

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

Development Application for \_\_\_\_\_  
Name of Applicant  
Address of site 1178 Barrenjoey Road, Palm Beach

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

I, Ben White on behalf of White Geotechnical Group Pty Ltd  
(Insert Name) (Trading or Company Name)

on this the 23/4/19 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**

- ☐ 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
- ☐ 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
- ☐ 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.
- ☒ 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.
- ☐ 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.
- ☐ have provided the coastal process and coastal forces analysis for inclusion in the Geotechnical Report


**Geotechnical Report Details:**

Report Title: Geotechnical Report 1178 Barrenjoey Road, Palm Beach  
Report Date: 17/4/19  
Author: BEN WHITE  
Author's Company/Organisation: WHITE GEOTECHNICAL GROUP PTY LTD

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

Australian Geomechanics Society Landslide Risk Management March 2007.  
White Geotechnical Group company archives.

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   
Name Ben White  
Chartered Professional Status MScGEOLAusIMM CP GEOL  
Membership No. 222757  
Company White Geotechnical Group Pty Ltd

## **1178 Barrenjoey Road, Palm Beach**

### **Minor Works Assessment**

#### **1. Proposed Development**

A Geotechnical Site Inspection was carried out on the 15<sup>th</sup> April, 2019.

Details of the proposed works are shown on 5 drawings prepared by Blue Sky Building Designs, Project number 2019006, drawings numbered A101 to 105, dated 7/2/19. The work involves the construction of privacy screens to the downhill side of the secondary dwelling. No excavations or fills are shown on the plans. The proposed works are considered minor in scope from a geotechnical perspective.

#### **2. Site Description**

The property is on the high side of the road and has a NW aspect. It is located on the moderate to steeply graded lower middle reaches and base of a hillslope. The natural slope around the house has been altered with excavations to create a level platform for the secondary dwelling, main dwelling, and pool area, and with filling used for landscaping across the property. The cut for the secondary dwelling is supported by a stable ~2.5m high concrete retaining wall (Photo 1). The cut for the main dwelling is supported by stable sandstone block retaining walls (Photo 2). Competent Medium Strength Sandstone outcrops between and through these walls in places (Photo 3). The cut for the pool area is supported by a stable ~2.3m high sandstone block retaining wall (Photo 4). The various fills across the property are supported by stable sandstone block, brick, and stack rock retaining walls (Photos 5, 6, & 7). An outcrop of Medium Strength Sandstone rises above the SE corner of the main dwelling. The upper portion of the outcrop is undercut to ~2.0m but the overhang tapers to a ~0.4m thick point forming a triangular prism (Photo 8). The triangular overhang extends back continuously to a rectangular mass of rock that forms a single horizontally bedded joint block. The geometry of the rock structure governs that the rectangular portion of the rock mass is heavier than the overhanging triangular portion and that the counterbalance point is set back beyond the

overhang. Additionally, the cantilever arm that supports the overhanging rock shows no cracking or other geological defects. We consider the overhang stable in its present state.

### 3. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed below or beside the property. The moderate to steep land surface that rises across the property and continues above is a potential hazard (**Hazard One**). The undercut rock face above the house is a potential hazard (**Hazard Two**).

#### Geotechnical Hazards and Risk Analysis - Risk Analysis Summary

| HAZARDS                  | Hazard One                                                                                                                  | Hazard Two                                                           |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| TYPE                     | The moderate to steep slope that rises across the property and continues above failing and impacting on the proposed works. | The undercut rock face failing and impacting on the house (Photo 8). |
| LIKELIHOOD               | 'Unlikely' ( $10^{-4}$ )                                                                                                    | 'Rare' ( $10^{-5}$ )                                                 |
| CONSEQUENCES TO PROPERTY | 'Medium' (20%)                                                                                                              | 'Major' (60%)                                                        |
| RISK TO PROPERTY         | 'Low' ( $2 \times 10^{-5}$ )                                                                                                | 'Low' ( $6 \times 10^{-5}$ )                                         |
| RISK TO LIFE             | $8.3 \times 10^{-7}$ /annum                                                                                                 | $8.3 \times 10^{-7}$ /annum                                          |
| COMMENTS                 | 'ACCEPTABLE' level of risk to life & property.                                                                              | 'ACCEPTABLE' level of risk to life & property.                       |

(See Aust. Geomech. Jnl. Mar 2007 Vol. 42 No 1, for full explanation of terms)

### 4. Conclusion

The property has an 'Acceptable Risk Level' in accordance with the 2009 Geotechnical Risk Management Policy for Pittwater.

White Geotechnical Group Pty Ltd.



Ben White M.Sc. Geol.,  
AusIMM., CP GEOL.  
No. 222757  
Engineering Geologist.



