In May this year, the Crossrail project will achieve a major milestone. The first of the new trains will enter passenger service on the TfL Rail route between Liverpool Street and Shenfield.

This is the first stage of the phased introduction of the new service that will be named the Elizabeth line when it opens through central London in December 2018.

The Elizabeth line is set to increase central London’s rail capacity by 10 per cent when it is fully operational. The accessible railway will serve 40 stations, with up to 24 trains per hour in each direction, giving an additional 1.5 million people better access to jobs and opportunities in London’s major employment centres.

Training of the new operations workforce is well underway. Drivers are familiarising themselves with the new trains and route, while apprentices are gaining experience working across the network. Crossrail’s purpose-built training facility, the Tunnelling and Underground Construction Academy (TUCA), has now become part of the Transport for London family. Offering apprenticeships and training, the centre will support the next generation workforce for rail and tunnelling projects.

The Crossrail project is now 83 per cent complete. The programme is continuing with construction of stations progressing well across the route. Tunnels, shafts and portals are being fitted out with cables, ventilation fans and all the communication and signalling systems required to operate the railway.

The first of the platform screen doors have been installed at Paddington station. Bespoke to the Elizabeth line, these will separate passengers from tracks and provide safe and easy access onto the trains. Platform lighting and real-time digital travel information will help with onward journeys.

As the year goes on, we will see the stations and tunnels come to life. While there’s plenty to do to get ready for the Elizabeth line, the project will continue to share its lessons learned along the way. There are now nearly 500 case studies freely available on the Crossrail Learning Legacy website, with more on the way, for the benefit of future projects.

Visit [http://learninglegacy.crossrail.co.uk](http://learninglegacy.crossrail.co.uk) for more information.
NEW ELIZABETH LINE TRAINS

The new accessible trains will be some of the most advanced on the UK rail system, making them more reliable, easier to maintain and more efficient. The first of the Class 345 Elizabeth line trains have begun to roll off the production line and are undergoing an intense schedule of testing ahead of their introduction into services on TfL Rail in the spring.

The new trains are being built by Bombardier in Derby and will be 200 metres long. They will have a capacity of 1,500 passengers per train, with 4 dedicated spaces for wheelchairs. There will be 840 people building the trains, including 80 apprentices.

NEW DRIVERS AND APPRENTICES BEGIN TRAINING

Future train drivers are learning how to operate the new fleet and familiarising themselves with the route using a simulator. Twenty new apprentices have also started training with Transport for London working across the network in preparation for the opening of the Elizabeth line from December 2018.

PHASED INTRODUCTION OF SERVICES

- **May 2017**: First new train enters passenger service between Liverpool Street and Shenfield. The first trains will comprise seven carriages and be 160 metres long.
- **May 2018**: TfL Rail service commences between Paddington and Heathrow. First full-length, nine-carriage trains will run on the route.
- **December 2018**: The Elizabeth line opens. Services will run between Paddington and Abbey Wood, Liverpool Street and Shenfield, and Paddington and Heathrow.
- **May 2019**: Elizabeth line services run from Paddington to Shenfield, Abbey Wood and Heathrow.
- **December 2019**: The Elizabeth line is fully open with services extending to Reading.

**Features of the Elizabeth line trains**

- Lightweight and energy efficient design uses 30% less electricity
- CCTV and public address systems
- Intelligent lighting, cooling and heating helps reduce energy used
- Fully air-conditioned
- Wi-Fi and 4G connection
- Large, clear areas around the doors will allow quicker and easier boarding and alighting
- A mixture of metro-style and bay seating will provide more choice
- Real-time information will help onward journey planning
NEW VIRTUAL ARCHAEOLOGY EXPERIENCE

A new virtual exhibition is giving more people the chance to explore the archaeological artefacts unearthed during Crossrail’s construction.

The new immersive website is based on the exhibition ‘Tunnel: The Archaeology of Crossrail’, on display at the Museum of London Docklands. Online visitors can explore panoramas of the galleries and interact with 10 new rotating 360 degree images of the most exciting discoveries, including the Walbrook Valley skulls and Roman coins.

The online exhibition takes visitors on a journey along the route of the new railway, with photographs and footage captured during archaeological excavations revealing the stories of Londoners from Mesolithic tool makers and inhabitants of Roman Londinium to those affected by the Great Plague of 1665.

Take a journey through the archaeology on Crossrail by visiting archaeology.crossrail.co.uk

NETWORK RAIL WORKS FOR CROSSRAIL

At Abbey Wood, the iconic new station continues to take shape with the completion of zinc cladding above the distinctive timber framed roof.

Interior fit-out and construction of the staircases are currently underway. Installation of the new Elizabeth line tracks is now complete and have been handed over for railway systems works to commence.

Network Rail has now electrified 19 kilometres of railway to the west of London between Stockley Junction and Maidenhead as part of the Crossrail project. Electrification will allow Great Western Railway to run new electric trains from London Paddington to Maidenhead from this May and to Didcot in January 2018, delivering more seats for passengers.

The work will also allow for the delivery of new Elizabeth line trains on this section of the railway from December 2019. Passengers in the Thames Valley will be able to catch new Elizabeth line trains all the way through central London without having to change onto the Underground at Paddington, making it easier to get to a range of destinations across London and the South East.

LOCAL PEOPLE TO HELP DESIGN ART FOR TRACKSIDE WALL IN NEWHAM

A new community artwork will be installed along a three kilometre-long trackside wall in Newham.

