

ABI Equipment Limited

Piling Equipment Specialists

Sales - Hire - Parts and Service - Project Support



Farrans Construction Ltd selected ABI Equipment Ltd to provide piling equipment solutions for their high profile civil engineering project in Northern Ireland.

The piling works were carried out from August 2011 to October 2012.

The project involved the construction of a 480m long new quay structure and deep water berth located in the Port of Belfast. The Quay wall was constructed using a combi-wall of Ø1620mm x 32m long tubes and 22m long PU22 sheet piles tied back to an anchor beam supported on 367no. 30m long Ø660/762mm raking tubes. The 17,000 sqm quay slab was supported on 780no. Ø750mm CFA piles.

The works also included dredging of the new berth and approaches. This involved the disposal of 500,000m³ of material to sea with treatment and disposal of some contaminated material to land. Behind the new quay there is 50-acres of hinterland to receive heavy duty unbound pavement involving the placement of 900,000 sqm of geotextile and the import of circa 1,000,000 tonnes of aggregate.

D1 Belfast Harbour, Belfast

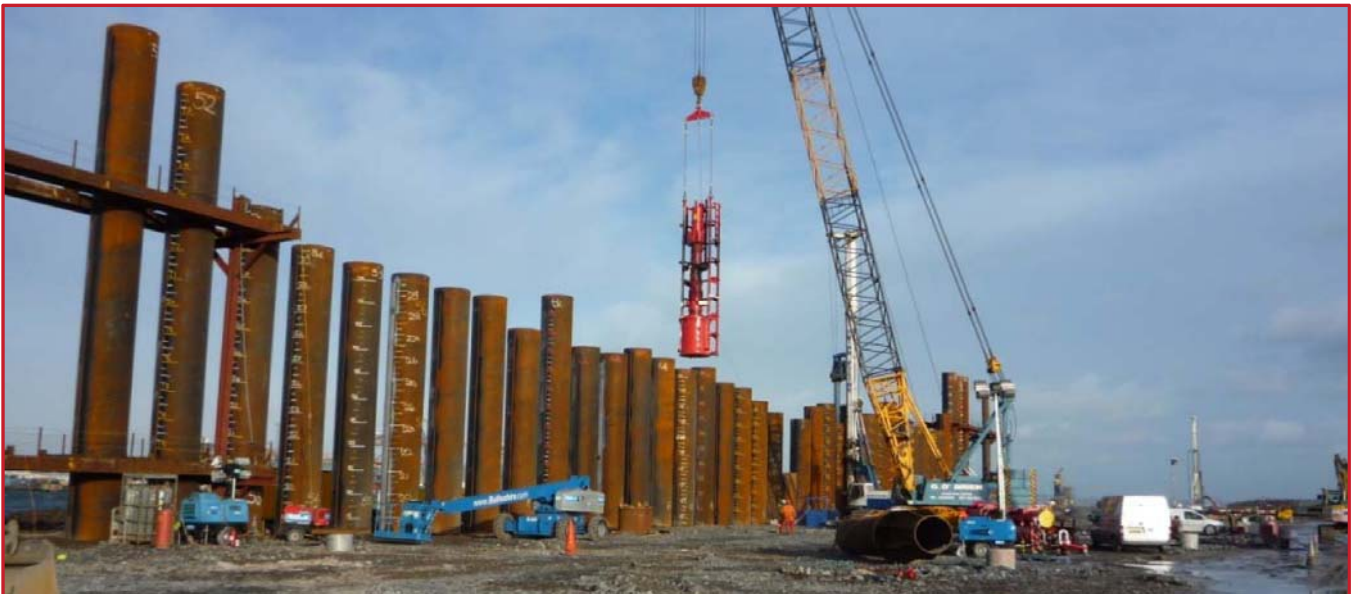
Main Contractor: Farrans Construction Ltd

Client: Belfast Harbour Commissioners

Piling Equipment supplier: ABI Equipment Limited

The time for completion of the whole project was programmed at 60-weeks but some of the major driven piling works had to be completed in just 11-weeks during the winter months of 2011/12, spanning the Christmas holiday period. It was clear that the piling works would have to be undertaken in a very productive manner with the client looking for a high quality of installation, accurate pile positioning and alignment control.

