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Project No.: 2017-234.1

Mr. Raper & Mrs. Newman
17 Kimo Street,
North Balgowlah N.S.W. 2093.

Preliminary Landslip Risk Assessment for 14 Kimo Street, North Balgowlah.

This letter report details the results of a preliminary landslip assessment required by Northern Beaches Council as part of the Warringah 2011 LEP to accompany all new Development or Building Certificate Applications. It is a review of the design plans followed by a walk over visual assessment of the stability of the existing property, no insitu testing was undertaken.

The assessment follows the guidelines as set out in Section E10-Landslip Risk of Warringah Councils 2011 LEP Planning Rules.

1. Landslip Risk Class:

The site is located within Landslip Risk Class B which is classified as Flanking Slopes of between 5° and 25°.

2. Site Location:

The site, 17 Kimo Street is located on the low east side of the road not far from the intersection with Water Reserve Road at North Balgowlah. It is a near rectangular shaped block with long south side boundary of 48.77m, and western street front boundary of 13.58m.

3. Proposed Development:

It is understood that the proposed works involve alterations and additions to the existing house including elevated swimming pool and deck at the rear. There appears to be no bulk excavation required, minor excavation only appears required for new footings as bedrock is outcropping or at a shallow depth.

4. Existing Site Description:

The site is located near the eastern end of a small south-eastern striking ridge line that starts at North Balgowlah and falls towards Balgowlah Park Golf Course and Burnt Bridge Creek Deviation. It is located within a south-east striking drainage valley at mid slope level.

The road pavement in front of the site is bitumen with concrete kerb, it is gentle sloping to the north (-5°/002° mN) and in fairly good condition. The road reserve is grass covered with gentle slope (-6°), the front boundary of the property is defined by a low 0.4m sandstone boulder garden bed. Access to the property is down a gentle sloping concrete driveway that leads to a single car garage below the front north-west corner of the house steps providing access up to a concrete terrace and the front door of the house.

The front half of the site on which the house has been built appears to be formed as a gentle north-east sloping sandstone terrace which cuts at an angle across the back half of the property. Access to the backyard is available via a concrete pathway (-4°) along the southern side of the property. The house is a 1980 style raised, single storey brick structure with tiled roof and basement area below the eastern end of the house. The floor level of the house is at about 0.8m above ground level in the front south-west corner and at about 3.5m in the back north-east corner.

The backyard has a 3.0 to 3.5m high sloping (-35°) sandstone cliff/outcrop striking at about 120mN that forms a small terrace behind the house, adjacent to the south-east corner. Below this cliff is a series of 0.8 to 1.3m high sandstone ledges with narrow terraces above forming a moderate (-15°) slope through the central part of the site. Numerous low sandstone boulder walls have formed a series of terraced garden beds along with narrow pathways across this central part of the site. To the north-east of this terraced area the slope angles increase again to between -24° to -27° with rock outcrops and small boulders surrounded/supported by sandy colluvium trees and bush. There were no signs of significant impending instability within these boulders and outcrops.

The exterior of the house and footings are in good condition, the roof has gutters with downpipes that are connected to a sub-surface stormwater system of unknown design/discharge.

5. Neighbouring Property Conditions:

The neighbouring property to the south Number 15 Kimo Street comprises a two storey rendered brick house with skillion colorbond roof. The house is located in about the middle of the site with single car brick garage adjacent to the sites house. The house and property appear to be in good condition.

The property to the north of the site Number 50 Condoover Street has a rear boundary that abuts Kimo Street. The house is located on the front half of the property, it is an older style, partly raised single storey brick structure with tiled roof and basement garage. There is a >3m high cliff abutting the Kimo Street boundary with a -24° to -26° slope comprising a combination of rock outcrops and boulders surrounded/supported by sandy slope wash materials between the cliff and house structure.

House Number 48 Condoover Street located adjacent to the lower north-east corner of the site contains a fairly new two storey rendered brick structure with colorbond roof and large basement garage. This house is located on the front half of the block with partly raised timber deck at the rear. This property has a steep backyard slope of between -24° to -27° similar to that of Number 50 Condoover Street.

A limited inspection of these neighbouring properties from within the sites backyard and public reserve did not identify any signs of major erosion or landslip instability.

6. Assessment:

Based on the above items and on Councils flow chart check list (Page: 2 of 2 in Section E10), i.e., does the present site or proposed development contain:

- | | |
|--------------------------------|---|
| • History of Landslip | No |
| • Proposed Excavation/Fill >2m | No |
| • Site developed | Yes |
| • Existing Fill >1m | Possibly |
| • Site Steeper than 1V:4H | Yes |
| • Existing Excavation >2m | No |
| • Natural Cliffs >3m | Yes (Sloping 39° Sandstone outcrop adjacent to the south-east boundary) |

It is considered that a detailed Landslip Risk Assessment for this Development Application is not required.

7. Date of Assessment: 20th August 2018.

8. Assessment by:



Peter Crozier
Senior Engineering Geologist

9. References:

Design plans by Novam/BDA Building Design, Drawing Number: A-01 to A-18, Dated: 18/05/2018.

Survey plan by C.M.S. Surveyors Pty. Limited. Reference No: 17543, Dated: 8/02/2018