FRANKHAM GROUP

Putney Pier Inspection and Design Preparation

Inspection and design preparation of mooring horns to accommodate modifications to the pontoon at Putney Pier.

Client:
Livett's Ltd

Services:
Maritime Engineering

Start and End Dates:
January 2024 - February 2024

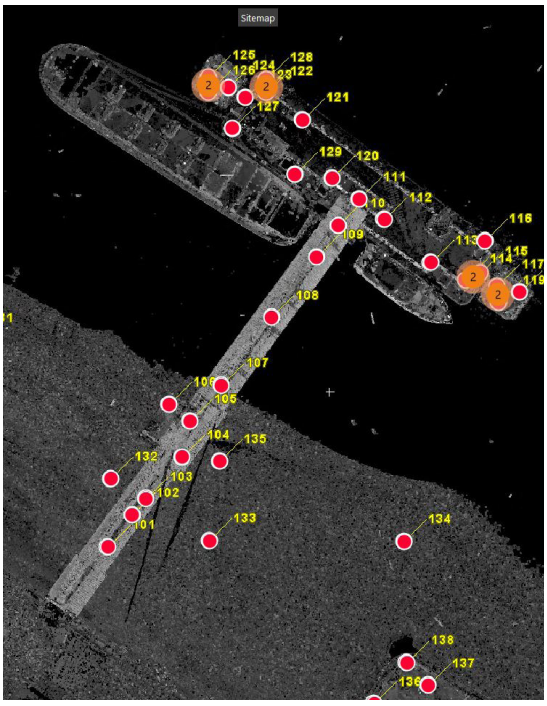
Overview

Frankham were appointed by Livett's Ltd to inspect their pier at Putney and to prepare the design of mooring horns to accommodate modifications to the pontoon. To provide a detailed and accurate representation of the existing structure, we prepared a 3D Revit model of the existing structure. This model intricately combined details of the dolphins and their connections to moving components, ensuring accuracy of up to 10mm and accounting for any deviations from plumb.

Our engineers calculated berthing energies and mooring loads essential for determining the loads acting on the structure. These loads were used to assess the structure and its ability to withstand the dynamic forces exerted during berthing and mooring operations, ensuring the safety and stability of the refurbished infrastructure.

Additionally, detailed design modifications were formulated to accommodate alterations to the mooring horn runners, facilitating seamless integration with the pontoon. The design of the mooring horns is engineered to withstand the demanding conditions of marine operations while ensuring optimal functionality and longevity. Fixing details for new timber fenders were provided to protect the dolphins from accidental impact damage.

The ultimate objective of the project is to ensure the safety, reliability and compliance of the maritime assets with operational standards. The comprehensive designs addressing structural concerns and implementing necessary enhancements, the refurbished brows, dolphins, and pontoon will serve to benefit the stakeholders and users of Putney Pier, ensuring continued operational efficiency and safety for all.



Challenges

One of the primary challenges faced was the limited accessibility to the horn runner's plastic rollers, crucial components facilitating the movement of the pontoon in response to tidal changes.

Typically positioned in a manner that severely restricted access, these rollers are prone to excessive wear and tear, necessitating regular maintenance. Our engineers developed a unique mechanism enabling the removal of the steel pins supporting the plastic rollers. This bespoke design innovation will allow for the seamless replacement of the rollers, facilitating easier and more convenient maintenance procedures and compliant with the CDM regulations.

Continuous Improvement

The Frankham maritime team consistently enhances its learning curve from project to project, showcasing a commitment to continuous improvement. Our projects are meticulously planned and executed with efficiency, utilising appropriate equipment and personal protective equipment (PPE).

The successful execution of this project stands as a testament to the team's growth, led by a skilled graduate engineer with a flourishing expertise in maritime designs.

Innovation

Frankham implemented 3D Revit modelling technology which allowed for the creation of precise design of intricate details within the moving structure. This technology facilitated informed decision-making and enabled proactive planning for refurbishment efforts.

The use of sophisticated mooring analysis software allowed us to accurately calculate the proposed loads and showcased our commitment to ensuring structural integrity while optimising operational efficiency. We identified potential risks and recommended tailored solutions to mitigate, ultimately safeguarding and ensuring reliability of the maritime assets.

Sustainability

Located along the River Thames in London, Putney Pier stands as a historic and iconic landmark, celebrated for its picturesque vistas and diverse recreational offerings.

Beyond its role as a recreational destination, Putney Pier holds significant importance within the local community, functioning as a vital transportation link for residents commuting to and from central London. Its strategic position and accessibility make it a pivotal transport node, enhancing connectivity and accessibility throughout the area.

The refurbishment of the pontoon at Putney Pier underscores the project's commitment to sustainability. By facilitating continued access to Uber Boat by Thames Clippers services, which utilise Europe's first hybrid high-speed passenger ferry operating with zero tailpipe emissions in Central London, the project promotes eco-friendly travel alternatives.

By encouraging the use of this sustainable mode of transportation, the refurbishment initiative aims to reduce reliance on less environmentally friendly modes of travel, thereby promoting greener and more eco-conscious journeys for commuters and visitors alike.