

TMS Maritime is a leading UK specialist in marine civil engineering, ancillary floating plant and diving services

Client: **Associated British Ports Ltd**

Duration: 18 weeks

Value: £877,000

March 2016

Project: **West Wharf Slab Replacement, Millbay Dock**

Requirement:

The existing suspended jetty at West Wharf is in part over 100 years old and exhibiting significant deterioration of the structural slab and supporting concrete structure. The underside of the suspended slab and secondary beams have suffered from fairly significant spalling of the concrete, allowing the lower, corroded reinforcement to be exposed to the marine environment. West Wharf is an operational berth, used principally by Brittany Ferries for their Plymouth-Continental ro-ro ferry services. The scheme involved the replacement of the existing 131m long by 18m wide upper concrete jetty slab with a new reinforced concrete slab spanning to the primary supports of the underlying reinforced concrete structure. Furthermore, this works had to be completed within a four month window, two months of which involved working around continuing ferry operations and ABP's requirement to have right of access along the leading edge of the jetty to securely moor the ferries.

Solution:

TMS Maritime were appointed as the Principal Contractor for the works, which started with a three dimensional geospatial scan of the underlying reinforced concrete birdcage structure. This enabled the new supporting beams to be accurately positioned over the existing columns and ensure correct load transfer from the new structure to the old. Part of the old supporting structure was formed from single skin brick arches with concrete cast directly on top.

The concrete had to be broken away from around these arches whilst maintaining their structural integrity. The works also involved the demolition of a small Fuel Filling Control Building, re-building it to new dimensions in a slightly different position. During the full course of the works, 2000t of existing concrete was broken out and removed, 1.3km of crane and rail track were broken out and removed, and 900m³ of reinforced concrete was cast.

Approximately 75m of new rail track was cast into the new slab to enable the travelling passenger loading structure to remain operational. The works were completed in March 2016.

