

Town and Country Planning Act 1990
Elephant and Castle Northern Line Passenger Link Tunnels

Design and Access Statement

March 2020

ABBREVIATIONS

BIA – Basement Impact Assessment
ECSCU – Elephant and Castle Station Capacity Upgrade
E&C – Elephant and Castle
LUL – London Underground Limited
LCC – London College of Communication
MTC – Metropolitan Tabernacle Church
NL – Northern Line
NLTH – Northern Line Ticket Hall
OAPF – Opportunity Area Planning Framework
SPD – Supplementary Planning Document
TfL – Transport for London
UAL – University of the Arts London

CONTENTS

1. INTRODUCTION	4
1.1. Purpose of this document	4
1.2. Background	5
1.3. Proposal.....	6
2. PROJECT CONTEXT	7
2.1. Project objectives	7
2.2. Strategic context	8
2.2.1. Elephant and Castle development.....	8
2.2.2. Elephant and Castle area today	10
2.2.3. Elephant and Castle area in the future.....	11
2.2.4. Heritage assets	13
2.3. Elephant and Castle station	14
2.3.1. Elephant and Castle station today and its context	14
2.3.2. Elephant and Castle station scheme development	17
2.4. Interface with Delancey development.....	19
3. DESIGN CONCEPT	21
3.1. Key challenges and opportunities	25
3.2. Design development	26
3.2.1. Concept design for the passenger link tunnels	26
3.2.2. Revised design proposal	27
4. CONCLUSION.....	30
LIST OF FIGURES	31

1. INTRODUCTION

1.1. PURPOSE OF THIS DOCUMENT

This Design and Access Statement forms part of a planning application for new passenger link tunnels required as part of the Elephant and Castle Station Capacity Upgrade (ECSCU).

Permission was granted in January 2019 for the construction of a new station entrance and station box to provide improved access to the Northern Line as part of the Elephant and Castle Town Centre Redevelopment Project by Elephant and Castle Properties Co. Limited.

This application is to provide underground connections between the approved station box with the existing Northern Line platforms, including provision of step-free access. The connections comprise three passenger tunnels that provide step free access to the southbound and northbound platforms and to the existing Northern Line overbridge.

This document sets out the background and context to the application, the design principles and concepts that have been applied, describes how issues relating to access to the development have been dealt with and how consultation with key stakeholders has informed the development of the scheme.

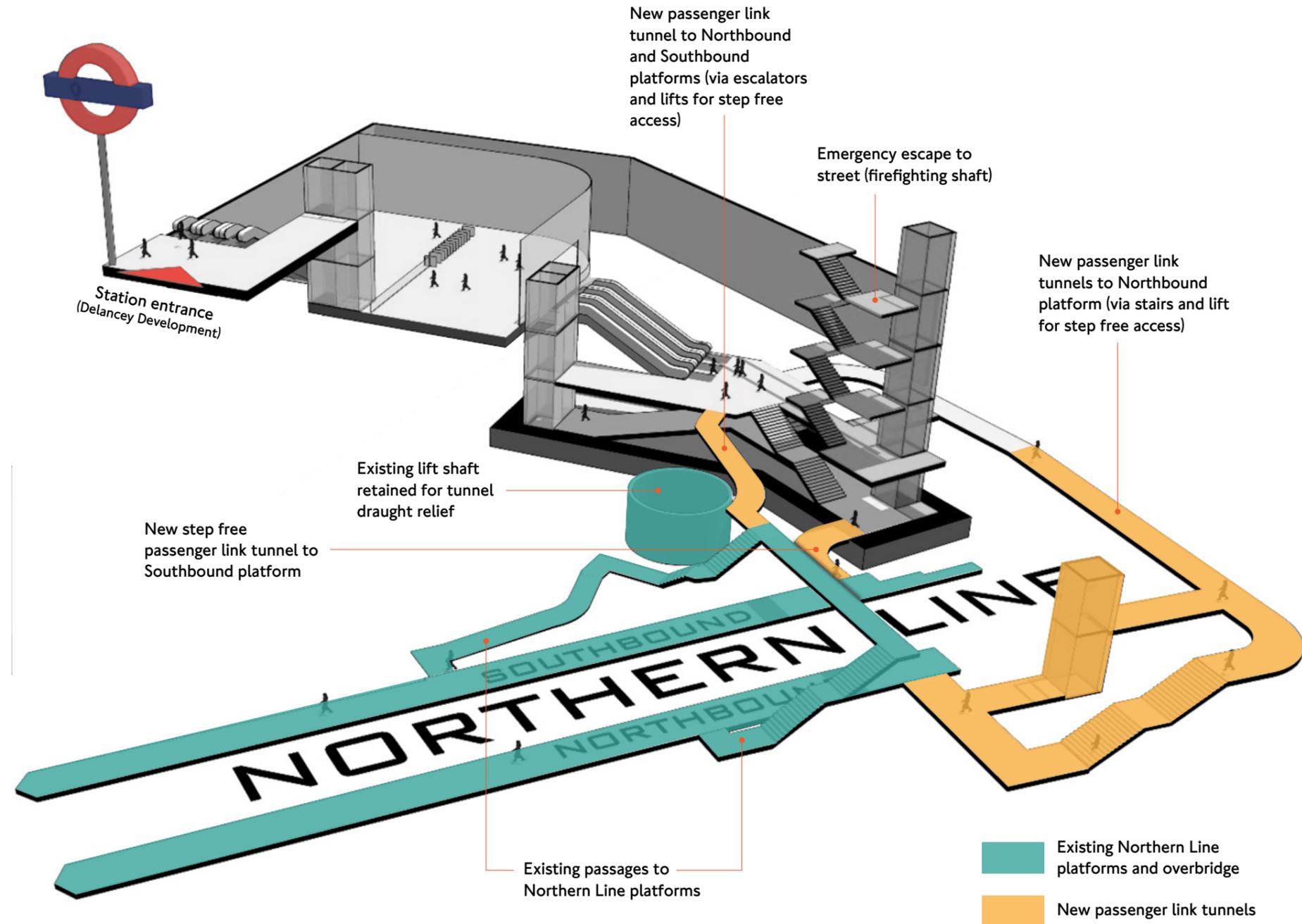


Fig 1. New Northern Line Ticket Hall and passenger underground connections



Fig 2. Elephant and Castle peninsula looking towards New Kent Road and the Old Kent Road Opportunity Area

1.2. BACKGROUND

Elephant and Castle is an Opportunity Area in the London Plan, suitable for high levels of growth to support physical, environmental and economic renewal.

Regeneration in the form of new mixed use developments will produce 5,000 new homes to be delivered in the period up to 2030. London Underground Limited (LUL) has undertaken several studies over the past ten years to respond to increased station congestion at Elephant and Castle Northern line station. This has been driven by the need to mitigate the pressure on transport infrastructure generated by the Elephant and Castle regeneration.

To support the land-use intensification and accommodate projected levels of growth, London Underground needs to upgrade the Elephant and Castle Station. The ECSCU project consists of the construction of a new station entrance and ticket hall. The new station entrance will be visible from the existing Bakerloo line station entrance and in a more prominent location on the peninsula. The new station will provide additional capacity and step free access by installing escalators and lifts to reach the new passenger connections to the Northern Line platforms. This is part of a major re-development scheme by Delancey (the Developer) of the Elephant and Castle shopping centre and the London College of Communication, part of the University of the Arts London.

Permission for the Delancey development was granted via a separate planning application by the London Borough of Southwark on 10 January 2019.

Delancey and LUL are working together to integrate the Northern Line Ticket Hall (NLTH) into the Town Centre re-development.

The delivery of the NLTH is envisioned as follows:

- Delancey will build the station box structure
- LUL will construct the new passenger link tunnel infrastructure to connect the new ticket hall at basement level to the existing Northern Line platforms from the station box
- LUL will fit out both the new passenger link tunnels and the station box ready for operation

Subject to the Developer's programme, the new station is forecast to open in 2028.

1.3. PROPOSAL

The proposed works will form new connecting tunnels between the approved station box and the existing Northern Line platforms. The connections comprise three passenger tunnels that provide step free access to the southbound and northbound platforms and to the existing Northern Line overbridge. The tunnelling infrastructure would be located under Newington Butts. The construction and future functioning of the passenger link tunnels will not impact on the existing and future uses above ground.

This Statement supports the planning application for the tunnels connecting the new station box with the Northern Line platforms. The tunnels would be built by accessing the site from within the station box (the Delancey approved development). No additional construction access would be required.



Fig 3. New Northern Line passenger link tunnels in relation with the road network above and adjacent buildings - indicative only

2. PROJECT CONTEXT

2.1. PROJECT OBJECTIVES

The Elephant and Castle Northern Line Ticket Hall Station Capacity Upgrade objectives have been set in accordance with the Mayor's Transport Strategy; in particular Chapter four – A good public transport experience and Chapter five – New homes and jobs. The project has the following objectives:

- Increase the capacity of Elephant and Castle Northern Line station entrance to meet future demand forecasts
- Reduce congestion and improve journey time savings
- Improve the quality of access, interchange and ambience including the provision of step free access from street level to the trains
- Provide good integration with other transport modes, surrounding land-uses and the public realm
- Improve fire and evacuation measures to reduce evacuation times to a relative place of safety
- Deliver a sustainable design
- Future proof improvements to the Northern Line/Bakerloo Line interchange including proposals for the future Bakerloo Line Upgrade and Extension (BLUE)
- Maintain TfL's reputation as a good delivery partner with the Developer, to support Elephant and Castle's regeneration and improve the lives of Londoners



Fig 4. Elephant and Castle junction aerial view

2.2. STRATEGIC CONTEXT

The design for an upgraded capacity of the Northern Line Ticket Hall and associated passenger link tunnels has been informed by an understanding of the Elephant and Castle area.

This section covers the historical development of both the Elephant and Castle area and Elephant and Castle station up to present day, before addressing the current proposal for the NLTH.

2.2.1. Elephant and Castle development

Elephant and Castle has long been a bustling south London centre. It sits at the convergence of important routes including the Roman Walworth Road, Newington Causeway and Borough High Street.

These ancient routes developed into important thoroughfares for travellers and trade to and from London. A spatial structure with narrow frontages and deep plots developed in response. By the 1830s much of the street pattern that exists today had been established and many historic elements have survived.

The use of the high street for trade survived and flourished up until the 1940's. During 1940 and 1941 Elephant and Castle suffered massive damage in the Blitz (Figure 5). The Elephant and Castle junction and its immediate surrounding area were seriously affected. Much of the area including the terraced housing was damaged beyond repair.

The spatial continuity that had always been maintained by the historic routes and public life of the high street was broken. In response, attempts were made to draw a cohesive masterplan. The winning design included a shopping centre as an American-style enclosed mall which was completed in the early 1960s. The former dance hall at the roundabout's centre was replaced with an electricity substation named the Michael Faraday Memorial, in honour of the local scientist who pioneered research into electricity.

A number of large scale housing projects were completed, with one of the largest, Heygate Estate, completed in 1974. By this time roads had also been re-aligned and subways installed under the new hexagonal gyratory. The volume and flow of traffic increased and over time this developed into an unsafe environment for walking and cycling and a disjointed community, separated by the dominant road infrastructure.

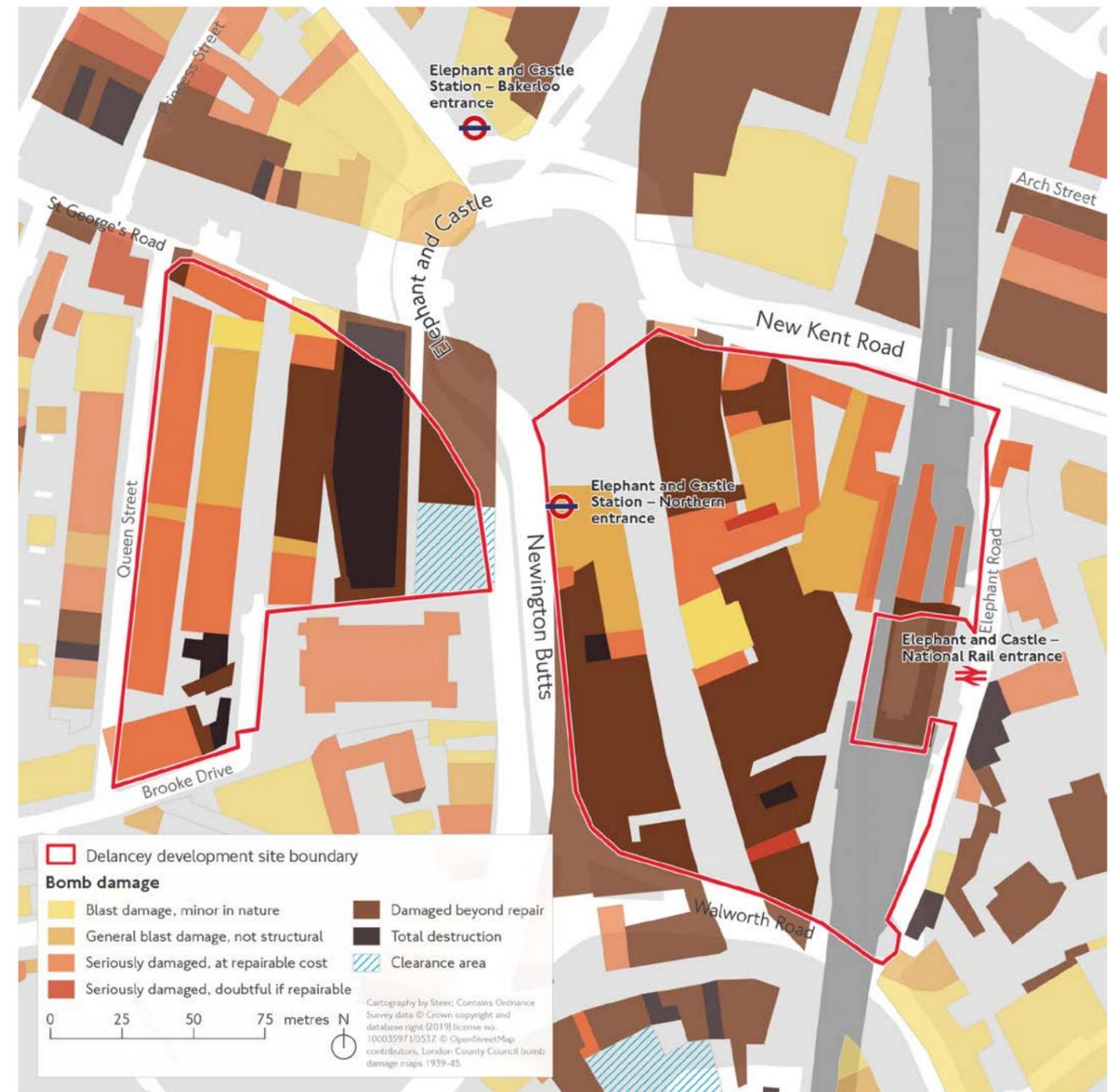


Fig 5. Elephant and Castle bomb damage map 1939-45

Elephant and Castle Station

There are two London Underground lines at Elephant and Castle: the Northern Line and the Bakerloo Line.