Photo 1



Photo 2





Photo 3

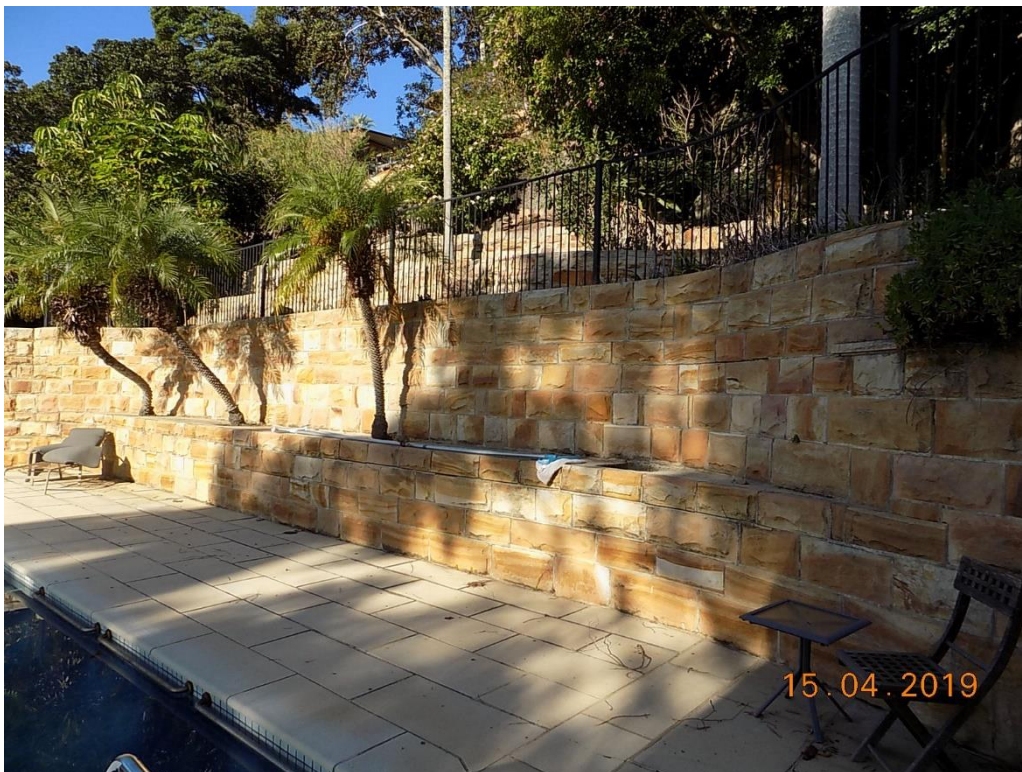


Photo 4



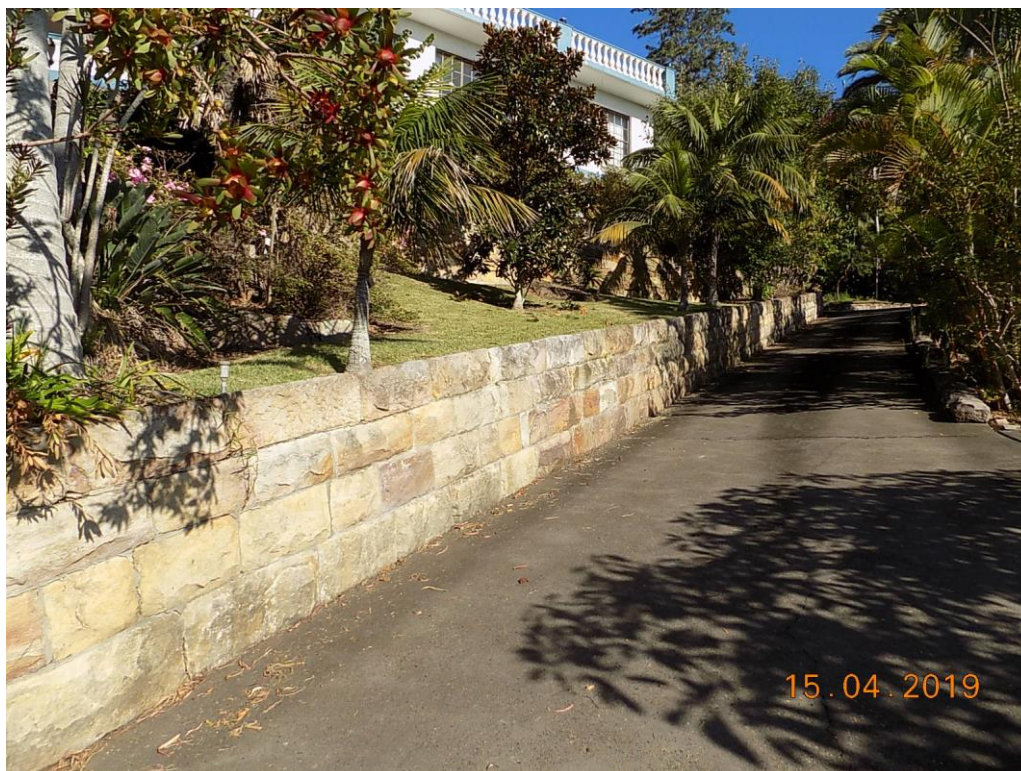


