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Ref No 29672 Let2

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The Interim General Manager
Northern Beaches Council
PO Box 882
MONA VALE NSW 1660

ATTENTION: Ms Rebecca England

Dear Madam

GEOTECHNICAL OPINION
41 MARINE PARADE, AVALON BEACH
DA NO: 279/16

We refer to the White Geotechnical Group (White) report in reply (dated 30 August 2016) and make the following comments:

In his introduction, White states categorically that the proposal as submitted (?) complies with the requirements of the Pittwater Geotechnical Risk Management Policy (2009) (Policy). We disagree and comment on each point we previously raised:

3i) Rectified in the White report in reply.

3ii) We do not consider that this issue was addressed in the original report and further comment is provided below with specific reference to the White report in reply.

3iii) We do not consider that this issue was addressed and further comment is provided below with specific reference to the White report in reply.

3iv) The statement which we mentioned has only been made in the White report in reply. It was not made in the submitted report.

3v) The geotechnical conditions have still not been provided to all four phases as described in the Policy. Reference should be made to Section 6.5 of the Policy for the specific requirements.

We comment below to each item of the White report in reply, using the same numbering system.

1 We note the issue associated with the printing of the contour lines. However, the copy of the clear drawing attached to the White report in reply does not include any mapping.

2 The base of the excavation is not ~RL35.65m. This is the finished lower floor slab level. Allowing for the slab thickness and/or a subbase/drainage layer, the bulk excavation will be about RL35.4m. The ground level at the north-western corner of the proposed excavation is about RL38.9m; thus an excavation depth of 3.5m.

White has made a big issue of 'floaters' and jointed bedrock, stating that we have confused the two and we should not have used the term 'floaters' as it is misleading. We note that in the Jack Hodgson Consultants report dated 4 December 2012 which was authored by Ben White for the same site, often refers to 'floaters'. The White report in reply is thus disingenuous in this respect.

In any event, and irrespective of the terminology used, the RL35.5m contour extends below but generally through, the rocks over the western slope of the site. Therefore, the proposed bulk excavation will require the removal of, and horizontal cuts through, the rock formations. It is during this process that the centre of gravity of the rock formations may change leading to toppling and/or sliding. In this respect, we refer to the 'floater' with an undercut which is described by Ben White in the Jack Hodgson Consultants report and which is illustrated in Photo 7 of that report.

The White report in reply does not acknowledge the above potential for destabilising the rock formations during excavation. It does, however, offer to specify a site inspection/geotechnical supervision regime during the soil clearing stage of the excavation, if Council deems it necessary. We note that in terms of the Policy, it is up to the geotechnical consultant to *"ensure that the geotechnical risk management aspects of the proposal have been adequately addressed to achieve an Acceptable Risk Management level for the life of the structure … and that reasonable and practical measures have been identified to remove foreseeable risk"*. It is not up to Council to determine what should be included in a geotechnical report. In this respect, we do not consider that White has presented reasonable and practical measures to remove foreseeable risk. The preparation of an inspection regime during excavation, and not just soil clearing, would go a long way to achieve this end and should be included as a Geotechnical Condition applying to the Construction phase as nominated in the Policy.
We also note that the Policy requirement described in Item 3v) above and in our report are Conditions which are required so that they can be referred to by the Development Consent.

3 As above, the White report in reply does not acknowledge that rocks (whether referred to as 'floaters' or otherwise) can be destablised during the excavation. Without appropriate controls (which need to be specified by White), destabilisation and toppling into adjacent properties is a distinct possibility.

4 The depth of the sewer trench is not mentioned in our report. We refer to the height of the upslope 'floaters' or outcrops above the ground level adjacent to the tree. By stating that the pipe could **typically** be diverted around rock obstacles or that directional drilling is **commonly** used to pass through obstacles indicates that the geotechnical engineer is not required to take an active involvement in this process. White should have included a Geotechnical Condition applying to the Construction phase as nominated in the Policy, requiring the geotechnical engineer to approve the method of overcoming such obstacles. The White report in any event did not provide Geotechnical Conditions to any of the four phases (refer comments in Item 3v above) and in our report of 15 May 2016.

5 Noted.

6 In terms of the Policy, statements relating to stability on architectural drawings cannot be relied on. This is the geotechnical engineer's responsibility.

The conclusions in the White report of reply are addressed by our above comments and are not discussed further.

Finally therefore, we can only repeat that the report as submitted does not comply with the Policy and, in our opinion, cannot be relied on to ensure that the geotechnical risk management aspects have been adequately addressed nor that reasonable and practical steps have been identified to remove foreseeable risk.

Should you require further information please do not hesitate to contact the undersigned.

Regards
For and on behalf of
JK GEOTECHNICS

Agi Zenon
Principal I Geotechnical Engineer