

**GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER**  
**FORM NO. 1 – To be submitted with Development Application**

Development Application for <u>GREG AND LISA POLYBLANK</u>	Name of Applicant
Address of site <u>21 ROSCOMMON CRESCENT, KILLARNEY HEIGHTS</u>	

*Declaration made by geotechnical engineer or engineering geologist or coastal engineer (where applicable) as part of a geotechnical report*

I, EDWARD A. BENNETT on behalf of CBS  
(Insert Name) (Trading or Company Name)

on this the 03/12/2019 certify that I am a geotechnical engineer or engineering geologist or coastal engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009 and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least \$10million.

I:  
Please mark appropriate box

- 3 have prepared the detailed Geotechnical Report referenced below in accordance with the Australia Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009
- 3 am willing to technically verify that the detailed Geotechnical Report referenced below has been prepared in accordance with the Australian Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009
- 3 have examined the site and the proposed development in detail and have carried out a risk assessment in accordance with Section 6.0 of the Geotechnical Risk Management Policy for Pittwater - 2009. I confirm that the results of the risk assessment for the proposed development are in compliance with the Geotechnical Risk Management Policy for Pittwater - 2009 and further detailed geotechnical reporting is not required for the subject site.
- 3 have examined the site and the proposed development/alteration in detail and I am of the opinion that the Development Application only involves Minor Development/Alteration that does not require a Geotechnical Report or Risk Assessment and hence my Report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements.
- 3 ☒ have examined the site and the proposed development/alteration is separate from and is not affected by a Geotechnical Hazard and does not require a Geotechnical Report or Risk Assessment and hence my Report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements. ☒
- 3 have provided the coastal process and coastal forces analysis for inclusion in the Geotechnical Report

**Geotechnical Report Details:**

Report Title: <u>D-11-267163A</u>
Report Date: <u>23rd May 2019</u>
Author: <u>EDWARD A. BENNETT</u>
Author's Company/Organisation: <u>CBS</u>

**Documentation which relate to or are relied upon in report preparation:**


I am aware that the above Geotechnical Report, prepared for the abovementioned site is to be submitted in support of a Development Application for this site and will be relied on by Pittwater Council as the basis for ensuring that the Geotechnical Risk Management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure, taken as at least 100 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature ..... [Signature] .....  
Name EDWARD A. BENNETT .....  
Chartered Professional Status NPER .....  
Membership No. 198230 .....  
Company CBS .....





## Civil & Structural Engineering Design Services Pty. Ltd.

ABN: 62 051 307 852  
3 Wanniti Road BELROSE NSW 2085  
Email: hited@bigpond.net.au

Tel: 02 9975 3899 Fax: 02 99751943  
Web: [www.civilandstructural.com.au](http://www.civilandstructural.com.au)

23<sup>rd</sup> May 2019

Mr. & Mrs. Polyblank  
21 Roscommon Crescent  
KILLARNEY HEIGHTS NSW 2087

D-11-267163A

Dear Sir & Madam,

Re: Preliminary Geotechnical Assessment – Proposed Alterations & Additions at

21 Roscommon Crescent, Killarney Heights

### **INTRODUCTION**

I, Edward A Bennett, practicing civil, structural, geotechnical & environmental engineer, hereby confirm that I have inspected the above site for the proposed Alterations & Additions and confirm that by review of Councils Policy, a full geotechnical report will **NOT** be required. From WSC Website under “eservices”, Warringah Development Control Plan, Part E, the Natural Environment, E10.

### **PROPOSED DEVELOPMENT**

The proposed development consists of Alterations & Additions at 21 Roscommon Crescent, Killarney heights on the architectural details prepared by the JAH Design Services refer Appendix ‘B’.

These works may include minor excavation, filling, and new piered/piled footing systems to be founded on underlying rock for all structural components.

### **DESCRIPTION OF SITE & SURROUNDING AREA**

The site of the new additions is adjacent to the rear elevation of the existing building and consists of new steel framing and composite decking to comply with requirements of bushfire report and an entry staircase to the deck. This work lies to the south of Roscommon Crescent with a downhill slope in the order of 5 to 10-degree (approximate) range. Council hazard mapping (Figure 1) places the property in land-slip risk class B (flanking slopes) – refer to Table 1 for risk class details.





## SITE GEOLOGY

The underlying site geology is a Mesozoic era sandstone containing medium to coarse-grained quartz sandstone with very minor shale and laminate lenses. Refer to 1:100 000 Sydney geologic mapping for more details (available via references).

