

Westbourne Grove Flood Alleviation Scheme

Client:	Thames Water
Location:	Bayswater, London
Value:	£2.5m
Duration:	6 Months

In Brief...

Barhale were awarded the scheme by Thames Water to alleviate flooding within the Bayswater area of London.

The scheme involved the connection of the existing Victorian sewers to a new pumping station from which discharge would be carried via a new rising main to another existing brick built egg shaped sewer.

Customer Benefits...

- **Early involvement** - Barhale were involved in supporting Thames Water during the design stage to help improve efficiencies
- **Traffic Management** - Barhale set up a compound to ensure site traffic movements were planned to prevent disruption to local traffic flows
- **Near miss reporting** - Reporting was actively encouraged on site and individual cash rewards were offered as an incentive to operatives to promote high standards of site safety
- **Innovation** - Barhale trialled new products to protect operatives from the risk of falling from heights

Early contract involvement...

During the early stages of the scheme, Barhale liaised directly with the design team and proposed a number of cost and time saving measures. To this end the following changes were implemented:

- 15m of concrete shaft corbel was replaced with stainless steel brackets
- The outfall chamber was redesigned to avoid a road closure and also to provide a cost saving to the client
- Barhale proposed best positions of shafts, which enables the shaft diameters to be reduced, achieving huge cost savings
- Shaft positions were amended to avoid the need for service diversions
- Barhale used our in-house fabrications department, to deliver the steelwork to a tight schedule saving on time and costs

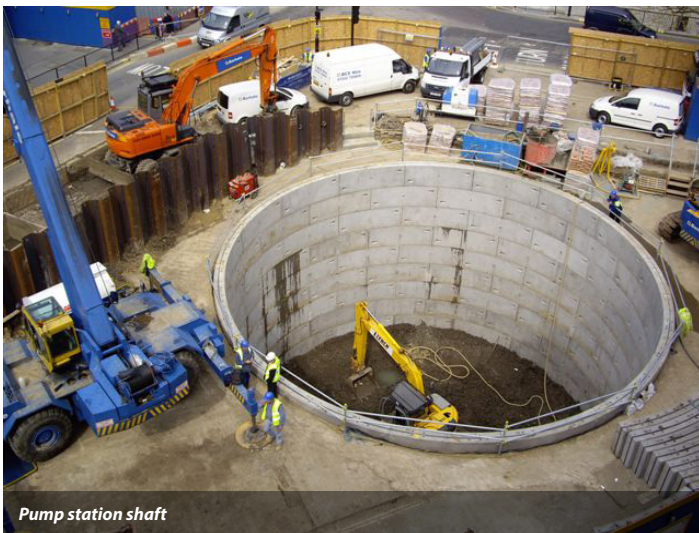
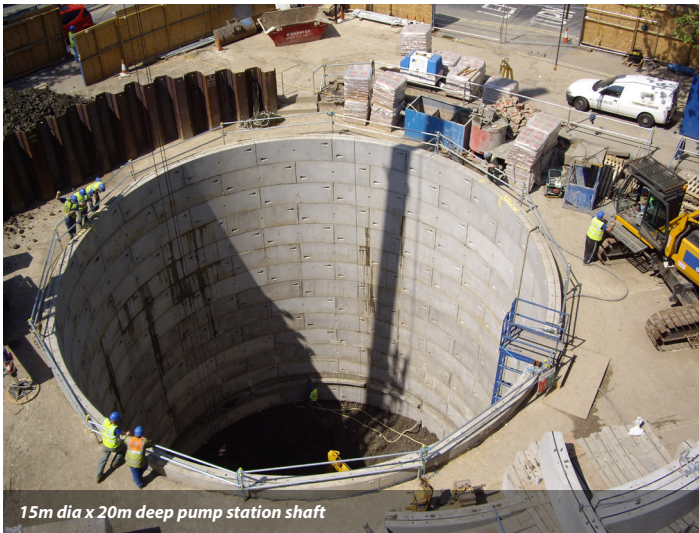
Traffic Management...

