Barhale

Green Lane / Great Western Road

Client:	BFK / Crossrail
Location:	Notting Hill, London
Value:	£6.2m
Duration:	2 Years, 5 Months

Barhale's site set up mitigated any negative impact on the local community

Children from a local school invited to site following their naming of the Tunnel Boring Machine

In Brief...

The Green Lane (Great Western Road) Project on behalf of BFK/Crossrail involved the construction of 6 shafts (by underpinning method) and nearly 600m of pipe jacking.

The scheme was required as the existing sewer going under Network Rails Great Western Rail lines and London Underground would have clashed with the new Crossrail line. As a result, the existing sewer was abandoned and replaced with a new 1.2m pipe at a lower level.

As part of the works, Barhale were responsible for the detailed design of the scheme involving consultation with Thames Water, Network Rail and London Underground.

Initial works involved the location and diversion of all services at the shaft locations including Gas, Water, Electrical & Fibre Optics.

Customer Benefits...

- Reduced waste and disruption to local community using pipe jacking method as opposed to open-cut
- Hoarding erected around each compound which minimised the impacts of noise and dust
- Programme accelerated to 24hr x 6day working which produced a 5 month saving on project completion
- An excellent Value Engineering proposal resulted in a 35m section of the existing sewer at the tie in point being re-inverted and relined as opposed to the original scope which involved the open-cut and installation of new pipework at 7m deep through a heavily congested road in the heart of Notting Hill
- The majority of the site was located in a quiet residential neighbourhood and works were conducted responsibly to minimise disturbance. One of the manholes was outside the area's bus depot which needed careful planning of traffic management and negotiation to reduce the interruption to bus operations

Community Involvement...

Barhale opened a competition for primary school students at Canada Blanch School in west London to name the tunnelling machine. ***BFK Project Director Graham Hughes said:***

"This is an exciting project for the local community and a chance to bring engineering to life for young students in the local area. We opened a drawing competition to year 3 and 4 students and selected a winning entry and TBM name. The students joined us for the launch and we hope seeing an engineering project in action will inspire a new generation of future tunnellers and engineers."

Barhale


Shaft Construction


Iseki Micro Tunnelling


Hand Jack


Service Diversions

The sites were also located in the area of the Notting Hill Carnival, and in August all of them had to be fully decommissioned during carnival weekend and reinstated afterwards as part of an agreement with the Carnival Organisers, Local Authorities and the Metropolitan Police.

Challenging Programme...

The team had to work hard to meet the demanding programme, including 24-hour working and using extra resources. It was a major piece of work, needing three micro-tunnel pipe-jacks. Two of these ran along the length of Tavistock Road, and one passed directly under the Network Rail and London Underground lines, with very shallow cover and with all rail lines remaining fully operational at all times. ***Crossrail Project Manager Andy Alder said:*** "This was challenging work, requiring careful planning and execution, and the successful completion reflects the hard work and commitment of the team engaged on it."

Health and Safety...

Perhaps the biggest achievement of the project was the completion of nearly 100,000 man hours in 18 months work 24/7 without major incident/RIDDOR or LTI. In an environment highly congested with pedestrians, traffic and utilities it is a credit to the site team. We received numerous letters of praise and Green Lane was also recognised by BFK/Crossrail as the best performing site within the C300/C435 section of Crossrail for submitting Observation Cards/Near Misses resulting in an award for the entire site team.

Technical Features...

Pre-tunnelling works involved the diversion of 15m of 6" gas, 30m of 6" water, 25m of LV Electrical cables, 30m of Fisher German Fibre Optics, 15m of Virgin Media ducting and10m of BT ducting. In addition to the 6 no. shafts constructed to facilitate the pipe jacks, the project involved various forms of tunnelling techniques such as 555m of Iseki micro-tunnelling, 20m of hand jack and 6m of timber headings.
Part of the project involved tunnelling under live Network Rail and London Underground rail tracks. A Settlement assessment was carried out together with monitoring points setup on various locations such as tracks and platforms. Shift Review meetings were carried out to discuss the tunnelling progress and any movements in settlement or expected trigger levels.
Barhale Project Manager Cormac Healy said: "The entire team involved in this project can feel a sense of pride in what has been achieved and reflect in years to come on the contribution they made to the Crossrail legacy."