From the observations from the site inspection, it was deemed unnecessary to perform any extra/special investigation of the underlying site geology.

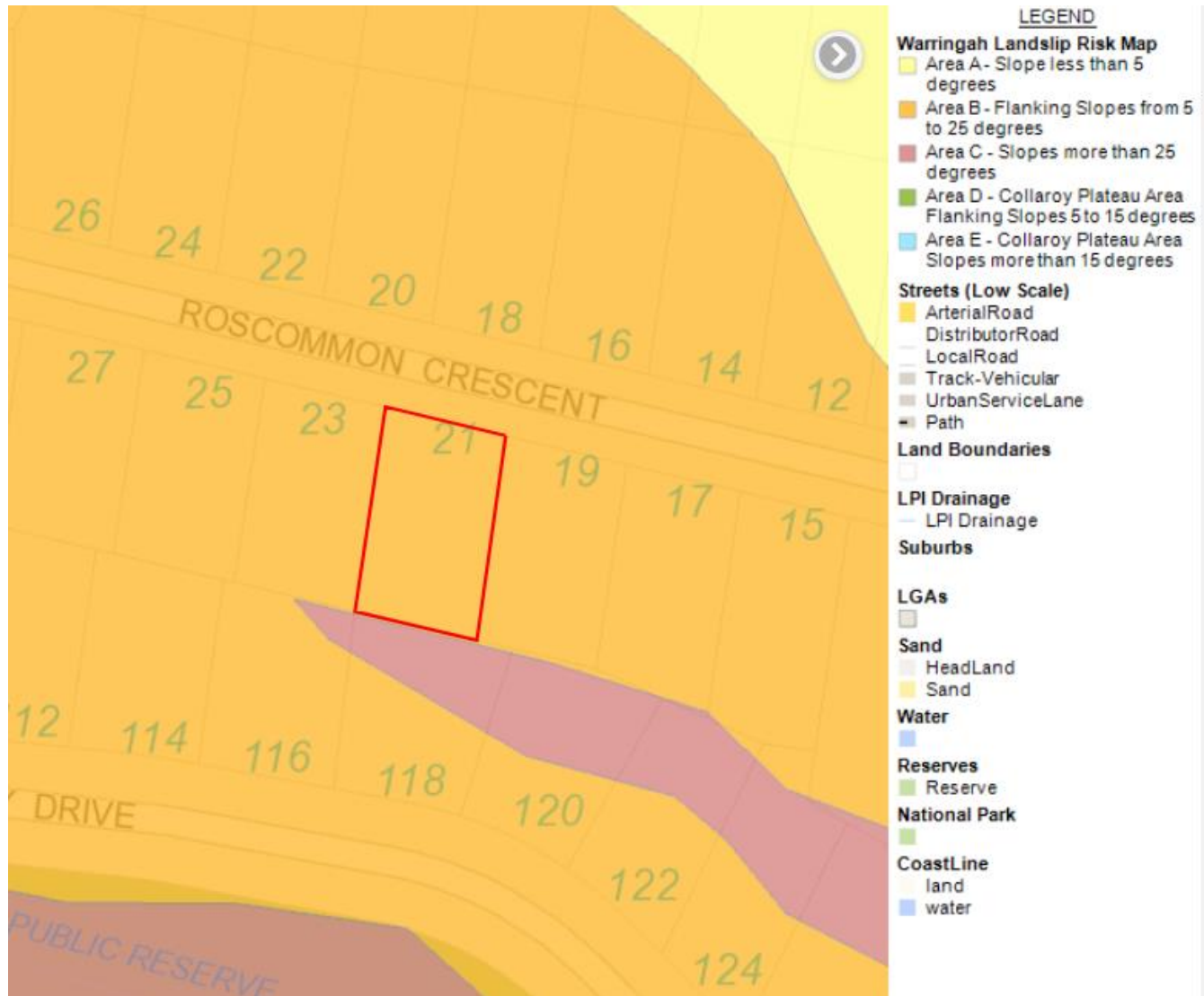


Figure 1: Land slip risk map for 21 Roscommon Crescent (site location marked in red)





Table 1: Landslip risk classes - from Warringah Council DCP Part E10 Landslip Risk

