

Date: 21 February 2018

Item: London Underground Major Stations Programme

This paper will be considered in public

1 Summary

- 1.1 The London Underground (LU) Major Stations Programme (the Programme) has been established to deliver major station enhancements, the objectives of which are to:
- (a) provide a much needed step-change in capacity;
 - (b) ensure that operational resilience is maintained at key interchange stations in the medium to long term;
 - (c) safeguard access to and benefits from upgraded lines; and
 - (d) support local area regeneration, housing and job creation.
- 1.2 The programme supports the Mayor's strategic objective of 'providing a good public transport experience' and over time leads through to the 'customer' measure on the TfL Scorecard.
- 1.3 The projects contained within the Programme are in various stages of delivery, and the TfL Business Plan accommodates the latest estimated costs for the projects.
- 1.4 The purpose of this paper is to provide the Committee with an annual progress update / overview of the Programme, and the status of its component projects. The Programme is fully authorised – no additional authority is being sought from the Committee.
- 1.5 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 3 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

2 Recommendation

- 2.1 The Committee is asked to note the paper and the supplementary paper on part 2 of the agenda.**

3 Strategic Case

- 3.1 As London grows, the capacity of LU stations must keep pace. Major station upgrades are critical to the efficient operation of the current network as well as for planned growth. Planned increases in capacity of train services must be accompanied by an assessment of station capacity in some locations. Without

sufficient capacity, stations can become bottlenecks, reducing the ability of the system to run smoothly, and this can result in unplanned station closures to ensure the safety of our staff and customers. In turn, this can compromise the benefits of other programmes, such as line upgrades, new lines and extensions.

- 3.2 In addition to capacity, the Programme also enables improvements to be made to station safety, accessibility, easing interchange, with inclusive designs providing lifts and step-free access. Where appropriate, the Programme also enables commercial opportunities including over-station development, retail and other secondary revenue opportunities.
- 3.3 The planning, design and delivery of the individual projects within the Programme takes many years and often spans multiple business plans. Classification as a 'major station project' reflects not only the quantified value of the project but its strategic importance. These projects can have significant third party interface implications including complex planning permissions and external funding sources.
- 3.4 The individual projects within the Programme contribute to wider TfL objectives listed in the table below.

| Major Stations Programme Objectives |
|---|
| Increase capacity |
| Reduce journey times and congestion |
| Improving the quality of access, interchange and ambience |
| Improving emergency fire and evacuation protection measures |

- 3.5 The LU Major Stations Programme comprises the projects in the table below. Background detail on all of these projects is provided in the appendices.

| Major Stations Programme |
|--|
| Bank Station Capacity Upgrade (Bank SCU) |
| Bank Bloomberg Place (BBP) |
| Bank Station Systems Integration and Upgrade (Bank SSIU) |
| Bond Street Station Upgrade (BSSU) |
| Tottenham Court Road Station Upgrade (TCRSU) |
| Vauxhall Station Capacity Upgrade (VSCU) |
| Victoria Station Upgrade (VSU) |
| Camden Town Station Capacity Upgrade |
| Holborn Station Capacity Upgrade |

- 3.6 The grouping of these projects in a programme enables greater sharing of best practices, lessons learned and opportunities to aggregate delivery efficiencies.

4 Current and Immediate Challenges

- 4.1 With the exception of Camden Town and Holborn, all of the above projects are currently on site and in delivery. The key challenges for the programme over the coming 12 months will be to:

- (a) complete, and commission Bank Bloomberg Place,
- (b) complete project close of Bond Street and Tottenham Court Road;
- (c) progress the Transport and Works Act Order application for Camden Town; and
- (d) progress delivery of the Bank Station Capacity Upgrade.

5 Equality Impact Assessment

5.1 The Programme will be delivered in accordance with the Equality Act 2010. Equality Impact Assessments are considered on all strategies, policies, business plans, change programmes or projects, with regard to our obligations under the public sector equality duty in section 149 throughout the delivery of the Programme.

5.2 As projects progress through feasibility and design, consideration will be given to the need for an Equality Impact Assessment for each one.

6 Assurance

6.1 A TfL Project Assurance (PA) and Independent Investment Programme Advisory Group (IIPAG) Assurance Review of the Programme. All of the recommendations have been accepted and are being addressed.

6.2 An Integrated Assurance Plan for the Programme has been agreed with TfL Project Assurance and this plan details the project-level reviews that will take place over the course of the year.

