

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

Client: Farrans Construction

Value: £5,270,000

Project: BAE Deep Water Berth, Glasgow **Duration: 14 months 2021-22**

Description:

TMS were appointed by Farrans Construction to undertake the Deep Water Berth Deepening Works for BAE Systems in Glasgow, which took a total of 14 months to complete.

The scope of the project included:

- Initial Backhoe Dredge of 27,000m³
- Precast concrete breakout and removal
- Rock breakout to revised berthing pit depths to accommodate precast concrete to -11m CD
- Bed levelling
- Precast concrete placement
- Underwater In-situ Concrete
- Re-siltation Completion Dredge

This incredibly technical project had many factors that required innovative engineering, not only to enable the dive team to place precast concrete blocks to tight tolerances but also to do this in the challenging conditions of zero visibility and continuous re-siltation in up to 17m water depth during the winter. Virtual reality technology was used to prepare divers beforehand and extensive planning of temporary works systems was required to accurately place bed levelling frames. A diving barge was used to allow the divers to position themselves just above the river surface in the required locations. Divers were involved with the frame set up to familiarise themselves with the frame levelling devices as well as the interlock systems to facilitate working in conditions of zero visibility.

Overall, 120 precast units weighing a total of 750 tons, were accurately placed within tolerance and then stitched together with in-situ rebar and circa 150m³ of specialised high specification underwater concrete whilst constantly battling against continuous re-siltation. Due to the professionalism of our team, in excess of 2,200 hours' diving time was accrued over a 6 month period (equivalent to 12 hours/day 7 days per week) without any safety incidents being incurred. Inspections were carried out in the form of physical measurements and 3D Bathymetric surveys to demonstrate the accuracy of the placement of units. Finally, on completion, a re-siltation dredge was undertaken.