

Mr Andrew Wilson
AW Planning

Level 14
56 Berry Street
NORTH SYDNEY NSW 2060
T +61 (0)2 8854 5000
F+61 (0)2 9929 0960
www.royalhaskoningdhv.com
ABN 66 153 656 252

email: awplanning@outlook.com

Our reference: PA1042-100-100_gwb300315-maintenance works.docx
Date: 8 April 2015

**Subject: CATTLE BAY MARINA – RESPONSE TO SUBMISSIONS ON EIS
REFURBISHMENT AND MAINTENANCE WORKS FOR THE EXISTING
JETTY**

Dear Andrew

In the Bega Valley Shire Council letter to Eden Resort Hotel Pty Ltd dated 18 February 2015, Council noted that a schedule of maintenance works for the existing jetty will need to be submitted for Council's assessment as part of the current Development Application.

The Statement by Council may have been prompted by the comment made by NSW Trade & Investment Crown Lands in its letter to Council dated 17 February 2015 that the "EIS outlines unspecified refurbishment works will be carried out the Jetty". NSW Trade & Investment went on to say that should they enter into Direct Negotiation with the Proponent, the exact nature of works associated with the refurbishment and maintenance of the Jetty will need to be determined as part of those negotiations.

The purpose of this letter is to provide some further detail regarding the refurbishment and maintenance of the jetty, as set out below, to assist Council's assessment of the Development Application.

1 PROPOSED ROLE OF THE EXISTING JETTY IN THE CATTLE BAY MARINA PROJECT

It is the intention of the Proponent that the existing jetty be retained in its current form and provide several functions:

- access to the floating marina from the shore, via a hinged access gangway located at the outer end of the jetty;
- occasional casual berthing of vessels along the western side;
- unrestricted public access for promenading, viewing, recreational fishing and the like, including interpretive signage to tell the story of the jetty's former use.

2 JETTY STRUCTURE

The jetty is constructed entirely of timber. It comprises the following main elements (refer **Photo 1** and **Photo 2**):

- piles, mostly vertical with occasional raking (or inclined) piles;
- headstocks, which sit on top of the piles and span across the jetty;
- girders, which are supported by the headstocks and run along the jetty;
- decking, which is supported by the girders and run across the jetty;
- fenders, which are installed vertically and are located at intervals along the side of the jetty to permit berthing of vessels;
- kerbs, which run along the sides of the jetty deck.

A set of low level landing steps is situated along the eastern side of the jetty close to shore (refer **Photo 3**). These steps would be no longer required for vessel access due to the inclusion of the hinged access gangway and pontoon system, and accordingly would be demolished.



Photo 1 View looking seaward under the jetty showing pairs of piles, headstocks, girders and decking



Photo 2 View looking towards shore along the western side of the jetty showing vertical piles, a raker pile, external girder, decking and kerb



Photo 3 View of the jetty from the beach east of the structure showing the low level landing

3 JETTY CONDITION AND REFURBISHMENT

3.1 General

The following sections provide an appraisal of the existing condition of the jetty based on a visual walkover inspection. A detailed condition assessment including cleaning of piles of marine growth and an underwater inspection would be required as part of finalisation of the refurbishment scope of work. Methods of refurbishment are also outlined. The photos presented were taken in October 2014.

Materials used in the refurbishment would be durable natural timber or possibly recycled plastics with timber appearance.

The jetty refurbishment would also include low level bollard lighting to improve public safety. These lights would be downward facing and fitted with dimmer systems or similar to satisfy ecological and amenity requirements.

3.2 Piles

The piles are in variable condition. Many of the piles appear to be in reasonable condition, but a number exhibit evidence of marine borer attack in the intertidal zone characterised by loss of cross-section or 'hour glassing'. Refer **Photo 4** and **Photo 5**.



Photo 4 Piles in reasonable condition near the landward end of the jetty



Photo 5 Pile showing signs of marine borer attack in the intertidal zone, viewed from the low level landing

A common method for repair of timber piles is use of the PileJax system. In this method a sleeve is fitted around the pile in the zone to be repaired, typically the intertidal zone for timber piles. The sleeve is manufactured from a light weight high quality filament wound fibre composite material. The sleeve is locked in place and sealed top and bottom, and the annular space between the pile and the sleeve is filled with a cementitious grout or epoxy grout. The method provides a long term protective barrier to the pile against water, oxygen and marine borers.

The application of the sleeve and the filling of the annular space can be undertaken from a barge positioned alongside the jetty. It is not necessary to remove the pile or to drive a new pile.

A copy of a PileJax brochure is attached to this letter.