The Northern Line service to Elephant and Castle started in December 1890 and was then called the City & South London Railway. In November 1924 tunnel enlargement, general modernisation and platform lengthening works were carried out, forming what would later become the Northern Line. In 2003 the Northern Line ticket hall was rebuilt, however access to the platforms remains via two lifts and a spiral staircase which cannot accommodate current demand in the AM peak in particular.

The Bakerloo Line at Elephant and Castle opened in August 1906. The original name was the Baker Street & Waterloo Railway. A substantial modernisation project in the Bakerloo Line ticket hall area was completed in 1993. The Bakerloo station is located to the north of the application site, at the southern end of London Road.

The proposed passenger link tunnels will have no impact on the existing Bakerloo Line.

The Elephant and Castle National Rail station lies to the south-east of the Underground stations on the eastern side of the existing shopping centre. Currently there is no direct link between the stations.



Fig 6. Elephant and Castle Bakerloo Line entrance



Fig 7. Elephant and Castle Northern Line entrance

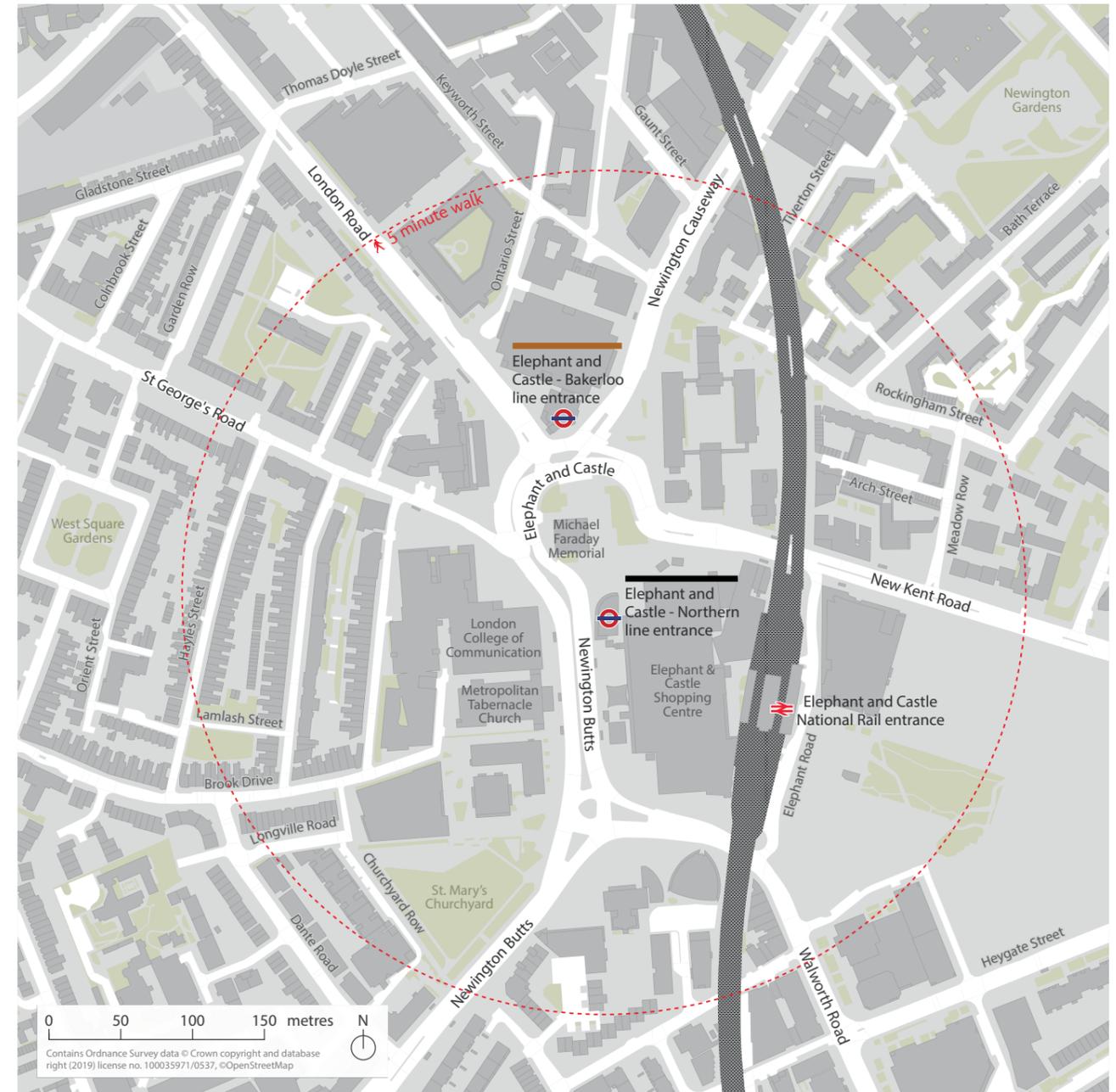


Fig 8. Elephant and Castle existing station entrances plan

2.2.2. Elephant and Castle area today

The Elephant and Castle junction is today a major public transport interchange hub. It is a focal point for south London buses, with approximately 36 bus routes serving the London Underground and Network Rail stations.

In 2016, Transport for London (TfL) completed a significant road modernisation project to transform the road layout from the roundabout to a peninsula, forming a major new public space. These changes aimed to reduce the impact of traffic, make the area feel cleaner and greener and balance the needs of pedestrians and cyclists more evenly with those of drivers.

The area is changing today at a rapid pace. Whilst the character is mainly residential, it has a flourishing cultural, educational and community focus. Examples of current community projects now helping to shape the area are Hotel Elephant which is a not-for-profit company established to support the borough's artists and makers and Mercato Metropolitano, a food and drink venue housed in a disused paper factory on Newington Causeway. It brings together small producers, farmers and artisans from across London and Italy and contains a cookery school, vegetable garden and in-house cinema.

The Art Academy is making use of the former Newington Library building on Walworth Road on an interim basis for exhibitions, studios and classes. 55 East is a new, permanent community and enterprise hub. It includes combined co-working and training space, a community café and retail and event space for local designers and community groups.

The area is establishing itself as a busy town centre, with a lot more residents and visitors attracted to the area. Due to this the existing transport infrastructure needs to be upgraded. This application supports the provision of the previously permitted new station entrance designed to accommodate higher numbers of people using the Underground station.



Fig 9. Elephant and Castle's places of interest - Mercato Metropolitano (bottom left), Hotel Elephant workspace (bottom right), E&C public space at the peninsula (top)

2.2.3. Elephant and Castle area in the future

Proposed developments

Elephant and Castle is undergoing a period of transformation, with significant redevelopment taking place. The local planning policy framework for managing the regeneration of the area is the adopted Elephant and Castle Supplementary Planning Document / Opportunity Area Planning Framework (SPD / OAPF). The SPD sets out a vision for the area which includes transforming it into an attractive central London destination, making it a more desirable place to live for existing and new residents, with excellent shopping, leisure, learning and cultural facilities, and significant new housing.

The £3bn regeneration programme is aiming to create an exciting destination for London over the next 15 years. There are currently 24 projects that form the core of the programme, some of which have been completed and others which are underway.

The regeneration includes the replacement of existing post-war tower blocks to the east of the National Railway line with around 5,000 new and replacement homes and mixed-use developments. This is scheduled to be completed between 2025-2030. Associated with this will be road upgrades and widening, construction of new retail facilities and enhancement of the railway viaduct arches.

The two main developments at the heart of the regeneration are Elephant Park on the former Heygate Estate site and the new town centre developed by Delancey which will replace the existing Elephant and Castle shopping centre.

The Delancey development will provide a new Northern Line station entrance and ticket hall and will connect the new Elephant and Castle town centre with the other developments underway in the area.

Implications for the station

The 5,000 new/replacement homes and creation of new retail space will put increasing pressure on the existing Elephant and Castle station and create an extremely busy hub.

The restricted access into the existing Elephant and Castle Underground station places limitations on the functioning of the area, preventing the town centre from developing into a commercial and social focus in Southwark and South London.

The ECSCU project seeks to address the existing issues with the station's layout and access and provide sufficient capacity to accommodate projected passenger flows. The improved access to housing, retail and education will reinforce Elephant and Castle as a major centre contributing to the life and character of the area.

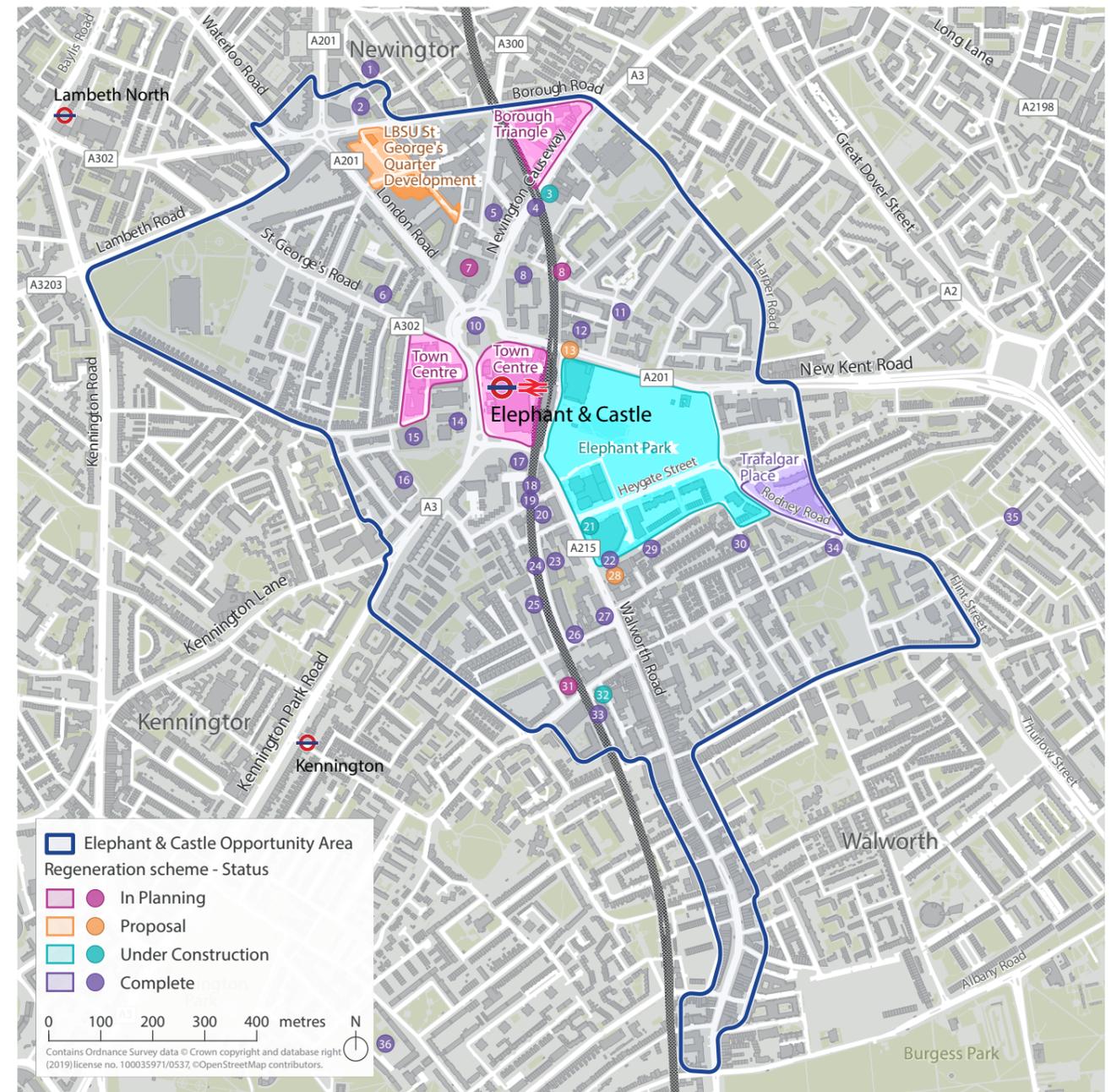
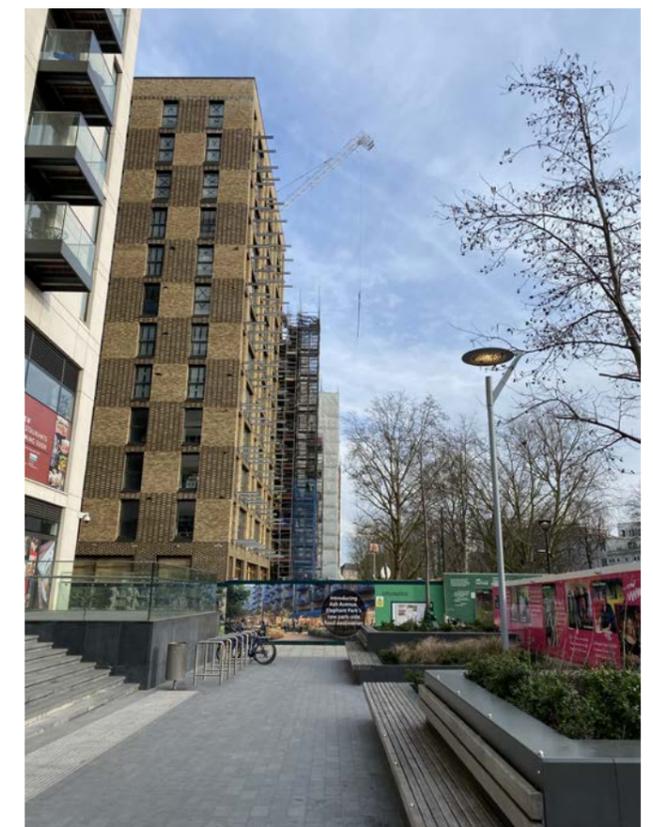


