

Chelsea to Battersea Tunnel

Client: National Grid (tRIIO for Barhale)

Location: Chelsea, Battersea

Value: £5m

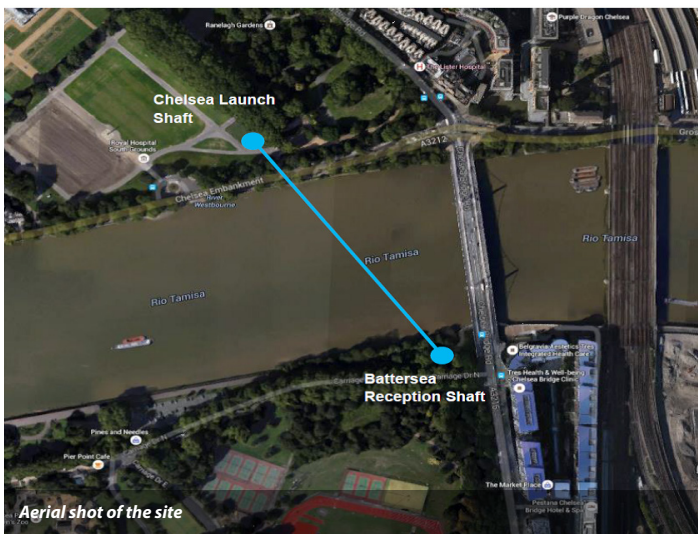
Duration: 55 Weeks

In Brief...

As part of the ongoing work to replace and upgrade the large diameter medium pressure gas mains in the centre of London, a new gas pipeline is needed underneath the River Thames between the Royal Hospital Chelsea and Battersea Park. The overall contract is being undertaken by tRIIO, a joint venture of Morrison Utility Services and Skanska Construction UK Limited on behalf of National Grid. Barhale are employed by tRIIO to deliver the civil engineering element of the project.



Shaft for launching the tunnelling machines



Aerial shot of the site

Some of the most significant operations we are currently working on are:

Shaft Construction - We are constructing the shafts by using 2 different methods; underpinning and caissons. The purpose of the shafts is to facilitate the tunnelling operations for the insertion of the new gas main. The shaft for launching the tunnelling machines have a diameter of 7.5m while the reception shaft is 6m.

Both locations are in extremely sensitive and high profile areas of London and come with their own challenging constraints that need to be managed; Chelsea hospital grounds (left picture below) and Battersea Park (right picture below). Locations, distance between shafts and their dimensions have been designed with a view to optimise the construction cost. Design has taken into consideration stakeholder constraints and British tunnelling specifications in regards to maximum length that allows man access.

Technical Features...

Barhale's work activities will take place at two sites:

- Works have taken place in the grounds of the Royal Chelsea Hospital with the construction of a 7.5m diameter, 30m deep drive shaft, which had to be completed and covered ahead of the Chelsea flower show.
- Following the Chelsea flower show, works are planned to start in the north-east corner of Battersea Park to construct the reception shaft. The works include the construction of a 330 meter long x 1.8m diameter pipe jack tunnel to carry the new gas pipeline beneath the River Thames.

The project remains live and there is currently a team of approximately 15 operatives and staff working on this scheme. We are confident that we will deliver this project successfully.



Chelsea hospital grounds



Battersea Park

Technical Features Cont...

- Tunnelling** - Due to the vicinity of existing and planned services and 3rd party assets (namely a proposed Thames Tideway tunnel passing below our tunnel) the tunnelling operation will be carried out with a 2100mm Iseki machine (slurry Tunnel Boring Machine (TBM)) as these TBM's are well suited to coping with London clay, which is the expected ground condition. Barhale cyclone slurry recycling equipment will also be used in conjunction with the TBM to control settlement and manage spoil arising from the tunnelling operations. Tunnelling works are due to begin in October and will be carried out on 24hr working shifts for approximately 5 weeks.

