



# Crossrail 2 shafts

Shafts would be required along the tunnelled section of the proposed Crossrail 2 route to connect the tunnels to the surface and provide a safe and comfortable environment for passengers and staff

---

## Why would shafts be needed?

Shafts would connect the underground Crossrail 2 tunnels with the surface. During everyday operations, the motion of trains would push air out of the tunnels and pull air into them from the atmosphere. As the air pushed out is usually warmer than the air pulled in, the shafts would help to provide a more comfortable temperature for passengers and staff.

During periods of disturbed service, when trains could be held in Crossrail 2's tunnels for an extended period of time, the shaft's ventilation system would deliver cooler air from the atmosphere to the tunnels and to stationary trains.

In the unlikely event of a fire, the shafts would control smoke, provide access for the fire and rescue services and provide a safe evacuation route for passengers.

---

## Where are shafts required?

Shafts would be required at both ends of each underground Crossrail 2 station. Where possible, these would be constructed within the overall station structure.

Shafts would also be required at locations between underground Crossrail 2 stations where operational and safety requirements determine they are needed.

---

## What would a shaft look like?

Most of the shaft would be underground with an above-ground structure known as a 'head-house'. This would provide access to the shaft itself, the equipment within it and the tunnels below. A head-house is ideally located directly above the shaft and tunnels, except in some cases where they can be located separately and connected by a short underground passage. A street-level entrance would provide access for the fire and rescue services, for the safe evacuation of passengers in an emergency as well as for maintenance. Direct access to the head-house is required for emergency and maintenance vehicles.

At stations the head-house would typically be integrated with the overall station structure. At locations between stations the head-house would be separate. At this early stage of Crossrail 2 design, we expect a typical head-house to occupy an area of around 25 metres by 25 metres and to be at least two storeys high – although the size of each head-house would be influenced by local factors including the depth of the tunnels and the height of surrounding buildings at each site. Further design work would be required to determine our requirements at each individual location.

As the Crossrail 2 scheme develops further, we would engage with the relevant local authority, interested stakeholders and local communities to inform the designs for each head-house. The examples overleaf illustrate some of the different ways in which head-houses can be integrated into their surroundings.

## Selecting shaft locations

The locations of station shafts would form part of the overall design for each station.

A separate process is undertaken to inform the locations of shafts in between stations and in doing so a range of factors would be considered. These include:

- Whether a site can provide an area of at least 3,000metres<sup>2</sup>
- Existing land use and community impacts
- Environmental and heritage impacts
- Site suitability for construction
- Site suitability for operational and safety requirements
- Potential for reinstatement of the site

Crossrail 2 would require shafts in the following proposed locations:

- Downhills Recreation Ground (S2: Seven Sisters to New Southgate Route Options)
- Stamford Hill area (featured within this factsheet)
- Shoreditch Park area (featured within this factsheet)
- Victoria Coach Station (S9: Victoria station)
- Westbridge Road (featured within this factsheet)
- Wandsworth Common (Honeywell Road) (S12: Wimbledon to Clapham Junction)
- Springfield (S12: Wimbledon to Clapham Junction)
- Weir Road (S12: Wimbledon to Clapham Junction)

