

## Project Fact Sheet

**Client** – Roadbridge

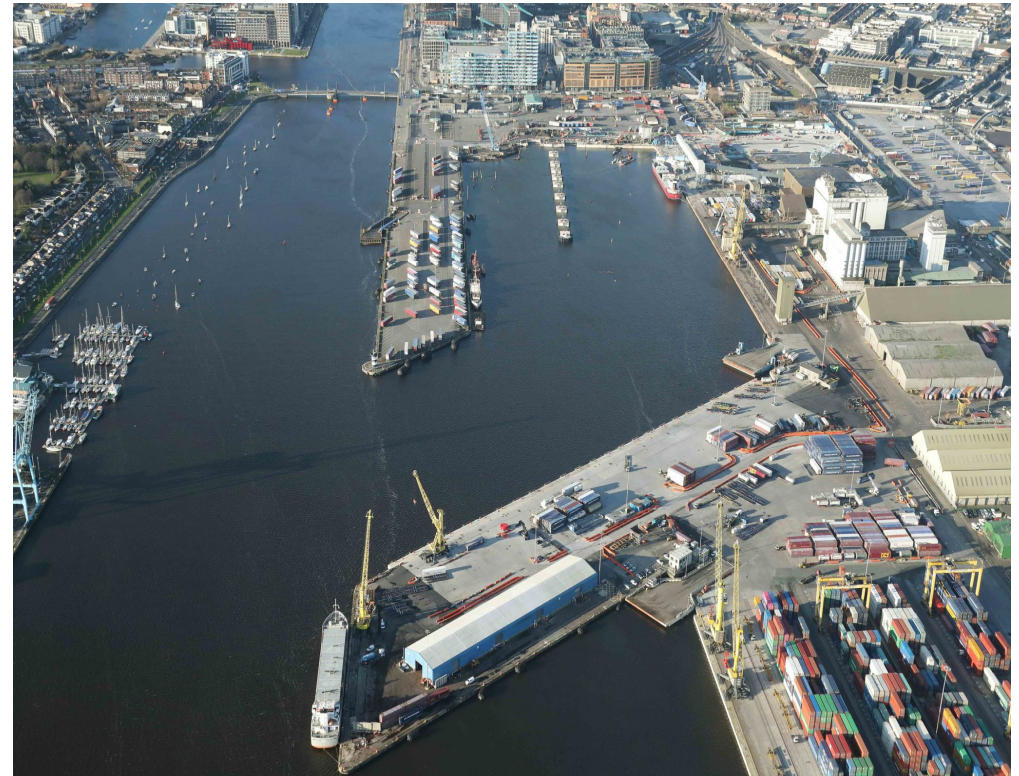
**Project** – Berth 35, Dublin Port

**Location** – Dublin Port, Dublin

**Start Date** – 21<sup>st</sup> September 2020

**Completion of Piling** – 10<sup>th</sup> November 2020

**Contract Value** – Piling contract €300k  
(€133m overall redevelopment fund)



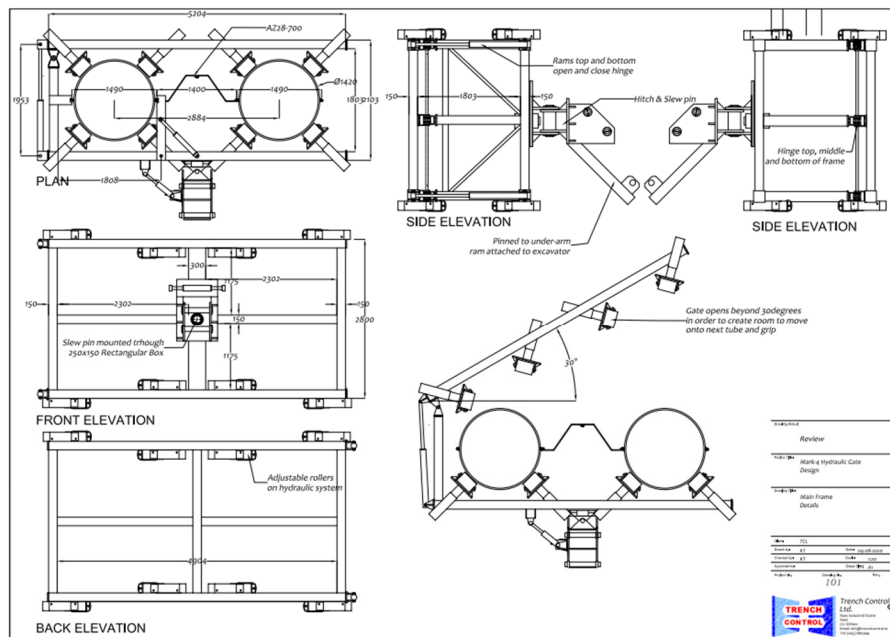
**Project Brief** – Roadbridge had secured, through a joint venture with Keating's, the redevelopment of Dublin Port and had already successfully extended and upgraded several berths prior to TCL being invited to tender. The subsequent demise of Keating's meant the JV partnership had been dissolved leaving large areas of the development plan still to be constructed. On the foot of successful combi-wall installations for other contractors using the ALPS hydraulic gate system, Roadbridge approached Trench Control to engage them as specialist piling contractors to install Berth-35 in the absence of JV partner Keating's.

