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Chelsea Embankment Foreshore – Thames Tideway Tunnel

ABI Equipment Ltd were contracted to supply an ABI Mobilram TM 16/20 B SR35T piling rig to FLO Expanded (Ferrovial Agroman Laing O'Rourke JV) for sheet piling works at their Chelsea Embankment Foreshore site in late Spring / early Summer 2018.

Chelsea Embankment Foreshore is an important confluence point in the Thames Tideway Tunnel construction.

Dubbed as London's 'Super Sewer' and being the largest single infrastructure project undertaken in this country to date, the sewer tunnel is designed to prevent the overflow of millions of tonnes of raw sewage from spilling into the River Thames each year. The site at Chelsea will be an integral control point diverting the flow from 10 current egress points to the river, into the new main sewer tunnel - this is one of 13 such points along the tunnel length.

There were a number of environmental factors to consider with this project regarding site access and location: this stretch of the River Thames has a tidal range of approximately 6.5m, the embankment itself is hugged by the busy Chelsea Embankment thoroughfare, and it is in close proximity to a number of historically important buildings and structures. Tideway (the company formed to oversee the entire project) are also deeply committed to minimising the impact that these and all the other works have upon those who live and work in the city, so traffic disruption and noise disturbance needed to be kept to an absolute minimum.

The project:

Construction of cofferdam

Contractor: FLO Expanded

Equipment Supplied:

ABI Mobilram TM 16/20 B

+ MRZV-28VV Piling Vibro



Application: Piling with Vibration



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In order to carry out the main construction work an extension of the foreshore and embankment area was needed, and this in turn will be landscaped to conceal the new structures being built. To do this a safe and watertight area in which to operate had to be created – both as the ‘construction zone’ and also to contain the site offices and act as machinery compound - there being no adjacent land available for this purpose.

This new ‘dry’ area was created by forming a cofferdam around the site, holding back the tidal river safely and securely whilst excavation, construction and subsequent landscaping takes place. It was the construction of the cofferdam that required the use of a compact yet powerful piling rig – the ABI TM16/20 B coupled with a MRZV-28VV piling vibrator and EZK clamp assembly. This was transported by road to Tilbury Docks, where it was taken up-river by barge and off-loaded to a jack-up barge from which it was to operate.

The work itself consisted of driving sheets of AZ28-700 piles and 1080mm H piles up to 18m long in order to compensate for the varying level of the riverbed. The ability to turn the clamp through 90° to install both the sheet and H piles made this an efficient process.

The soil conditions at this location are primarily river terrace gravels over clay.



Ian Watkins, Project Leader at FLO's Chelsea Embankment site, said:

“A large proportion of the work we’re undertaking at Chelsea Embankment is marine specific. There are areas of our cofferdam where particularly tight tolerances are needed, such as the temporary sewer outfall and strong cell where our cofferdam’s sealed against the river wall. The ABI Mobilram piling rig was key to us achieving the build quality this job requires.”