## Minimising our impact

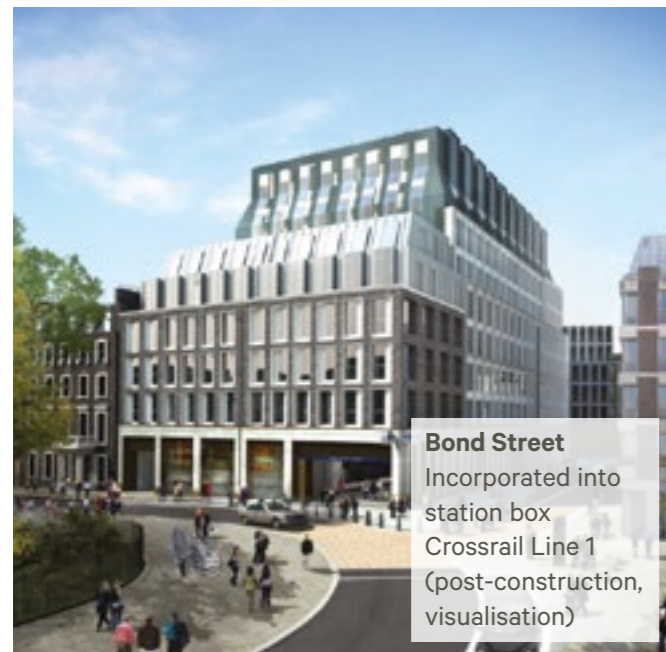
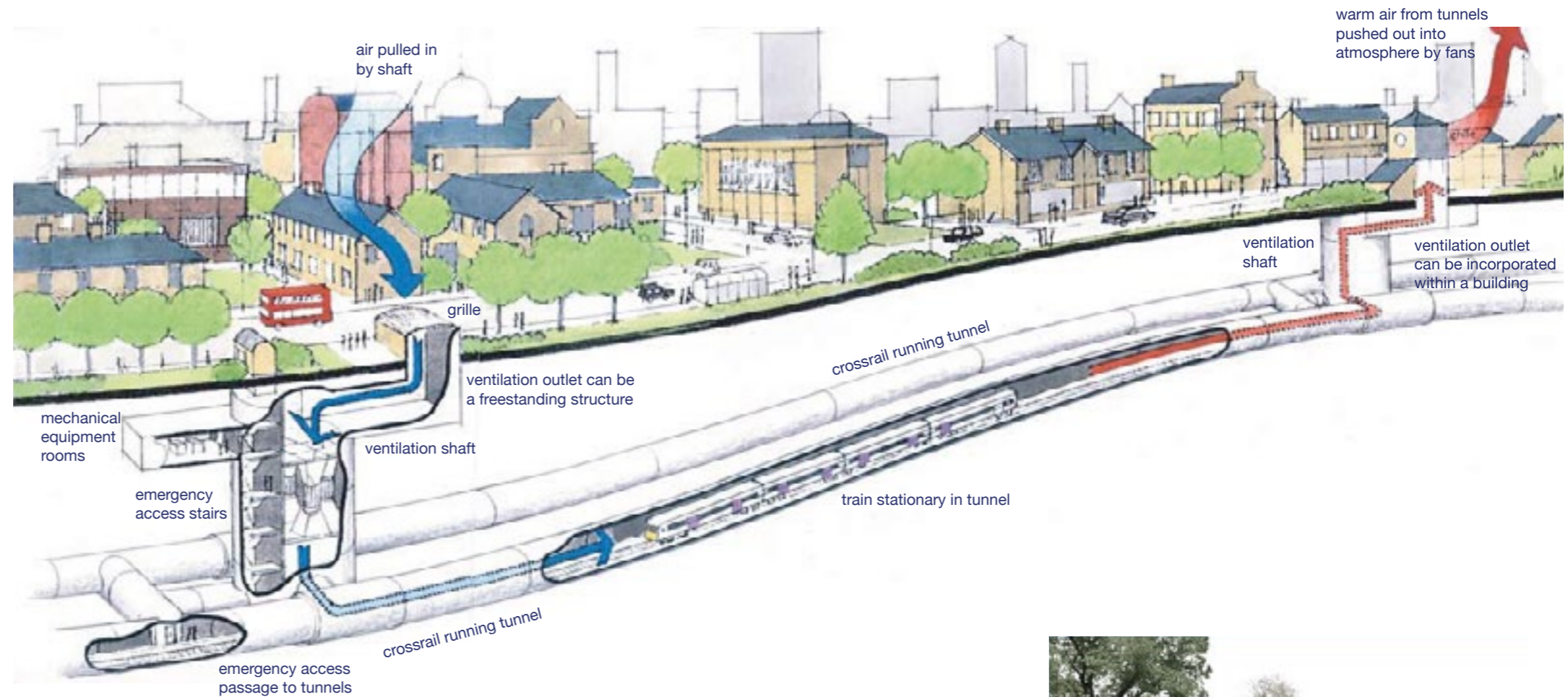
Crossrail 2 shafts would be designed to avoid any noticeable impact on background noise levels or air quality from their operation.

Proposals for the scheme are still at the early stages of design. Feedback from this and future consultations, together with further design and engineering work, will refine the proposals ahead of seeking permission to build the new railway.

All our contractors would have to adhere to a Code of Construction Practice, which would be developed together with local authorities. This would set out requirements for considerate construction practices that use the latest techniques to reduce noise and disruption both for surface and underground works.

