

CFA Piling & Civils

Don Viaduct - Bridge Strengthening

Techniques:

CFA Piling, Track RRV (Drilling and Civils), Movax, BSP Hammer

Solution:

- 32 no. CHS 762mm
- 40 no. CFA 17.5m

Client:

BAM Nuttal

Month, Year:

August, 2019



Project Background

In March 2019, we were successfully awarded the contract by BAM Nuttall's HEP team to help on the Don Viaduct Bridge Strengthening in Aberdeen, originally built in 1880. The project was to install piles that would form part of a new shock absorber anchorage assembly that will allow the Don Viaduct to remain in use for many more years to come.

Issue

Our initial schedule of works included the installation of 32 no. 762mm Spliced Circular Hollow Section (CHS) piles to a depth of 10m (infilled with reinforced concrete) using one of our wheeled T10,000 and Tracked T10,000 RRV (Road Rail Vehicle) Colmar's which incorporated a side grip Movax and 2.5tn BSP hammer. Having made great progress we encountered a few issues with the ground conditions including: clay depth anomalies, groundwater higher than expected, open bores collapsing, and running sand rising into casing.

Project Snapshot:

- 32 no. 762mm Spliced Circular Hollow Section (CHS) piles to a depth of 10m
- 40 no. working piles (10 no. x 4 corners of the Don Viaduct structure) to 17.5m depth
- Collaborative Working
 - On Track RRV Piling & Civils
 - General Piling - SR-30 CFA
- Improved client relationships



Solution

The project presented opportunities for the business to unearth innovative solutions through joined up thinking across our divisional disciplines to solve issues as they emerged.

Working in collaboration with our Specialist Piling team, we finally installed 40 no. working piles (10 no. x 4 corners of the Don Viaduct structure).

CHS casings were driven utilising the RRV's working in Rules of the Route possessions and following on from the Continuous Flight Auger (CFA) piling to mitigate the affect of the hydrostatic forces from below. A final pile depth of 17.5m was achieved, filling with concrete to support final pile and installing a substantial reinforcing cage, utilising one of our SR-30 CFA Rig's.

Results

The project completed In the middle of May 2019, around 7-10 days ahead of published schedules. The technical knowledge and experience provided pivotal in the final solution delivered on the prestigious project. Several commendations have been received from the client, thanking Van Elle for a successful programme of works, which has given BAM Nuttall the best chance of succeeding in delivering on time the next phase of delivery on HEP. There were no reported accidents and or incidents on the project.



A big success of the project was achieved through Van Elle innovating its approach to improving project management and client relationships, by:

- Embedding contracts staff within BAM Nuttall
- Daily Progress meetings with client and supply chain
- Open and transparent dialogue for issue resolutions