LANDSLIP RISK CLASS			
Landslip Risk Class	Topographic Position	Slope Angle (degrees)	Geology
A	Plateau areas, ridge crests, major spur slopes, footslope areas; and beach, foredune and alluvial flats.	< 5	At higher elevations, generally shallow residual soils developed on Hawkesbury Sandstone. Hawkesbury Sandstone exposed in occasional outcrops and in near vertical <i>road</i> cuts. Some areas <i>offill</i> . At lower elevations, unconsolidated marine and alluvial sands often overlying deep marine sediments.
B	Flanking slopes.	5 to 25	Colluvial and residual soils, possibly deeper than in Class A, developed on Hawkesbury Sandstone. Minor detached sandstone blocks, occasional exposures of sandstone in cliffs and <i>road</i> cuts. Occasional <i>fill</i> areas associated with playing fields, roads and some developments.
C	Steeper slopes, generally near coastal areas and adjacent to creeks and major gullies.	> 25	Colluvial soils and bouldery talus, with detached blocks of sandstone on steep escarpment areas, developed on Hawkesbury Sandstone. Near vertical cliffs to approximately 50m high at Dee Why Head.
D	Flanking slopes (Collaroy Plateau area)	5 to 15	Colluvial and residual soils (possibly deeper than in Class A) developed on Narrabeen Group or Hawkesbury Sandstone. Minor detached sandstone blocks, occasional exposures of sandstone in cliffs and <i>road</i> cuts. Occasional <i>fill</i> areas associated with playing fields, roads and some developments.
E	Steeper slopes (Collaroy Plateau area)	> 15	Colluvial & residual soils & bouldery talus, with detached blocks of sandstone on steeper escarpment areas, developed on Narrabeen Group or Hawkesbury Sandstone. Near vertical cliffs up to about 20m high.

## OBSERVATIONS

Please refer to appendix "A" for the photographic record.

- The slope of the rear yard of the property is not excessive
- Topsoil profile is residual clay overlaying sandstone bedrock.
- No evidence of particularly high risk/hazard zones (unstable slip zones or localized areas of gradient greater than 25 degrees) across the entirety of the site.
- The existing structure is founded on stable footings either piered or founded on sandstone

## RECOMMENDATIONS

Some practices which assist to mitigate risk are as follows and should be adhered to:

### CLEARING - GOOD hillside practice

Provide siltation fencing and proper.

Provide a diversion spoon drain collect any surface run-off and avoid localized slippage from scouring effects

Cover any exposed rock faces to prevent loss of moisture and prevent risk to spall overnight.





## *EXCAVATION*

The proposed Development does not require detailed excavation as mechanical equipment will be employed. There is always the likelihood that temporary shoring or underpinning is necessary to prevent ground loss when excavating near or adjacent to cliff faces to ensure safety to the workers at all times.

The excavation for the proposed structure(s) will not create a build-up of disposable material which, if not being utilized as on-site suitable fill, shall be placed in special stock piles and be protected and maintained with suitable batters and cover so as not to be transported off-site by natural localized slippage or cause instability of existing batters through heavy rains before being used at a future date.

## *FOUNDATION MATERIALS AND FOOTINGS*

It is recommended that all footings for the foundations to be supported on the underlying shale/rock using reinforced concrete piers where necessary. Allow for end bearing piers to penetrate the medium strength sandstone surface by at least 150mm. The allowable bearing capacity for the piers shall be not less than 500kPa.

## *SUBSURFACE DRAINAGE*

Any retaining walls if constructed are to have adequate subsurface drains such as “strip drains” or sock covered agricultural pipes placed at the rear of the walls to prevent undue hydrostatic pressure.

## *INSPECTIONS*

It is recommended that the rock jointing be discovered and inspected by the engineer. The foundation material and pier placement are to be inspected and approved prior to casting any concrete.

It is an obligation for the certifier/builder/contractor to organize the inspections noted above within 24 hours notice notwithstanding that the principal certifying authority and the structural engineer needs to be notified in advance.

## *ON-GOING MAINTENANCE*

The property is to be maintained in good order and in accordance with the guidelines set out in CSRIO - BTF 18 “Foundation Maintenance and Footing Performance: A Homeowner’s Guide” and the Australian Geomechanics Article “Landslide Risk Management Concepts and Guidelines” May 2002.

All retaining walls are to be inspected at intervals not exceeding 20 years.

From evidence obtained during the site inspection, as well as assessment of existing geological data for the site, it has been determined that the proposed works will not adversely affect the geotechnical stability of the site.





