

Fisher Street Crossover Tunnels

Emergency access shaft on Crossrail Route



Our reference in London (United Kingdom): Fisher Street Crossover Tunnels

The background

A 15 metre diameter shaft was designed for emergency access in the Crossrail route. The shaft was also used to support tunnelling works to build a large crossover tunnel, allowing trains to transfer from one running tunnel to another.

The challenge

Construction of the crossover tunnels, which include some of the largest caverns on the Crossrail line, equate to a significant stage within the whole project.

Extremely limited surface and underground site space lead to a carefully planned out logistical programme for both plant and material storage.

Project:

Fisher Street Crossover Tunnels

Location:

London

Client:

Crossrail

Contractor

Bam Ferrovial Kier JV (BFK)

Designer:

Mott McDonald

Market sector:

Underground Construction

Products used:

MasterRoc MSL 345

MasterRoc TSL 865

MasterFinish MPT 299

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Our solution

Master Builders Solutions Underground Construction experts worked closely with the main contractor, BFK (Bam Ferrovial Kier), to not only supply the main sprayed waterproofing product used throughout the whole of the Sprayed Concrete Lined (SCL) works, but ensured that with a high level of support and training, the works were completed with minimal disruption and improved efficiency.

The enlargement design of the running tunnels consisted of combining a sheet membrane in the invert with a sprayed waterproofing membrane (MasterRoc MSL 345) for the crown. This illustrated how versatile the MasterRoc MSL 345 product can be when used with different materials. The bonding element between the sheet and the sprayed waterproofing membrane was clearly evident, thus producing a water-tight structure.

In addition, the insertion of dowels was placed into the programme after the MasterRoc MSL 345 had been applied. The correct overlap and coverage at the base of the dowel was assured, leaving no possible route for water ingress to occur.

A total of 33 tonnes of MasterRoc MSL 345, and 4 tonnes of MasterRoc TSL 865 were used within the SCL tunnels at Crossrail's Fisher Street project.



The customers benefit

- MasterRoc MSL 345 easily adaptable to any waterproofing design solution
- Highly organised Business Support team outlined effective and clear communication between contractor to ensure tight order schedules were completed.

Project facts at a glance

- Over 3 million tonnes of excavated material was shipped to Wallasea Island in Essex to create a new 1,500 acre RSPB nature reserve
- Crossrail will support regeneration across the capital and add an estimated £42bn to the UK economy
- Over 200,000 tunnel segments were used to line the 42 kilometres of tunnels