List of appendices to this paper:

- Appendix 1 Bank Station Capacity Upgrade
- Appendix 2 Bank Bloomberg Place
- Appendix 3 Bank Station Systems Integration and Upgrade
- Appendix 4 Bond Street Station Capacity Upgrade
- Appendix 5 Tottenham Court Road
- Appendix 6 Victoria Station Upgrade

A paper on Part 2 of the agenda contains exempt supplementary information.

List of background papers:

- IIPAG and Project Assurance Reports
- Management response to IIPAG and Project Assurance Reports

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Appendix 1 – Bank Station Capacity Upgrade (BSCU)

1. Background

- 1.1 Bank station is a major gateway to the City of London for employees and visitors, and is of strategic importance to London and the UK's economy. Joined with Monument station and operated as a single complex, it is a network-critical destination and interchange station on the Rail and London Underground Network, used by over 400,000 customers per day. Demand has risen 50 per cent over the last 10 years. Its effective operation is therefore critical not just to maintain access to the City of London, but also for the effective operation of the London transport network as a whole.
- 1.2 Bank station (as shown in figure 1) is an amalgamation, containing:
 - (a) six lines (District, Circle, Waterloo & City, Central, Northern lines and the Docklands Light Railway (DLR));
 - (b) five sets of platforms (District & Circle, Waterloo & City, Central, Northern lines and the DLR terminus); and
 - (c) three existing ticket halls – Central line (under Bank Junction), Northern line (under Lombard Street) and Monument (adjacent to Monument Junction) as well as the Bloomberg entrance for the Waterloo & City line (currently under construction as part of the development of Bloomberg Place at the north end of Walbrook).
- 1.3 Bank station's piecemeal growth over the last 130 years has created a heavily congested station complex for passengers. It is a poor gateway to the City of London and DLR services to Canary Wharf and offers a highly constrained interchange for thousands of passengers who use it to connect between services.

2. About Bank Station Capacity Upgrade

- 2.1 The key objectives and scope include a new southbound running tunnel and platform for the Northern line which will reduce interchange times and create more space for passengers; additional improvements for entry/exit and interchanging passengers including 12 new escalators as well as moving walkways between the Central line and Northern line/DLR); a new entrance on Cannon Street; and two new lifts to provide step-free access to both the Northern line and DLR (as shown in figure 2).
- 2.2 The project will require a major closure of the Northern line (Bank branch) to complete the works.
- 2.3 In January 2016, the Transport and Works Act Order granted by the Secretary of State came into force and tunnelling commenced in May 2017. The piling for the new Cannon Street entrance began in June 2017. The project has completed complex utility diversions, protected major sewers, constructed a shaft within inches of the Central line and enlargement of the new platform tunnel has been completed.

- 2.4 BSCU is also commissioning a feasibility study for providing Step Free Access (SFA) to the Central line platforms via one of two existing spiral staircases currently used for interchange between the Central and Northern lines. Once the new interchange route is in service this spiral staircase will no longer be needed for interchange.
- 2.5 In March 2016, the Board granted the full Programme and Project Authority of £607m for Bank SCU and the project has a business case with a benefit:cost ratio of 4.0:1. The project is programmed to complete in 2022.

