

A52 Wyvern Transport Improvements

Steel sheet piles to form a temporary sacrificial cofferdam.



AARSLEFF

The A52 Wyvern Transport Improvement Scheme will bring about network management improvements on the A52 Brian Clough Way and in the area around the Wyvern Retail Park and Pride Park. The scheme will help to reduce congestion, improve journey times and reliability, provide safer travel opportunities, increase sustainable travel and also support wider economic growth. The scheme was originally one of 31 proposed major transport schemes considered by Derby City Council. It will also provide economic benefits and this was one of the reasons it was selected for funding by the D2N2 LEP (Derby, Derbyshire, Nottingham and Nottinghamshire Local Enterprise Partnership).

The main works contract was awarded to Galliford Try in October 2017 under the Midlands Highways Alliance framework. In June 2019, CR Civil Engineering awarded Aarsleff the design and build contract for the sheet piling temporary works to protect the road when main works were being carried out.

From the 8th August 2019 to 27th September 2019, Aarsleff installed 372No. sheet piles, of max length 15m, to form a temporary sacrificial sheet piled cofferdam for 4.5-5.5m free standing retained heights. Due to the site's difficult ground conditions, Aarsleff first pre-augered and vibrated the piles with their ABI TM17 Rig, and then used impact driving with their Banut 300 midi-rig. Impact driving is one of the best methods for driving piles into difficult

ground or final driving of piles to level in panel form. Aarsleff adopted a clear working space of 1.0m to the tank crates, following a simplified alignment. Once installed, the cofferdam allowed for bulk excavation and the construction of an attenuation tank to control the flow of rainwater as it goes back to the water course/drainage system.

The A52 Brian Clough Way is a major road linking Derby and Nottingham. Over 18 million vehicles per year use this road. It is part of a wider west/east strategic route linking the A50, A38 and M1. The A52 between Raynesway and Pentagon roundabout is also used for local trips between residential areas and the city centre and Pride Park. As a result the section of the A52 between Spondon and Pentagon roundabout is heavily congested during morning and afternoon peak hours.

Aarsleff's Senior Technical Estimator Ashley Carter said: "This was a challenging project as we were dealing with ground consisting of made, clay and mudstone 9m below groundlevel. It was also a very deep dig, and being close to an existing dual carriageway and high pressure gas main meant that our installation method and sequence of works needed to be meticulously planned throughout the project's duration".



Scope of Works

223 lin/m steel pile retaining wall
372No. steel sheet piles
Pre-auger at 600mm

Contractor

CR Civil Engineering Ltd

Equipment

ABI TM17
Banut 300

Construction period

8th August - 27th September 2019

Aarsleff Ground Engineering Ltd, is the UK trading arm of Danish contracting giant Per Aarsleff A/S, and is one of the UK's leading piling and geotechnical design and installation specialist contractors; actively promoting early consultation to ensure each scheme can be Value Engineered to give clients the best service, quality design, safety and value. Aarsleff's strategy and philosophy of investment into the future has resulted in its wholly owned subsidiary Centrum Pile Ltd having the most advanced precast pile production facilities in the UK, producing segmentally jointed precast concrete piles to BS En12794 to Class 1A.

Contact

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