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Project No.: 2015-229.1

RSL Lifecare
c/- TSA Management
L16, 207 Kent Street,
Sydney, NSW, 2000.

Landslip Assessment for Proposed S96 Application for Cutler Village, Narrabeen, NSW.

This letter report details the results of a preliminary landslip assessment required by Warringah Council as part of their 2011 LEP to accompany all new Development or S96 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.

The site consists of the northern portion of the Cutler Village, RSL Lifecare Village located off Veterans Parade, Collaroy Plateau. The site is accessed off Coolooli Road and encompasses the area surrounding Cutler Circuit and Catalina Close. It is bordered to the east and west by Jamieson Park and to the north by Pipeclay Point Park. Both parks consist of natural bushland with outcropping sandstone bedrock and boulders with slopes containing sandstone cliffs and terraces stepping down the east and west through Jamieson Park.

1. Landslip Risk Class:

The site is located within Landslip Risk Class "A" which is classified as Plateau areas, ridges crests and major spurs, foot slopes and beach/alluvial areas with slopes < 5° with the eastern and western boundaries of the site defined as Class 'D' which is classified as Collaroy Plateau Area Flanking Slopes of between 5° and 25°.

2. Site Location:

The site is located on the crest of a moderately steep sided ridge line that strikes north from the north-west corner of Collaroy Plateau before plunging to Narrabeen Lagoon as Pipeclay Point. It consists of the northern extremity of Cutler Village and contains numerous individual residential unit/building structures located around the perimeter of Cutler Circuit and Catalina Close.

3. Proposed Development:

It is understood that the proposed works involve demolition of existing single storey, 1970's brick and timber units and construction of new modern brick units. The proposed works involve unit's no.: 4, 5, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 26, 31, 32, 33, 34, 35, 36 and 70.

The majority of the units are proposed for construction at or above existing ground surface levels and are designed with no bulk excavation and only minor fill to act as formwork for floor slabs.

Units No. 4, 7, 10, 17, 19, 20, 26, 31 and 33 all require minor excavation to < 0.90m depth to achieve the design floor levels at one end or side of the unit only.

4. Existing Site Description:

The south-east corner of the site consists of gently undulating topography that slopes down to the north around Catalina Close. This area contains Units 1 through to 11 which are either formed at or above ground surface level with gardens and lawn surrounds and only minor/shallow excavations or low garden/retaining walls. To the north of Unit 6 to 10 the hill slope continues as a gentle north dipping grass slope down to the site boundary with some minor bedrock outcrops identified.

Where Catalina Close intersects Cutler Circuit the ground surface is defined by a shallow natural drainage gully with gentle (<8°) sloping sides that strikes down to the west and south-west. This area contains Units 12 through 22 with most structures formed at or above existing ground surface levels within only minor/shallow excavations and some low garden/retaining walls.

Cutler Circuit curves around to the north with Unit 26 through 31 located on its low eastern side. A narrow lawn and concrete walkway are located directly on the low east side of these units with a steep (up to 40°) slope containing fill soils and minor vegetation extending down towards the sites eastern boundary. This fill material showed minor creep movement and erosion but there were no signs of larger scale instability within this part of the site with the footpath appearing in good condition. The lawn slope widens to the north with sandstone cliff lines of up to 3.0m in height identified down slope of Units 29 to 31. These contained minor overhangs and some boulders/detached sections of rock however there was no obvious impending instability.

Units 32 to 38 are located on the low north side of Cutler Circuit where it turns to strike west. These units are all located at or above ground surface levels and extend to the rear northern boundary of the site with gentle ($<11^\circ$) grass slopes extending approximately 10m to the north before moderate ($<22 - 24^\circ$) natural bushland slopes containing numerous low bedrock outcrops. The natural ridge crest passes below Unit 37 striking north-west.

Cutler Circuit becomes gently south sloping where it turns and strikes south along the western side of the site. Units 67 through 71 are located on the west side of the street with numerous other two to three storey brick apartment buildings. This part of the site has gently south and west sloping lawn which extends beyond the site boundary to a 3.0 to 5.0m high natural sandstone bedrock cliff line with a natural steep (22°) bushland slope extending down to the west from its base.

The central area of Cutler Circuit and extending along its southern edge contains numerous two storey brick apartment buildings within gently south to south-west sloping topography.

There were no signs of previous or impending instability within the site boundaries with no obvious significant cracking in brick structures or deformation in pavements.

5. 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 $>2\text{m}$ | No |
| • Site developed | Yes |
| • Existing Fill $>1\text{m}$ | Possible below existing units |
| • Site Steeper than 1V:4H | No |
| • Existing Excavation $>2\text{m}$ | No |
| • Natural Cliffs $>3\text{m}$ | No (beyond the boundaries) |

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

6. Date of Assessment: 21st February 2017

7. Assessment by:



Troy Crozier

Principal Engineering Geologist

(Registered Professional Geoscientist No.: 10197)

8. References:

Design Plans by Humel Architects, Drawing No.: 2007.14 – DA 15, DA 16, DA18 to DA43 and DA70, Revision: C, Dated: December 2015.

Survey Plan by Byrne and Associates, Plan No.: A1 – 9964D, Dated: 15/06/07.