



Structural Inspections, Brownsea Island



Frankham were commissioned by the National Trust to complete the structural inspections of the Maritime and reservoir assets located on Brownsea Island, Dorset.

The inspections were required to assess their deterioration, effectiveness against flood risk and damage to sensitive ecology and historic structures which are highly valuable to the island visitors and habitants.

Brownsea Island, located in Poole Harbour, is a captivating destination renowned for its rich history and stunning natural beauty. Brownsea Island is known as the birthplace of the global Scouting movement. This National Trust-managed island is a natural haven, featuring diverse habitats like woodlands, heathlands, and a lagoon. It is particularly famous for its population of red squirrels and various bird species, offering visitors both historical significance and beautiful wildlife.

The inspections were conducted by professionally qualified civil engineers from Frankham, using both tactile and visual inspection techniques. The inspections generated a detailed and accurate record of existing defects for each structure. Our team utilised specialised software to document all observed defects, creating defect location sketches on drawings of each structure.

From the structural inspection, condition reports were prepared with recommended remedial repairs presented in a low, medium, high or very high-risk schedule.

Client

National Trust

Services

Maritime Engineering

Sector

Maritime

Value

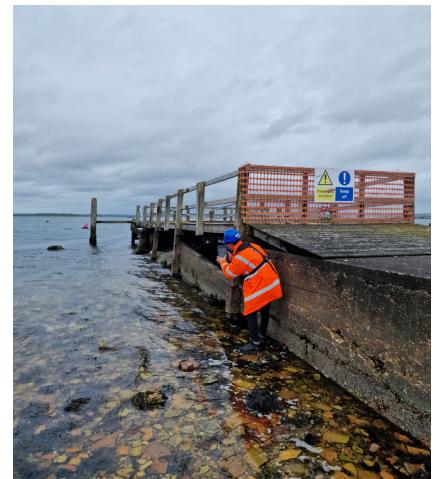
£13.9k

Duration

May - June 2024

The condition reports assessed the need for amendments to the dam structures and spillway in light of the lake volume and the magnitude of potential floods. Reports and remedial repair recommendations were also made for the Maritime structures (Pottery Pier, Lagoon Sea Wall and the Vilano Wall).

The recommendations considered not only the short term requirements but also the strategic aspirations to protect the historic value, ecological and sea level rising impacts of the next 75 years and beyond.



The birthplace of Scouting

Did you know Brownsea Island is the birthplace of the Scouting movement? Over 100 years ago, a man named Lord Baden-Powell had been thinking for some time about the benefits of training in 'scouting skills' for young people and went on to prove his idea in practice.

On 1 August 1907, Lord Baden-Powell sounded his kudu horn to signal the start of the first experimental Scout camp. Ten public school boys together with ten local lads from Poole and Bournemouth Boys' Brigade sailed across to join the camp.

The boys were all involved in plenty of activities including:

- Tracking, fire lighting, cooking and observation
- Study of birds, plants, animals and stars
- There were sessions on loyalty, courage, unselfishness, charity and thrift

During the week long camp, the boys learnt how to cook, look after themselves and work together as part of a small team. Adventure, learning by doing and self-reliance were at the core of the Brownsea Island camp. In the evenings, Baden-Powell inspired them with campfire 'yarns' about the heroes of old. The camp was a great success and its legacy still lives on today.

Baden-Powell's first experimental camp on the south shore, Brownsea Island 1907





Project Development

This project aligns with the National Trust's strategic asset management plan, contributing to a program of maintenance and inspection works. Our inspection established the current condition of all structures and identified any necessary repairs and/or required maintenance. This information will be used to determine the associated costs and develop a costed forecast for the next 2 to 3 years, ensuring the continued safety and functionality of these structures, where applicable.

Frankham's inspection and subsequent remedial works recommendations have helped to support National Trust in ensuring their sites are safe and secure for the island's visitors and residents.

“

During the tendering process, Frankham were attentive and thorough, wanting to make sure that they fully understood the brief and the island, ensuring that their pricing was as accurate as possible.

Upon appointment, as a new consultant, Frankham held online meetings with the team, ensuring that they had covered all of the queries and planned the logistics of the surveys. The engineers who carried out the surveys behaved professionally, respectfully and diligently whilst on the island, and their communication was always clear and prompt. They held an online meeting with the team to discuss the draft report, to make sure that they had answered the brief, before producing their final report in a timely manner.

Overall, we have all been very happy with Frankham in terms of their conduct and service delivery. They met the requirements of our brief and we would not hesitate to use them again in the future.

”





Innovation

The project team conducted the inspection efficiently by using specialist inspection software on tablets. This advanced tool facilitated the systematic recording of every identified defect on the inspected structures, noting its location and corresponding structural element. The implementation of the software not only streamlined the inspection process but also significantly reduced the post-inspection workload and ultimate cost to the client.

The software had a function of automatic report generation at the end of each inspection shift, thus minimising the hours traditionally spent in the office compiling data. This approach not only enhanced the speed and accuracy of our assessment but also exemplified our commitment to leveraging innovative technologies for a more efficient and productive workflow.



Sustainability

Conducting thorough structural inspections is crucial for effective asset management. Frankham identified key defects and recommended targeted repairs to maintain the structural and operational integrity of the assets inspected. By focusing on the maintenance and repair of Brownsea Island's existing assets, we can advise our clients on how to best achieve long-term sustainability and reduction in carbon footprints.

Actions enhance structural performance and durability while minimising waste and conserving embodied energy. This approach is substantially more effective when compared to the high carbon footprint associated with constructing new structures, undertaking major renovations or opting for demolition. For Pottery Pier, one of our recommendations included the repurposing of an unsafe and disused structure into a marine habitat.

The suggested remedial works for the embankment dam will help maintain reliable water storage and management, which is crucial for firefighting on the island. Additionally, by ensuring the dam functions properly to manage and mitigate flood risks, these works will reduce the likelihood of severe flooding, thereby minimising potential damage to ecosystems and infrastructure.



Challenges

The timings of inspections were targeted to maximise the amount of time spent at periods of low tides. This provided the best opportunity for the inspection engineers to identify any signs of deterioration below the waterline.

A tactile inspection was carried out where possible and visual inspections were carried out in areas where tactile access could not be gained, providing value to the client without breaking budgets. Access was gained by foot and via workboats which were provided by the National Trust.

Knowledge Sharing

Frankham maintained open, clear and professional communication with National Trust representatives throughout the project and stood ready to advise on the next stages. This included highlighting defects requiring immediate action to staff on-site, issuing deliverables and post issue follow-up meetings.

After delivering the inspection report, Frankham organised a 'next steps' meeting with National Trust representatives to summarise and explain the findings. This meeting provided the client with a comprehensive understanding of the current condition of their assets and the suggested recommendations.



Continuous Improvement

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

The integration of software such as PlanRadar has notably streamlined our inspection processes, illustrating the efficiency achieved through technological advancements. This improvement highlights the significance of innovation in technology for the effective evaluation and preservation of historical structures. By adopting these modern tools, we have not only enhanced the accuracy and speed of our assessments but also promoted a culture of continuous improvement, ensuring that our methodologies evolve with technological progress.

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. The project was completed successfully, delivering the required information punctually and meeting all expectations.



Bringing ideas
to life.