Provided all recommendations above are adhered to, the works will be completed following good geotechnical and structural engineering practice.

The development will not cause detrimental impacts because of stormwater discharge from the land onto other properties.

A full geotechnical report is therefore deemed unnecessary for the proposed development.

Yours faithfully,

E.A. Bennett M.I.E. Aust. Cp Eng. NPER 198230, Member AGS, BPB 0820

## **REFERENCES**

NSW Dept. of Resources & Energy, "Sydney 1:100 000 Geological Map", Accessed 16 July 2014 from  
<<http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/geoscience-information/geological-maps/1-100-000/sydney-1100-000-geological-map>>

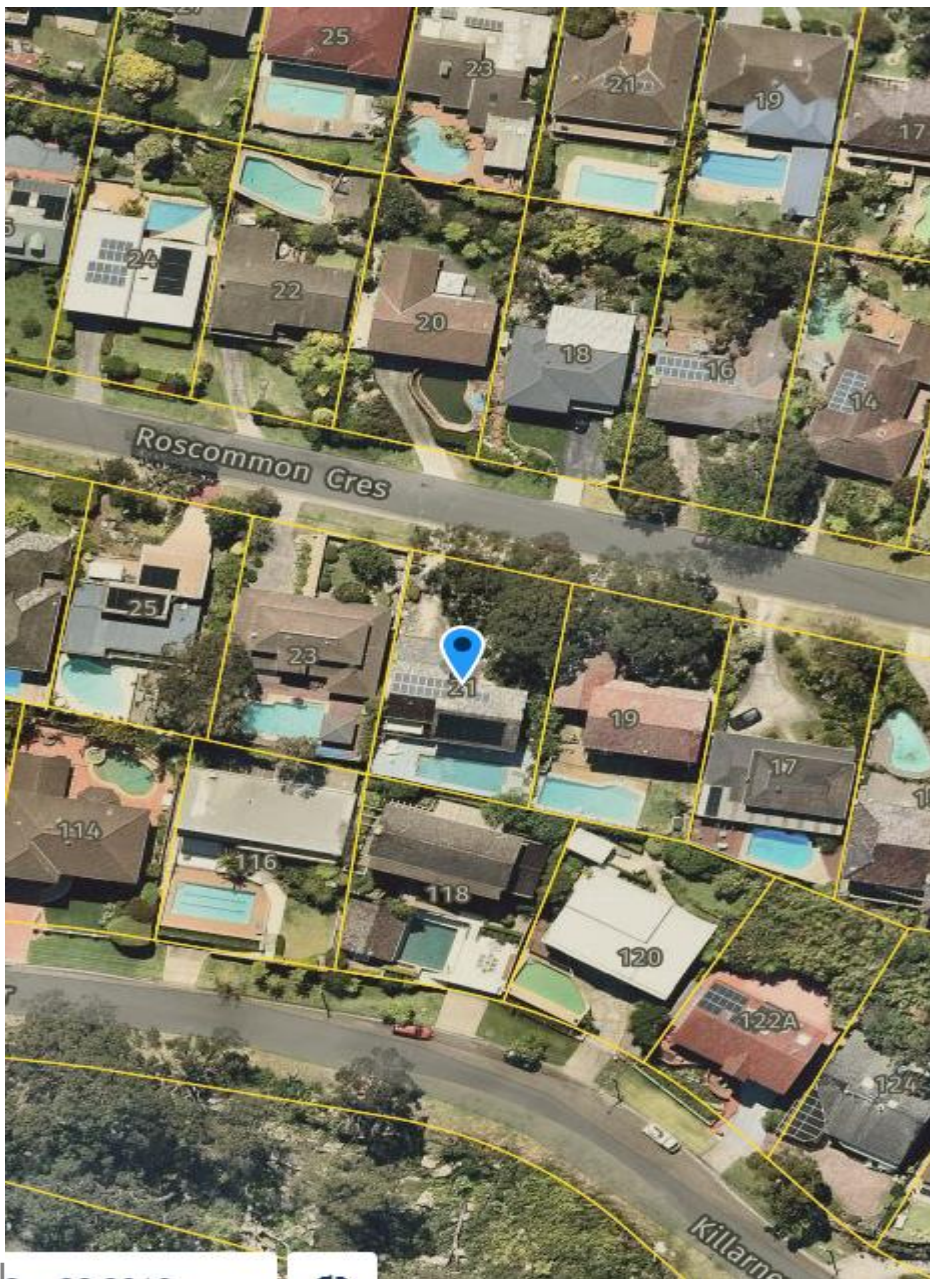
Warringah Council eServices, Warringah Council Development Control Plan 2011, Part E10,  
Accessed 16 July 2014 from  
<<http://eservices2.warringah.nsw.gov.au/ePlanning/Public/XC.Plan/Book.aspx?vid=12873>>





