



CASE STUDY ACCESS 18, AVONMOUTH



FOUNDATION SYSTEMS

CLIENT

Magrock Ltd

SCOPE OF WORKS

Driven Precast Concrete Piles
Precast Pile Caps

ACHIEVEMENTS

Completed on time
Completed on budget
Reduced insitu concrete works
Package solution

Project Brief

Roger Bullivant Limited (RBL) was approached by Magrock Ltd to provide a foundation solution for three industrial units for a commercial development at Access 18, Avonmouth.

With a wealth of experience of previous projects in this area, the RB Southern team submitted a proposal for over 2000 No. x 250mm SQ Driven Precast Concrete Piles across all three units and 1,364 Precast Pile Caps to support a reinforced suspended slab.



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FOUNDATION SYSTEMS



Key Issues/Requirements

- Specific milestones in the client's programme had to be achieved to accommodate the delivery and erection of the steel frame which would mean close collaboration with other trades on site.
- A comprehensive site investigation identified localised hard driving conditions, which had the potential to hinder production.

Solution

- RBL deployed three of its 5500 series rigs, working simultaneously, to ensure the piling works could meet the critical path on our client's programme
- Careful co-ordination with the client ensured RBL worked initially in critical areas where external caps could be cast allowing the steel erection to commence, while then less time critical works could continue.
- Providing multiple preliminary static load tests, prior to the main piling works commencing, RBL was able to optimise the pile design and ensure the piles were fully optimised for the ground conditions encountered.
- 250mm SQ precast piles were utilised for most of the units, achieving compressive loads of 600kN and catering for lateral loads of up to 50kN utilising enhanced reinforced 6m top sections.
- Our rigs were supplied daily with our precast segmental piles, delivered from our manufacturing facility at Walton Park in South Derbyshire, enabling each rig to drive over 25No. piles each day to 20.0m.

To address the hard driving conditions identified in the site investigation, an additional Continuous Flight Auger (CFA) rig was also brought in to pre-auger localised areas of dense upper soil layers. This approach enabled RBL to maintain high installation rates throughout the project.

- Utilising our standard stock item 800mm square Precast Concrete Caps, we were able to provide a package solution to support the reinforced slab that was installed to tight tolerances and specific programme milestones.
- RBL cropped and capped 1,364 piles, reducing wet works, curing periods and subcontract interphase.
- Once placed, RBL backfilled and compacted the ground around the cap to provide safe access to follow on trades.



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