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ABI Equipment Ltd were contracted to provide a total of three Delmag RH28 drilling rigs to Dawson-WAM for coring and piling works at their Woolwich Royal Arsenal project site in London throughout 2018.

Woolwich Royal Arsenal Phase 9 is part of an urban regeneration project on the south bank of the River Thames, on the site of the former coal fired power station. Berkeley Homes are developing this brown-field site, which will include a range of prestigious residential dwellings and retail outlets.

One of the first procedures was to bound the construction zone with sheet piles to form the basement walls, adding foundational support at the site. Although the former power station had long been demolished the site was heavily contaminated with underground concrete and steel structures, the whole being topped off with a steel reinforced concrete slab of variable thickness up to 10m deep in places. To excavate the entire site and remove the previous construction would have proved just too expensive and time consuming, not to mention the environmental impact of having to dispose of the contaminated materials.

The solution was to core through the thick reinforced concrete slab layer along the line of sheet piles into the original ground and remove all potential obstructions ahead of their installation using conventional segmental casing and heavy-duty rotary drilling tools. Dawson-WAM decided to use OD880mm segmental casing for this purpose and to stitch drill with an overlap in a traditional 'secant wall' formation to form a continuous slot along the

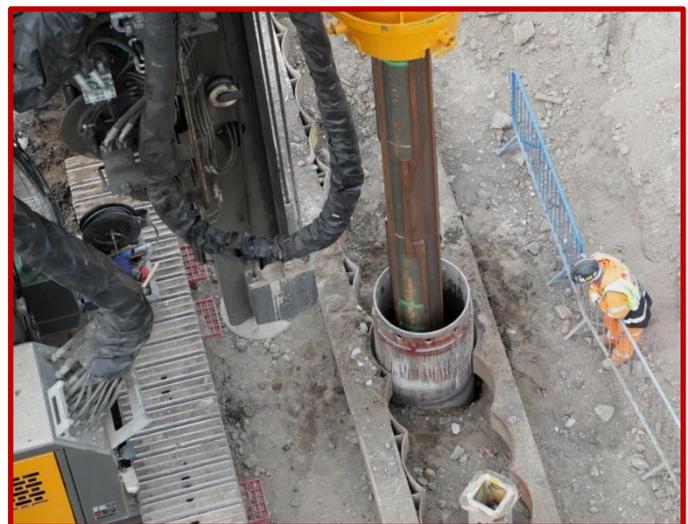
Woolwich Royal Arsenal Development

Client:

Dawson-WAM

Equipment:

Delmag RH28 Drilling Rigs



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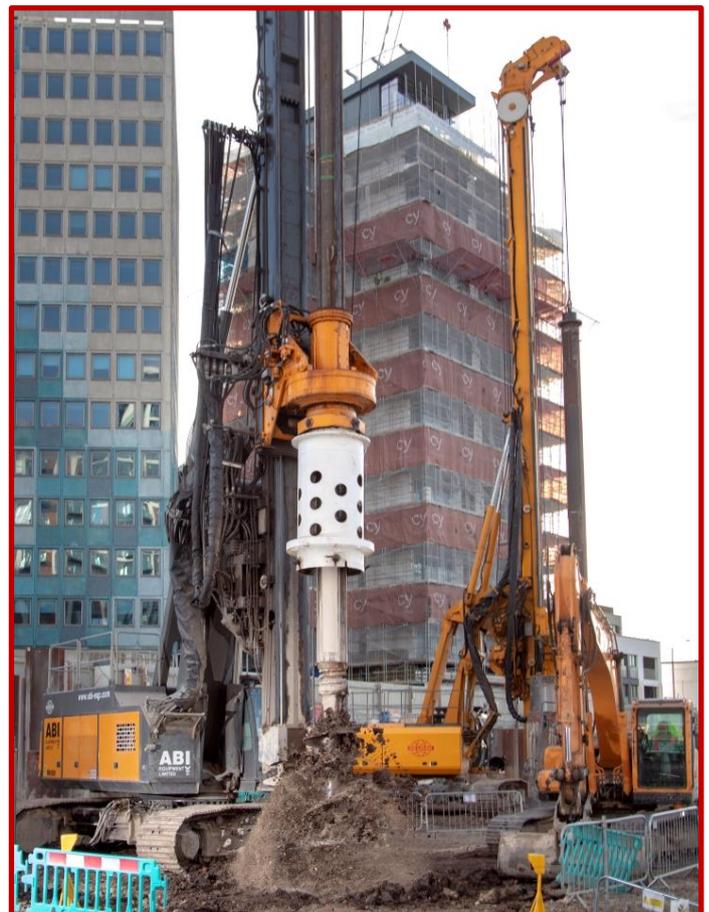


Stage IV compliant engine and range of attachments for a variety of drilling procedures.

In addition to the ground improvement and preparation works around the perimeter of the construction, the RH28's were also employed for further coring and clearance of the main load bearing pile positions across the whole job site. These OD900mm piles were to be installed by Dawson-WAM's own CFA piling rig to a depth of 32m so required OD1000mm coring works to be undertaken to a similar depth at the sheet pile locations.

pile line of the correct width to suit the sheet pile sections. Accurate drilling position, and to some degree verticality, was greatly aided by the use of a purpose-built ground guide frame, designed by Dawson-WAM. Specially prepared 'cutting shoes' with a solid ring of carbide wear blocks ensured optimum coring efficiency was achieved whilst minimising tool wear and vibration.

Drill depth tended to stop just below the bottom of the slab at around 11m, where the underlying dense ground was well suited to subsequent sheet pile installation. With the ground prepared in this manner the 14m long EZ18-700 sheet piles were easily installed with no further issues. This was by far the most productive and cost-effective installation method and kept the amount of spoil and waste generated to a minimum. The Delmag RH28 rig is a popular choice with contractors for groundwork in challenging conditions. Like all the hydraulically powered Delmag drilling rigs it is robust and reliable, providing much desired strength and stability with its EU



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Gary Johnstone, Site Agent for Dawson WAM says:

“The Delmag RH28 drilling rigs did the vital work that then facilitated the rest of the construction. The installation of the piles on this site would not have been possible without the preparation work carried out using these rigs – they did the work in advance of the other machines and in most cases did not install the piles themselves.

These are very tough rigs, with efficient EU Stage IV engines, high torque and high crowd/extraction forces that are very important when boring through difficult ground. The RH28 rigs really proved their worth in removing the obstructions formed by the previous building structures and performed reliably from March right through to the end of their hire at

Christmas. The support we received from ABI Equipment from project inception to project completion was first class.”

Other equipment in use on this same project produced by ABI Group included one of Dawson-WAM’s three ABI TM22 Mobilrams equipped with an MRZV30VV variable static moment, variable frequency vibrator (which undertook the installation of some temporary sheet piles and Vibro Concrete Columns (VCC)) plus one of their smaller TM13/16 Mobilrams which was used for the installation of steel reinforcing cages and some smaller diameter drilling works.

Dawson-WAM’s use of both ABI and Delmag equipment together on this project was a winning combination and ABI Equipment is proud to have been chosen as their key equipment supplier for this prestigious project.

Technical specifications and methodology documents for all the equipment used can be found on our website at: www.abi-eqp.com