Fig 10. Recent and future developments in the Elephant and Castle area

Fig 11. Emerging and completed developments in the Elephant and Castle area: Elephant Park (bottom right and left - no. 21 on the map); completed mixed use development to the south of Metropolitan Tabernacle Church (top left, - no. 14 on the map); recently completed public space as part of the peninsularisation works, in front of Metro Central Heights and flanking Newington Causeway (top right)



2.2.4. Heritage assets

The Metropolitan Tabernacle Church (MTC) and Michael Faraday Memorial are Grade II listed buildings in the vicinity of the Elephant and Castle LU station. The Michael Faraday Memorial sits at approximately 50m north-west from the proposed station access and MTC at approx. 85m west.

The site is not located within a conservation area. The closest conservation area is Elliot's Row, at more than 180m to the west of the application site.

The site lies within the North Southwark and Roman Roads Archaeological Priority Area which follows the alignment of the present day Newington Causeway and Newington Butts, extending across the entire application site.



Fig 12. Conservation Areas, Listed Buildings and Archaeological Priority Areas at and around Elephant and Castle



Fig 13. Listed Buildings in the vicinity of the planning application site - Metropolitan Tabernacle Church (top) and Michael Faraday Memorial (bottom)

2.3. ELEPHANT AND CASTLE STATION

2.3.1. Elephant and Castle station today and its context

The current LUL station comprises the southern terminus of the Bakerloo Line and an intermediate stop for the Northern Line services. Each line has a separate ticket hall at street level, to the north and south sides of the peninsula respectively.

The existing Northern Line ticket hall is served by two lifts as the primary means of access and a spiral staircase. There is step free access to the southbound platform via a ramp, but stairs must be used to access the northbound platform. At its most acute in the AM peak period, approximately 30% of passengers entering the NLTH use the spiral staircase to avoid regular queuing at the two lifts.

Although it was upgraded in 2003, the ticket hall is operating over its capacity and has experienced a significant upward trend in demand in recent years, which is only expected to increase with recent and planned developments in the area.

The existing Bakerloo Line ticket hall is served by three lifts as the primary means of access, with a supporting spiral staircase. There is no step free access to either Bakerloo Line platform. The ticket hall is operating above its capacity but has undergone some enhancement works in recent years to increase the footprint and provide additional ticket gates. This ticket hall is outside the scope of the ECSCU project.

In relation to the street above, the Northern Line tunnels run below Newington Butts and the Elephant and Castle peninsula (Figure 14).

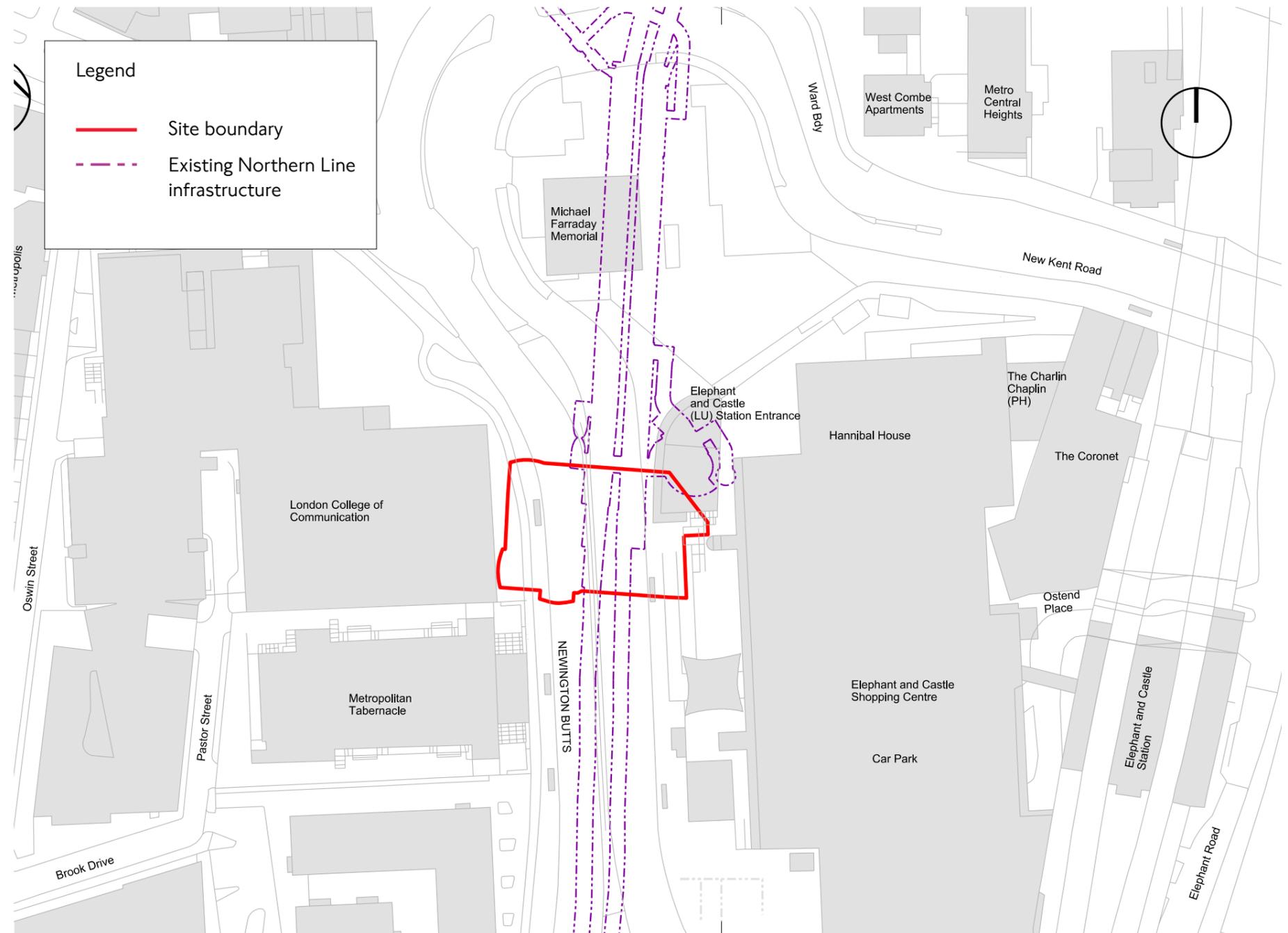


Fig 14. Context plan showing the existing Northern Line station and tunnels (shown in purple) and the application site boundary (shown in red). All works are underground

Transport interchange and pedestrian movement

Elephant and Castle is one of the most significant multi-modal interchange hubs in London.

London Underground

The Northern and Bakerloo Line ticket halls currently have no direct interchange at surface level, so passengers are required to use the Northern Line platforms as a sub-surface interchange between lines.

National Rail

The Elephant and Castle railway station is accessed at surface level from Elephant Road, a three minute walk to the Northern Line entrance via New Kent Road, or via the existing shopping centre. The public realm enhancements planned by Delancey will create a pedestrian route from the National Rail station through the Development to the London Underground station entrance on the peninsula.

During the weekdays, approximately 20% of people interchange between National Rail and the Elephant and Castle London Underground station (both Bakerloo and Northern Lines).

London Buses

Figure 15 shows the bus stop locations around Elephant and Castle serving 36 different bus routes. The sheer number of bus stops together with a very frequent service make Elephant and Castle one of the most important interchange hubs in London.

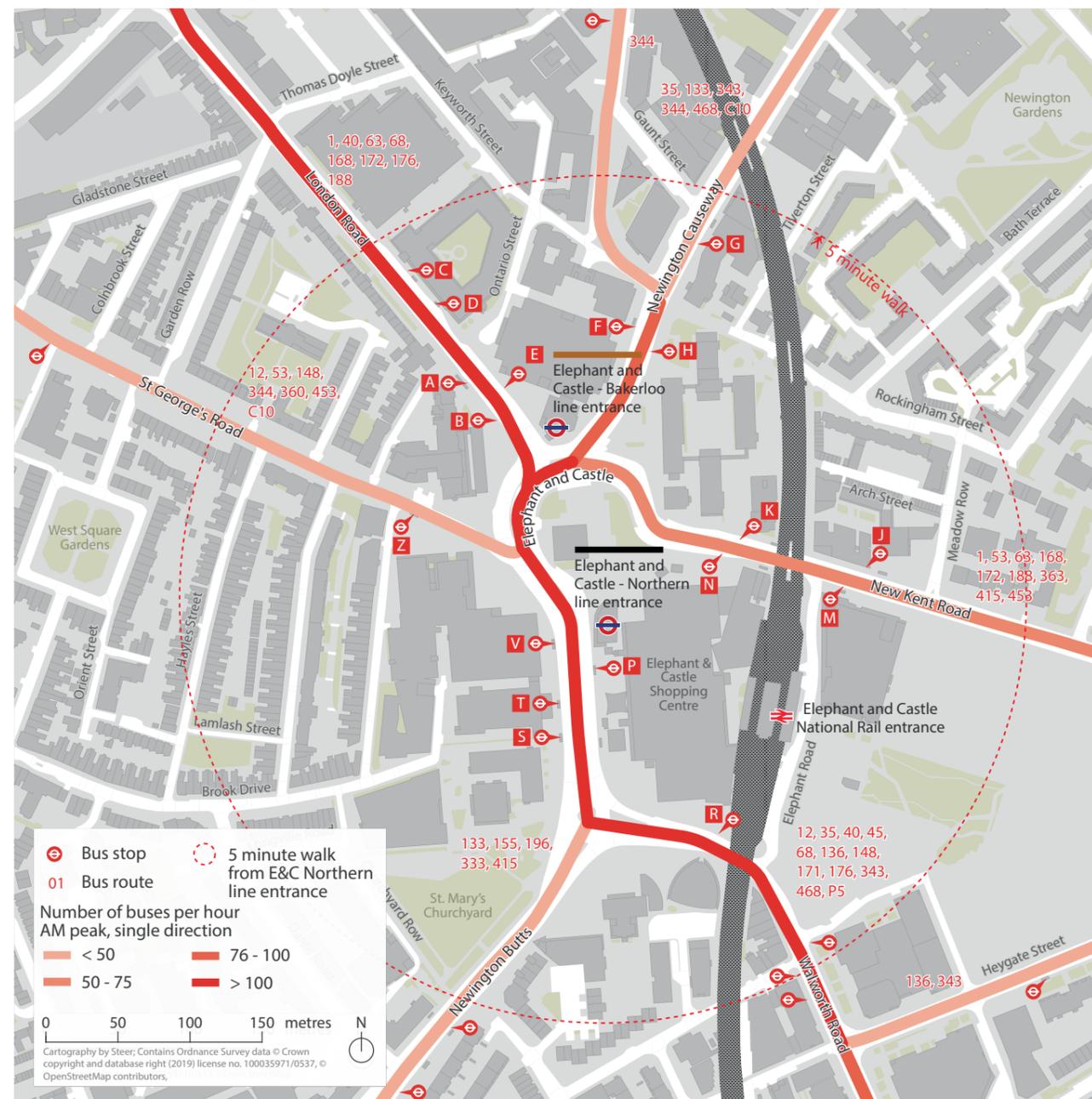
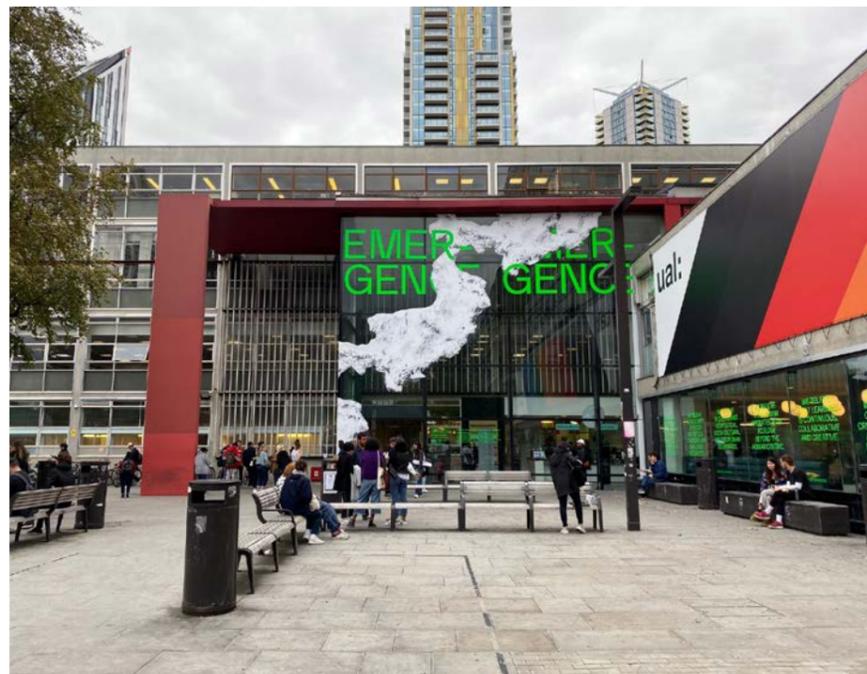


Fig 15. Existing local public transport facilities around the new Northern Line station entrance



Fig 16. Existing views of the site: Elephant and Castle Northern Line station entrance (top left), extended view towards the station across Newington Butts under which the existing Northern Line tunnels run (bottom left), Bakerloo Line station entrance view from the peninsula (top right), public square in front of University College London (bottom right)



2.3.2. Elephant and Castle Station scheme development

In 2008, studies undertaken by LUL found congestion had increased by 20% compared to the 2007 demand levels. Options for a station capacity upgrade started to be explored.

