

Tilbury2 Port Expansion, London

Fort Road Bridge facilitates expansion of the 'UK's fastest growing port'

£105m

/ Project value

March 2019

/ The project commenced

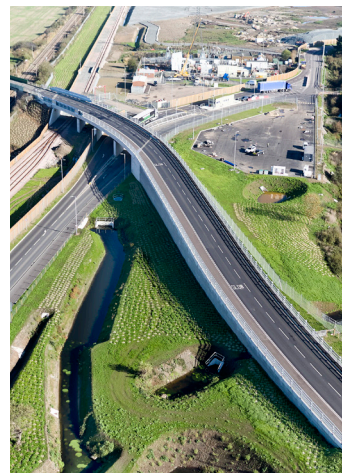
November 2020

/ The project was completed

As part of the "Nationally Significant Infrastructure Project", Tilbury2, we constructed two separate bridge structures that continue to support "fast, modern distribution services" at the UK's fastest growing port. Officially opened on July 4th 2020, the four span Fort Road Bridge was described as a "key milestone in the development" of the overall Tilbury2 scheme. A component of our Terrestrial Works package, it was positioned onto pile supported abutments at each end and onto three intermediate pile supported reinforced concrete piers. Additionally, an articulated bridge/linkspan was also designed, delivered and installed within the tidal estuary beyond the existing sea wall and flood defences. This project was completed in line with our Marine Works programme.

The brief

Appointed Principal Contractor and Designer by Port of Tilbury London Ltd, this ICC Design and Build (fixed price) contract involved the creation of a new port terminal and associated facilities inclusive of the Fort Road Bridge and an articulated bridge/linkspan. Tilbury2 is central to the Port of Tilbury's wider £1bn investment programme.



"I want to thank the team from GRAHAM who have delivered this new bridge during these challenging times."

John Speakman
Port of Tilbury - Senior Asset Manager

“The reopening of Fort Road and the new bridge is another milestone in the development of our new port, Tilbury2. The reopening will be of great benefit to many people. I want to express my thanks to the local communities for their patience and continued support as we build this new port in Tilbury.”

John Speakman
Port of Tilbury - Senior Asset Manager

The challenges

A Development Consent Order restriction on the alignment of road/rail, with permission for a 1m deviation from the road alignment, became a particular challenge for a short section of the Fort Road Bridge over a Network Rail line. In collaboration with Thurrock Council, we agreed and designed a bespoke engineered structure with a new alignment which resulted in a cast in-situ four span bridge (two spans for highway, one for rail and one empty) that has a vertical and horizontal curve and a super elevation. Notably, the piers vary throughout the structure due to the curve, ranging from 55 degree angles to 59 degree angles.

The solution

Our Tilbury2 development has helped facilitate the expansion of the Port of Tilbury and supported its “regional and national economic growth”. The four span Fort Road Bridge over the new highway and new railway, which ties into the existing bridge, was an integral element of the Terrestrial contract. The bridge deck was formed in full depth in-situ reinforced concrete and is curved to a plan radius of 180m on the carriageway centreline. Furthermore, the deck incorporates a cross camber to provide the required super elevation for a 180m radius curve. The in-situ reinforced concrete deck is structurally continuous over intermediate piers, meaning that joints in the deck or surfacing over the intermediate piers were eliminated. We delivered new rail works, pavements, cabling and electrical connections, as part of the road and bridge works. Working in partnership with our specialist subcontractor, Ravestein, we also designed, engineered and installed (Marine package) an articulated bridge/linkspan – an 85m structure, with a two-lane and pedestrian walkway, suitable for double stack Ro-Ro traffic. The main dimensions of the pontoon incorporate a length of 60m and a width range of 34m to 45m.

Outputs & Benefits

- Prestige:** The Port of Tilbury is London’s major port, and its strategic location makes it a natural point for distribution with 18m people living within 75 miles
- Productivity:** We fully utilised the Saturday shift window throughout our programme, maximising the working time available to ensure our marine plant worked efficiently
- Innovation:** We introduced a GRAHAM designed, bespoke floating piling gate
- Covid-19:** The Fort Road Bridge was handed over in July 2020 in the middle of the Covid-19 pandemic
- Integration:** Both of the Terrestrial and Marine works’ designs and testing and commissioning were fully integrated, providing a robust whole site testing and commissioning programme



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

+44 (0) 28 9268 9500

info@graham.co.uk

graham.co.uk

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