



## Project Fact Sheet

**Client** – L&M Keating Ltd

**Project** – The construction of 2No slipways for car ferry crossing over Carlingford Lough

**Location** – Greenore Port, Co. Louth to Greencastle, Co. Down

**Start Date** – 23<sup>rd</sup> January 2017

**Completion of Piling** – 1<sup>st</sup> May 2017

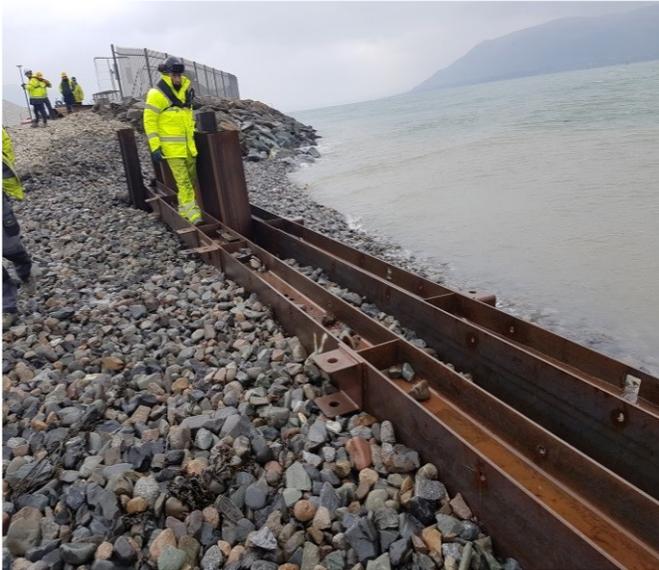
**Contract Value** – Approx. €10m

**Project Brief** – Trench Control Ltd were appointed specialist piling sub-contractor by L&M Keating Ltd to install sheet piling and steel tube supports for the proposed slipways either side of the Carlingford Lough proposed car ferry route.



**Greenore** – A cofferdam was installed using A-Z sheet piles and our Movax excavator mounted vibro hammer with a steel ground gate to keep the pile line within tolerance. The Main contractor formed a stone platform which allowed us to utilise our ABI 14/17 piling rig to close in the cofferdam.

The cofferdam was then filled to formation level with stone and dynamic plate tested by main contractor verifying the ground bearing capacity thus providing a platform for installation of steel tube fender piles using 130t mobile crane & MS16 vibro hammer.



Ground gate



Spliced tube for installation



Cofferdam flooded with tide

The steel tubes were splice welded by TCL at lengths from 22-32m and were driven from the cofferdam at 7m centres. TCL designed a self supporting piling gate that would fit over the first steel tubes installed from the cofferdam and would act as an accurate guide for the next pile to be installed into the sea. This system would then be repeated by leapfrogging onto the pile that had just be driven.



Imported stone fill



Cofferdam filled to provide working platform

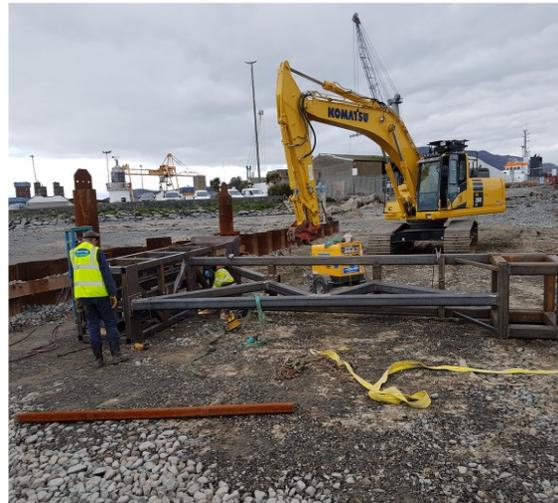


Steel tube fender piles spliced

**Piling Gate** - The piling gate was designed and fabricated in-house at our head office in Naas and brought to site for assembly in two pieces. It was inserted over the driven pile to provide the guide for installing the next tube 7m beyond the cofferdam.