As part of our Environmental Statement, a full assessment of the potential impacts of construction and operation of the scheme will be documented along with proposed methods to minimise impacts where required. These proposals would then form commitments as part of the application for planning consent.

## Diagram to illustrate how a shaft operates



**Bond Street**  
Incorporated into station box  
Crossrail Line 1  
(post-construction, visualisation)



**Mile End**  
'Green design'  
London Borough of Tower Hamlets  
Crossrail Line 1  
(post-construction, visualisation)



**Gibson Square**  
Heritage design  
London Borough of Islington  
Victoria line



**Kennington Park**  
Conservation Area  
London Borough of Southwark  
Northern line extension  
(post-construction, visualisation)

# Westbridge Road

## Why is a shaft needed in this location?

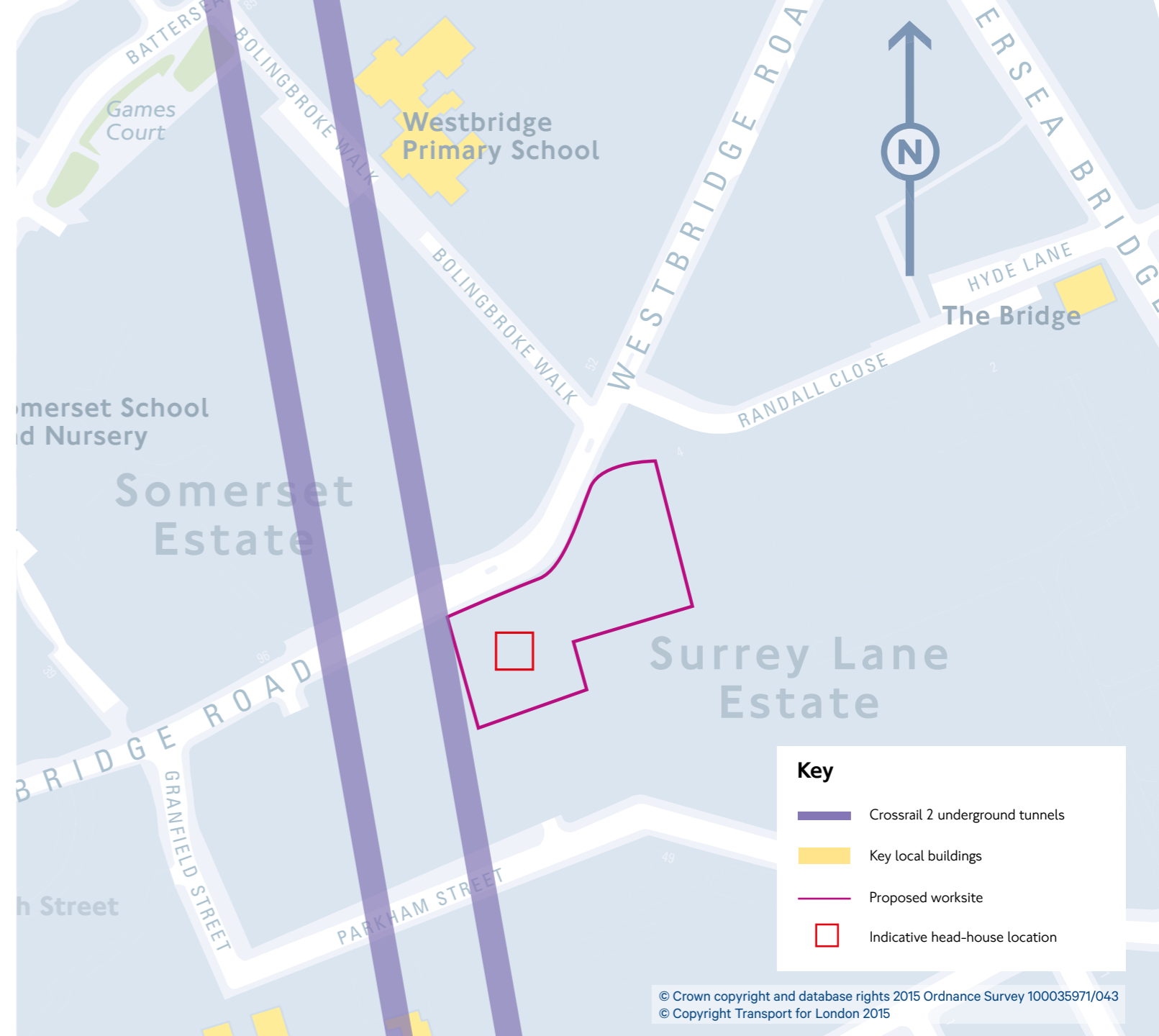
To enable Crossrail 2 to operate safely, we would need a shaft midway between Clapham Junction and King's Road Chelsea stations. The shaft would provide tunnel ventilation, access for the fire and rescue services and a safe evacuation route for passengers in the event of an emergency.