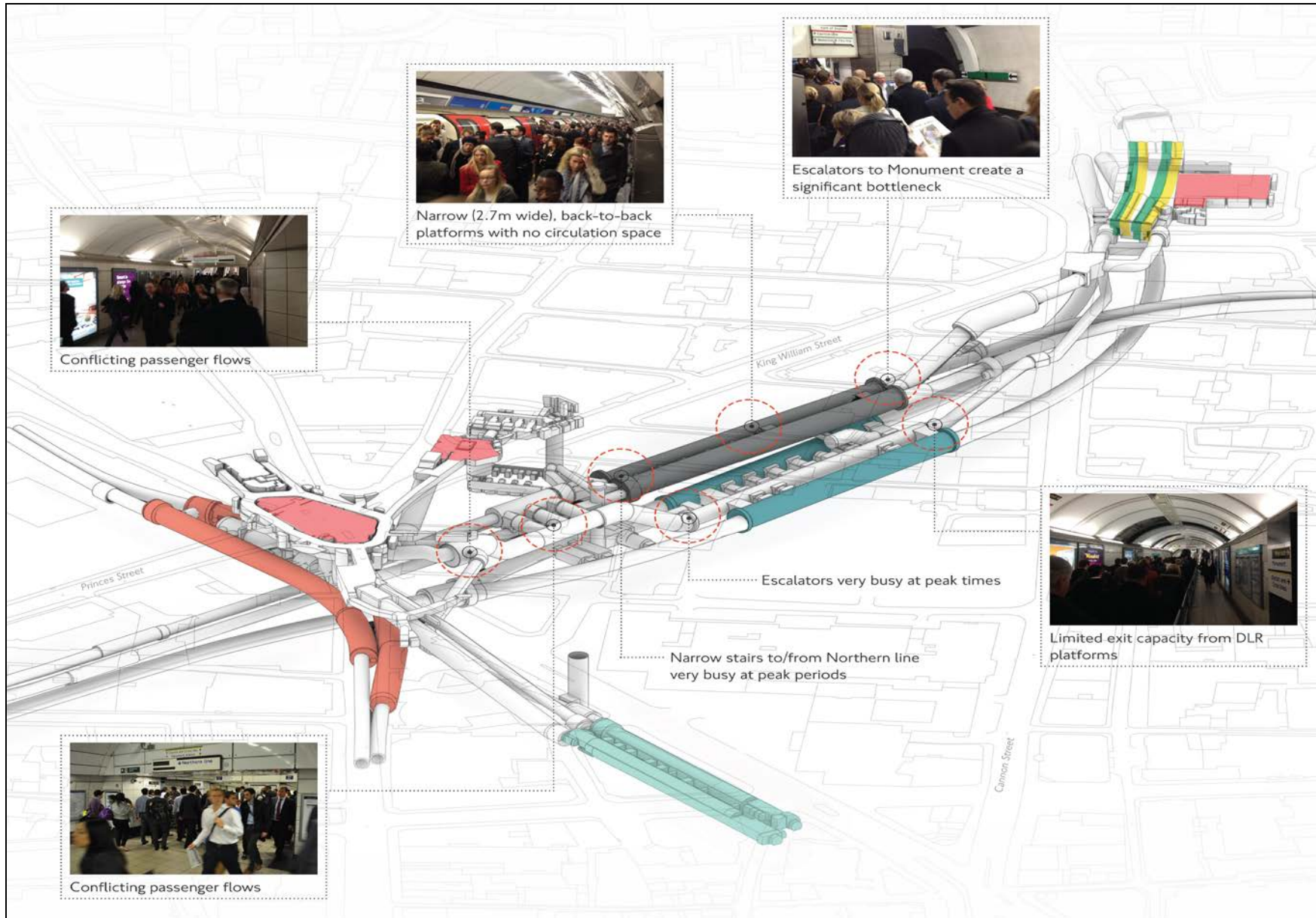


Figure 1: Bank/Monument station complex - existing station

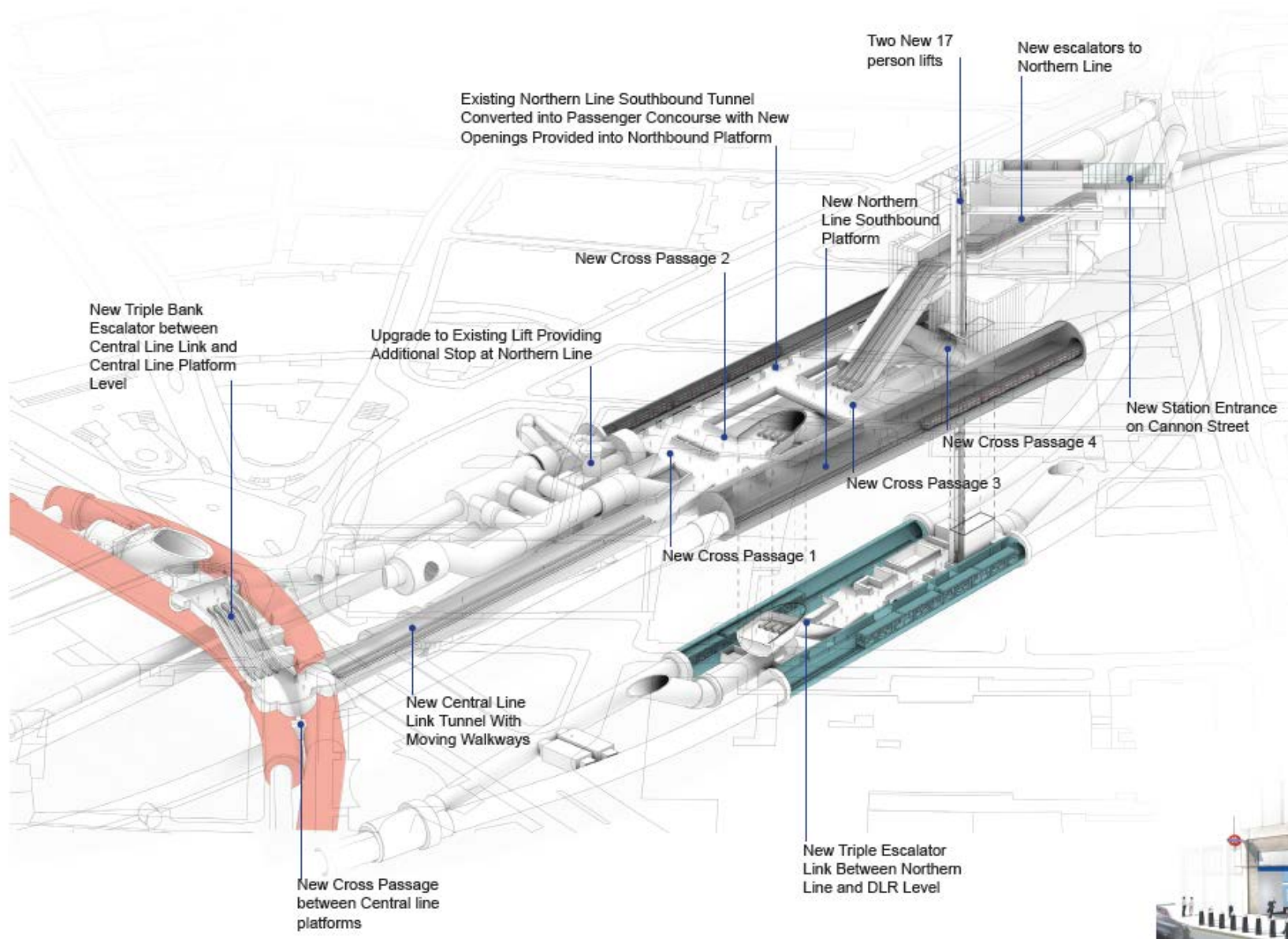


Figure 2: Diagram showing Bank Station Capacity Upgrade

3. Delivery

- 3.1 The scheme is constructed from two main worksites. The area bounded by Cannon Street, Abchurch Lane, King William Street and Nicholas Lane is known as the 'Whole Block' worksite. The new station entrance on Cannon Street along with lifts and escalators will be built from this worksite. Most of the tunnelling works take place from the Arthur Street worksite, to the south, and make use of the disused King William Street station.
- 3.2 Tunnelling of the new Northern line tunnel began in May 2017 and excavation works have commenced on the 'Whole Block' site which forms the new ticket hall box for the station entrance on Cannon Street.



Figure 3 Progress photo: Tunnelling the new southbound Northern line



Figure 4 Progress photo: Piling on Whole Block Site (with St Mary Abchurch in background)

- 3.3 Within the station, work will be completed to move the high voltage power in the station so that the future escalators for the Central line link can be installed. At DLR level, the centre concourse will be taken out of passenger use to enable the project to construct the escalator barrel from the Northern line to DLR level.

4. Oversight Development

- 4.1 Following the completion of Bank SCU, the Whole Block worksite will be used to build a new office building above the new station entrance at Cannon Street, with ground floor retail space. The building is in a conservation area and planning permission for a seven storey building was granted in 2014.

Appendix 2 – Bank Bloomberg Place (BBP)

1. About Bank Bloomberg Place

- 1.1 During the morning peak, 31 per cent of all passengers exiting Bank station arrive via the Waterloo and City line (WCL). The lack of a dedicated entrance/exit for this line leads to severe overcrowding at platform level. BBP will deliver a new station entrance within a station box that has been constructed by Bloomberg Corporation as part of their construction for a new European headquarters. As set out in a development agreement, LU made a financial contribution towards the costs of the works, but at much lower cost than if LU had undertaken the scheme as a stand-alone project.
- 1.2 The key objectives and scope include a new station entrance primarily serving the WCL; and four new escalators and two passageways connect the entrance to the existing station as well as two lifts for step-free access (shown in Figure 1).
- 1.3 The Project was granted full Programme and Project Authority of £57m in July 2007 and has a business case with a benefit:cost ratio of 2.3:1. The new station entrance is targeted to open in Spring 2018.

