Barhale

Trinity Farm Project

Client:	Yorkshire Water
Location:	Knottingley, West Yorkshire
Value:	£1.1m
Duration:	12 Months

Construction of the pump station shaft

Directional drilling was utilised for 800m

T-Rex perparing to launch under the A1(M)

In Brief...

In order to facilitate the development of a new retail distribution hub in Knottingley, West Yorkshire, Barhale's Yorkshire region have successfully delivered a brand new foul sewer pumping station and associated rising main.

As part of their £100m 'Cross Point' development, Caddick Developments were commissioned to construct a huge new distribution hub for their client TK Maxx. The new distribution centre will be operational on a 24/7 basis and eventually employ around 2,000 people. Yorkshire Water therefore engaged Barhale to provide the centre with a foul water connection to the existing network.

Technical Features...

The project was delivered in mainly rural land surrounding the A1(M). Works involved the following elements:

- Construction of a 5m diameter, 12m deep pumping station shaft. This was constructed in rock through underpinning techniques
- Installation of around 1600m of new 110mm diameter polypropylene rising main. This was delivered through a combination of:
  - 720m open cut
  - 800m of directional drilling
  - 80m of micro-tunnelling

The directional drill elements were incorporated to avoid any adverse damage to existing agricultural land drain systems. The 600mm diameter micro-tunnel drive was designed to enable the new main to pass under a section of the A1(M) without impacting on traffic flows.

To facilitate the tunnel drive, two additional shafts were constructed at the east and west sides of the A1(M). Both the drive and reception shafts were 3.66m in diameter, approximately 8m deep and constructed in rock strata using underpinning techniques.

The Barhale team worked closely with our partners JKL and SBU Ltd., who constructed the shafts, associated pipelines, aswell as installed and commissioned the mechanical and electrical components of the pump station. This included a self-cleansing pump system, with a flow-rate of 8 litres per second. The design of which was completed by our partner GHD Livigunn Ltd.

Community Engagement...

Led by Regional Manager Deborah Davies and Commercial Manager Tom O'Donnell, the team engaged closely with a local primary school throughout the works. This included delivering a presentation which highlighted the importance of water services as well as the potential danger which construction sites can pose. Deborah and Tom also invited the children to partake in a naming competition for the Tunnel Boring Machine used to complete the micro-tunnelling sections. The chosen name was "T. REX".

Customer Benefits...

Despite potentially challenging interfaces with several stakeholders, most notably Highways England during the A1 tunnel drive, it was meticulous planning, innovative design ideas and a great team effort that made the project a resounding success. The works were delivered on time, to budget and with no health and safety accidents. All of which ensured the site was handed over to a very satisfied client.