

Sugar Wharf Concrete Apron – Structural Report

The Port Douglas Sugar Wharf has been part of the history of Port Douglas for more than one hundred years and was entered on the Queensland Heritage Register (QHR: 600466) in 1992.

The Sugar Wharf is complemented by a concrete jetty constructed in the early 1980s which is used extensively to assist in servicing the Sugar Wharf building for functions, allowing catering vehicles easy access to the building, and for a marquee to be set up for preparation and plating of food as the Sugar Wharf has no kitchen facilities.

A recent structural inspection of the concrete jetty found significant corrosion had impacted the steel reinforcing causing significant damage to the structure, some of which was now becoming apparent visually. This has led Council to undertake repairs to the concrete jetty which further exposed large areas of concrete delamination



Pic 001 & 002 [concrete areas that let go during repair work]

At this point the Engineer and Council became concerned as to the structural integrity of the concrete jetty and decided that further testing would need to be carried out to determine the full extent of the corrosion. For this reason, three core samples were taken to establish the compressive strength of the concrete and five concrete cut-outs were undertaken from the top of the concrete jetty. These were undertaken to determine the condition of the internal reinforcing steel. A sixth hole was cut through the concrete jetty to confirm the presence of two rows of steel reinforcing.



Pic 003 [one of five test holes]

Pic 004 [test hole six]

Pic 005 [one of three core samples]

The results of the testing identified the quality of the concrete in the jetty was below what would be expected for a structure of that age (built in mid 1980s) and that while some areas of the concrete jetty were in fair condition, other areas showed significant corrosion penetration and separation of the concrete between the bottom and top sections. For this reason, the engineer has re-classified the condition state to a four.

Due to this new condition report, the concrete jetty will require the following new weight restrictions, with six monthly inspections to allow continued use at this new rating until remedial works are undertaken:

The pedestrian traffic has the following limitations:

- Limit of **200 pedestrians** (higher pedestrian limit subject to specific permission by APEC);
- Does not include fixed seating;
- Wheeled vehicles are **not** permitted (including catering vehicles);
- Area is **not** to be used as an emergency assembly area; and
- Area is not to allowed for stages in public assembly areas.

Note – The above load capacity assessment applies for the level of deterioration observed as presented in the site inspection reports in Appendix A. APEC recommends that the condition be re-assessed in 6 months from the date of this report. Higher load ratings may be achievable subject to a specific check of load configuration and other mitigation measures to be specified by APEC.

Moving forward, the Engineer has recommended that each of the twenty concrete piles that support the concrete jetty be tested to ascertain their condition and assist in planning the concrete jetty's future both short and long term.



Pic 006 [piles supporting concrete jetty]