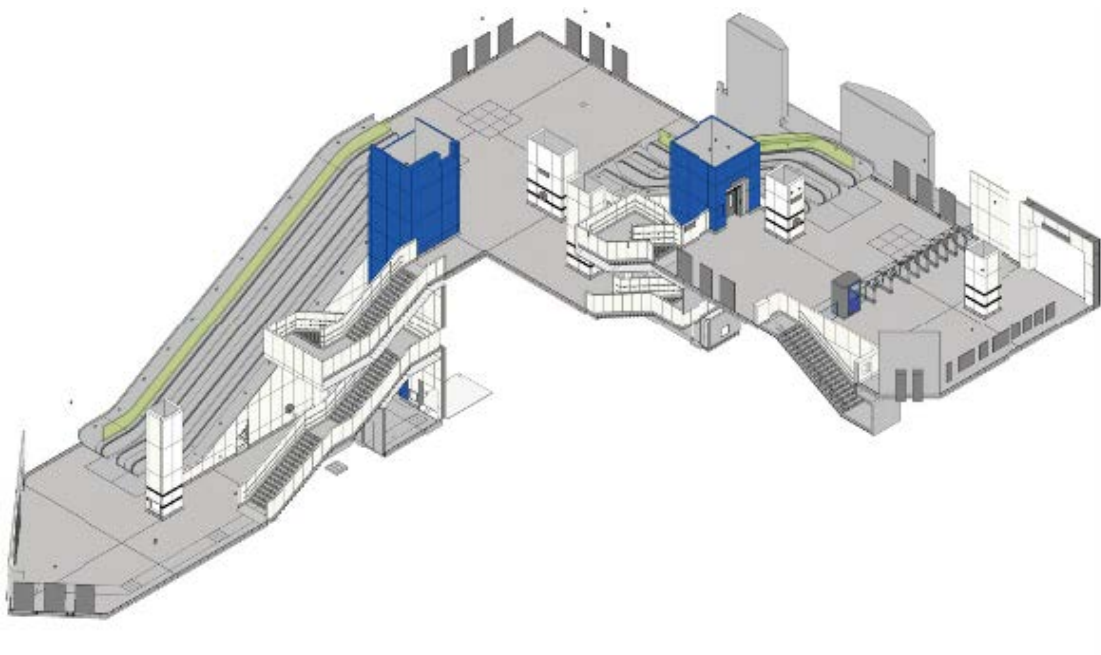


Figure 1: Diagram showing the new entrance (on the right) leading to the connections to the Waterloo and City line (on the left)

- 1.4 In 2007, TfL entered into a legal agreement with the developer to construct the station box on TfL's behalf. However, due to several changes of site ownership construction did not commence for a number of years.
- 1.5 During construction there have been a number of delays impacting the project. During the station box works (by Bloomberg), delays resulted due to several risks occurring, namely:
 - (a) movement to an adjacent building, a Grade I listed Wren church opposite the station box site resulting in the developer stopping works to review the

construction sequence and construct temporary works to prevent further movement;

- (b) the deep excavation construction uncovered items of Roman archaeological interest which again required works to stop; and
- (c) ground obstructions (piling), more steel and concrete contained within and below the existing basement slab than expected slowed progress.

1.6 Even though the project has been delayed, the EFC of the works has not increased due to LU's contribution to the station box being fixed at the start of construction. Therefore developer delay was at their risk and the fit-out scope was reduced to the minimum required.

2. Delivery

2.1 The project is currently in delivery, with Principal Contractor Hochtief.



Figure 2 - Installation of ceiling at intermediate level

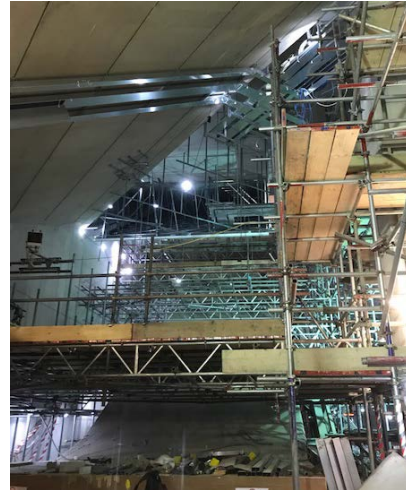


Figure 3 - Cable Management System installation above lower escalators

Appendix 3 – Bank Systems Integration and Upgrade (Bank SSIU)

1. Background

- 1.1 The Bank SSIU project will upgrade the systems controlling the station complex and is an enabler to the Bank SCU and BBP projects.
- 1.2 The key objectives and scope include a new station-wide digital system; a new Station Management System to control upgraded systems including CCTV and Passenger Help Points; and a new Station Operations Room (SOR) with LU and DLR staff in the same control room.
- 1.3 In September 2012 full Programme and Project Authority was granted. This included £2m of third party funding from City of London Corporation. The SOR is now in use with LU capabilities, and functionality for the DLR was installed mid December 2017. The project was completed in January 2018.

