

Date: 21st December 2020 **No. Pages:** 3 **Project No.:** 2020-265

Brad Sugar 29 Donegal Road, Killarney Heights N.S.W.

Preliminary Landslip Assessment for 29 Donegal Road, Killarney Heights

This report details the results of a preliminary landslip assessment required by Northern Beaches (Warringah) Council as part of their 2011 Local Environmental Plan (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 in-situ 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 Warringah Councils Landslip Risk Class "B" which is classified as 'Flanking Slopes of between 5° and 25° as indicated on Figure 1.



Figure 1: Landslip Risk Map, Warringah LEP 2011

2. Site Location:

The site, 29 Donegal Road, is located on the high south side of the road. It is a rectangular shaped block with east and west side boundaries of approximately 18.4m and front/rear north/south boundaries of approximately 38.1m as referenced from supplied site plan.



3. Proposed Development:

It is understood that the proposed works involve the construction of a partially in ground pool along with decking and a new second storey balcony addition within the rear of the property. Within the front of the site a new access ramp to the residence entrance is proposed along with extensions to the front of the dwelling.

Excavation for the proposed pool appears to be less than 1.5m within the deep (west) end. Excavation for the proposed additions to the front and rear of the residence is understood to be limited to footing excavations only.

The proposed pool excavation is approximately >20.0m, 3.4m, 4.9m and 7.5m from the shared boundaries to the north, east, south and west respectively.

4. Existing Site Description:

The front (north) of the site comprises a gently to moderately south sloping lawn with scattered immature trees, and concrete driveway adjacent to the western shared boundary. The site residence comprises a twostorey brick dwelling which appeared in good condition with no cracking observed in the brickwork. A view of the front of the property is provided in Photograph 1.



Photograph 1: View of the site looking south from Donegal Road.

Donegal Road lies to the north of the site and comprises a bitumen road surface bounded by a concrete kerb, it is dipping gently to the west and in good condition where it passes the site. The road reserve contains a thin grass verge adjacent to the road reserve.

The rear of the site contains a gently to moderately south dipping lawn and terrace to the rear of the existing residence. Within the south end of the rear garden bedrock outcrops and evidence of previous (likely ancient) rockfalls were observed. In addition, a vertical cliff line trending broadly east-west and up to approximately 3.0m in height is present.

At the crest of the cliff line, a retaining wall approximately 2.0m in height has been constructed. Evidence of recent instability or a potential mechanism for future instability was not observed within either the cliff face or overlying retaining structure.

Views of the previous rockfalls, retaining wall and cliff are provided in Photograph 2 and 3.





Photograph 2 and Photograph 3: Views of the cliff face and retaining wall (1) and indications of ancient instability (2) at the south end of the site.

It appears that bedrock is outcropping in the vicinity of the pool excavation (see Photograph 4) and comprises sandstone bedrock of at least low to medium strength.



Photograph 4: View of sandstone bedrock outcropping in the vicinity of the proposed pool excavation

5. Neighbouring Property Conditions:

The property downslope to the south (No.26 Roscommon Crescent) contains a residential dwelling and swimming pool and appeared in good condition.

The properties to the east and west (No.27 and No.31 Donegal Road No.30 Roscommon Crescent) contain two storey residential dwellings with front and rear gardens and appeared in good condition. An inground pool is present within No.30 Roscommon Crescent approximately 3.0m from the shared boundary.

A limited inspection of these neighbouring properties from within the site and public roadway reserve did not identify any signs of previous or impending landslip instability.



6. Assessment:

Based on the field mapping undertaken it appears that excavation for the proposed pool is likely to require excavation through fill soils behind the existing retaining wall towards the rear of the site and the construction of footings bearing on sandstone bedrock.

All footings should bear on sandstone bedrock of at least low strength which offers allowable bearing capacities of approximately 1000kPa.

Construction of safe batter slopes, at a recommended angle of 1.5H:1V for the fill soils (steeper where bedrock is encountered), are considered suitable to maintain stability to the excavation whilst protecting neighbouring boundaries.

The exact strength of the bedrock that will be encountered during the excavation is unconfirmed and is likely to vary with depth and across the proposed pool excavation. There is a potential for the lower/deeper portions of the excavation to intersect low strength and potentially medium strength bedrock (e.g. within the west end of the proposed pool) which would require rock excavation equipment (i.e. rock hammer). The use of rock hammers will create ground vibrations which could impact adjacent structures. Since the excavation is to be carried out in a relatively small area, rock hammers should be limited to \leq 300kg which will maintain low ground vibrations levels as per the AS2187.2-2006 requirements. This will result in slow excavation progress however should large hammers be proposed then a geotechnical professional should be consulted for equipment assessment and controls.

It is understood that a Sydney Water (SW) asset underlies the site adjacent to the west boundary. CGC has not undertaken any investigation into the construction/type/depth etc. of the asset. Based on previous experience it is recommended that Sydney Water be contacted as soon as possible to determine if any additional requirements may exist in order to protect the asset. In general footings must extend below a 45° zone from the invert of the pipe.

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 >2m	No
•	Site developed	Yes
•	Existing Fill >1m	Possibly behind retaining wall at rear
•	Site Steeper than 1V:4H	No
•	Existing Excavation >2m	No
•	Natural Cliffs >3m	No

It is considered that a Geotechnical Report and Landslip Risk Assessment <u>will not be required</u> for this development according to the requirements stipulated by Northern Beaches Councils LEP.

7. Date of Assessment:

21st December 2020

8. Assessment by:

Idieron Micholan

Kieron Nicholson Senior Engineering Geologist



9. Drawing Provided:

- DA Drawings JAH Design Services, Project Name: 'Proposed Alterations and Additions, 29 Donegal Road, Lot 19, DP232313, Killarney Heights, NSW', Project No.: 2017 Status: DA Submission, Drawings: DA01, DA04 and DA11, Date: October 2020,
- Survey Drawing: By Land Surveyors, Job No. 1600082, Plan FS, Drawing: 001, Rev B.
- Scope of Works: E-mail brief dated 12tgh December from Brad Sugar.