In 2011 Elephant and Castle was identified as an Opportunity Area. Four years later, TfL changed the roundabout layout to a peninsula design; providing additional public realm and making it safer for pedestrians and cyclists to use the area.

LUL have carried out further studies to understand the improvements required to support the increasing demand at the station driven by the emerging and upcoming local regeneration.

At present, the NLTH and lifts are under pressure due to the current demand, particularly in the AM peak when queuing for the lifts cannot be accommodated within the existing station.

The modelling shows that the NLTH and station forecourt at the peninsula will experience severe overcrowding by 2031 during the AM and PM peaks (Figure 17). This could potentially have a negative impact on the attractiveness and use of the public space on and around the peninsula.

In 2013, Delancey (the Developer) and APG (pension fund asset manager) joined forces and purchased the Elephant and Castle Shopping Centre with plans to redevelop it as part of a significant regeneration scheme for the area. Delancey approached TfL with proposals for integrating a new NLTH as part of the redeveloped shopping centre. Delancey and TfL then worked together to agree a suitable location and size for the new station entrance.

Following negotiations, TfL agreed with the Developer to place the station entrance on the outside of the development, facing the public space at the peninsula. This ensures a good public transport interchange, with the new station visible from the Bakerloo Line station entrance and many bus stops, but also with direct access to the National Rail station via the new direct pedestrian route (refer to Figure 19).

In January 2016, 2D boundary lines were agreed for the station box.

Incorporating the new NLTH within the Delancey development means that the forecast congestion levels for 2031 can be proactively addressed and avoided.

Figure 18 on the opposite page shows a timeline of studies from 2008 to present.

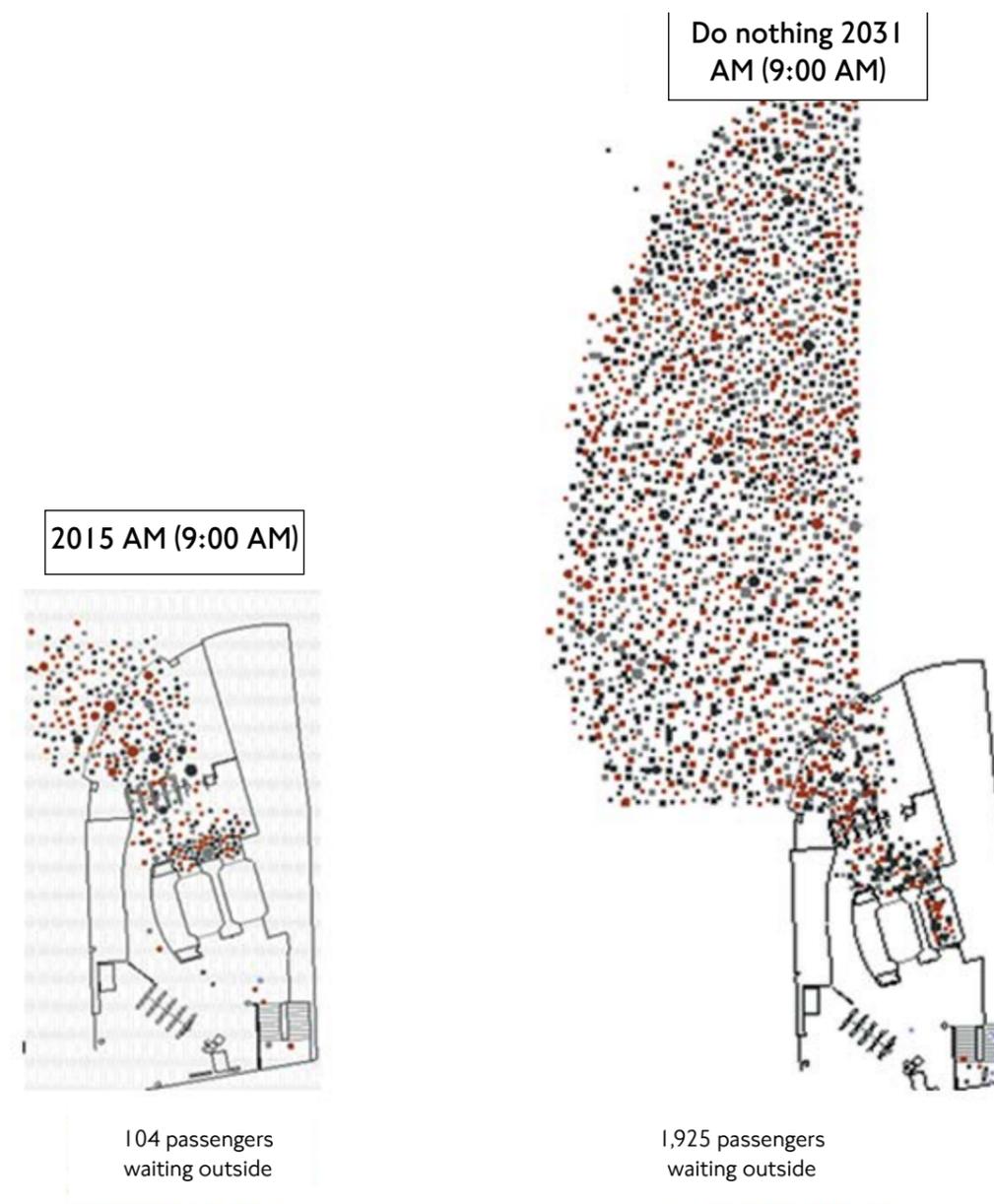
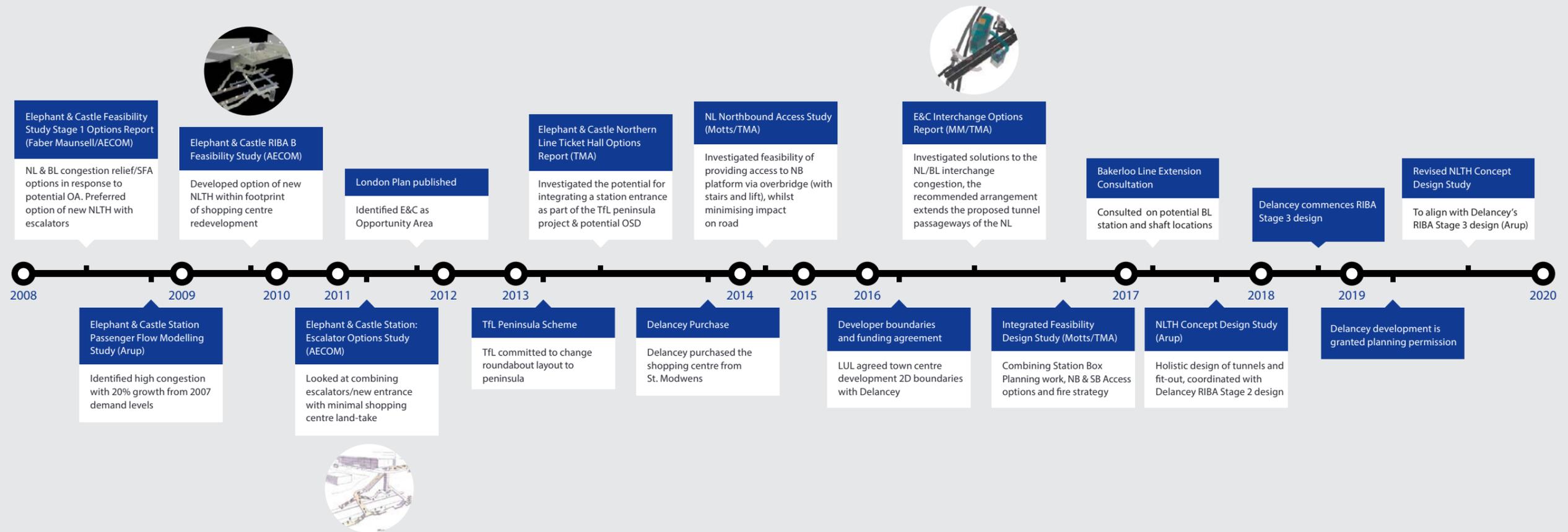


Fig 17. Legion modelling showing size of the crowd waiting outside the Northern Line station entrance in 2015 AM peak (left) and in the 'Do nothing' option for 2031 AM peak (right)

Timeline of Studies



NL	Northern line	OA	Opportunity area	NLTH	Northern line ticket hall	LUL	London Underground Limited
BL	Bakerloo line	OSD	Over station development	NB	Northbound	TMA	Tony Meadows Associates
SFA	Step-free access	E&C	Elephant & Castle	SB	Southbound	MM	Mott Macdonald

Fig 18. Timeline of studies for the Northern Line ticket hall since 2008 to present

2.4. INTERFACE WITH DELANCEY DEVELOPMENT

Planning permission was granted by the London Borough of Southwark for the Delancey scheme on 10 January 2019, subject to conditions and a legal agreement pursuant to Section 106 of the Town & Country Planning Act 1990.

The approved scheme is for:

Phased, mixed-use re-development of the existing Elephant and Castle shopping centre and London College of Communication sites comprising the demolition of all existing buildings and structures and redevelopment to comprise buildings ranging in height from single storey to 35 storeys (with a maximum building height of 124.5m AOD) above multilevel and single basements, to provide a range of uses including 979 residential units (use class C3), retail (use Class A1-A4), office (Use Class B1), Education (use class D1), assembly and leisure (use class D2) and **a new station entrance and station box for use as a London Underground operational railway station**; means of access, public realm and landscaping works, parking and cycle storage provision, plant and servicing areas, and a range of other associated and ancillary works and structures.

The S106 agreement requires the Developer to construct the station box and station access from the public highway to a specification agreed with LUL.

Figure 19 shows the approved location of the station entrance (in yellow) and the application site boundary for the proposed tunnels linking it to the Northern Line platforms.

Whilst the Delancey development authorised the construction and operation of the new station box and entrance, the majority of the passenger link tunnels are located outside the red line boundary of that scheme (shown in dotted green), so they require separate planning consent.

