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Northern Beaches Council
Attention: Mr Daniel Milliken
(submitted online at the NSW Planning Portal at https://www.planningportal.nsw.gov.au/)

20 February 2023

Response to Request for Information on Fencing, Maintenance Access and Seawall Alignment for DA2021/1612, Relating to Construction of Upgraded Coastal Protection Works at 1190-1196 & 1204 Pittwater Road Narrabeen

1. INTRODUCTION AND BACKGROUND

On 25 January 2023, Northern Beaches Council (in an email from Daniel Milliken to Peter Horton) requested the following (numbering added for convenience):

1. Details of the proposed form of the fence along the seaward edge of the top of the vertical wall and an assessment of the risk of damage to the fence and the potential for debris to enter the public beach in the event of storm waves overtopping the wall.
2. Feasibility of achievement of a minimum access width for maintenance of 5 to 6m by temporary removal of the fence along the top of the vertical wall.
3. Justification of the proposed alignment of the proposed works, specifically whether the vertical wall could be located further landward on the private land.

A response to the above is set out below.

2. RESPONSE TO REQUEST FOR INFORMATION

2.1 Item 1 – Fencing

On the DA drawings, it was specified that fencing that would satisfy exempt development provisions as per *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* would be used. This was specified in order to avoid the need for fencing to be part of the DA.

That stated, it is recognised that some forms of fencing (particularly solid fences) would be more likely to be damaged, if impacted by waves, than other forms (ie, open fences).

To avoid argument on this matter, it can be stated the owners intend to install an open stainless steel wire fence at the top of the seawall, to meet the barrier against falls requirements of the *Building Code of Australia*. Being open, such a fence is highly unlikely to be damaged by wave action alone such that fence debris would enter the public beach. However, large forms of debris (external to the subject property) carried by the wave action could exert forces that cause damage to the fence. It is not considered likely that wave action combined with significant debris would

overtop the seawall (bend around the wave return) in a severe storm over the design life, but it is possible. That is, it is considered unlikely that wave action combined with debris would damage the proposed fence.

If significant debris carried by wave action applied forces on the fence to cause elements to yield, it is considered that:

- stanchions would most likely bend at the base if subjected to overload, although shearing off is possible;
- the extent of stanchion damage would be a function of the debris size, so it is highly unlikely that many stanchions would be damaged, due to debris more likely being localised, and due to the release of energy once elements begin to yield;
- should localised wires fail due to overload, either at fixing points or elsewhere, they should remain fixed to the stanchions at one end (given that tension in the cables would be released once any failure occurred);
- if the failures described above occurred, the connectivity of elements in the fence would most likely mean that the damaged fences remain in the subject properties.

That is, it is considered unlikely that the proposed fence would enter the public beach in the event of storm waves overtopping the wall, even if those waves created debris impacts on the fence.

It should be noted that given that damage through wave action alone is unlikely (with the mechanism for damage to the fence being if significant external debris was in the wave action), if in the unlikely event that fence debris entered the public beach due to fence damage, it would be combined with the very debris that caused the failure. It is barely credible that any fence debris entering the public beach would cause a significant public safety risk beyond any other debris on the beach after a significant coastal storm (and there is less of a debris issue with the proposed works compared to the existing situation, given that mobile boulders and rubble may cause significant debris on the beach after storms at present).

2.2 Item 2 - Access Width for Maintenance

A maintenance setback width of 4.5m (landward of the landward edge of the vertical wall) was proposed in the DA documentation, which could increase to 5.35m if the fence was removed, as the seawall is 0.85m wide (thus adding the seawall width into the available width). Rotation of equipment seaward of the wall could increase the width further. Such an arrangement was approved for coastal protection works at 1174-1182 Pittwater Road Narrabeen (DA2020/0301 and Mod2020/0651).

This is feasible as:

- the loads associated with maintenance equipment (such as a 45 tonne excavator) surcharging the fill landward of the proposed seawall (and tracking directly on the top of the seawall including the wave return) have been accommodated in the design of the wall; and
- fencing attached to the top of the wall may be removed at any time without structural detriment to the seawall. Fencing could be quickly removed by cutting steel elements, such as the wire, as required.

2.3 Item 3 – Justification of Proposed Alignment

As described in the DA documentation, the proposed works have been positioned entirely on private property. There are a number of reasons why a vertical wall should not be located further landward on the private land, namely that:

1. this would reduce the space available for dissipation of wave overtopping between the wall and existing residential development, thus increasing the risk of wave runup damaging the proposed development over the design life;
2. this would reduce the constructability of the works and lead to increased and potentially onerous requirements for shoring to prevent undermining of the existing residential development during construction, and greater risks of damage to this development during construction;
3. garages are located on the seaward side of the residential flat buildings at two of the subject properties (namely at 1192 and 1204 Pittwater Road Narrabeen), and based on *Australian/New Zealand Standard AS/NZS 2890.1:2004 Parking facilities - Off-street car parking*, a minimum apron width is required for access to these garages, as discussed further below;
4. there is a requirement for a 4.5m wide maintenance setback width landward of the seawall, to enable clear passage of construction plant as required for future works maintenance;
5. the seawall itself is 0.85m wide to accommodate the 0.5m wide wave return; and
6. at 1204 Pittwater Road, it would become more difficult to save the Norfolk Pine tree, which is located only 5.0m from the seaward boundary.

With regard to the garages, 1192 Pittwater Road currently has two garages on the seaward side, with door widths of 2.6m and 3.2m respectively. 1204 Pittwater Road has six garages on the seaward side, of varying widths (2.1m, 2.3m × 2, 2.4m, 3.5m and 4.0m). Garages at both properties require a 90° vehicle turn to enter. Based on *AS/NZS 2890.1:2004*, apron widths increase as the garage door width narrows. For the smallest door width of 2.4m in Figure 5.4 of *AS/NZS 2890.1:2004*, the required apron width is 7.0m. For a 3.0m door width, the required apron width is 5.6m. These apron widths can be reduced by 0.3m if the edge opposite the doorway is a kerb 150mm or less in height, and there is a clearance of at least 0.3m behind the kerb.

At 1192, interpolating between the values above, the required apron width for a 2.6m wide door is 6.5m, less 0.3m, so 6.2m. At 1204, extrapolating the values above, the required apron width for a 2.1m wide door is 7.7m, less 0.3m, so 7.4m.

At 1192, the minimum distance between the seaward edge of the residential flat building and the seaward property boundary is 13.6m. Allowing for the apron, maintenance setback and seawall itself takes up 11.6m. The 2.0m potentially available to move the seawall landward is not recommended due to Items 1 and 2 above.

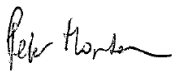
At 1204, the minimum distance between the seaward edge of the residential flat building and the seaward property boundary is 14.8m. Allowing for the apron, maintenance setback and seawall itself takes up 12.8m. The 2.0m potentially available to move the seawall landward is not recommended due to Items 1, 2 and 6 above.

It is emphasised that the seaward edge of the proposed works is within the footprint of the existing coastal protection works at the subject properties (and up to 10m landward of the seaward edge of the existing works), so reducing the impact of the works on coastal processes and coastal hazards compared to the existing situation, as outlined in the DA documentation. That is, there is no requirement to move the works landward to satisfy any coastal processes or coastal hazards considerations.

3. SALUTATION

Should you require any additional information or clarification, please do not hesitate to contact Peter Horton via mobile on 0407 012 538, or via email at peter@hortoncoastal.com.au.

Yours faithfully
HORTON COASTAL ENGINEERING PTY LTD



Peter Horton
Director and Principal Coastal Engineer