



Coastal Environment Pty Ltd

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20th July 2018

**Tim West
THW Architects
Suite 1 - Level 1,
60 Old Barrenjoey Road,
AVALON NSW 2107
Email: Tim@THW.net.au**

Dear Mr West,

Coastal Engineering Review: Additional Advice July 2018
Proposed Alterations and Additions to 127 Riverview Road, Avalon 2107

I have previously reviewed the details of the proposed alterations and additions to the property located at 127 Riverview Road Avalon and as shown on Dwgs A00-C to A15-C prepared and provided to us by AHW Architects on 20th July 2015. I am advised By AHW architects that these plans have subsequently been revised and changes to the plans were provided to me on a series of drawings A00-K to A15-K, with revisions from the original highlighted.

This advice should be read in conjunction with and as an addition to my previous advice provided by letter to THW Architects dated 20th July 2015. I have undertaken no further site inspection or inquiry relating to this matter and that advice has not been revised other than in terms of the minor (from a coastal risk) amendments now proposed.

As advised previously, the block is elevated and sloping from the waterline to a maximum level of approximately 30m AHD near the eastern boundary. No new development or alterations are now proposed west of the building setback line (as originally shown), other than an addition of an inclinor to assist access to the waterfront at the base of the steeply sloping property. In that regard, our previous advice in relation to the buildings and additions as proposed remains relevant: *"There is no foreseeable threat of coastal erosion or recession affecting the proposed development or alterations for the next 100 years."*

The swimming pool originally proposed to the west of the Building Setback Line has been redesigned and moved closer to the dwelling. It is now largely to the east of the building setback line with only a small incursion of the south-west corner of the pool west of that line. It remains separate to the dwelling and is to be constructed on piers/piles. I have not reviewed the final supporting structure proposed nor any associated geotechnical assessment, as this

was not included in my brief or the drawing provided. The likelihood of future impact from coastal processes to the pool has only been reduced by this relocation, the coping level of the pool has now been raised by approximately 5 metres to around 20m AHD. I note that the pool as now proposed is located in part over the sewer main across the property and issues relating to that should be addressed in the construction design and geotechnical assessment.

The inclinor proposed is a new addition. It will be constructed adjacent to the northern property boundary and will extend approximately 16 metres eastward of the development setback line as shown on Drawing A00-K. As the sole purpose of the inclinor is to provide safe access to the waterline across the steep slope within that setback allowance, there is an unavoidable and increasing risk of damage to the lower end of the inclinor, including the foundations and control equipment at the lower end, if not designed to accommodate this. I note that the lowest ground level shown for the inclinor is around 2m AHD on Drawing A00-K. I have not been provided with detailed drawings of the proposed inclinor design. It appears to consist of a rail, supported on discrete piles/piers sets. The detailed design for the inclinor foundations should include appropriate geotechnical investigation to ensure support of the structure and should take into consideration the increasing risk of inundation at the lower level particularly when designing the control and access/egress structures at the lowest point. I note that the purpose of the structure depends on it being extended to the base of the steep gradient and should future changes in sea level compromise the usability of the system it could be readily shortened to accommodate the appropriate hazard at that time, if appropriately designed.

I would be pleased to provide any additional information that may be required to support the opinions expressed within my previous advice and this addition, should that be necessary.

Yours Faithfully,



Douglas Lord MEngSc, CPEng, MIE Aust
Director, Coastal Environment Pty Ltd

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