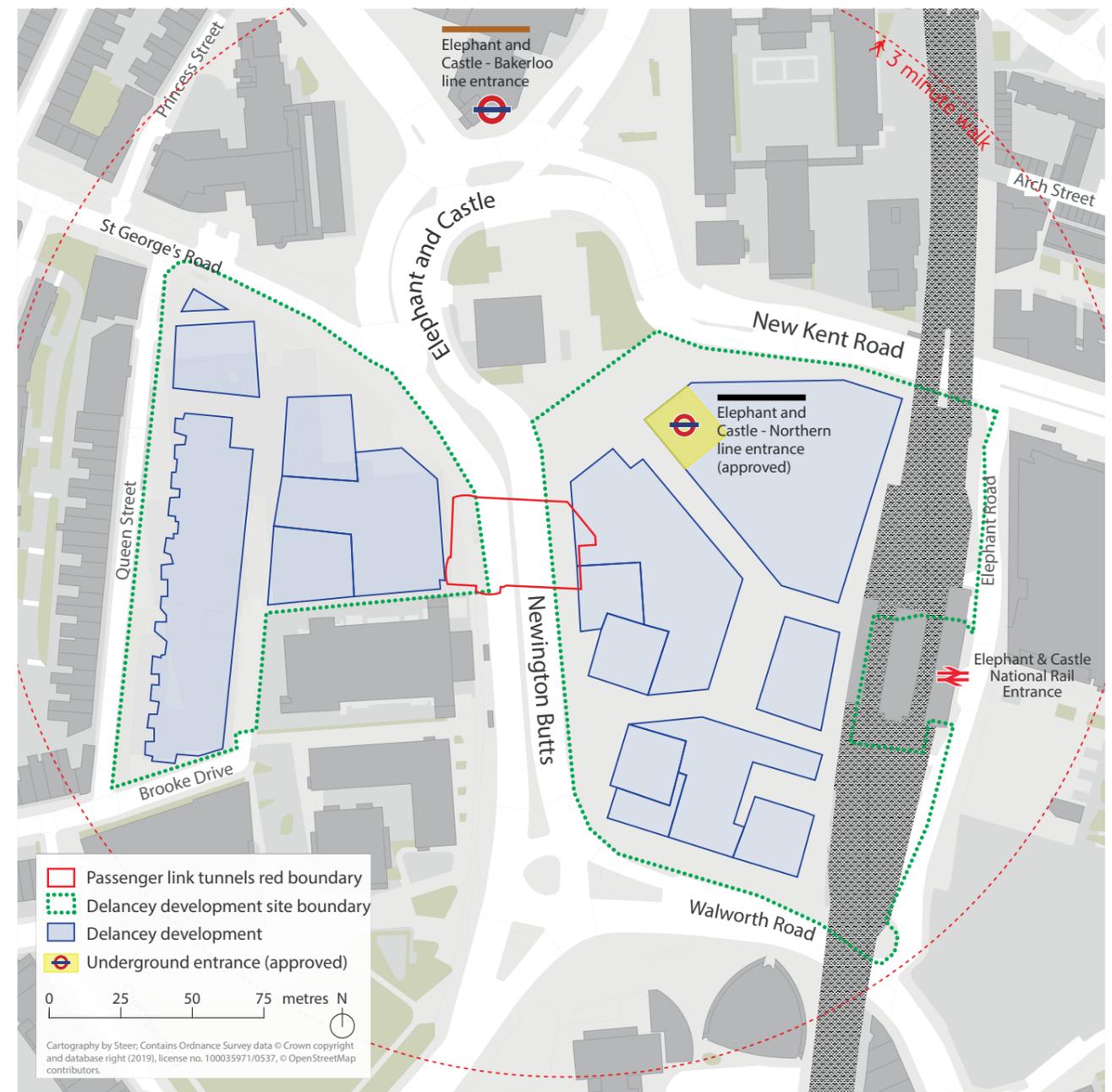


Fig 19. Drawing showing the approved Delancey development including the new Northern Line station entrance and application site boundary for the proposed passenger link tunnels

The Delancey development for the Elephant and Castle town centre will include a range of high street and independent retailers to replace the existing shopping centre, enhanced leisure opportunities and a new cutting-edge University campus for UAL's London College of Communication. Plans also include 979 new homes for rent, with part of this ambition already underway on Elephant Road.



Fig 20. View of the town centre from the peninsula, showing the proposed Northern Line station entrance on the left hand side (top) and aerial view of the development with the new station at the heart of the town centre (bottom right)



3. DESIGN CONCEPT

Elephant and Castle London Underground station is a main gateway into the area and its efficient functioning is essential to the sustainable regeneration and delivery of the objectives set out in the OAPF. The new passenger link tunnels and NLTH are vital to create a station to the standard required to enable a positive contribution to the Elephant and Castle area and overall for London.

The design provides step free and stepped access, including one-way stepped routes for more efficient passenger movement (Figure 22). The objective is to provide a modern functional station with good ambience, providing capacity for the additional passengers.

The construction sequence for the NLTH is that:

- Delancey will undertake the detailed design and construct the station box structure, including piling, the internal wall structure, basement and floor levels within, as approved by LB Southwark
- LUL will be responsible for designing and constructing the new passenger link tunnels to connect the new ticket hall to the existing Northern Line platforms and fit-out of the station box (which will form the new NLTH)

Bakerloo Line Upgrade and Extension

TfL is proposing to extend Bakerloo Line beyond Elephant and Castle to Lewisham, serving Old Kent Road and New Cross Gate. The proposals are part of the commitment to improve public transport connectivity in this part of London and enable the provision of new homes and jobs.

This would involve the construction of new platforms at Elephant and Castle with new passenger tunnels to connect the new Bakerloo Line platforms to the new NLTH. The new NLTH will be upgraded to operate as a combined ticket hall for both the Northern Line and extended Bakerloo Line.

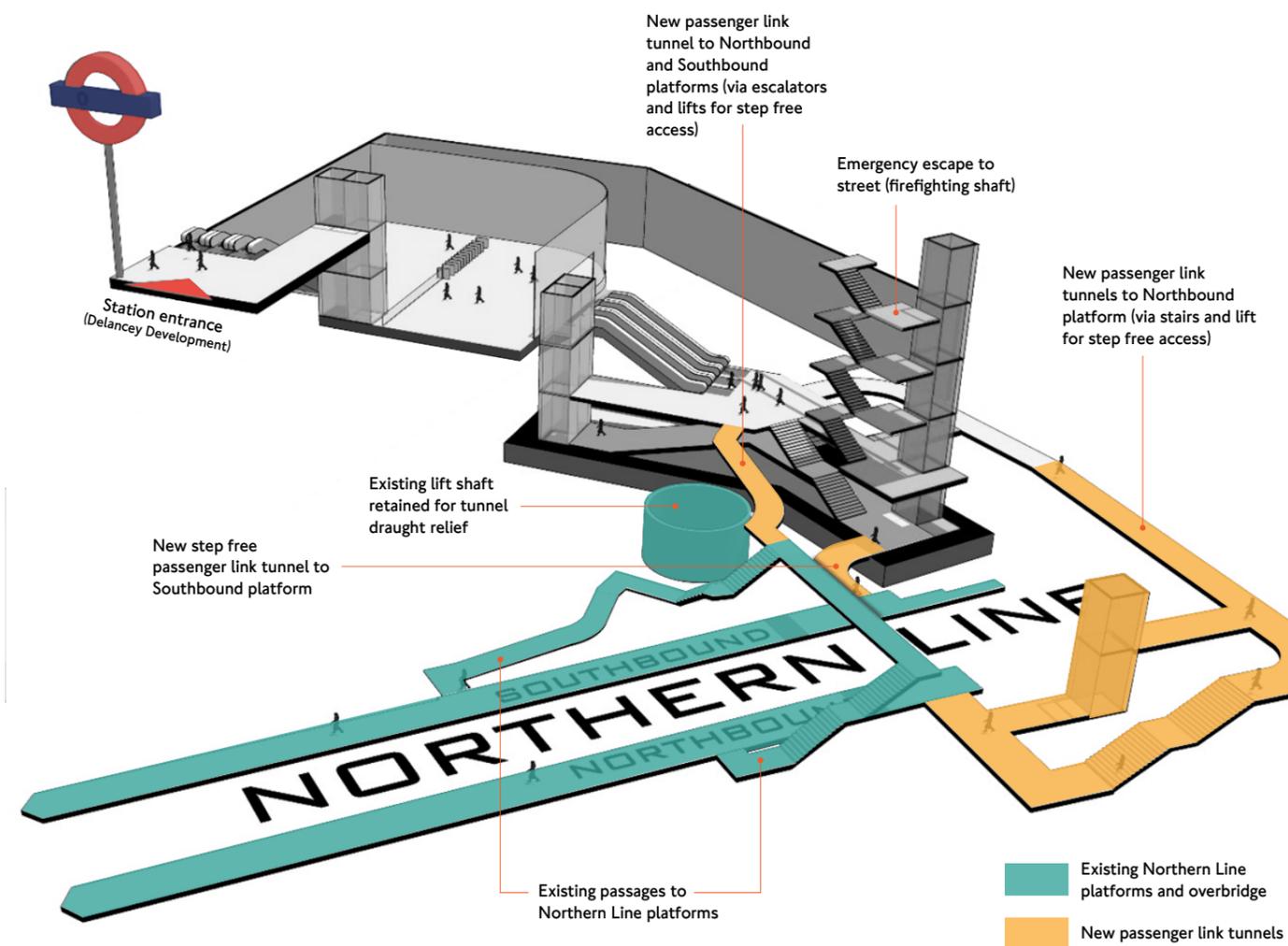


Fig 21. Indicative diagram of the new passenger link tunnels connecting to existing Northern Line tunnels and the approved Delancey development

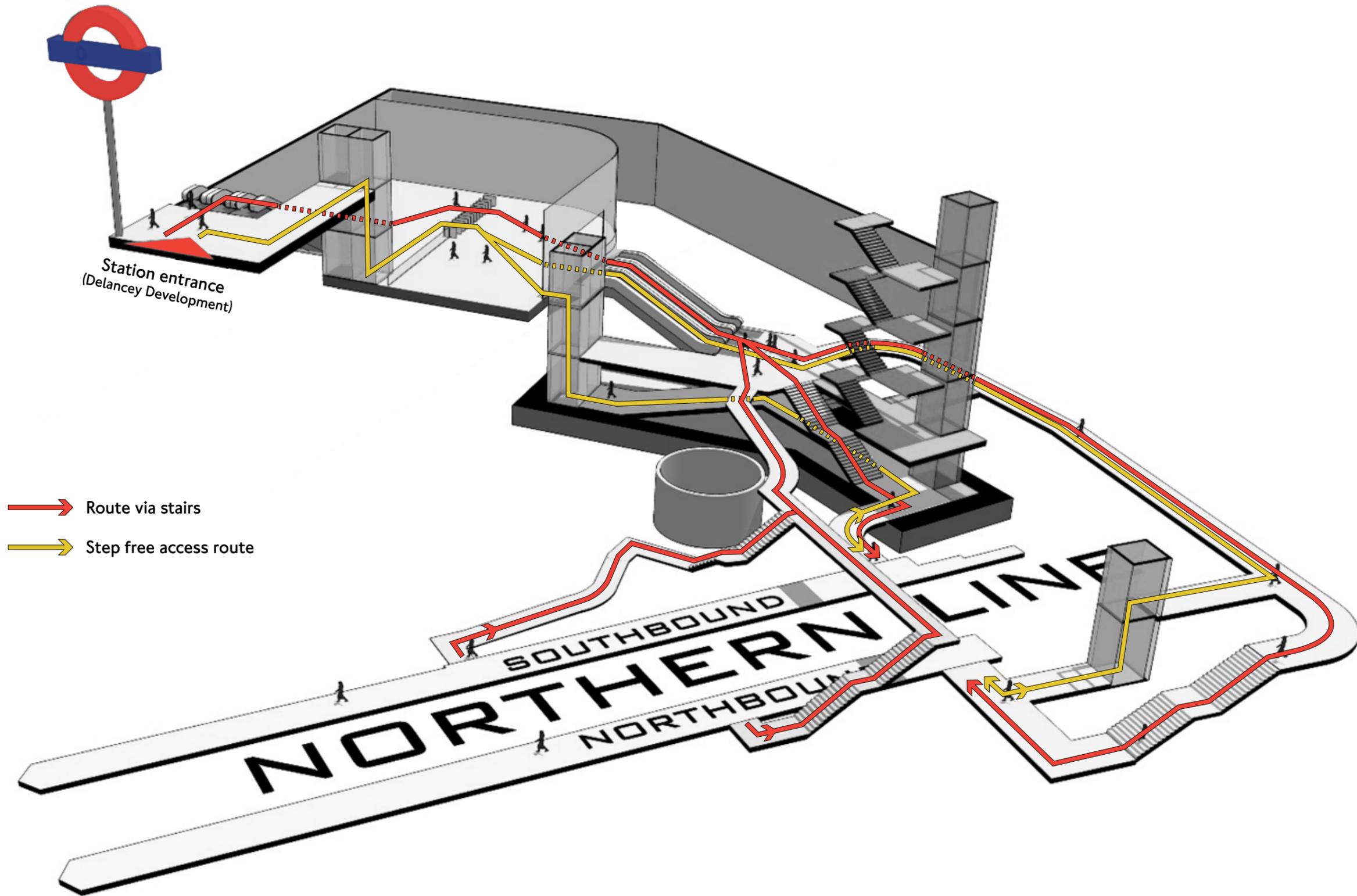
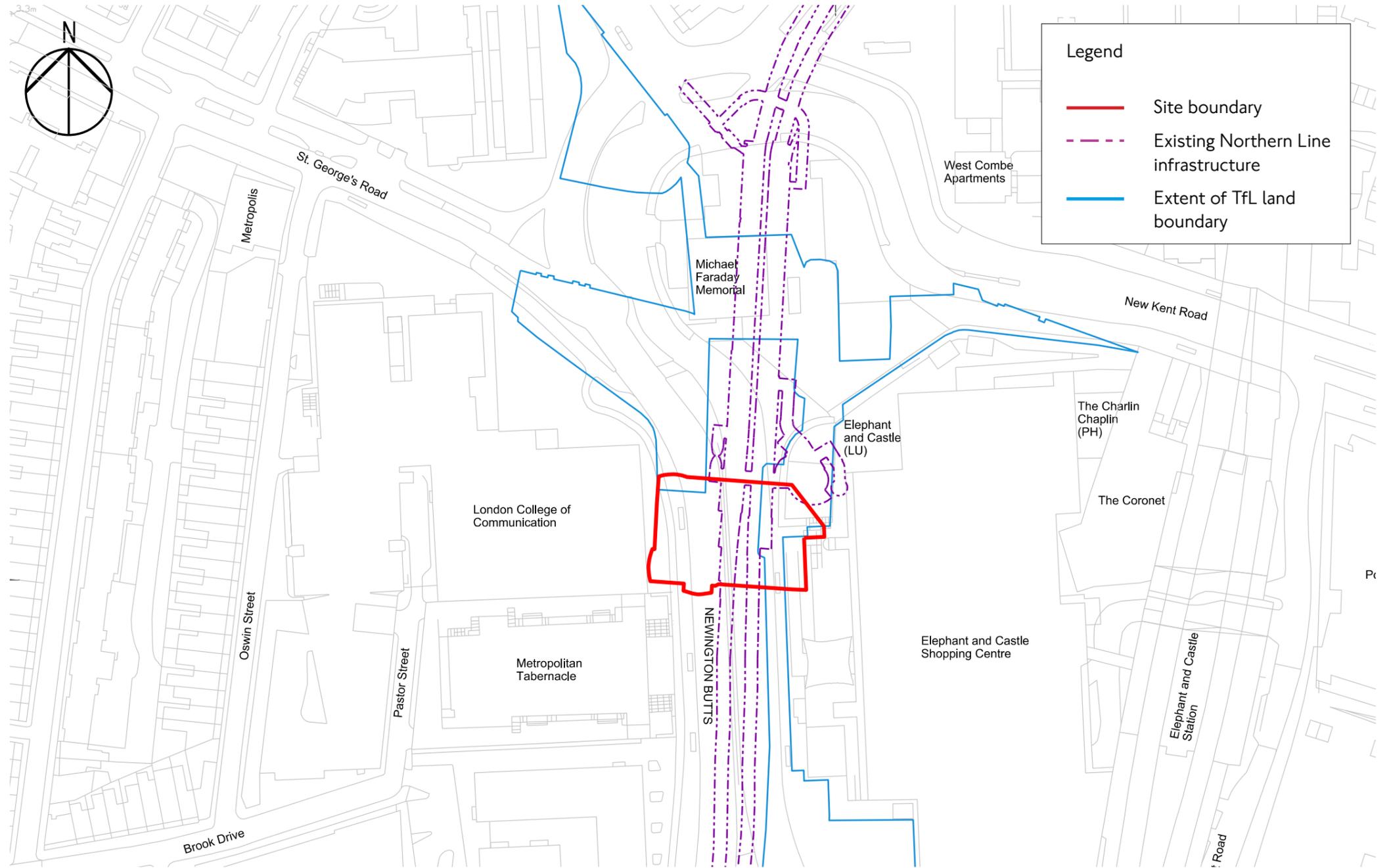