2. About Bank SSIU

- 2.1 Bank SSIU has delivered a new SOR hosting both LU and DLR operations. The SOR and associated systems are used for controlling the operation of the station.



Figure 1 Comparison between previous (upper image) and new (lower image) control desks

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Appendix 4 – Bond Street Station Upgrade (BSSU)

1. Background

- 1.1 Bond Street station is a major interchange and a key point of access to the West End serving both the Central and Jubilee lines. The station upgrade commenced in 2010 and the upgraded station opened in November 2017. The new station is now in service and the capacity upgrade and step free customer benefits have been delivered.
- 1.2 The station, pre-upgrade, suffered from serious congestion both inside the station and at street level where customers were held during periods of station control. With growing demand, delays would have increased with exit only operation in the PM peak impacting the economy of this part of the West End.

2. About BSSU

- 2.1 The key objectives and scope of the BSSU include additional capacity for passenger routes within the station to relieve congestion. This includes:
 - (a) installing two new escalators to the Jubilee line;
 - (b) building a new deep level interchange route between the Central and Jubilee lines, increasing capacity and interchange passageways to the Elizabeth line platforms;
 - (c) installing four new lifts provide step-free access to the Central and Jubilee lines as well as the interchange with the future Elizabeth line; and
 - (d) providing an additional entrance on Marylebone Lane (on the north side of Oxford Street) to improve surface access to the station.