## APPENDIX "A"

### Photos



Aerial View  
Courtesy of Near  
Maps



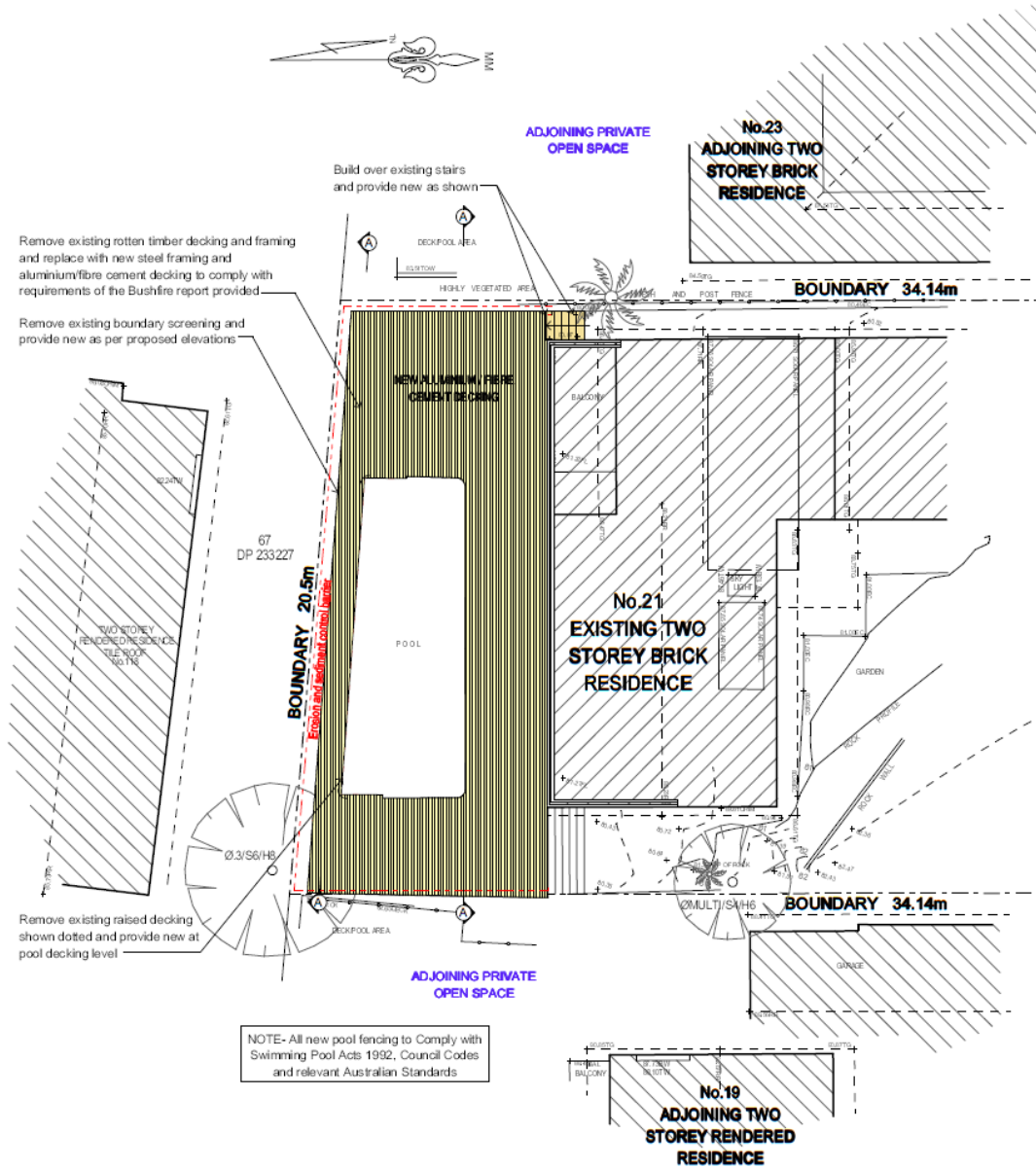


Front of the property





## APPENDIX "B"



Site plan