

Victoria 2 Terminal, Belfast

Ship shape VT2 welcomes 'next generation' vessels

£12.6m

/ Project value

June 2019

/ The project commenced

June 2020

/ The project was completed

An “important step” towards Belfast Harbour’s ambition to be recognised as “the world’s best regional port”, we completed the £12.6m upgrade of the Victoria 2 Terminal (VT2) ferry terminal ramp in June 2020. VT2 handles more than 200,000 freight units annually on the Belfast to Birkenhead (Liverpool) route. This major redevelopment has facilitated the introduction of the next generation of modern Roll-On / Roll-Off (RoRo) ferry vessels - Stena Line’s new E-Flexer series ships. Our project centred on the installation of a new double deck linkspan which allows vehicles to be loaded or discharged simultaneously over two decks of the ferry. As part of the works, we also constructed new berthing infrastructure including dolphins, walkways and an automatic mooring system, in addition to a new approach ramp to the linkspan upper deck.

The brief

Part of Belfast Harbour’s continued investment in Northern Ireland’s transport infrastructure, the upgrade of VT2 was commissioned to support the arrival of Stena Line’s new, larger vessels. We were responsible for the civil and marine construction works associated with the installation of a new double tier Roll-On / Roll-Off linkspan at the terminal..



“The upgrade of the Victoria Terminal 2 ferry terminal will provide world class facilities for Northern Ireland’s importers and exporters. By supporting the introduction of larger vessels the investment also futureproofs Belfast Harbour’s ferry facilities and strengthens our long-term partnership with Stena Line.”

Trevor Anderson
Director Operations, Belfast Harbour

“We’re delighted to have been part of this important infrastructure project for Northern Ireland, which will unlock further potential for freight capacity between Belfast and Liverpool. The facilities will provide major benefits to Northern Ireland’s importers and exporters, improving the customer experience as well as enhancing capacity on the route.”

Thomas Craven
GRAHAM Contracts Manager

The challenges

Belfast Harbour handles 67% of Northern Ireland’s seaborne freight and approximately 25% of the maritime trade of the entire island of Ireland. Given its strategic importance, we had to ensure that ferry operations remained operational throughout our 12-month programme. This was achieved through the creation of a temporary mooring structure, and the implementation of two sequential phases of works. In addition, “working over water” risk was reduced thanks to a range of methods including the onshore fitting of M&E equipment to walkways and the utilisation of precast reinforcement for dolphin structures.

The solution

Helping to “futureproof” Belfast Harbour’s facilities, the new VT2 has enabled Stena Line to increase freight capacity by 40%, reduce turnaround times, and enhance connectivity to key markets. Demonstrating continuous improvement, we achieved an 80% time reduction between the demolition of Dolphin F1 (50 days) in comparison to each of the remaining five Dolphins (10 days each). This was achieved by switching methodology and using more advanced equipment. In turn, the environmental risk was mitigated as this demolition approach facilitated full containment. Piles were driven with a 26 tonne vibrating hammer to refusal, before a persuasive hammer was adopted to drive to design level with a soft start procedure. All dolphin piles were installed using our bespoke hydraulic piling gate system from a 280 tonne crane barge. Highlighting further efficiencies, we saved approximately eight weeks of design and fabrication time by reusing the existing linkspan structure as our piling gate. By burning off large sections of the structure, with a view to reusing it, the need for on-site welding was significantly reduced.

Outputs & Benefits

- Sequence:** We kept services operational with a temporary mooring structure and two sequential phases of works. The two phases ensured the seamless operation of the VT1, 2 and 3 berths with no disruption to ferry services. Notably, we installed a temporary mooring pile and buoy before starting our phase 2 works to allow VT2 vessels to berth at the existing VT1 linkspan RoRo berth for uninterrupted Stena Line operations
- Surveys:** Two archaeological surveys were carried out with a report produced and presented to the Department of Agriculture, Environment and Rural Affairs (DAERA). We also had a robust marine mammal protection system in place, with surveys conducted by an experienced marine mammal observer during piling works
- Recycling:** We recycled large amounts of materials for reuse in the project including crushed material in the hinterland area for bankseat piling, hydraulic ram frames from the demolished linkspan for various piling gates, and the use of demolished dolphin sections for kentledge



For more information on how we’re delivering lasting impact:

+44 (0) 28 9268 9500

info@graham.co.uk

graham.co.uk

GRAHAM