3.3 Headstocks and Girders

The headstocks and girders appear to be in generally reasonable condition (refer **Photo 1** and **Photo 6**). A section of girder on the eastern side of the jetty close to shore has deteriorated due to rot and would need to be replaced (refer **Photo 7**).

Where detailed inspection revealed a headstock or girder had to be replaced this would be typically achieved by locally taking off the deck and installing the new member using a barge mounted crane positioned alongside the jetty. Where barge access was not available due to restrictive water depth, the replacement would be achieved using access from shore.



Photo 6 View under deck from the low level landing showing headstock and girders



Photo 7 View of rot in girder on the east side of the jetty close to shore

3.4 Decking and Kerbs

Decking and kerbs are in variable condition. There are some localised areas of deterioration where replacement of decking and kerbs would be necessary, eg. refer **Photo 8** and **Photo 9**. In other areas it should be possible to reuse deck planks and kerbs. Refurbishment of decking and kerbs would be typically undertaken using a barge mounted crane positioned alongside the jetty, except in shallow areas where access would be from shore.

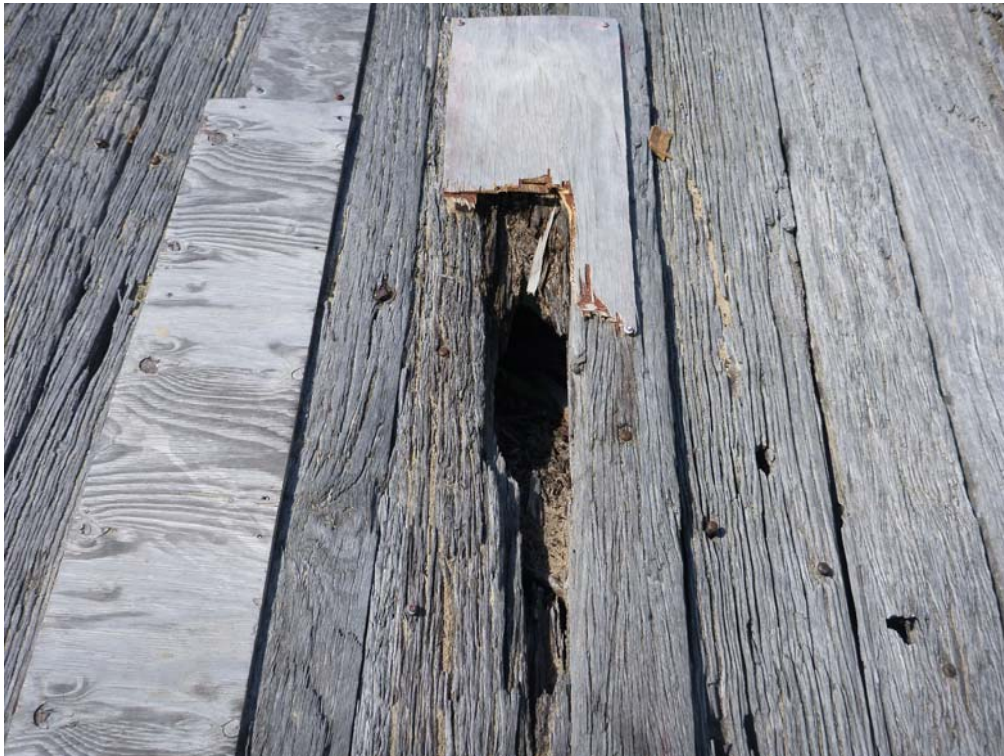


Photo 8 Example of localised deterioration (rot) of decking



Photo 9 Section of deteriorated kerb along eastern side of the jetty

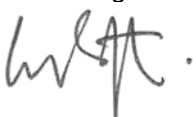
4 MAINTENANCE

Maintenance of the jetty structure would be undertaken as required as part of a finalised lease agreement with NSW Trade & Investment Crown Lands. As indicated in the NSW Trade & Investment Crown Lands letter to Council dated 17 February 2015 details would be subject to negotiation with the Proponent. It would be expected that the lease agreement would require regular maintenance inspections of the jetty and the carrying out of maintenance works to ensure the jetty was at all times fit for purpose.

The intention would be to utilise durable materials in the refurbishment to reduce maintenance going forward but existing (original) parts of the structure would continue to deteriorate over time and would require maintenance. Maintenance would involve similar work activities to those described above for refurbishment. Maintenance of timber maritime structures is a common regular activity undertaken in all ports and harbours.

Please contact the undersigned should you require any clarification or additional information.

Yours faithfully
Haskoning Australia Pty Ltd



G W Britton
Resident Director