ABI Equipment Limited proposed the use of two crane suspended Delmag D100-13 Diesel Hammers mounted in rope suspended lead systems for the impact driving of the Ø1620mm



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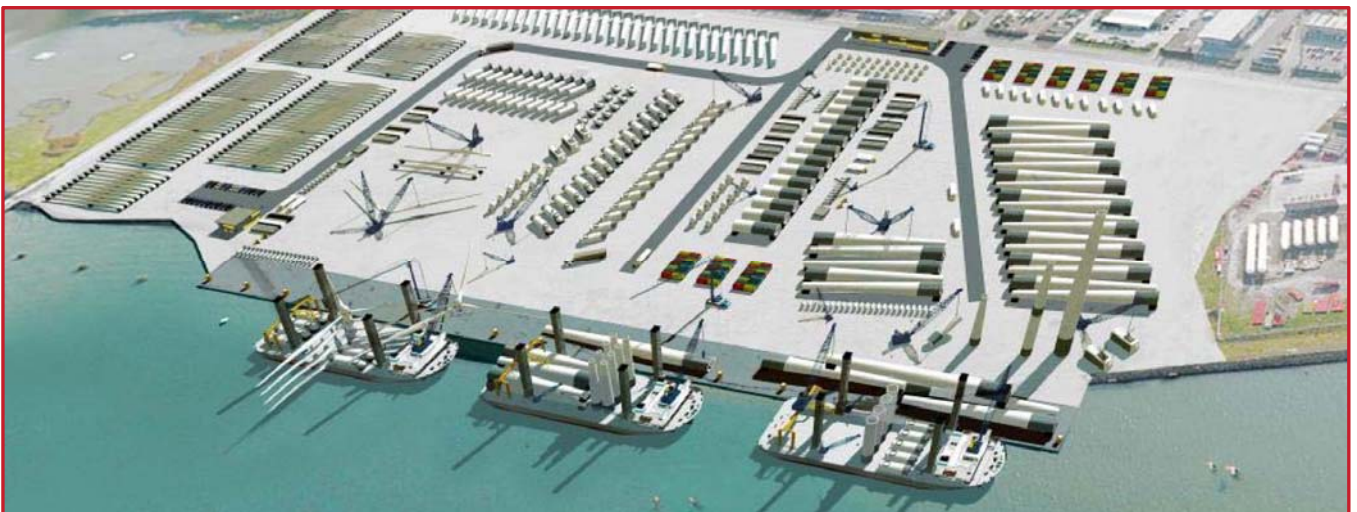
combi-wall tubes. "We liked the look of the simple, robust design of the Delmag diesel hammers and our project required us to select equipment with proven reliability if we were to meet the tight programme" said Farrans site agent, Tony Mulholland. "We could also see operational benefits from using large impact hammers that did not require the use of separate hydraulic power packs and associated, cumbersome hose bundles". All large diameter piles were successfully driven to level using the proven Delmag hammers.

ABI Equipment Limited also proposed the use of a purpose built piling rig for the rapid handling and installation of the raking anchor beam piles. Mulholland comments "our programme required that the 367No 30m plus long tubular raking piles be accurately installed in an exceptionally tight time frame. We needed to implement a mechanised approach and the rig identified by ABI Equipment Ltd enabled us to comfortably achieve our deadline with excellent installation quality." The raking piling rig was equipped with another Delmag diesel hammer, a D46 unit set-up for driving both the Ø660mm and Ø762mm tubular piles in one 30m length raking at 1:3 from vertical. "We had hoped to achieve around 6No piles per day but using the rig set-up we were easily able to exceed this.



The overall performance of the system permitted us to accommodate some lost production days when bad weather hit us" says Mulholland.

Mulholland went on to say "we received first class advice and support from the team at ABI Equipment Limited and their input made a significant contribution to the on-time completion of our piling works for this project".



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