Fig 22. Indicative diagram of the proposed step free access routes and via stairs. Note one-way routes (via stairs)

Fig 23. Proposed site location of the red line boundary for the passenger link tunnels in the existing situation



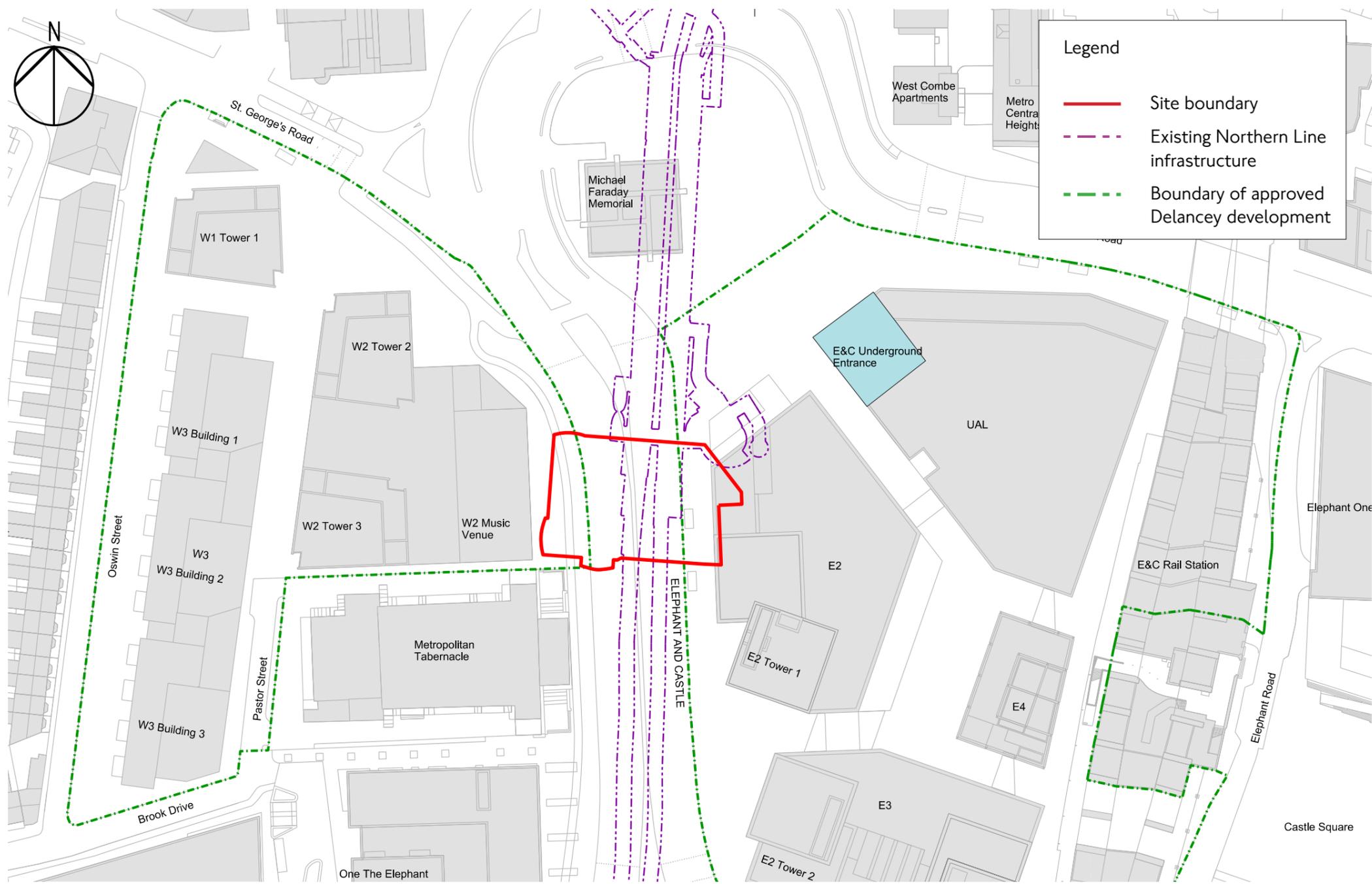


Fig 24. Proposed site location of the red line boundary for the passenger link tunnels in relation to the approved Delancey development

3.1. KEY CHALLENGES AND OPPORTUNITIES

The site presents a number of challenges and opportunities below and above surface.

Opportunities focus on how the new station and passenger link tunnels will improve the interchange and overall experience on London Underground for the passengers who live, work and travel in the area. The improved public transport access will enable Elephant and Castle to grow sustainably, helping to deliver the intensification envisioned through its designation as an Opportunity Area.

The studies undertaken by LUL over the past 10 years identified the need to upgrade the NLTH station capacity to support future demand. There is an opportunity to use the Delancey development to build a new station box and passenger link tunnels using their construction site.

In line with providing a sustainable design, this would ensure that the area above the passenger tunnels (Newington Butts) is not disrupted and that the length of the tunnels and associated works are minimised.

The constraints refer to the existing physical underground assets (utilities and LUL infrastructure) and the relationship of the new passenger link tunnels with the listed buildings adjacent to the site.

The Grade II listed Faraday Memorial, located within the peninsula, will be outside the project's area of influence. The Grade II listed MTC falls slightly within the ground movement zone.

The key challenges that have and will continue to inform the design of the new passenger link tunnels are:

- Proximity of the tunnelling to the Grade II listed MTC building foundations and LCC
- Thames Water sewers under Newington Butts. These are significant assets dating from Victorian times which are vulnerable to ground movement. A spiderweb of utilities is located under the peninsula which has meant that the location of the proposed passenger link tunnels had to shift south along the alignment of Newington Butts. Due regard has also been given to the depth where the tunnels could be built so as to not affect the functioning of the Thames Water sewers
- The proximity to the existing Northern Line tunnels. The depth of the existing platform tunnels dictates where the new passenger tunnels will connect to the existing transport infrastructure

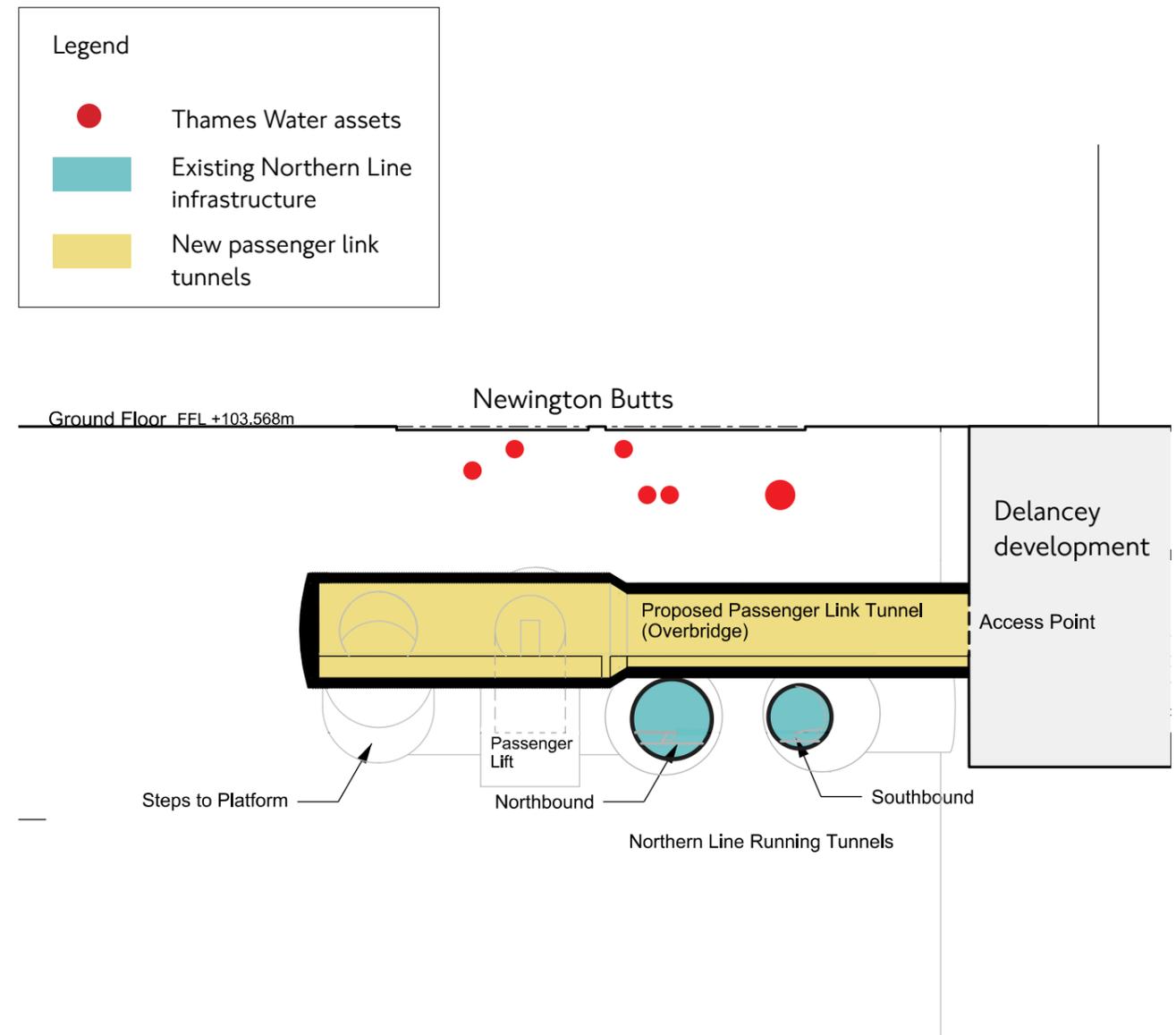


Fig 25. Existing Northern Line tunnels and Thames Water assets

3.2. DESIGN DEVELOPMENT

The NLTH project is linked to the development above ground. Delancey is responsible for designing and building the station box and LUL are responsible for the design and construction of the tunnelled connections from the new box to the existing Northern Line tunnels and fit-out out of the station box.

The initial concept design for the passenger link tunnels was completed in 2017, in coordination with Delancey's design. The design proposed tunnels extending underneath Newington Butts in close proximity to the Metropolitan Tabernacle Church and close to and under the south-eastern corner of the LCC.

To address the challenges outlined in 3.1, further design work was undertaken in 2019.

The revised design mitigates potential ground movement impacts on the Metropolitan Tabernacle Church, LCC and existing Thames Water sewers. The tunnel has now been aligned further away from the two buildings, reducing potential ground movement.

This is described in more detail in 3.2.1 and 3.2.2.

3.2.1. Concept design for the passenger link tunnels

The original concept design was developed in 2017 alongside the Developer's planning application. It was proposed that the passenger link tunnels would be constructed under Newington Butts at a depth of approximately 9m below ground level and would have an external diameter of between 5.54m and 6.76m.

One section of the passenger link tunnels extended by approximately 1m under the LCC, which would have required purchase of sub-soil from the LCC and had ground movement implications.