Photo 5



Photo 6



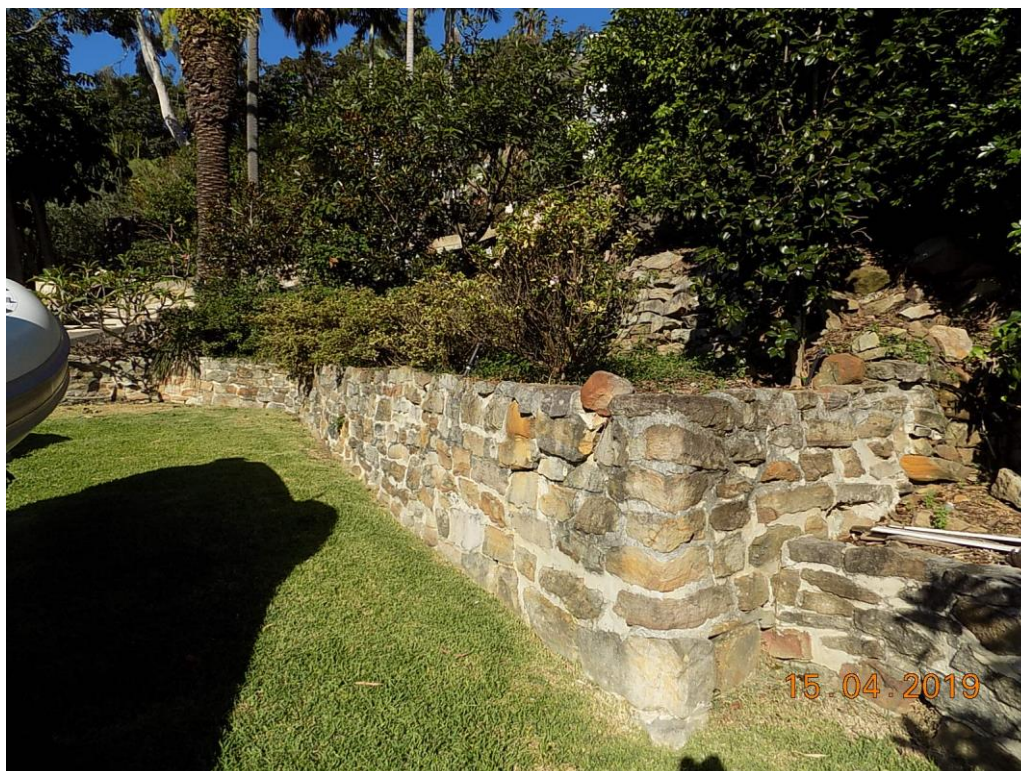


Photo 7

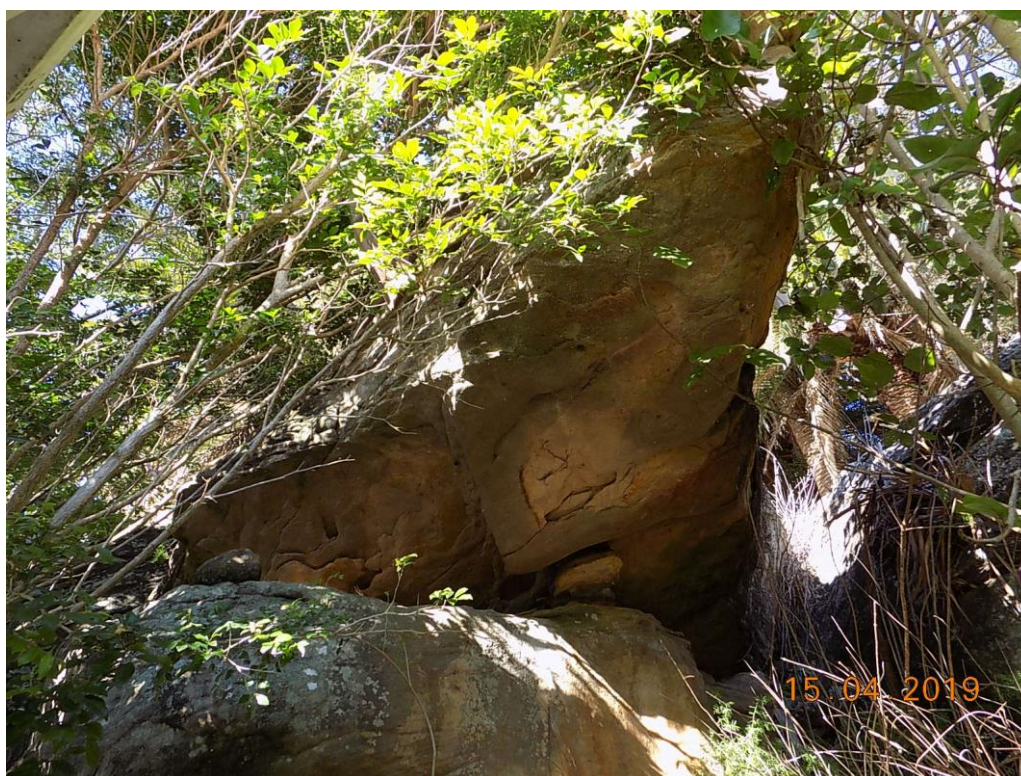


Photo 8