8.5.5 The internal spaces have been designed to be legible by minimising the decision points, open up views and minimising changes of direction. In the new Station Entrance all Lines are accessed by escalators positioned directly in front of the gateline in the same direction of travel. The route to the step free access lifts is also directly in front of the gateline but to the left of the escalators. The lifts will be visible from the gatelines.



Figure 8.6 Visualisation of station entrance with functional LUL blue freeze, projecting canopy and 3D Roundels

8.5.6 Street level signage will be developed in future design stages in conjunction with the City of London Corporation. Officers have indicated that the City of London Corporation intends to undertake a comprehensive review of the signage in this area incorporating the adoption of TfL's Legible London principles (figure 8.7).

8.5.7 The signage strategy will recognise the walking routes at street level to alternative Station Entrances and will include information on step-free and non step-free lines and platforms at Bank Station.

8.5.8 Due to limited space on footways, signage will be incorporated into the physical structure of the station where possible while acknowledging the need for it to be clearly visible to its users.



Figure 8.7: Legible London signage

8.6 Sustainability and climate change

8.6.1 The sustainable design objectives of the BSCU Project include the following:

- Mitigating climate change through a series of proposed passive design and energy efficiency measures and the incorporation of a materials strategy that minimises embodied carbon and other environmental impacts relating to manufacture and procurement;
- Adapting to climate change through the development of a waterproofing strategy for the new escalator box and lift shaft, providing flood barrier protection at the station entrance, mitigating the risk of groundwater flooding and of the impacts to groundwater resources;
- Improving quality of life through increasing the capacity of Bank Station, reducing journey times and congestion for passengers and maximising use of land and enhancement of the built environment;
- Providing for inclusive and safe access, as well as minimising (or significantly alleviating) road traffic congestion, while actively promoting sustainable modes of transportation and patterns of movement;
- Improving the local and regional economies and promoting sustainable growth through reduced journey times and passenger congestion relief, step-free access and avoidance of station closures during peak times. These will result in an enhanced transport system, which will have a positive effect on the wider economy of the area; and
- It is intended that the overall sustainability performance of the proposed BSCU Project will be demonstrated through the achievement of an 'Excellent' CEEQUAL (Civil Engineering Environmental Quality Assessment & Award Scheme) Whole Team Award rating.



Figure 8.8: Station Entrance isometric



Figure 8.9: CEEQUAL Scheme Logo

8.7 Phasing

Deconstruction

- 8.7.1 The construction of the BSCU Project will require the demolition of existing buildings at the Whole Block Site to enable the construction of the new station entrance. This will include the demolition of 135-141 Cannon Street, 10 King William Street, 12 Nicholas Lane, 14 Nicholas Lane, 143-149 Cannon Street and the rear section of 20 Abchurch Lane.
- 8.7.2 The main building of 20 Abchurch Lane will be retained during the demolition and station construction to protect its façade and St Mary Abchurch. It will also provide temporary staff accommodation and site facilities during the works.
- 8.7.3 All demolition will be undertaken in accordance with a Code of Construction Practice (CoCP).

Construction

- 8.7.4 Construction is due to begin in 2016. Tunnelling is expected to last until late 2020. During the final phases of construction to link new infrastructure with existing, a period of closure of the Northern Line running tunnels at Bank Station will be required (a blockade) as described in the Statement of Case and considered in the Environmental Statement which form part of the TWAO application.
- 8.7.5 Construction of the Station Entrance and Station Entrance Hall will be completed in 2021.
- 8.7.6 Construction of an OSD is expected to occur after the Station Entrance is complete and fully operational. A planning application for the 10 King William OSD (at the Whole Block Site) was approved by the City of London Corporation in June 2014.



Figure 8.10 Visualisation of new Station Entrance and approved OSD (shown for information only)

9. Conclusion

9. Conclusion

9.1 Conclusion

- 9.1.1 This Design and Access Statement has described the BSCU Project and explained how they will benefit passengers using the station and the area in general.
- 9.1.2 As a key gateway to the City of London and located in one of the world's most important financial centres, Bank station should be an example of a world class station. It is also a strategic network interchange and its effective operation is critical to maintaining access to the City of London and to the wider functioning of London's transport network, especially the London Underground and the Docklands Light Railway.
- 9.1.3 The station is one of the busiest in London and passenger numbers will continue to grow. It is also one of the most complex with 14 relatively discrete entrances (15 on completion of the new entrance on Walbrook) and five sets of platforms built cumulatively over 130 years. Interchanging passengers make up more than half of total users and this creates particular congestion management issues.
- 9.1.4 Today, the internal areas of the station are heavily congested, passenger experiences are compromised and their routes within the station are long and convoluted. Station congestion at Bank causes delays to passenger journeys. Wayfinding is difficult and step free access limited and indirect. Emergency fire and evacuation protection measures need improvement. At street level the presence of the station is limited and footways at station entrances heavily congested.
- 9.1.5 The station requires major development to enhance its street presence and improve its functionality by reducing crowding, improving the journey experience and generally making journeys more efficient. Such improvements will enable it to serve the area effectively and support London's growth.



Figure 9.1: Visualisation of Station Entrance interior

- 9.1.6 This document has described how these objectives will be achieved through the provision of a prominent new Station Entrance at street level and extensive works and remodelling below ground to expand the capacity of the station creating new direct and intuitive routes through it.
 - Rebalancing of existing and new passenger routes, improving the overall passenger experience;
 - Step free access from street to the Northern Lines and the DLR and added resilience to lift capacity;
 - Improved evacuation arrangements;
 - A Station Entrance designed to be fully integrated into a high quality OSD;
 - Reduced pedestrian congestion on the footways around Bank and Monument Junctions; and
 - An enhanced public realm with active frontages and a raised carriageway on Nicholas Lane.
- 9.1.7 In design and access terms, the overall benefits of the project are:
 - Provision of a prominent new Bank Station Entrance at street level and a new gateway to the City of London;
 - Direct access from street to the Northern Line and DLR;
 - More circulation and waiting space on the Northern Line level, reducing levels of congestion;
 - More direct, intuitive and quicker connections between the Northern Line and DLR, the Northern Line and the Central Lines, and the DLR and Central Lines;

9.1.8 The project has been designed to maintain acceptable passenger flow conditions, including a forecast demand growth for at least 60 years after the works are complete in 2021, thereby supporting London's sustainable population and employment growth for the benefit of the UK economy.

This will all be achieved through the provision of a high quality development which enhances the character of the Bank Conservation area whilst minimising disruption to existing passengers and the users of the surrounding area.

