

Coppermills Water Treatment Works Upgrades

Client: eight₂O (SMB JV)

Location: Coppermills, Walthamstow

Value: £2.2m

Duration: 12 Months

In Brief...

As part of the upgrades at Coppermills Water Treatment Works, Barhale were contracted by eight₂O to undertake the civil works for the installation of 12 Rapid Gravity Filter Tanks (RGF Tanks), construct a new weir chamber and pipework to two adjacent pipe galleries and install new draw pits and ducting for HV/LV cables running into the newly constructed MCC base slab. These upgrades will significantly improve water purification capacity into Thames Water's Ring Main, and help to meet the demands of London's rising population.



Intermediary work on the piling mat 2



10,000 tonnes heap of 6F2 rubble

Technical Features...

The scope of work on this project included all the earthworks for the installation of the RGF Tanks and North and South pipe galleries. The initial work plan required us to excavate the pipe galleries before constructing the piling mat between them. However, in reality, this proved to be difficult due to site space constraints. In collaboration with SMB JV, Barhale re-sequenced the works to enable work on the south pipe gallery and on the piling mat to be carried out at the same time. This enabled the team to finish the piling mat 3 weeks ahead of programme.

Barhale avoided hitting any services by proof digging the pipeline routes to a depth of 1.2m with a smaller excavator in advance of the large trench excavators. At one of the shafts, the team found uncharted concrete and they employed a skilled drilling and concrete cutting contractor to remove it using a variety of low risk methods, which also reduced Hand to Arm Vibrations (HAV's)

The scope of work also included all the interconnecting pipework for low-lift pumps (pipe dimensions ranging from 700 DN to 1200 DN) and the raw water connection to a 7mm thick, 84" diameter existing steel pipe (exposed through hydro-demolition).

Barhale carried out the works while multiple stakeholders interacted on site. For example, the team installed pipe trenches around the new RGF filters while all other trades (precast concrete installers, M&E installers, cable pullers) were working on the tank. Such overlaps can raise significant obstacles to finishing with minimal or no disruption and on time. To prevent difficulties, Barhale engaged early and attended the SMB's monthly collaboration meetings with all the contractors working on the project. These entailed the use of a Synchro Simulation model that highlighted clashes among contractors' programmes, and thus enabled the necessary programme adjustments. Cutting-edge technology, coupled with collaborative behaviour, minimised the programme time for all the parties involved.



North pipe gallery installation

Customer Benefits/Feedback...



Finished piling mat

Barhale saved eight,0 money and decreased the environmental impact of our work by being pro-active and strategic in how we dealt with reusable waste. Barhale also carried out high risk, high pressure work to stringent quality and health and safety standards. For example, the duct work entailed working in close proximity to high density, often unchartered services. A single service strike in the area carried the risk of cutting water supply from 3-3 million Thames Water customers. Despite these constraints, the team carried out the work without any major health and safety incidents. Barhale also enhanced SMB's reputation by showing the value of collaborative working on large scale civil infrastructure projects, and by successfully navigating the difficulties inherent in working with multiple stakeholders on small sites.