



Breathing New Life into Stonehaven Harbour's Aging Pier Infrastructure

Case Study

To revive Stonehaven Harbour's aging piers, TMS Maritime Ltd and DYWIDAG collaborated to deliver an innovative and efficient solution that ensured the piers' long-term stability and sustainability, completing the project ahead of schedule and under budget.

PRODUCTS

Tied Rods

LOCATION

United Kingdom

SCOPE

Supply

TIMELINE

05-2022 - 11-2022

SCOPE

Supply

OWNER

Aberdeenshire Council

GENERAL CONTRACTOR

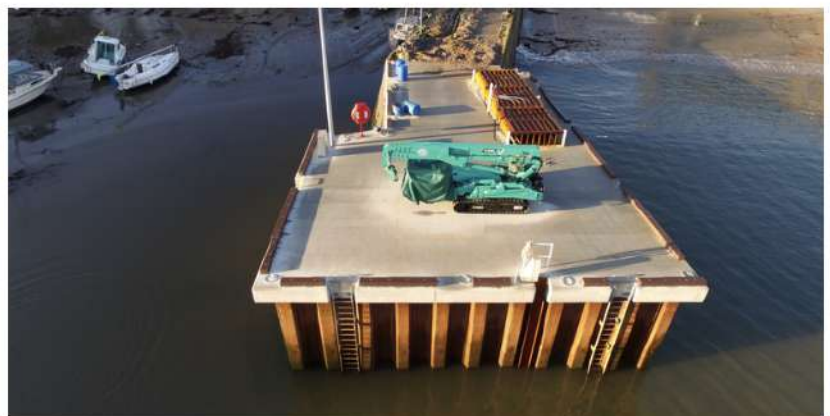
TMS Maritime Ltd

Context

Stonehaven Harbour in Aberdeenshire faced the challenge of aging pier infrastructure, putting the Net Pier, South Pier, and Fish Jetty structures at risk of failure. To address this issue, Aberdeenshire Council appointed TMS Maritime Ltd (TMS) as the Principal Contractor, relying on their extensive maritime expertise to develop innovative solutions that would ensure the long-term sustainability and safety of the harbour.

In the initial planning stages, TMS collaborated with DYWIDAG to identify the most suitable engineering solutions that would not only reinforce the existing structures but also minimize disruption to the local community and environment, particularly during the busy summer tourist season. Careful consideration was given to the project's logistics, including the selection of appropriate equipment and methods for the installation of piles and other materials, to ensure minimal impact on the local community and meet the budget and timeline requirements.

The exposed coastal location presented a further challenge. Strong winds meant that the working window was constrained to the period between May and November, as the piers are frequently inundated with seawater outside these months.



Solution

One of the key solutions employed in this project involved the installation of an interlocking steel sheet piled wall system on three sides of each pier, enclosing the existing piers. This approach provided robust support and protection to the aging structures. Through a thorough analysis of the site conditions, material requirements, and potential risks, TMS and DYWIDAG selected the DYWIDAG Marine Tie Rods to provide the necessary support for the new sheet piled quay wall system. These were used to support the berthing face retaining wall, ensuring the stability and resilience of the new quay wall.

50mm diameter Gewi Bars, varying in length, were utilized to provide six longitudinal tie rods, extending from 'dead-man' anchors at the existing old quay wall to terminate through the back walings of the new quay wall. These were then backfilled to form new pier substructures. The S355 grade gusseted angled plates, designed and manufactured by DYWIDAG, were installed by TMS to provide anchorage for the inner corner bracing ties, further reinforcing the newly constructed sheet piled quay wall. Additionally, a sacrificial anode cathodic protection system was designed and installed to further enhance the longevity of the sheet piles.

The project was an exemplar of innovative engineering and logistical planning, as TMS utilized Movax and impact hammer piling equipment, supported by cranes, to install the piles. Furthermore, a modular barge and tugboat were employed to transport most of the plant and equipment between the piers during the tourist season, minimizing disruption to local and tourist traffic. Finally, careful planning to take advantage of good weather ensured that TMS was able to complete the project ahead of schedule and under budget, without having to work into the winter months.

The successful collaboration between TMS and DYWIDAG on this project resulted in the revitalization of Stonehaven Harbour's aging pier infrastructure ahead of schedule and under budget, whilst also ensuring the long-term safety, functionality, and sustainability of this essential maritime facility.