The project consisted of large diameter tubes with AZ infill sheet piles with various anchor and support tubes for crane platforms and stabilisation of existing structures.

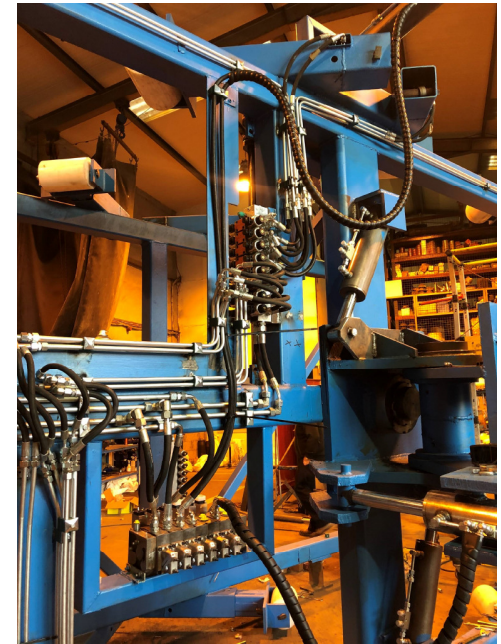
**Design** – Combi wall structure consisted of 1420mm Diameter tubes, 25mm thick wall and 36m long with AZ28-700 sheet pile infills 23m long. Anchor tubes and piles were 813mm diameter and were installed onto the existing berth land using TCL 16/20 piling rig.

26No Crane rail piles were also installed in 2 sections with TCL vibro 15m section to ground level where Roadbridge would splice weld another 15m section vertically on top and drive to refusal.

**Hydraulic Gate** – Mark 4 of the ALPS gate was produced to incorporate some upgrades and additional time saving features not least the introduction of the hydraulic rollers. This will enable TCL to make adjustments on verticality and alignment much quicker than previous version speeding up the set up time tube to tube and increasing production.



## Mark 4 Gate Design's



### Fabrication of Gate



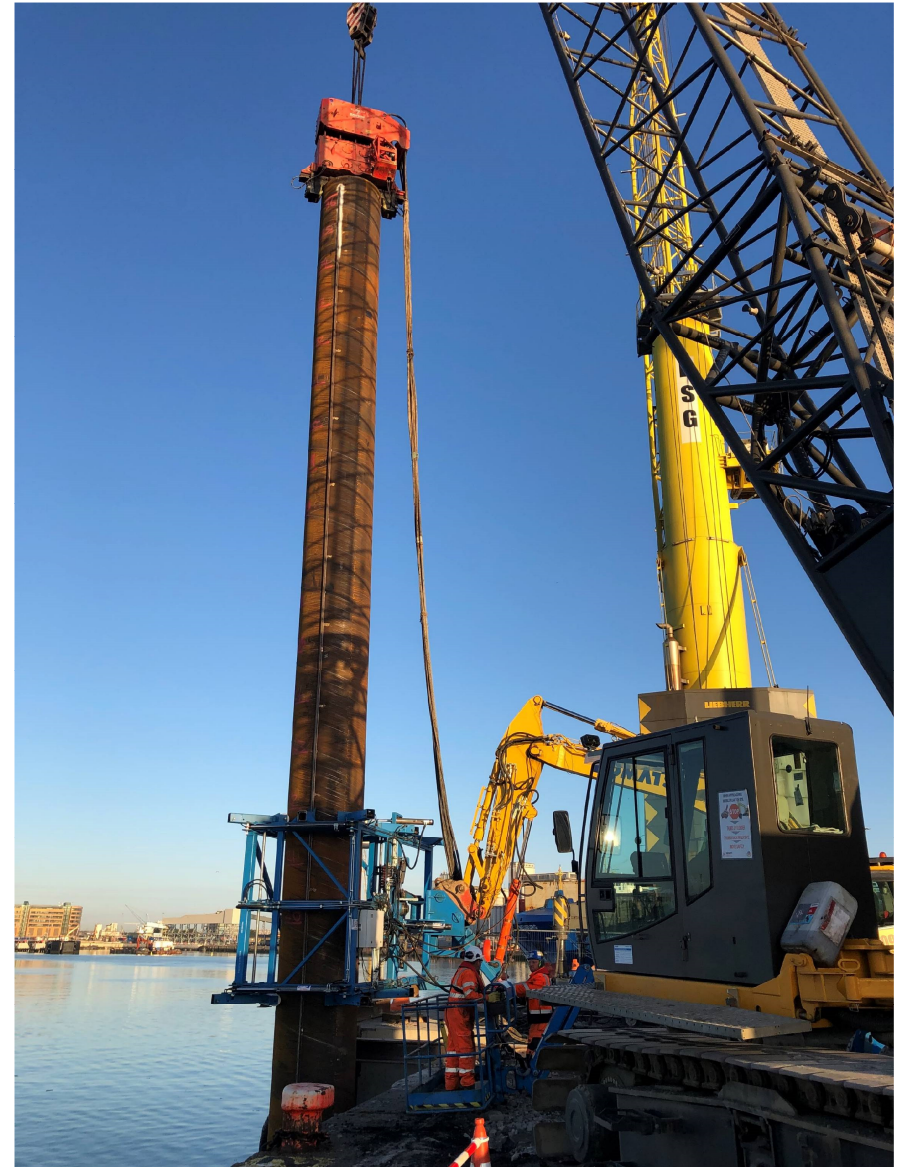
**Installation** – Combi wall tubes are lifted by crane and inserted into the hydraulic gate with the left hand clutch being GPS back sighted by the engineer until it is exactly in the correct vertical/horizontal alignment.