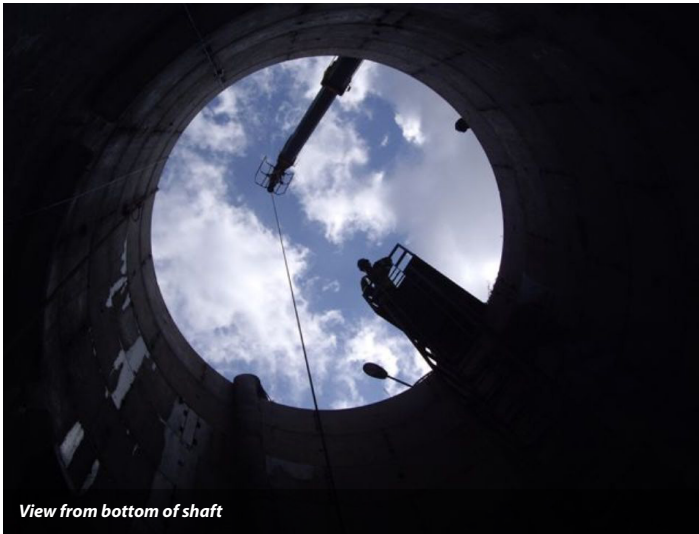
The 15m dia x 20m deep sewage storage shaft construction area was situated at a busy junction requiring detailed planning by the site team and local authorities to minimise disruption.

Close liaison with Westminster Council, TFL and Metropolitan Police was essential to take traffic movement and flows into account when building the compound. The detailed planning, layout and control of site vehicle movements throughout the project proved successful with no reported road traffic accidents involving construction traffic.

Zero reportable incidents...

The Project Management team were proactive in ensuring effective communication, consultation and participation was conducted with the workforce involved on the project. Regular health and safety committee meetings were held to represent all site personnel including our supply chain partners.





View from bottom of shaft



Work in busy urban environment

Customer Benefits Cont...

Innovation...

The site team conducted a risk assessment, which concluded there was a risk of falling from height and shaft landings. Barhale trialled a combi-safe edge protection product, which provided the most practical and safe solution. The product was easy to assemble and delivered significant time savings compared to the traditional use of assembling hand rails.

Customer service...

The site set-up included a 'drop in centre', which enabled site management to communicate with local stakeholders and update them on any activities associated with the scheme. In addition, a viewing window was incorporated in the hoarding so that local residents and stakeholders could see the progress of the work first hand. The scheme received many letters of commendation from the local community, Metropolitan Police and the Notting Hill carnival organisers.

Technical Features...

The pumping station was designed for storage of a 1 in 15 year storm. Discharge passed through a reinforced concrete valve chamber some 6m long, 3m wide and 3m deep, to a 600mm concrete outlet pipe laid in open cut trenches to the existing Victorian brick built sewer at Inverness Terrace, a narrow road with a number of Embassies to one side. The pipework, valves, fixtures and fittings, together with the M&E installations comprising MCC Board ATEX out-station and the usual array of control switches were installed by Barhale's own in-house team. The shaft included intermediate landing slab, 1400mm diameter drop pipe and all associated M&E equipment.

A new 4m diameter, 12m deep, segmental shaft was constructed by underpinning, it provided a 600mm diameter overflow connection to the existing adjacent brick sewer (800x1200mm).

Works at the Garway Road shaft included the overflow connection to the existing sewer, which included:

Another new 5m diameter segmental shaft, 12m in depth, located at the Queensway and Westbourne Grove junction, in a similar high profile location, constructed adjacent to two high pressure water mains and fibre optic cables. This shaft provided a 600mm diameter overflow connection to two existing adjacent brick sewers (both 800x1200mm dia) and included an intermediate landing slab and 900mm drop pipe.

At Inverness Terrace, a 4m diameter shaft, 11m deep, was used to hand-jack a 1500mm diameter pipe to the pumping station, because the new pipe passed just underneath another Victorian sewer and other utility services. The 34m length was installed within a week.

There was a need to liaise closely with the utility undertakers. Barhale were able to form a good relationship with EDF Energy and British Telecommunications PLC to enhance the installation of new electrical and PSTN telephone connections to serve the Newbury House pumping station storage shaft.