

Building Crossrail 2 – our approach to minimising construction impacts

Introduction

Crossrail 2 would be Europe's largest and most ambitious construction project. Works would include building:

- Up to 11 new underground stations along over 37km of twin-bore tunnels
- New tracks and station improvements on the existing mainline railway
- New trains
- Up to nine shafts between stations
- New depots and sidings

The UK has extensive experience in building major transport infrastructure projects – most recently on projects like Crossrail 1. We are using this experience to ensure that we minimise the construction impact of Crossrail 2 and protect our distinctive and historic surroundings.

Protecting communities

We understand that people may be concerned about the disruption that building Crossrail 2 could cause. With major worksites required in central London, there would be some localised impacts from construction activities. Experience from Crossrail 1 has shown that these impacts can be effectively managed and that it is important that we undertake works in the right way and keep people fully informed.

Should Crossrail 2 be built, we are committed to using the best techniques to minimise impacts from noise, dust and pollution, traffic, town and landscape. A code of construction practice would be agreed with local authorities ahead of works starting, setting out the required standards and construction techniques that we would follow. Everyone working on our sites would have to follow these rules, and all work would be closely monitored to ensure that it was being managed properly.

Managing our excavated materials

From Tottenham Hale and New Southgate in the north to Wimbledon in the south, tunnels will be bored over approximately three years by large machines known as Tunnel Boring Machines (TBMs). These machines would be similar to the ones used to build the Crossrail 1 tunnels, excavating earth and building a tunnel around them as they go.

Current proposals are that two TBMs would be deployed to each of the following 'drives':

- New Southgate to Stamford Hill junction, where the machines would be dismantled at the proposed Stamford Hill shaft
- Tottenham Hale to Victoria and Wimbledon to Victoria, where the machines would be dismantled at the proposed Victoria Coach Station shaft

The excavated materials would be removed along the tunnels, rather than taking material out on the surface through station worksites and using vehicles to remove it. The construction of Crossrail 2 is being planned to minimise lorry movements where possible. By connecting the tunnels first we would provide an underground route to remove excavated soil from our sites. As a result a typical Crossrail 2 station would need roughly half the number of waste lorry movements compared with similar projects in the past, which would minimise the risks to public safety, congestion and pollution.

We are already planning ways of finding productive uses for excavated material. Crossrail 1 has used almost all of its excavated material in land reclamation projects across London and the South East, including creation of the bird reserve at Wallasea Island.

Protecting London's heritage

Crossrail 2 would require work sites close to some valued historic buildings, parks and within some conservation areas. We have identified all of these locations as part of our environmental impact assessment and are working closely with Historic England to discuss how these can be protected during construction, as well as in the long term. We would also follow the same techniques which were used during the Crossrail 1 construction phase, which saw a team of archaeological specialists investigate and help protect historic sites.

Digging tunnels and shafts poses a small risk of ground settlement, the technical term given to the way that the ground moves around a hole after it has been dug out. Digging tunnels, shafts and basements commonly causes small movements in the ground.

We know a lot about how settlement works in London from projects such as Crossrail 1, the Jubilee Line extension, tunnels for the Docklands Light Railway, High Speed 1 and various Thames Water works. We have also learned a lot about how best to minimise it and limit the effect of this movement on buildings. In the event that settlement does occur, in most cases you would not be able to see the effects but in some cases there may be small cracks in plaster, and in a few cases doors or windows may stick. Very rarely does settlement affect the structure of buildings. We try to create as little settlement as we can. We do this firstly by controlling the way that we carry out the tunnelling and then, if necessary, by treating the ground so that it is less likely to move.

One method for treating ground movement is by using 'compensation grouting'. This well established technique works by injecting a cement-like substance, called grout, into the ground to lift up the area where settlement is expected to occur. This method can be employed very precisely and is an effective way of minimising settlement damage to buildings.

Protecting and enhancing the natural environment

We are working to identify opportunities for increasing biodiversity value at locations with opportunities for restoration. We will identify where the main areas of



Tunnel Boring Machine (Crossrail 1)



Lowering a Tunnel Boring Machine into the shaft (Crossrail 1)

biodiversity are situated, ensuring that we protect these areas where possible. Identification and protection of certain listed animal species (such as bats and reptiles) is a key part of our approach, as well as being a statutory requirement.

To find out more

Visit www.crossrail2.co.uk where you can view and download a range of factsheets, maps and other information about the scheme.

Come along to one of our drop-in events where you will have an opportunity to view our proposals and speak to members of the Crossrail 2 team. Please visit www.crossrail2.co.uk for details about events in your area.

Please contact us to request a copy of this leaflet and other Crossrail 2 consultation material in hard copy, large print, audio or another language.

Have your say

This consultation gives you the opportunity to comment on proposals for Crossrail 2. Visit www.crossrail2.co.uk to leave a comment or provide a response to the consultation questions. The consultation will close on Friday 8 January 2016.

Development is still at an early stage. There will be more opportunity to provide feedback on Crossrail 2 as the scheme develops.

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