



IPSAC project: Pile Survey for Swanage Pier (2025)

Keith Coombs

Overview

This year, the Swanage Pier Trust have been carrying out a 5 yearly inspection of the structure of the pier.

A pier leg is known as a pile. There are 45 bents (rows of piles) within the pier structure. There are normally 3 piles across a bent. Additional piles are in place in the rows underneath the intermediate and main boat decks. Furthermore, piles are doubled up on the outside edge of the boat decks; this is so the outer pile takes any thrust from mooring ferries while the inner pile supports the pier structure. The piles are braced horizontally by the use of cross and diagonal bracings and stringers.

The general outcome of the survey is that the pier is in good condition, with one or two areas of concern.



Image courtesy of Swanage Pier Trust



Above Water Survey

The Structural Engineer carried out a survey of the above water parts from a small boat during the low spring tide in late April 2025. This included the above water parts of the piles, the cross and diagonal bracings and the stringers.

The above water supporting timbers and decking come from West African forests and are of Ekki or Opepe. We have had trouble with a wood rotting fungus which lives in the Ekki decking installed in the 1990s. It seems to occur at random in the decking with cream fruiting bodies underneath the decking and a brown rot inside the decking. We assume the fungus infected the timber before it was installed and is now activated by warm damp weather.

The recommendation of the survey is that there is both short-term and long-term maintenance required. A fair number of cross and diagonal braces need to be re-fixed or replaced and there are a fair number of piles to be replaced in the next 10 years.

Below Water Survey

Divers from IPSAC (the local Isle of Purbeck Sub Aqua Club), have been inspecting the piles from the seabed to the cross bracing at mid-tide level. This work was carried out between June and August 2025 and 200 piles were inspected.



Image courtesy of Paul Pettitt

The piles are made of Greenheart timber and are formed from the baulks of a fast growing laurel tree grown in Guyana, on the Caribbean shore of South America. This timber is very tough and is



immune from shipworm (teredo) but is susceptible to the gribble, a small marine isopod very similar to the woodlouse which bores in-between the grains of the timber.

Different species attack different parts of the pile. Traditionally, one species lives near the seabed and narrows the pile to a waist just above the seabed and another species lives in the intertidal zone and forms a waist in the pile behind the cross brace. This explains why the many concrete sleeves were installed during the 1920s and 1930s.

As in the woodlouse, both the male and female gribble have a brood pouch to support their young and, if the conditions are correct, they can be very prolific.

We have now discovered a new area of attack along the length of the piles; the gribble is boring holes about the size of a football, and this has happened in several piles which will need to be replaced fairly quickly. One has already been supported by a galvanised steel brace/sleeve.

Previous Pier Repairs

The gentleman in a diving suit in the photo below may look familiar, but he is not an IPSAC diver preparing to carry out part of the pile survey.



Image courtesy of Swanage Pier Trust



The image, discovered in a family album and shared on a Swanage Facebook page by the photographer's grandson, was taken from the new pier looking toward the old pier. It is most likely that the diver was George Stevenson and his assistant was the Piermaster, Edward Brunsdn; George subsequently became Piermaster.

The diver appears to be installing cast iron piles to support a new platform attached to the old pier – possibly part of Du Plat Taylor's work in the late 1920s to install the concrete sleeves to reinforce piles damaged by gribble at mid-tide level.

*Photo taken from the Grosvenor Hotel:
Shows the platform in use as storage for local fishermen.*



Image courtesy of Swanage Pier Trust