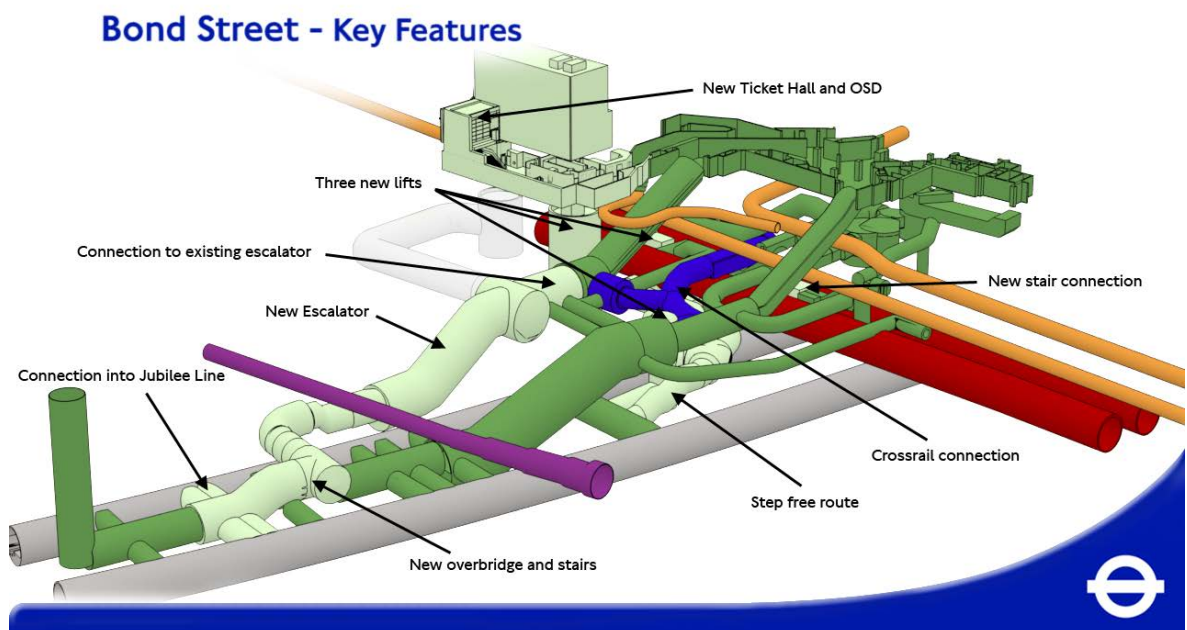


Figure 1: Overview of new elements delivered as part of the station upgrade



Figure 2
Construction of new entrance on Marylebone Lane

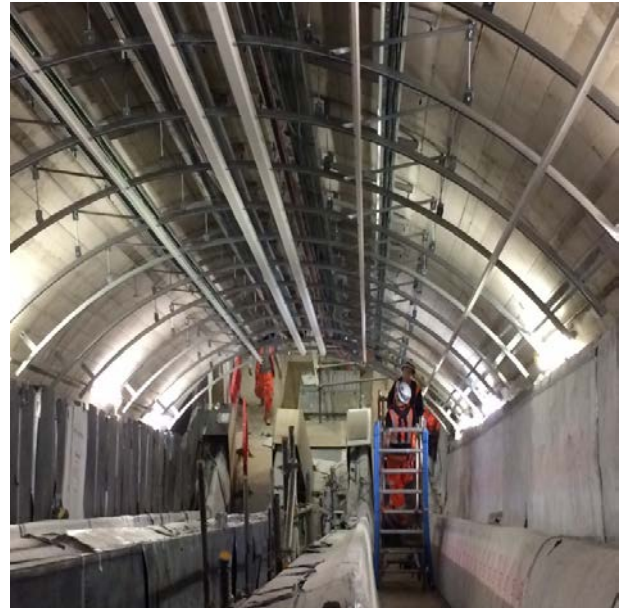


Figure 3
Construction of barrel for new escalators serving the Jubilee line platforms

- 2.2 The project was fully authorised at £321m by the Board in December 2009. The business case for the project has a benefit:cost ratio of 4:1.

3. Delivery

- 3.1 The upgraded station opened in November 2017 with all passenger facilities in use. The project continues to complete final snagging items and documentation for handover and is expected to close later in 2018.

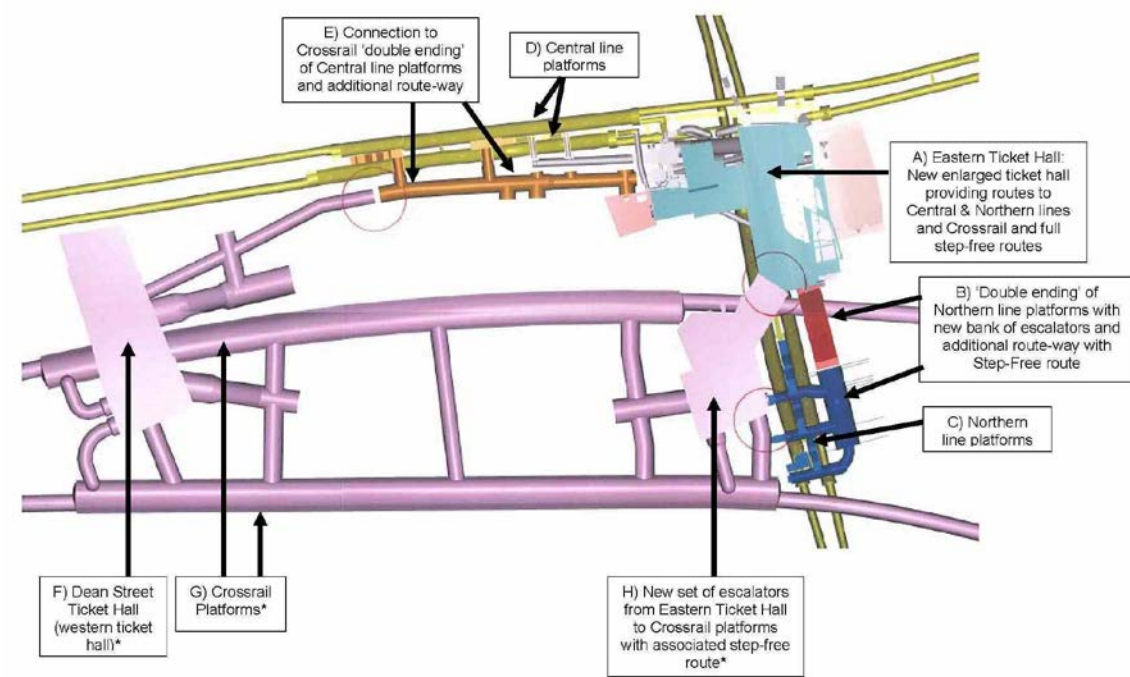
Appendix 5 – Tottenham Court Road Station Upgrade (TCRSU)

1. Background

- 1.1 Tottenham Court Road station is a major interchange served by the Central and Northern lines. It has a strategic role in providing access to the West End and is in the centre of a major retail, leisure and commercial district that is undergoing rapid redevelopment. In 2018/19, the Elizabeth line will be introduced at the station.
- 1.2 The station upgrade works started in 2009 and project close is due later in 2018.
- 1.3 The new spacious ticket hall provides sufficient space so the station no longer suffers from serious congestion or overcrowding at street level due to operational controls. New escalators, stairs and passageways have removed serious congestion throughout the station.

