

Belper, Derwent Street

Adaptable retaining wall design results in increased scope

Belper and the Derwent Valley, which is universally recognised as the Cradle of the Industrial Revolution, now holds World Heritage Status. The introduction of cotton mills at the beginning of the 19th Century changed Belper's landscape, turning this small village into a thriving market town which is now becoming an attraction hub for young families. This picturesque market town just a county over from Aarsleff's head office in Nottinghamshire provided the backdrop for our latest KPW project for a housing development.

Aarsleff were initially contracted to design and build a 135m long king post wall with steel sheet infills for a retained height of up to 2.5m. The team took time to competently assess and understand the initial findings of the ground investigation report, as is done with every project. As there were worries that traditional methods may prove difficult, Aarsleff mobilised to site with a down the hole hammer system alongside our own plant to ensure that suitable penetration was attained. The team carried out trial auguring to establish a more accurate soil profile as well as determine the areas where traditional auguring was feasible to ensure that our client benefitted from early completion of critical sections on site.

The majority of the drainage works were completed prior to the installation of the wall and therefore, ran alongside and intersected the proposed line. These included various water pump stations, drainpipes, access staircase and manhole chambers which meant that the position of posts and length of infill lagging had to be tailored.

Due to the increased complexity, effective coordination and communication between our design and operations department was essential to ensure the safe delivery of works. Our design team members visited site prior to mobilisation to understand the extent of the obstructions. A bespoke design was then created around these, through enlarging and reducing the spans. Heavy concentration was also placed on optimising the use of plant to ensure that all design iterations were feasible and could be accommodated on site.

Due to the varying levels on site along with the adverse weather conditions, the piling platform mat required constant maintenance and to assist our client, we actively scheduled our sequence to ensure that there was no idle time. With the determination shown by our site team in delivering the works, Aarsleff were also instructed to carry out civil works, excavations and backfilling, and steel folded capping beam to be installed on site.

Our Project Manager, Zohaib Khan, commented: "Our scope of works increased greatly because of the commitment shown in our delivery. Given the various obstacles, the success of our project was dependent on carefully monitoring and reacting to on site changes."



Data

- 135m long king post wall with steel sheet infills
- Retaining up to 2.5m of soil

Client

Countryside Properties

Type of contract

Design and build contract

Construction period

December 2022 - January 2023



Contact

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