

RIVER THAMES

PORT OF LONDON AUTHORITY

STRUCTURAL INSPECTION

Frankham were commissioned to conduct a structural inspection of a 200m stretch of wall along the River Thames. The river comprises no less than 11 different types of construction including stone, masonry, concrete, plate steel and steel sheet piles.

An initial site reconnaissance inspection was carried out by a Frankham Engineer accompanied by a client representative and a contractor who had agreed to provide budget costs for remedial repairs specified, which allowed for a rapid turnaround on report delivery.

The structural inspection was undertaken by a Frankham Engineer assisted by Port of London Authority's (PLA) "Driftwood" and "Dory" vessels. The PLA's "Driftwood" vessel provided a welfare base for operatives where toilets, handwash basins, kitchenette and eating area were provided. This maximised the amount of time our operatives could spend inspecting the structure.

The smaller jet propelled "Dory" vessel was used to get close to the structure and allowed our operatives to inspect from the shore (at low tide).

Inspections were carried out during both low and high tides to ensure that as much of the wall was inspected as possible within the given shift allowances.

Hand tools and ultrasonic thickness measurement equipment was used to assist with the inspection providing the client with a snapshot record of material thicknesses at the time of inspection, allowing the client to monitor and compare with future inspections.

The key driver behind the project was to support potential future developments on the landside area of the river wall.

As part of the collective deliverables to the client, the PLA provided a combined bathymetric (below water) and laser scan survey together with a high-resolution video of the wall and surrounding area. These surveys were then converted into a 3D point cloud which can be used to create models for visualisation and structural analysis. Providing the client an accurate record from which future development could be based.

The use of the "Driftwood" vessel allowed for extra inspection time, efficient use of time as with no time wasted having to transport our engineers back to shore for comfort breaks.

As with most maritime projects, access can be a challenge. With support from the PLA's vessels, we were able to inspect the river wall at both high and low tides to ensure as much of the structure was inspected to within touching distance as possible.

During the low tide inspection, our engineers identified the early stages of an aggressive form of corrosion known as "accelerated low water corrosion". Identifying this defect early and recommending a remedial strategy has given the client the tools they require to stop this form of corrosion causing significant damage and incurring future cost penalties.

Due to its age, an absence of as built construction records is common with infrastructure in London. To aid our observations and recommendations, our engineers conducted a historic record search to shed light on the history of the structure and what may lie beneath the surface such as the old dock walls.



FRANKHAM

Client:
Port of London Authority
Sectors:
Transport - Port/Marina
Industrial - Maritime

Services:
Civil Engineering