Once the first tube is pitched correctly the twin clamp vibro hammer is then attached and tube is vibrated into the seabed within the gate.

When the first tube has reached vibro refusal the gate is then open in a scissor movement and reset onto the tube that has just been driven. The auto level system will then take effect during the installation of pile No 2 and will adjust itself hydraulically off pile No 1 to ensure verticality and distance between piles is maintained.



Hydraulic rollers guide tube



First tube being installed



**Sequence** – Once tubes had reached vibro refusal finishing at the top of the gate, the second crew can then fall back to the first tubes and start the impacting. These tubes were impacted using BPH CG240 and were impacted vertically to design depth refusal without rotation. The infill AZ sheet piles were clutched into the tubes and vibrated to design depth completing the combi wall



Vibro refusal at top of gate



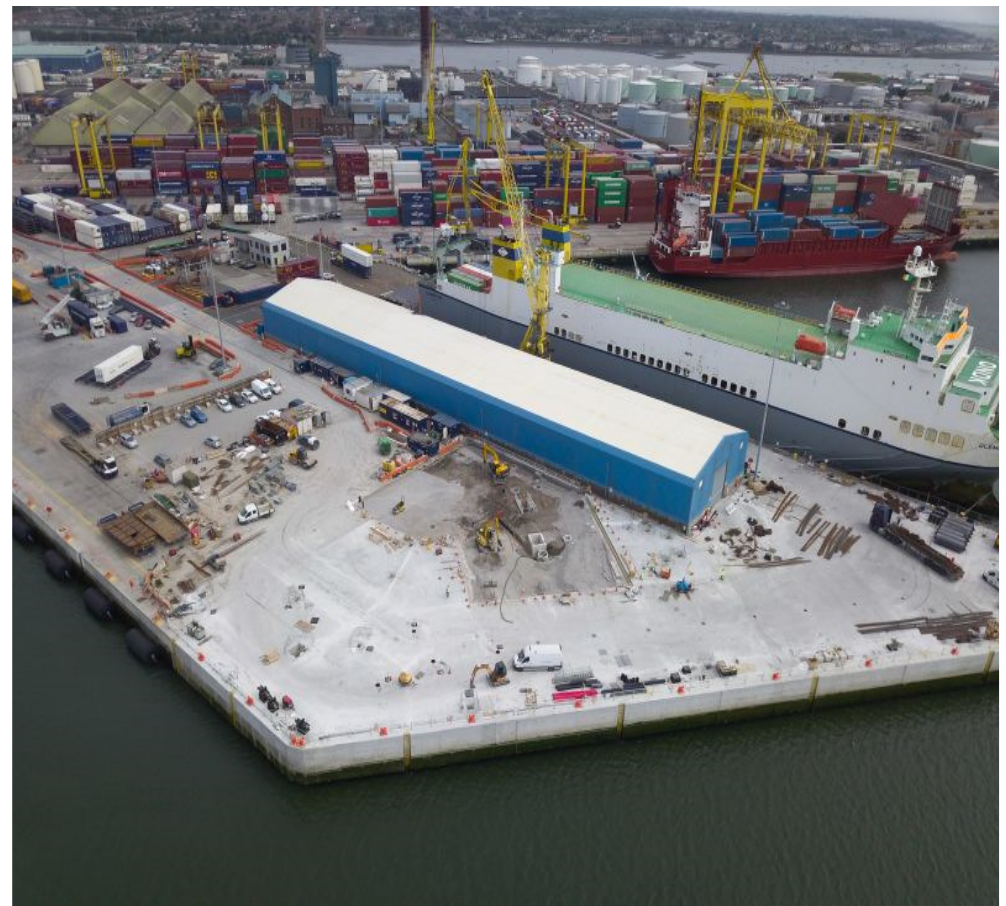
Impacting can begin



**Completion** – Roadbridge gave a tight program of works for installation of combi-wall, anchor wall and crane rail piles within 9 weeks. TCL successfully installed this in 8 weeks from start to finish. In comparison to the conventional piling method that was specified for Berth-35 by Keating's, stripping and re-using a fixed gate system, this meant that TCL completed the same works closer to 60% faster than had been previously programmed.



Final tube installed



Completed structure