Prefabricated piling gate



Gate assembled on site

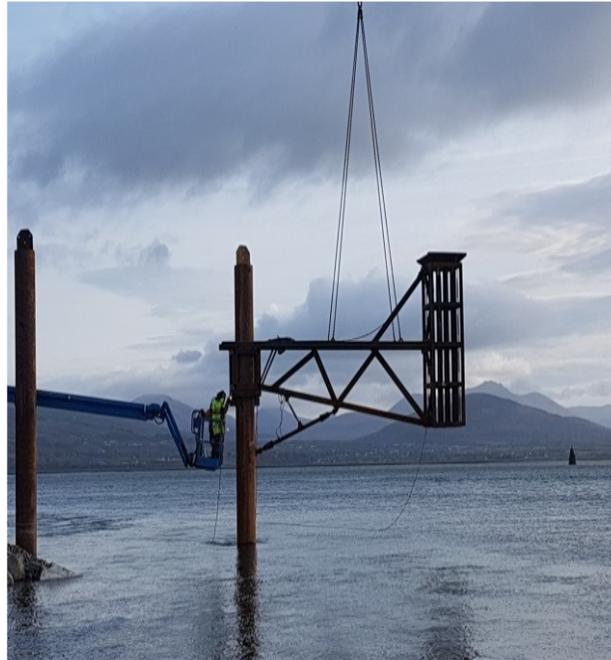


Gate installed onto last tube pile of cofferdam

**Piling Gate** - The piling gate was designed and fabricated in-house at our head office in Naas and brought to site for assembly in two pieces. It was inserted over the driven pile to provide the guide for installing the next tube 7m beyond the cofferdam.



Gate leap-frogged out over water



24m out to sea for final fender pile



130t Crane installs pile into position

The tubes were then driven using MS16 vibro hammer until refusal or formation level provided by main contractor. The process was then repeated for until the gate was set 24m off the cofferdam wall and was modified to install 910mm diameter final fender pile into position driven off the barge.

**Fender Pile** – The last fender pile was 32.3m long and weighed over 16t which exceeded the main contractor's ground bearing pressures calculated therefore it was decided not to install from the cofferdam using 350t mobile crane but to utilise the spud barge moored in Greencastle to finish this job.



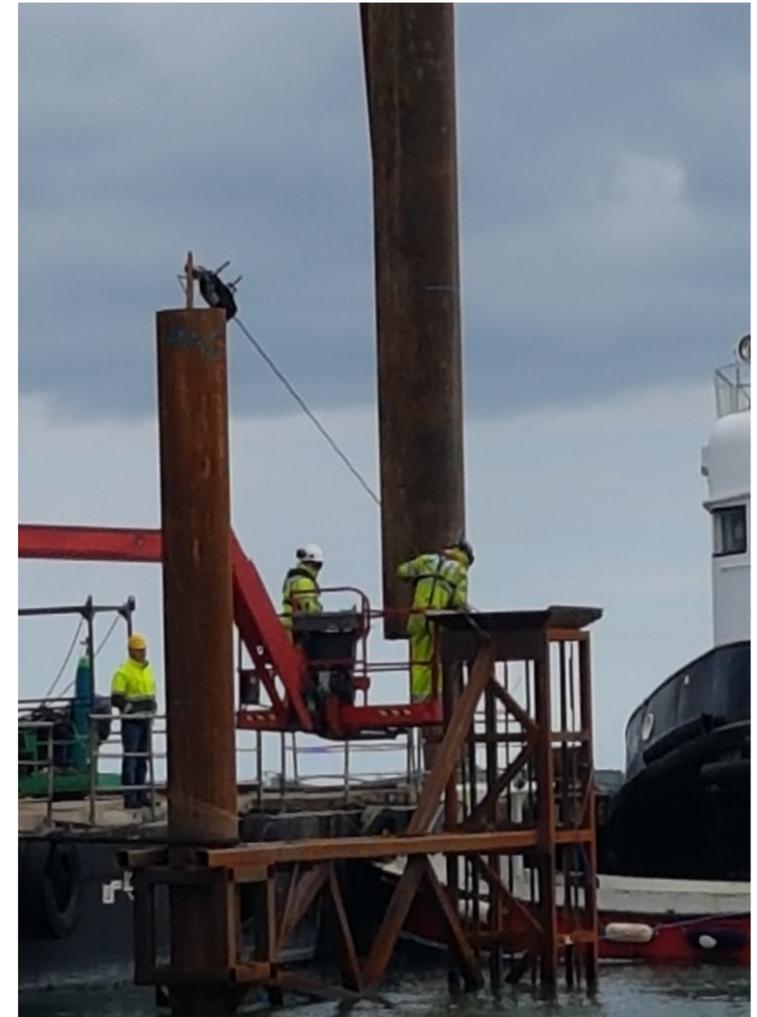
MEWP on stoned causeway from beach



Aerial view of fender pile set up



Spud barge manoeuvred into place for final fender pile



Fender pile installed at high tide



## Trench Control Ltd – Piling & Ground Support Systems

**Greencastle** – The works to the Greencastle side were also tide dependant and much of the steel tubes to be driven were done on the lowest spring tides in early morning or late evening. 40No steel tubes 610mm diameter were driven into the beach in rows of 3 using our ABI 14/17 piling rig. These were then spliced in the vertical position by TCL, back-driven with the rig and then impacted using our PVE impact hammer to refusal.



Low tide allowed piles to be installed from beach



Impacted to cut off height



Late shift catches the low tide