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13 April 2022

Coastal Engineering Risk Management Report for Spa at 13 Monash Crescent Clontarf

1. INTRODUCTION AND BACKGROUND

A Development Application (DA2021/2485) has been submitted to Northern Beaches Council for replacement of a seawall and construction of a spa at 13 Monash Crescent Clontarf. In a letter dated 22 March 2022, Council requested the following:

It is understood that the application has been modified to combine two previously separate applications: a proposal for a new seawall and a proposal for a spa.

The spa is included in the seawall designs but is not mentioned in the amended Statement of Modifications, amended Statement of Environmental Effects or the Coastal Engineering Risk Management report.

The addendum to the geotechnical report identified features of the proposed seawall that should be addressed for structural integrity, but it is unclear whether the necessary amendments have been made.

As per Clause 15 of the Coastal Management SEPP, Council must be certain that the proposal will not increase the risk of coastal hazards or be at risk from coastal hazards. The report dated 9 February 2022 Coastal Engineering Risk Management Report for 13 Monash Crescent Clontarf is to be amended to demonstrate the suitability of the site for the proposed spa under existing conditions.

The applicant must provide evidence and sufficiently clarify that the proposed spa is of sound design and will not be at risk of coastal hazards under existing conditions. There is no obligation on the owner to build the seawall once approved and the application therefore needs to demonstrate the spa is suitably designed and located in the absence of the proposed new seawall.

In a report dated 9 February 2022, Horton Coastal Engineering addressed matters relating to the seawall. The spa is addressed herein, including the condition above, and can be read in addition to that earlier report (common information is not repeated, for brevity).

Note that all levels given herein are to Australian Height Datum (AHD). Zero metres AHD is approximately equal to mean sea level at present.

2. INFORMATION PROVIDED

Horton Coastal Engineering was provided with 4 drawings of the proposed spa works prepared by Jim Buda Architects (Drawing Numbers A-01, 02, 13 and undefined), Revision A, dated 9 December 2021.

3. PROPOSED DEVELOPMENT

Based on the Jim Buda Architects drawings, the spa is to be located at the SE corner of the subject property, just landward of the proposed seawall. The proposed top level of the spa is 3.10m AHD.

From discussions with Partridge Structural, it is understood that the spa is to be founded on a reinforced concrete slab and piles.

4. RISKS OF DAMAGE TO PROPOSED SPA AND MITIGATION OF THOSE RISKS

It has been interpreted that to satisfy Council's request described in Section 1, it is necessary to design the spa as if no seawall is located seaward of it (either the replacement seawall or existing seawall). To do this, as part of detailed structural design of the spa, it will be necessary to:

- allow for a scour level of -0.8m AHD (as part of detailed design, the structural engineer should consider the required depth and nature of piles to accommodate this scour); and
- allow for wave and sand slumping forces on the piles, and wave forces on the seaward face of the spa, as provided by a coastal engineer.

If the above requirements are followed, the risks of damage to the proposed spa would be suitably mitigated, and it would have an adequately low risk of failure with no seawall in place.

Once the replacement seawall is constructed, it is considered that the above requirements would no longer apply. Therefore, if the replacement seawall is constructed before the spa, it would not be necessary to comply with the above requirements.

In a Statement of Structural Design Intent dated 13 April 2022, Partridge Structural has stated that they would consider the above requirements as part of detailed design, as necessary. Therefore, the requirement of Council that "the spa is suitably designed and located in the absence of the proposed new seawall" would be satisfied if this was carried out.

5. OTHER REQUIREMENTS OF COUNCIL

Reference is also made to the statement of Council that the "addendum to the geotechnical report identified features of the proposed seawall that should be addressed for structural integrity, but it is unclear whether the necessary amendments have been made". If this refers to a 2 February 2021 report of JK Geotechnics (Ref: 33691YJrpt), it can be noted that the considerations therein can be addressed as part of detailed design.

6. MERIT ASSESSMENT

The spa is generally consistent the merit assessment for the seawall carried out in the 9 February 2022 report of Horton Coastal Engineering. Note that *State Environmental Planning Policy (Resilience and Hazards) 2021* has now replaced *State Environmental Planning Policy*

(Coastal Management) 2018, but is essentially identical in content except for numbering of Clauses.

7. CONCLUSIONS

A Development Application (DA2021/2485) has been submitted to Northern Beaches Council for replacement of a seawall and construction of a spa at 13 Monash Crescent Clontarf. The seawall was addressed in a report of Horton Coastal Engineering dated 9 February 2022. If the requirements in Section 4 are followed, the risks of damage to the proposed spa would be suitably mitigated, and it would have an adequately low risk of failure with no seawall in place. It would not be necessary to comply with these requirements if the replacement seawall was constructed before the spa.

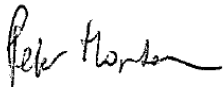
Partridge Structural has stated that they would consider these requirements as part of detailed design, as necessary. The requirement of Council that “the spa is suitably designed and located in the absence of the proposed new seawall” would be satisfied if this was carried out.

8. SALUTATION

If you have any further queries, please do not hesitate to contact Peter Horton via email at peter@hortoncoastal.com.au or via mobile on 0407 012 538.

Yours faithfully

HORTON COASTAL ENGINEERING PTY LTD



Peter Horton

Director and Principal Coastal Engineer

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