



Isle of Grain Jetty Repairs

Frankham's Maritime Engineering Team has been working with Aggregate Industries in the refurbishment of their jetty on the Isle of Grain.

Overview

The jetty was inspected by the team in the Autumn of 2021 and designs were produced to restore the asset including timber and box fender replacements, concrete repairs and protective coating to steel piles. Frankham managed the tender process on behalf of Aggregate Industries setting out a scope of works and assessing various contractor's suitability.

The refurbishment works began in January 2024 with Frankham supervising the project on behalf of Aggregate Industries. TopBond is the Principal Contractor and are utilising their 250T jack up barge (Topjack) to complete the works on the jetty head and approach.

Frankham have worked with both client and contractor providing additional technical support to mitigate site issues, as well as managing the NEC4 contract.

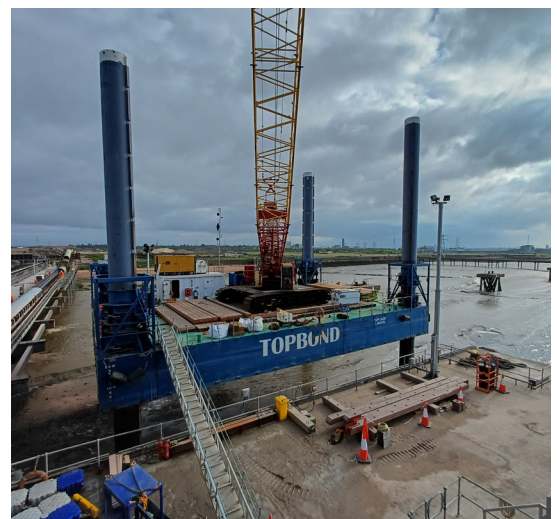
The project is now over 80% complete, with the new fenders installed. The project will be complete by Autumn of 2024.

Client:
Aggregate Industries

Value:
£2.1m

Services:
Civil Engineering
Maritime Engineering
Risk Management Services

Start and End Dates:
May 2021 - August 2024



Overview *Cont.*

The in-house activities undertaken by Frankham for project comprised:

- Structural inspection.
- Design for tender, including berthing and mooring analysis of the structure, and specification of timber replacements, concrete repairs and paintwork.
- Creation of tender documents for the Client and assessing Contractor suitability.
- Contract development between client and contractor legal teams. Management of an NEC4 Option A contract.
- Managing environmental licenses for the contractor to operate 250T JUB on riverbed. This included working with the Marine Management Organisation (MMO) to apply for a full license and contracting a specialist unexploded ordinance contractor to assess risk.
- Project supervision of works, acting as a clerk of works. Assessing contractor payment applications and issuing contract instructions. Judging programmes and compensation events in accordance with NEC4 contract.
- Managing risk on site and checking the Contractor's CCPs and risk assessments (Frankham Risk Management).
- Responding to technical queries, managing programme and assessing Compensation events on behalf of the Client.
- Mitigating issues on site with additional engineering designs. Designing solutions to accelerate programme (including plate solutions to reduce drilling through heavily reinforced wall and to mitigate drilling at low water marks).
- Working with the landowner to pass on any design changes and responding to comments.
- Chairing monthly meetings and completing weekly site visits to assess project progress.



Challenges

Higher than expected reinforcement in the jetty head meant that the programme would have been delayed by 6 weeks due to the additional time spent drilling through reinforcement, not to mention the probably weakening of the structure by doing so. This was managed through the design of new stainless-steel plates, which allowed for multiple timbers to be bolted on to one set of fixings.

The number of fixings could also be reduced from 9 to 7 bolts by using larger fixing bolts. Frankham provided the design for these new plates. As such the delay could be mitigated by 33%. Frankham's knowledge of innovative materials, creative solutions, and good management allowed the Contractor to save on costs, programme and provided environmental benefits which were ultimately passed to the Client.





Innovation and Added Value

Frankham played an active role in managing the contract on behalf of the Client. Our project team were able to support the Client with their experience in managing a competitive tender for specialist marine based works and provided additional resource to support a lean Client team. Frankham's unique ability to provide a fully in-house, multidisciplinary service was key to our success. This service included engineering design, contract administration, risk management, and Principal Designer duties. Together, these capabilities allowed us to perfectly complement the Client's operations team.

Value was provided to both the Client and Contractor by ensuring that the two parties communicated effectively with an intermediary in between.

This meant that conflict was avoided as much as possible and compensation events could be managed effectively. There were challenges during the project such as the unexpected high volume of reinforcement, which was managed effectively due to this relationship. Engineering support was given to allow the most efficient way forward with a new plated design which lowered costs for the Client and sped up programme for the Contractor.

In terms of the engineering of the project. Innovation was provided by innovative use of reused timbers and UHMW-PE in non-critical applications to reduce the amount of steel required, whilst still proving suitable resistance for the harsh marine environment.



Sustainability

Frankham's design allows Aggregate Industries to continue operating the jetty for the next 30 years. Timber fenders which were in fair condition were reused and refixed to reduce the material requirement for new hardwood timbers.

Where possible the number of fixings to the jetty head were minimised thus reducing carbon impact. By concentrating resources on critical areas for improvement, in alignment with economic sustainability principles of asset management, sustainable practices have been adopted wherever possible.

Continuous Improvement

Risk reduction meetings have been held whenever an early warning notice was raised. By adhering to these strict procedures, our project team have been able to mitigate risks such as clashes in shipping operations collaboratively with both Client and Contractor.

Improvement has been continuous throughout the project where Frankham and the Contractor have been able to draw from experience on other sites to raise improvement notices specific to the Isle of Grain, ultimately improving safety for all.



“Overall very happy with the service. The team came in, made an assessment, formed a plan for the project and stuck to the plan and delivered. Very professional, very competent and very good service. I’ve recommended Frankham internally and externally”

*Gary McNeely, Area Manager
Aggregate Industries*