

INTU Lakeside Enabling Works

Client: INTU Lakeside Limited

Location: Grays, Essex

Value: £1.1m

Duration: 9 Months

In Brief...

To facilitate a new 225,000 square foot extension to the INTU Lakeside shopping centre in Essex, Barhale were required to divert existing utility services away from the new building footprint by carrying out extensive open cut excavation.

The new extension will act as a focal point for the shopping centre, housing numerous leisure facilities including; a bowling alley, various food and drink outlets and an interactive family entertainment centre.



A 49m long bridge was removed over two nights



Several uncharted services were fed by the existing water main

Technical Features...

There were three existing services, which clashed with the footprint of the new building:

- Potable water main
- Gas main
- HV electricity ducting

The Barhale team excavated diversionary trenches through open cut techniques into which the new services were installed by third party stakeholders. Barhale then carried out all backfilling and reinstatement operations, including bitumen surfacing and paving stone laying.

The excavation was carried out through a combination of mechanical and hand dig methods. In keeping with the requirements of HSG47, a full scan of the excavation area was carried out before works began to identify all underground services. No mechanical excavation was permitted within 1m of a known service. In total, the Barhale team enabled the diversion of:

- 487m of 355mm water main
- 418m of HV ducting
- 100m of 63mm gas main

Barhale worked with third parties (Essex and Suffolk Water, UK Power Networks and Fulcrum) to correctly divert the water, electric and gas services respectively. The team collaborated with these stakeholders throughout the excavation, installation and backfilling operations to ensure the works were carried out in keeping with statutory requirements and industry best practice.

Part of the works also involved the removal of an existing footbridge, which spanned the width of the ring road surrounding the shopping centre, connecting two multi-storey car parks. The bridge was due to be removed by the client as part of a future phase of works, however because the steel support columns would have been positioned directly above the new water main, the asset owner; Essex and Suffolk Water, would not allow this design through fear of causing damage to the main below. The Barhale team were able to adapt to this potential issue by agreeing to add the demolition activities to their programme of works, moving the operation forward by several months to meet the requirements of Essex and Suffolk Water.

The bridge spanned a distance of 49m and was removed over a period of two nights. Demolition works were carried out by Barhale's competent subcontractor, Squibb Group. The bridge deck was cut into four sections by trained welders using burning tools. After each section had been cut, they were individually lifted out of place by a 350t crane supplied by City Lifting Ltd. All demolition works were carried out at night to allow the team unrestricted access to the bridge location, without the risk of disrupting shoppers visiting the centre. This meant the team had to work to extremely tight deadlines to ensure the demolition was carried out within the allotted time frame.



The team excavated 487m of water main trench, 418m of electrical trench and 100m of gas main



Barhale carried out all trench reinstatement

Technical Features cont...

During the excavation operations, the Barhale team uncovered 19 uncharted water services leading into the shopping centre, which were fed by the existing water ring main. Neither Essex and Suffolk Water nor INTU were certain of the status of the services. The Barhale team therefore carried out tests on all services to ensure no areas within the centre were left without water. The team found five of the services to be live and 14 to be dead.

Customer Benefits...

The high profile project posed several unique challenges for the Barhale team:

- Firstly, this extensive level of excavation and demolition was carried out within the grounds of a fully operational shopping centre, which plays host to around 500,000 visitors per week. Barhale were in constant liaison with the client, INTU. By working together through weekly look ahead meetings and daily updates, Barhale and INTU were able to collaboratively ensure that the needs of the 250+ retail tenants were met throughout the works, with minimal disruption caused to shoppers and visitors.
- Extensive traffic and pedestrian management measures had to be put in place to protect the work site, while at the same time ensuring the experience of visitors was not disrupted. These measures required meticulous planning at several points along the excavation route, including where the team had to open cut across the main delivery haul road into the centre and across the entrance to one of the centre's multi-storey car parks.
- The team also successfully managed interactions with the three asset stakeholders throughout the diversion operations to ensure their installation requirements were met.