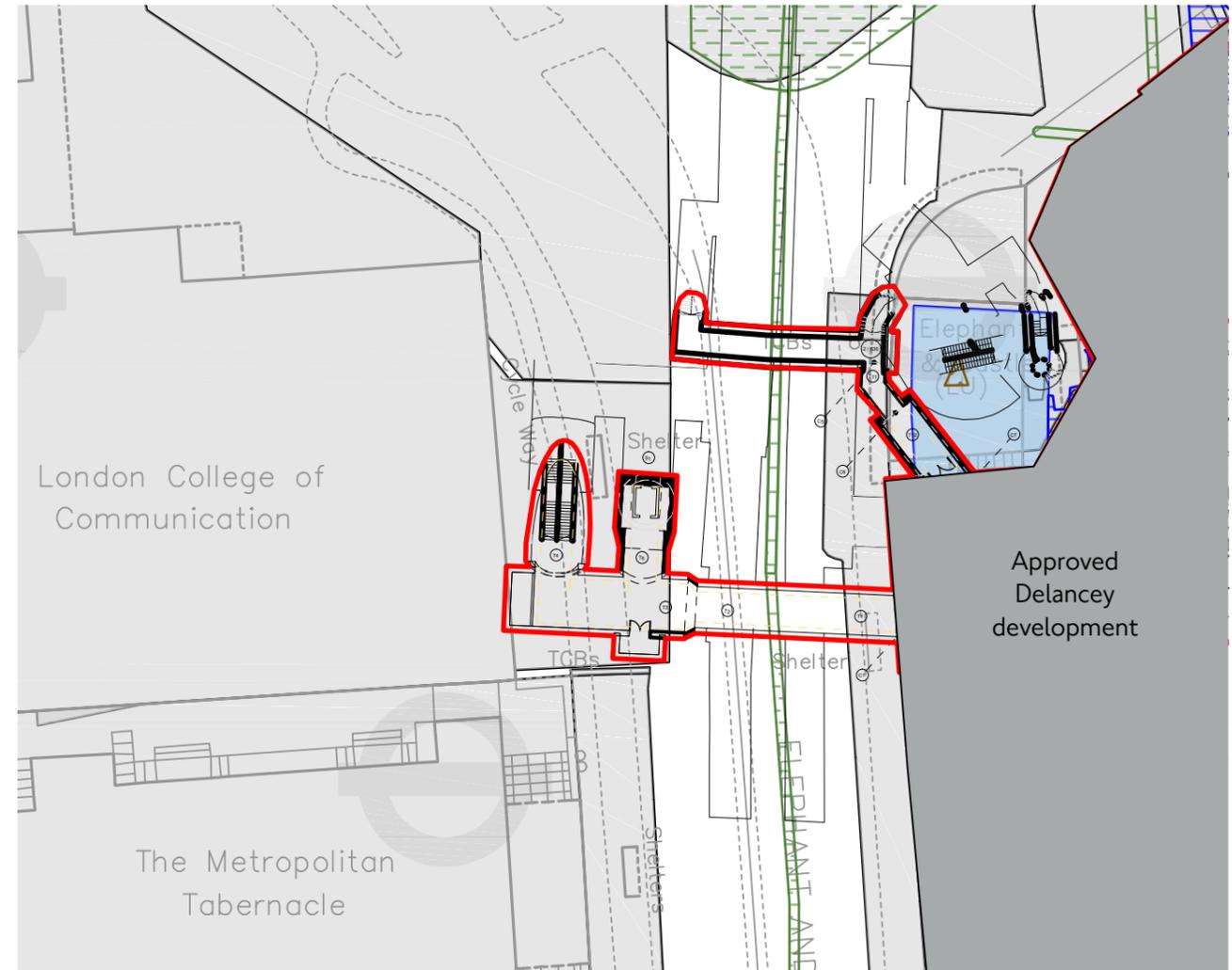


Fig 26. Passenger link tunnels (in red) concept design proposal 2017

3.2.2. Revised design proposal

To mitigate potential ground movement implications for utilities and the adjacent Grade II listed MTC and LCC, further design work has been undertaken, to produce the scheme which is the subject of the current planning application.

The revised design builds the passenger tunnels outside of the LCC boundary and reduces the ground movement implications as described in the Basement Impact Assessment (BIA) report.

The following modifications have been made to the passenger tunnels' layout:

- Tunnel T3 has been reduced of 1m along the tunnel axis
- Tunnels T3, T4, T5, T6, T8 and T9 and shaft S1 have been moved of 1m eastward along the T3 tunnel axis

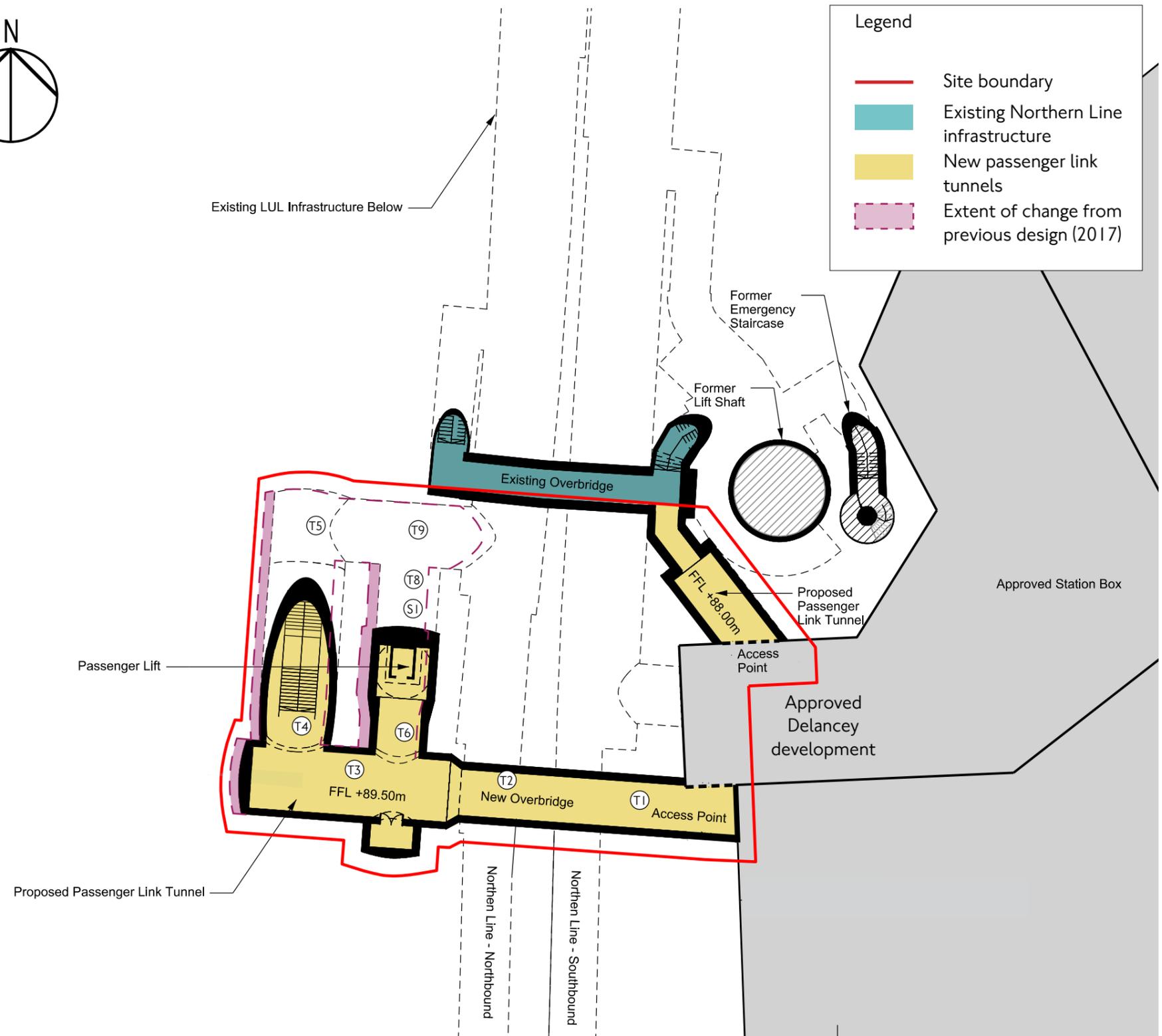
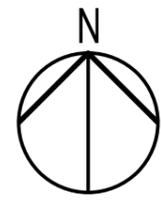


Fig 27. Passenger link tunnels revised design proposal

A Flood Risk Assessment and a BIA for the tunnelling works have been undertaken. It was concluded that the flood risk for the new tunnels is low and no special design measures will need to be adopted.

Based on the available ground investigation information, position of the proposed passenger link tunnels and available existing building records, the BIA has found that there will not be an adverse impact on the existing basements due to the construction of the proposed passenger link tunnels.

As a result, it is unlikely that there will be any significant contamination issues due to the proposed works.

A high level archaeological assessment has also been carried out. The tunnels are to be constructed exclusively in London Clay, with no penetration into the above layers, which have the potential to contain archaeological evidence. London Clay is considered to be archaeologically sterile as it predates human interaction on the planet. As such, the works introduced by construction of the passenger link tunnels are unlikely to impact buried archaeology as discussed above. However, the need for archaeological assessment should be addressed at detailed design stage if surface grouting is identified as a mitigation measure.

In conclusion, the construction and future functioning of the passenger link tunnels will not have an impact on the uses below and above ground, including the existing and future businesses and transport operations at and around the peninsula.