Our current preferred site is within the Surrey Lane Estate at Westbridge Road. This has been selected to avoid taking residential land, and the site has already been safeguarded for Crossrail 2.

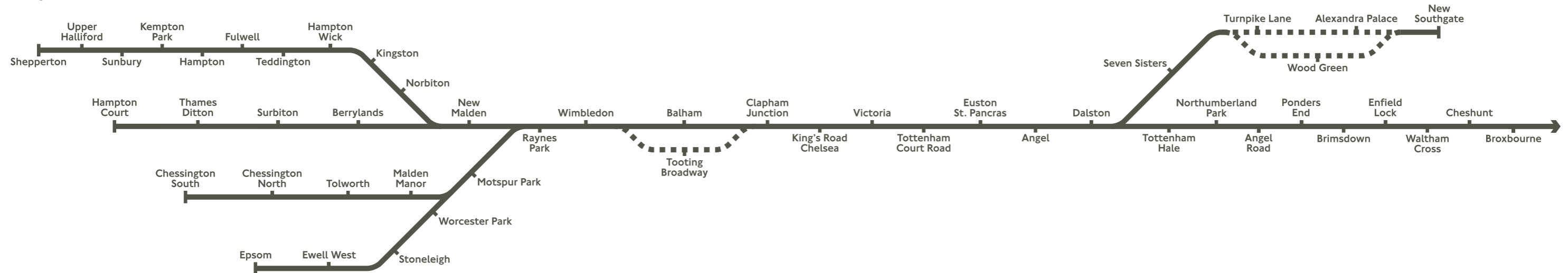
## The proposal

A single worksite would be required to build the shaft, and a typical shaft would take approximately five years to complete. Activity on site would fluctuate during this period. Once the site has been cleared and prepared, the major construction work to dig out the shaft would usually be complete within two years.

On completion of the works at each site, an above-ground structure known as a 'head-house' would remain. The head-house would provide access to the shaft, the equipment within it and the tunnels below. It would also allow air to be drawn into and out of the tunnel ventilation system. At this early stage of Crossrail 2's design, we expect a typical head-house to be at least two storeys high and to occupy an area of around 25m by 25m. As the scheme develops further, we would engage with the local authority, interested stakeholders and local communities to inform the designs for each head-house.



## Proposed Crossrail 2 stations



# Shoreditch Park area

## Why is an intermediate shaft required in this location?

To enable Crossrail 2 to operate safely, we would need a shaft midway between Angel and Dalston stations. The shaft would provide tunnel ventilation, access for the fire and rescue services and a safe evacuation route for passengers in the event of an emergency.

We also need to make provision for a junction between Angel and Dalston stations which could allow a future Crossrail 2 'Eastern Branch'.

We have adopted the principle that these two requirements should be combined in a single construction site in order to minimise overall disruption.

## The proposal

A single worksite would be required to build and equip the shaft and the junction.

We are currently considering a number of options for the shaft in the area. Our current options have been selected because they would allow us to position the possible 'Eastern Branch' junction under the open space of Shoreditch Park. These comprise:

Option A – Eagle Wharf Road (48 and 48a)

Option B – Eagle Wharf Road (46 and 47)

