

Alwoodley Rising Main Replacement

Client:	Yorkshire Water
Location:	Wigton Lane, Leeds
Value:	£1.1m
Duration:	7 Months

In Brief...

As part of Yorkshire Water's AMP 6 programme, our team in Yorkshire undertook a scheme to replace 930m of an existing rising main along Wigton Lane in Leeds.



Trench planed off in preparation for excavation



Site entrance to works on Wigton Lane

Technical Features...

The overall scope of the works were as follows:

- Installation of a combination of 450mm and 355mm PE pipework, laid at a depth of between 1.6m to 2m
- Associated air valves and washout chambers
- Construction of one 1.2m diameter pre-cast break manhole and one 1.2m diameter pre-cast connection manhole
- Installation of 8m of 300mm vitrified clay gravity sewer where the rising main connected into the existing sewer sewerage system
- Temporary shutdown of Alwoodley pumping station to allow the final connection to be made while flows were diverted from the old cast iron main through the newly laid plastic rising main pipework

The scheme was required to replace a section of the existing cast iron rising main which pumped waste water from Alwoodley pumping station to the local waste water treatment works along Wigton Lane. The existing cast iron rising main had deteriorated over the last few years resulting in several bursts. Consequently, numerous emergency repairs were required, causing widespread disruption to the local residents, including road closures and diversions to the busy surrounding road network. The installation of the new main was to prevent bursting and resultant disruption to the area.

The team laid the new sewer on the opposite side of the carriageway to the existing sewer. This was so the existing sewer could remain live during the works, enabling the new rising main to be installed offline. The final part of the scheme involved shutting down Alwoodley pumping station and diverting flows into the newly laid rising main.

Customer Benefits...

The team demonstrated a proactive, customer focused approach in solving several issues presented during the works. Ideally the scheme would have been completed under a full road closure due to the working space required. This suggestion was put to the local community via a poll which concluded that the works must be carried out under 2 way lights to keep the road open. The team therefore undertook very effective planning to ensure the works were sequenced efficiently and the limited space on site was maximised to its full potential, which in turn guaranteed the safety of all operatives and members of the public.

The area is locally known as 'Millionaires Row' due to the size and value of the properties along Wigton Lane. Access to the driveways of these properties had to be maintained at all times using lightweight plastic access ramps to span the open cut trench. The fact that the majority of these properties have two access points worked to Barhale's advantage, as it has allowed the team to block off one entry point while still allowing access to the property through the other. This aspect of the works needed to be particularly well managed by the team, who were in constant liaison with the home owners to ensure they were informed of the programme of works throughout the project. This resulted in the development of good relationships with the local community, enabling a potentially intrusive scheme to run smoothly with complaints kept to an absolute minimum.



Customer Benefits Cont...

One of the best practices on the scheme was the use of Vertishore supplied by MGF. Vertishore provide a lightweight, innovative method of safely supporting excavations within certain types of ground, up to certain depths. Due to the nature of the ground in Wigton Lane, the team were able to utilise this product as means of advancing the excavation operation quickly, whilst providing the same levels of safety as the traditional sheet and frame methods. The team also selected the use of foam concrete to backfill the top 500mm of backfill prior to laying tarmac. This concrete was poured straight in to the trench, which sped up the backfilling operation and also alleviated the risk of any potential settlement issues following the reopening of the carriageway.

Due to space restrictions on Wigton Lane, the site compound was positioned approximately 1.5km from the main works. The team therefore had to instigate detailed logistical procedures during the removal of spoil and the importing of new materials. All excavated material was transported by dumpers to a stockpile within the site compound, while all imported backfill materials were delivered to the site compound and transported to the work site by dumpers.