2. About TCRSU

- 2.1 The scope for TCRSU includes:
 - (a) a new sub-surface ticket hall underneath Charing Cross Road (five times larger than the previous one);
 - (b) a new station control room;
 - (c) a major new public space at street level with iconic glass entrances as well as wider pavements, better cycling facilities, and improvements to bus services;
 - (d) six new lifts providing step-free access to the Central and Northern lines;
 - (e) additional capacity including three new escalators, staircases and passageways; enabling the introduction of the Elizabeth line by providing sufficient capacity and an integrated station entrance and interchange facilities;
 - (f) operational improvements including additional staff accommodation; and
 - (g) a major restoration of the Paolozzi mosaics and a new permanent public art installation.



* These Elements are provided by Crossrail

Figure 1: Overview of new elements delivered as part of the station upgrade



Figure 2: New Plaza entrances outside Centre Point tower and revised urban realm layout



Figure 3: New ticket hall



Figure 4: Restoration of Paolozzi tiling

3. Delivery

- 3.1 In 2009, the Board granted full Programme and Project Authority. All the passenger facilities are now in use. The project continues to complete final snagging items and documentation for handover and is expected to close in July 2018. The final finishes within the urban realm will be delivered by the London Borough of Camden.

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Appendix 6 – Victoria Station Upgrade (VSU)

1. Background

1.1 Victoria Underground station is part of a strategic multi-modal transport gateway hub including Network Rail, buses, and Victoria Coach Station. The station is an access point for local employment and handles a significant number of tourists.

2. About VSU

2.1 The scope/objectives of the Victoria station upgrade are to:

- (a) increase capacity and support the increased service frequency on the Victoria line;
- (b) provide a new entrance in Bressenden Place with subterranean north ticket hall and 300 meters of new subways to connect the two ticket halls to allow improved interchange;
- (c) install six new escalators to provide better access to the Victoria line platforms which will be supplemented by a further three escalators from the enlarged existing south ticket hall;
- (d) provide step-free access throughout the station; and
- (e) upgrade finishes on the District line platforms and other areas of the station to match those installed in the new corridors and ticket hall spaces.

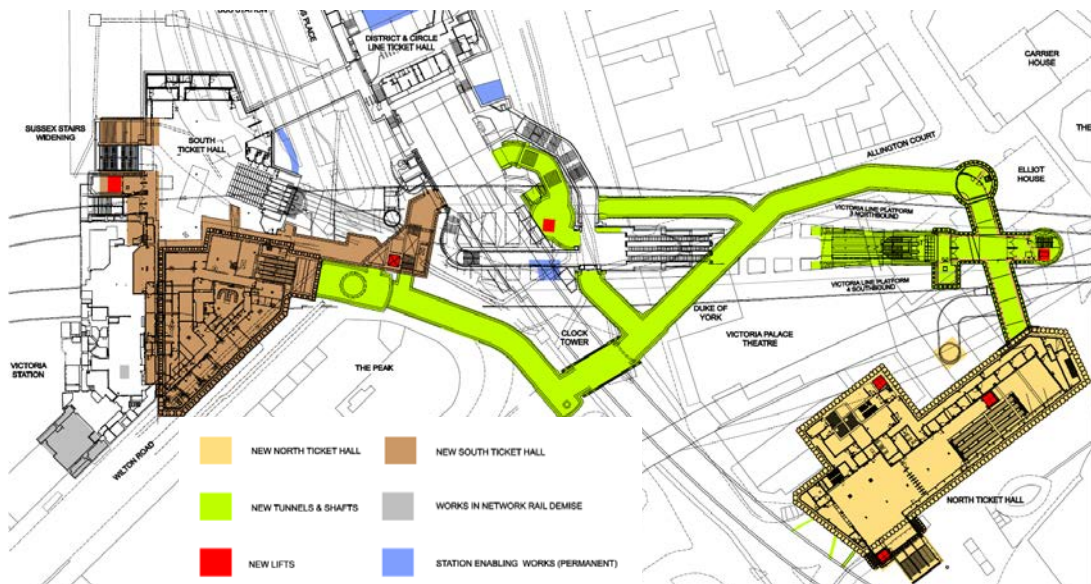


Figure 1: Overview of new elements delivered as part of the station upgrade



Figure 2: New entrance at Bressenden Place



Figure 3: Escalators and lift leading to New Bressenden Place North ticket hall

3. Delivery

- 3.1 In 2009, the Board granted full Programme and Project Authority and the project has a business case benefit:cost ratio of 7.1:1. The new north ticket hall opened in January 2017. The lifts providing step-free access between street and the Victoria line were brought into use in April 2017. The reinstated Wilton Road entrance and expanded south ticket hall were opened in late January 2018. The full project is due to complete in summer 2018 when expanded and improved connections to the National Rail station will be opened.