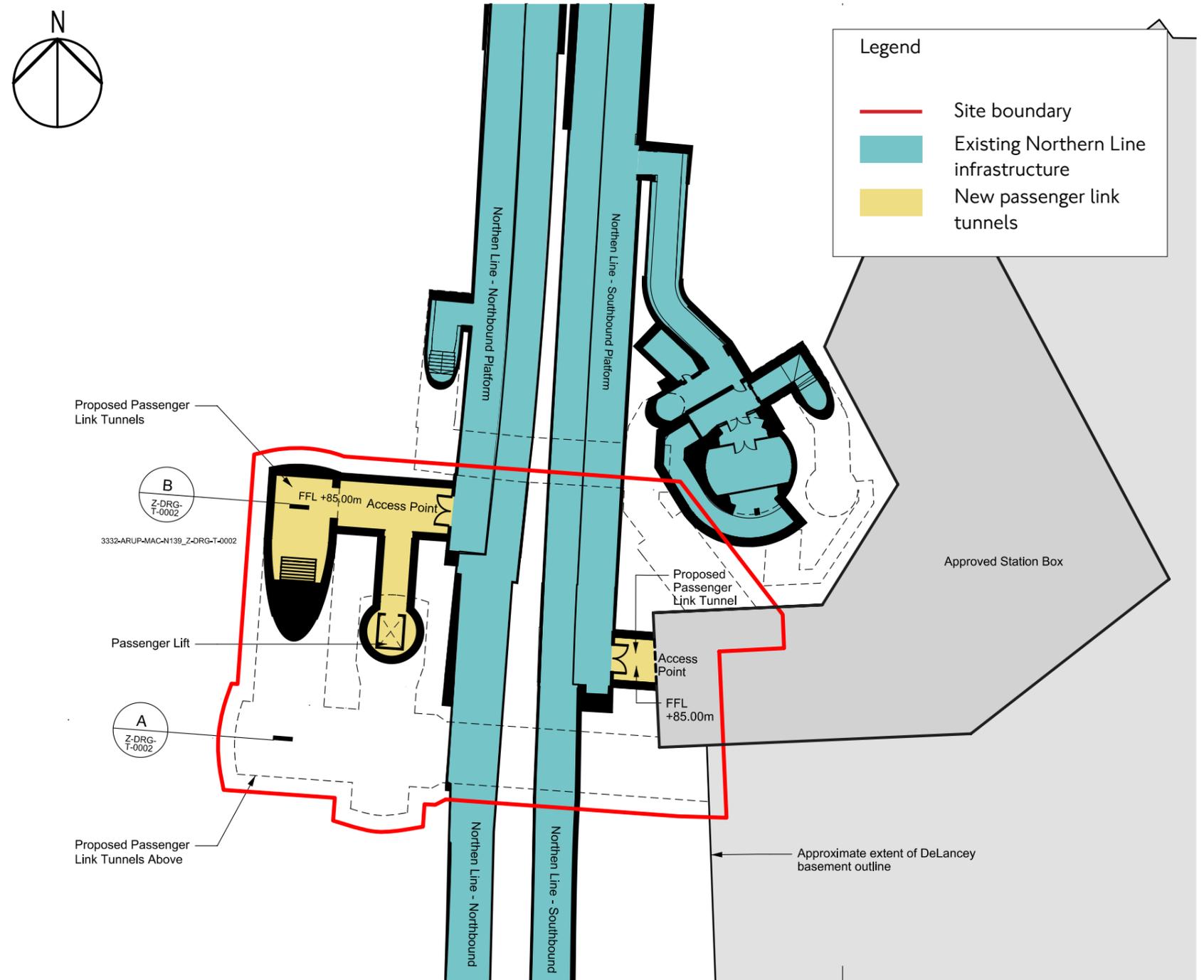


Fig 28. Passenger link tunnels plan showing platform level

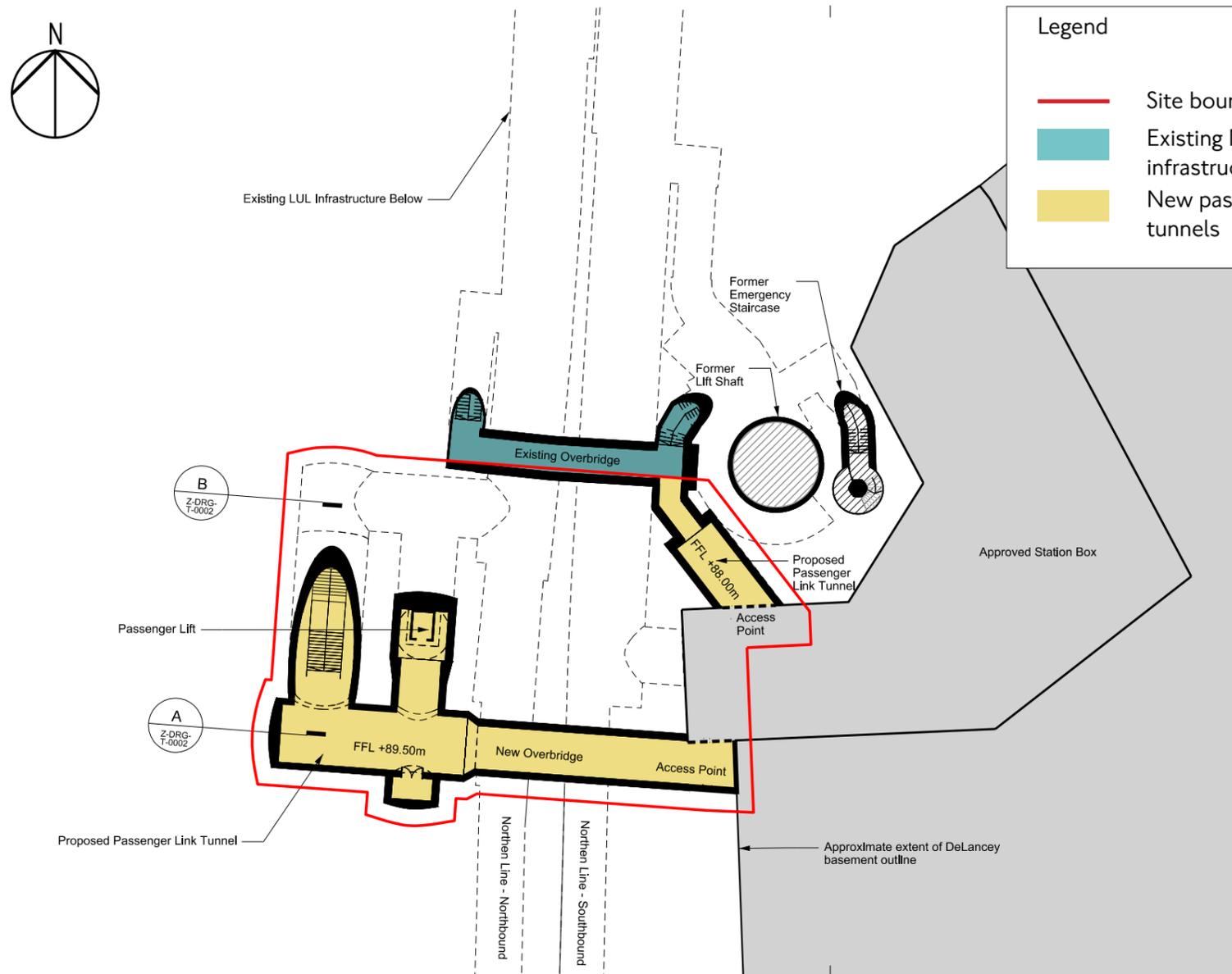


Fig 29. Passenger link tunnels plan showing overbridge level

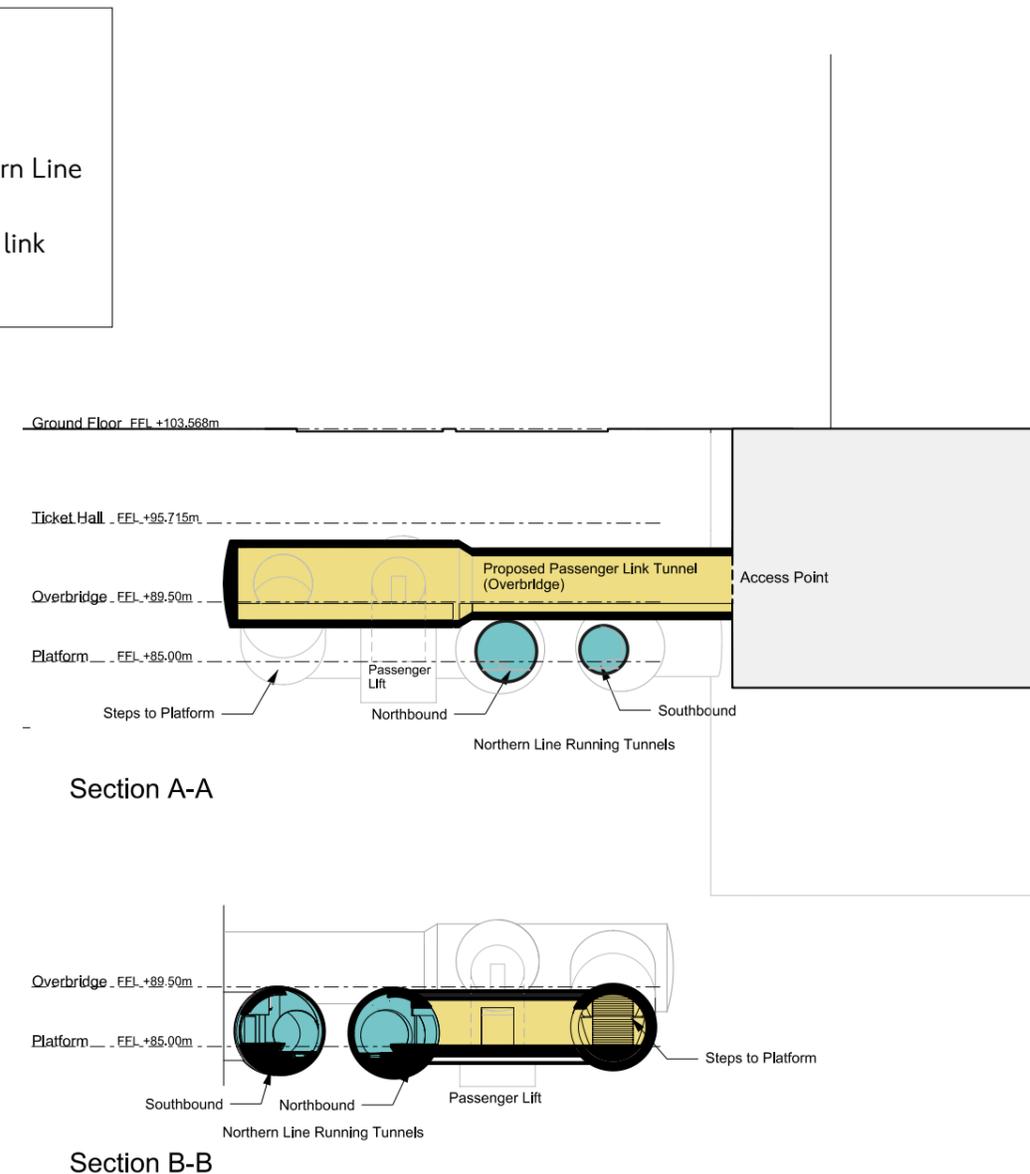


Fig 30. Passenger link tunnels cross sections

4. CONCLUSION

This Design and Access Statement has described the ECSCU project and explained how it will benefit the regeneration of Elephant and Castle.

As an important economic, educational and cultural centre in South London, Elephant and Castle station needs to support the future growth of this area. The station also comprises part of a very busy transport interchange with overground rail and buses. Its effective operation is essential to providing access to people from all walks of life living, working or visiting the area.

Studies done by LUL over the last decade have shown that passenger levels have increased by 20% over the estimated demand, causing congestion. Elephant and Castle has been identified as an Opportunity Area, with the delivery of residential and mixed use developments as a priority.

Today, the NLTH is operating over its capacity, an upward trend expected to grow with recent and planned developments. The modelling forecast estimates severe overcrowding by 2031, with as many as 1,925 passengers queuing to enter the station during the AM peak.

The NLTH was upgraded in 2003 and LUL started developing options for a new NLTH within the footprint of the shopping centre development in 2009.

When Delancey purchased the shopping centre with the intention to re-develop it, conversations also started with LUL to integrate the NLTH in an optimum location within the development, improving the interchange experience. Delancey was granted planning permission in

January 2019, which included permission for a new station entrance and station box for use as a London Underground operational railway station.

The passenger link tunnels required to access the Northern Line platforms were not included in the consented scheme. Therefore, a separate planning application to seek consent is required, which this Design and Access Statement supports.

An initial concept design for the passenger tunnels was drawn in 2017. A number of challenges have had to be overcome, including proximity of the passenger tunnels to the Grade II listed MTC, LCC and Thames Water sewers. To mitigate potential ground movement, the design was revised to align the tunnels away from the buildings.

This is the design that this application is seeking planning permission for.

In design and access terms, the overarching benefits of implementing ECSCU and the associated passenger link tunnels are:

- Increase the capacity of E&C Northern Line station entrance to meet future demand forecasts
- Reduce congestion and improve journey time savings
- Improve the quality of access, interchange and ambience including the provision of step free access from street level to the trains
- Provide good integration with other transport modes, surrounding land-uses and the public realm
- Improve fire and evacuation measures to reduce evacuation times to a relative place of safety
- Future proof improvements to the Northern Line/Bakerloo Line interchange including proposals for the future Bakerloo Line Upgrade and Extension



Fig 31. Suggested visualisation of the Northern Line Ticket Hall interior

In conclusion, the proposed passenger link tunnels would connect the consented development with the Northern Line platforms and would enable the area to benefit from improved public transport.

LIST OF FIGURES

Fig 1. New Northern Line Ticket Hall and passenger underground connections	and Archaeological Priority Areas at and around Elephant and Castle	aerial view of the development with the new station at the heart of the town centre (bottom right)	Sources:
Fig 2. Elephant and Castle peninsula looking towards New Kent Road and the Old Kent Road Opportunity Area	Fig 13. Listed Buildings in the vicinity of the planning application site - Metropolitan Tabernacle Church (top) and Michael Faraday Memorial (bottom)	Fig 21. Indicative diagram of the new passenger link tunnels connecting to existing Northern Line tunnels and the approved Delancey development	TfL (Fig 1, 2, 3, 4, 5, 6, 7, 8, 9 top image, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31)
Fig 3. New Northern Line passenger link tunnels in relation with the road network above and adjacent buildings - indicative only	Fig 14. Context plan showing the existing Northern Line station and tunnels (shown in purple) and the application site boundary (shown in red). All works are underground	Fig 22. Indicative diagram of the proposed step free access routes and via stairs. Note one-way routes (via stairs)	http://www.savethedatelondon.com/2016/10/29/mercato-metropolitano/ (Fig 9 bottom left)
Fig 4. Elephant and Castle junction aerial view	Fig 15. Existing local public transport facilities around the new Northern Line station entrance	Fig 23. Proposed site location of the red line boundary for the passenger link tunnels in the existing situation	https://hotelelephant.co.uk/ (Fig 9 bottom right)
Fig 5. Elephant and Castle bomb damage map 1939-45	Fig 16. Existing views of the site: Elephant and Castle Northern Line station entrance (top left), extended view towards the station across Newington Butts under which the existing Northern Line tunnels run (bottom left), Bakerloo Line station entrance view from the peninsula (top right), public square in front of University College London (bottom right)	Fig 24. Proposed site location of the red line boundary for the passenger link tunnels in relation to the approved Delancey development	https://www.southwarknews.co.uk/news/exclusive-will-elephant-and-castle-developer-delancey-be-taken-to-court/ (Fig 20 bottom right)
Fig 6. Elephant and Castle Bakerloo Line entrance	Fig 17. Legion modelling showing size of the crowd waiting outside the Northern Line station entrance in 2015 AM peak (left) and in the 'Do nothing' option for 2031 AM peak (right)	Fig 25. Existing Northern Line tunnels and Thames Water assets	https://www.constructionenquirer.com/2018/07/05/londons-elephant-castle-new-town-centre-approved/ (Fig 20 bottom left)
Fig 7. Elephant and Castle Northern Line entrance	Fig 18. Timeline of studies for the Northern Line ticket hall since 2008 to present	Fig 26. Passenger link tunnels (in red) concept design proposal 2017	https://www.building.co.uk/news/mayor-approves-huge-elephant-and-castle-redevelopment/5096997.article (Fig 20 top)
Fig 8. Elephant and Castle existing station entrances plan	Fig 19. Drawing showing the approved Delancey development including the new Northern Line station entrance and application site boundary for the proposed passenger link tunnels	Fig 27. Passenger link tunnels revised design proposal	
Fig 9. Elephant and Castle's places of interest - Mercato Metropolitano (bottom left), Hotel Elephant workspace (bottom right), E&C public space at the peninsula (top)	Fig 20. View of the town centre from the peninsula, showing the proposed Northern Line station entrance on the left hand side (top) and	Fig 28. Passenger link tunnels plan showing platform level	
Fig 10. Recent and future developments in the Elephant and Castle area		Fig 29. Passenger link tunnels plan showing overbridge level	
Fig 11. Emerging and completed developments in the Elephant and Castle area: Elephant Park (bottom right and left - no. 21 on the map); completed mixed use development to the south of Metropolitan Tabernacle Church (top left, - no. 14 on the map); recently completed public space as part of the peninsularisation works, in front of Metro Central Heights and flanking Newington Causeway (top right)		Fig 30. Passenger link tunnels cross sections	
Fig 12. Consevation Areas, Listed Buildings		Fig 31. Suggested visualisation of the Northern Line Ticket Hall interior	

Transport for London