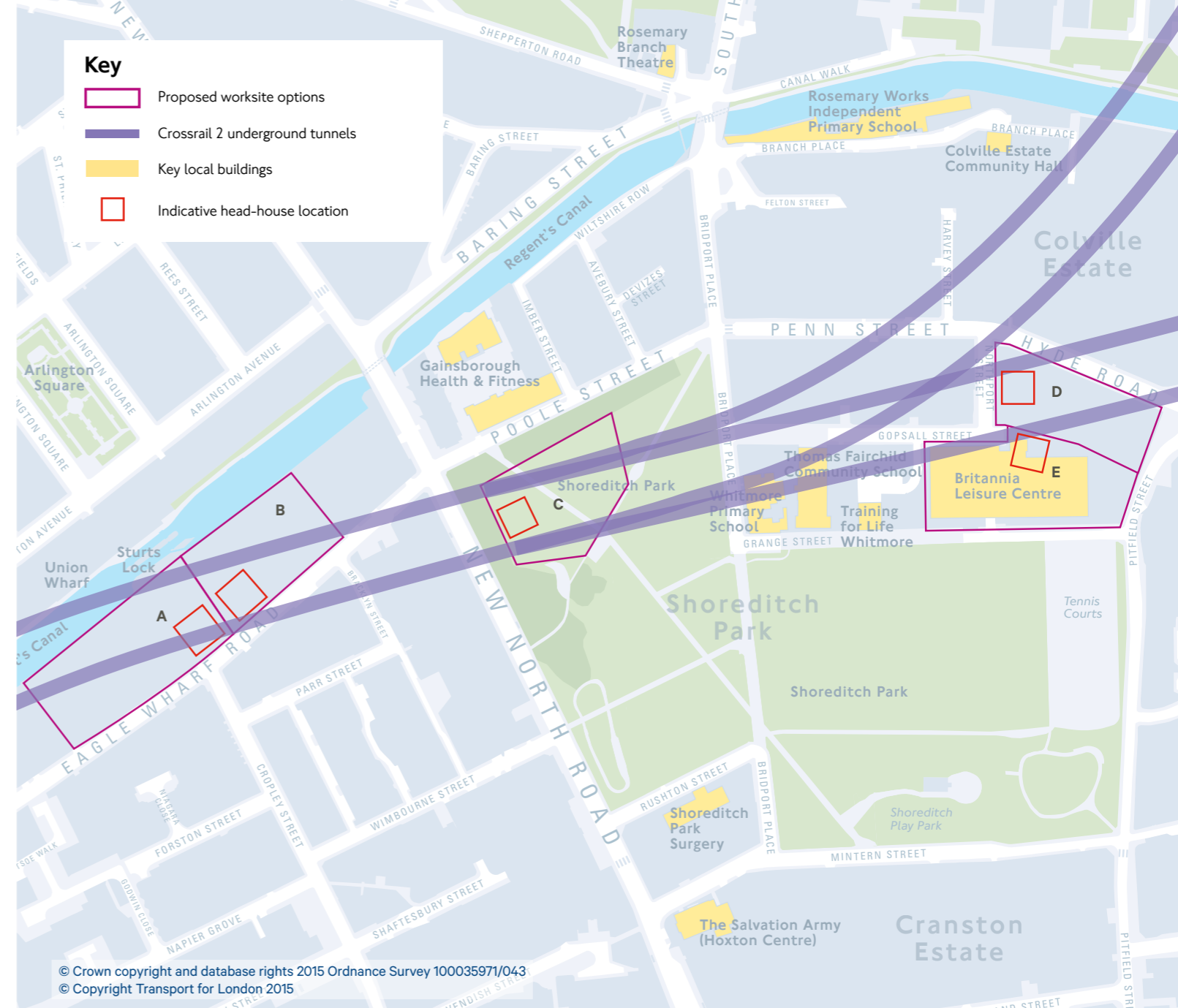
Option C – Shoreditch Park (north-west corner)

Option D – Britannia Leisure Centre (car park)

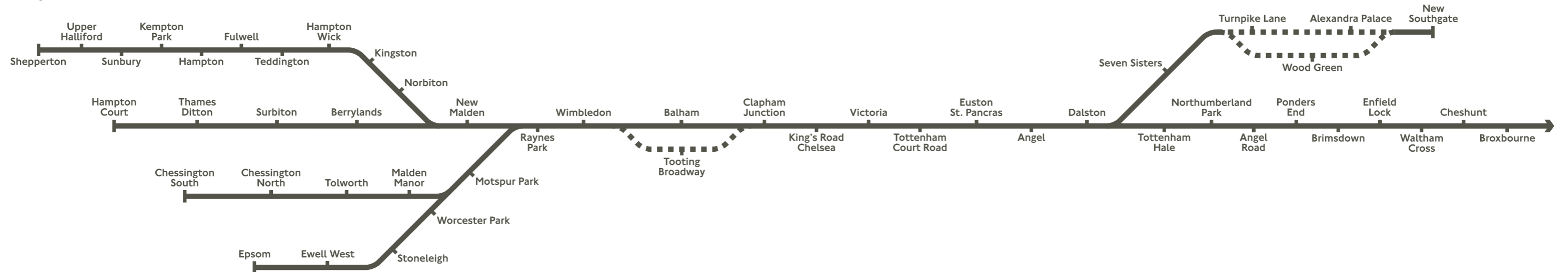
Option E – Britannia Leisure Centre (main building)