Three artists with significant ties to east London have been shortlisted to work with local people to deliver designs that will be applied to the boundary wall, which will run through Custom House, Silvertown and North Woolwich. The artists – Sonia Boyce, Oscar Murillo and Amalia Pica – all have experience of working with communities to shape art that is not only visually impactful but also meaningful for local people.

The artist’s proposals will go on display for community feedback in the summer. As part of the display, local people can also find out how they can get involved in the development of the final design. Information will be available at www.crossrail.co.uk closer to the date.
CENTRAL STATIONS UPDATE

FIRST PLATFORM SCREEN DOORS INSTALLED
The first platform screen doors have been installed in the westbound tunnel at Paddington station and are now also being installed at Bond Street station. The glass doors, built and assembled in Wolverton, are being carried into each site on an engineering train and installed in sections. Bespoke for the Elizabeth line, full height platform screens will line the length of the platforms in the eight new underground stations. Twenty-seven doors on each platform will provide passengers with safe and easy access to the new 200 metre-long trains.

BLACK GLAZED WALLS GO UP AT TOTTENHAM COURT ROAD
Installation of glazed walls wrapping the Dean Street entrance to the new Tottenham Court Road station is complete. The five metre-high panels will allow natural light to filter into the ticket halls during the day and station lighting to illuminate the street at night, acting as a beacon for passengers. Installation of the six escalators (three in the western ticket hall, three in the east) and platform cladding and lighting are also underway. 141 LED light boxes are currently being installed along the length of each platform. This will provide brightly lit spaces for passengers whilst using minimal energy.

FARRINGDON’S BESPOKE CEILINGS COMPLETE
Distinct ceilings, bespoke for each of the two ticket halls, are now structurally complete at Farringdon. The props supporting the diamond-shaped ceiling in the western end were removed early in the spring, revealing the scale of this striking inclined ceiling. Below ground, 95 per cent of the wall cladding has been installed on platforms and 65 per cent in the concourses, making the station look increasingly finished.

GETTING READY TO INSTALL 120 METRE-LONG CANOPY AND ARTWORK AT PADDINGTON
Preparation works are underway to commence installation of the 120 metre-long glazed canopy above the station entrance. Works include erecting structural support beams and temporary decking to cover the 90 metre-long open space above the station. In the coming months the steel frame and glass panels will start to be lifted into place as the permanent roof of the new station is built. Installation of the 15 escalators at this station is also progressing well with 12 of the trusses now installed.

FINAL DIG AT LIVERPOOL STREET MARKS THE END OF EXCAVATION
The last piece of earth was excavated at Liverpool Street marking the end of an immense and complex excavation programme on the project. More than seven million tonnes of spoil has been excavated beneath London since construction began in 2009; 98 percent has been beneficially reused to create new wildlife, recreational and agricultural land. The excavation programme has also uncovered one of the most significant archaeological discoveries in the UK. See more than 500 objects that have been unearthed on the project in ‘Tunnel: The Archaeology of Crossrail’ – a free exhibition at Museum of London Docklands.
LOOK FORWARD TO LIVERPOOL STREET

Nestled in one of the City’s leading financial centres, the new Liverpool Street station stretches from the existing Moorgate station to Liverpool Street station, weaving through existing underground infrastructure. The two new Elizabeth line ticket halls share a unified design that makes the most of the limited space available in this dense urban landscape.

Inside both ticket halls a shallow, geometric folded ceiling formed by ribbed pre-cast concrete panels, will break the perception of a flat ceiling to create a greater sense of space. The concrete mix for this station includes the mineral mica which will reflect light, enhancing the underground experience. At the eastern ticket hall, a glazed, inclined lift alongside the escalators will ensure an accessible journey from street to platform.

Natural light will shine through to the underground ticket hall in the east through a five metre-high canopy, while in the west it will be through a wide street level entrance. At night, the station lights will illuminate the street, marking the station entrance.

New forecourts around each entrance will offer pedestrian friendly spaces with wider pavements, new crossings, signage and trees.

APPRENTICE OF THE YEAR

Ben Cox, a 22 year-old civil engineering apprentice from Medway in Kent has been named Crossrail’s Apprentice of the Year.

Crossrail has surpassed its target of creating 400 apprenticeships during the lifetime of the project, with 699 recruited so far.

EVENTS

Platform for Design exhibition
Discover the design of the stations, art and public space on the Elizabeth line.
Free exhibition at City Hall, 1–19 May.

Preview your local Elizabeth line station
See what your local stations will look like in our series of pop up exhibitions in LU stations:
• Tottenham Court Road station, until 25 May
• Canary Wharf station, 30 May–29 June
• Paddington station (Hammersmith & City ticket hall), 2 July–3 August

London Festival of Architecture, June
Hear about the architecture and art on the project. Details will be available soon. at: www.crossrail.co.uk

Crossrail Learning Legacy Webinars
Environmental Management Planning, 25 May, 12.30–1.30pm Register at: http://learninglegacy.crossrail.co.uk/event

Tunnel: The Archaeology of Crossrail
See more than 500 archaeological objects unearthed during construction. Free family exhibition at Museum of London Docklands.

The Design Line exhibition
A family exhibition about the stations, art and public space on the Elizabeth line. At London Transport Museum.
Visit www.crossrail.co.uk for details.

CONTACT US

Find out more and join mailing lists

call 0345 602 3813 24hr

email helpdesk@crossrail.co.uk

visit www.crossrail.co.uk

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