Construction would take around six years from start to finish. Activity on site would fluctuate over this period. Once the site has been cleared and prepared, the major construction work to dig out the shaft and junction would usually be complete within three years.

On completion of the works, an above-ground structure known as a 'head-house' would remain. The head-house would provide access to the shaft, the equipment within it and the tunnels below. It would also allow air to be drawn into and out of the tunnel ventilation system. At this early stage of Crossrail 2's design, we expect a typical head-house to be at least two storeys high and to occupy an area of around 25m by 25m. As the scheme develops further, we would engage with the local authority, interested stakeholders and local communities to inform the designs for each head-house.



## Proposed Crossrail 2 stations



# Stamford Hill

## Why is a shaft required in this location?

In order to allow Crossrail 2 trains to serve both of its northern branches via Seven Sisters and Tottenham Hale, an underground junction would be required north of Dalston station. This junction would also have a facility for reversing Crossrail 2 trains so as to ensure a robust and resilient service.

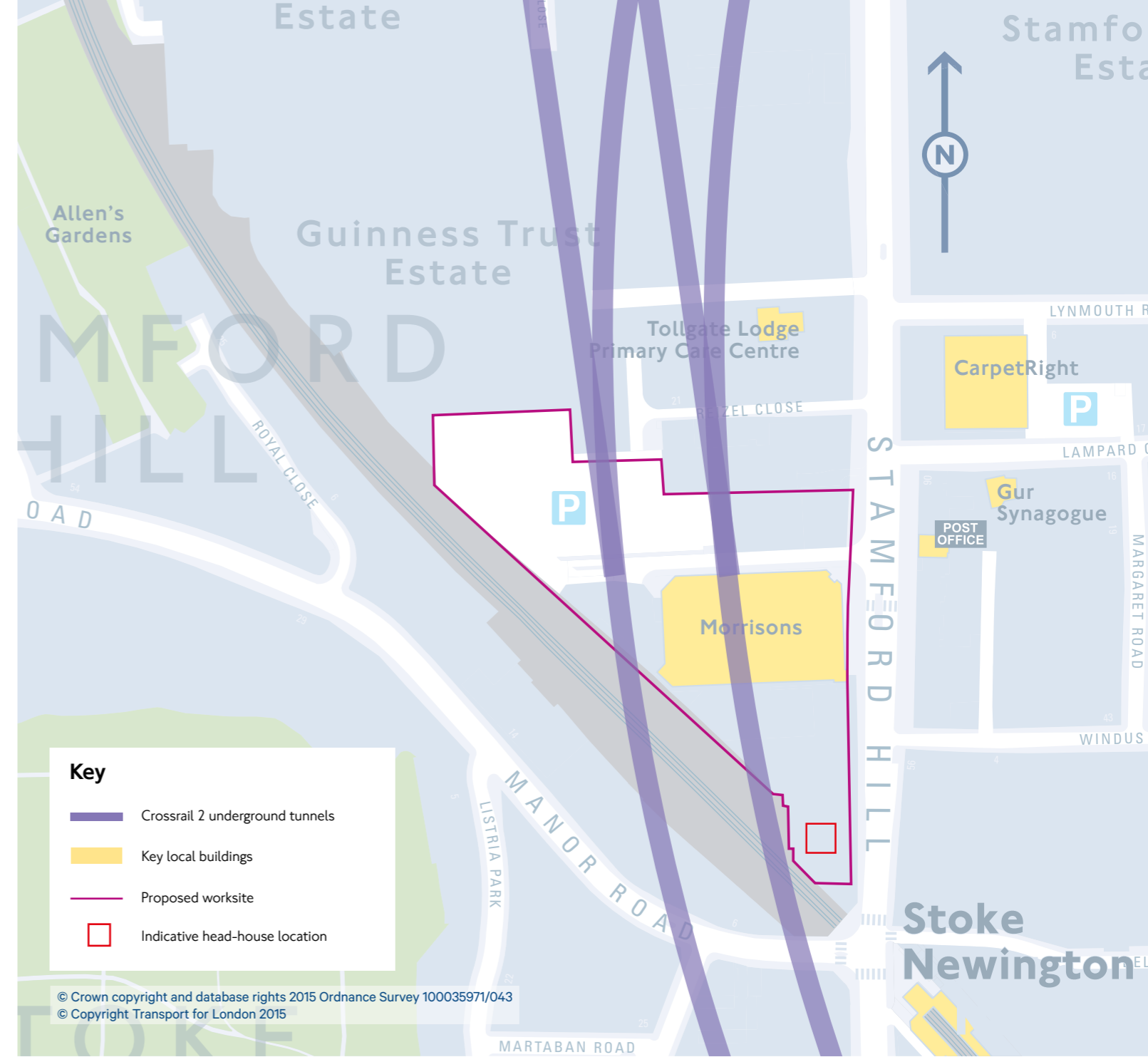
A shaft would be required to construct the junction and reversing facility. To allow Crossrail 2 to operate safely, this shaft would be retained in the long term to provide tunnel ventilation, access for the fire and rescue services and a safe evacuation route for passengers in the event of an emergency.

## The proposal

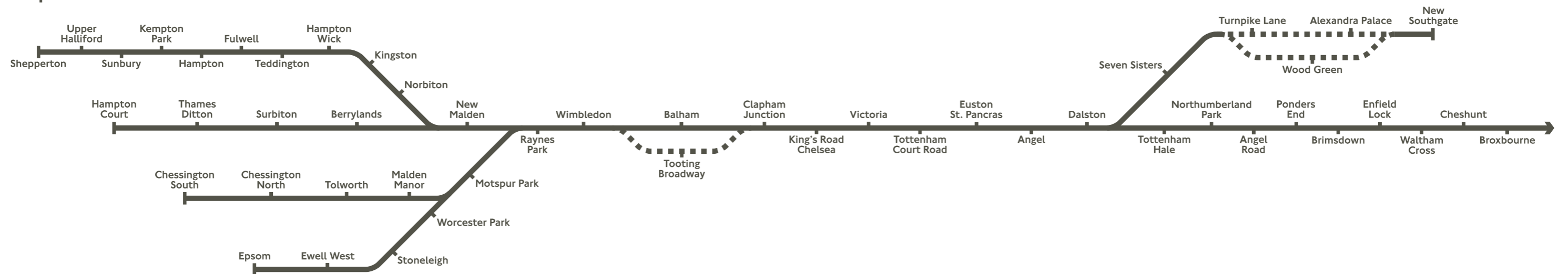
A single worksite would be required to construct the shaft, junction and reversing facility. Our current preferred location for this worksite, just north-west of Stoke Newington station, has been selected to minimise the amount of residential land we would need to take.

Construction would take around six years from start to finish. Activity on site would fluctuate over this period. Once the site has been cleared and prepared, the major construction work to dig out the shaft, junction and reversing facility would usually be complete within three years.

On completion of the works, an above-ground structure known as a 'head-house' would remain. The head-house would provide access to the shaft, the equipment within it and the tunnels below. It would also allow air to be drawn into and out of the tunnel ventilation system. At this early stage of Crossrail 2 design, we expect a typical head-house to be at least two storeys high and to occupy an area of around 25m by 25m. As the scheme develops further, we would engage with the local authority, interested stakeholders and local communities to inform the designs for each head-house.



## Proposed Crossrail 2 stations



---

## To find out more

Visit [www.crossrail2.co.uk](http://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](http://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.

---

## Contact us

- Email: [crossrail2@tfl.gov.uk](mailto:crossrail2@tfl.gov.uk)
- Helpline: 0343 222 0055\*
- Post: Freepost Crossrail 2 Consultations
- Website: [www.crossrail2.co.uk](http://www.crossrail2.co.uk)

\*Service and network charges may apply. See [tfl.gov.uk/terms](http://tfl.gov.uk/terms) for details

## Have your say

This consultation gives you the opportunity to comment on proposals for Crossrail 2. Visit [www.crossrail2.co.uk](http://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.