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# PRELIMINARY GEOTECHNICAL ASSESSMENT:

# 3 Orlando Road, Cromer

1.0	LANDSLIP RISK CLASS (Highlight indicates Landslip Risk Class of property)
	A - Geotechnical Report not normally required
	B - Geotechnical Engineer (Under Council Guidelines) to decide if Geotechnical Report is required
	C - Geotechnical Report is required
	D - Geotechnical Engineer (Under Council Guidelines) to decide if Geotechnical Report is required
	E - Geotechnical Report required

### 2.0 Proposed Development

- 2.1 Extend the existing garage on the S side. Add a new lower ground floor addition on the S side of the house. These works require an excavation to a maximum depth of ~1.6m.
- **2.2** Extend the upper ground floor of the house on the S side.
- **2.3** Other minor internal and external alterations to the existing house.
- 2.4 Construct a new paved terrace and boundary wall on the W side of the existing pool.
- **2.5** No significant fills are shown on the plans.
- Details of the proposed development are shown on 8 drawings prepared by Architectural Draft and Design, project number 2101, drawings numbered 1, 1.1, 2.1, 2.2, 4.1, 4.2, 5.1 and 5.2, Issue 1, dated 25/6/21.

### 3.0 Site Location

**3.1** The site was inspected on the 22<sup>nd</sup> April, 2022.



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**3.2** This residential property is on the high side of the road and has a SW aspect. The block runs longways to the N so the slope is a cross fall. It is located on the gently graded middle reaches of a hillslope. No rock outcrops on the property. The Sydney 1:100 000 Geological sheet indicates the site is underlain by the Newport Formation of the Narrabeen Group, although Hawkesbury Sandstone is shown close to the N property boundary and at a residential scale the map is not always accurate. Hawkesbury Sandstone bedrock was observed outcropping on the W neighbouring property and is expected to underlie the surface of the subject property at relatively shallow depths. The natural surface of the block has been altered with cuts for the pool and garage and filling for lawn/garden areas across the property. The proposed development will require an excavation to a maximum depth of ~1.6m for the proposed garage extension and lower ground floor addition.

**3.3** The site shows no indications of historical movement in the natural surface that could have occurred since the property was developed. We are aware of no history of instability on the property.

### 4.0 Site Description

The natural slope rises across the property at an average angle of ~7°. At the road frontage, a concrete driveway runs up the slope to a garage attached to the house. Minor filling provides a level platform for a lawn and garden area between the road frontage and the house. The single storey brick and timber clad house with garage below is supported by brick walls and brick piers. One of the supporting piers is slightly undercut (Photo 1). One of the supporting walls displays stepped cracking through the mortar (Photo 2). The sandy soil in the foundation space displayed significant moisture at the time of inspection. See **'Section 5.0** Recommendations' regarding the undercut pier and cracked wall.

A paved area and pool that show no significant signs of movement are located on the N side of the house. A gently sloping lawn and garden area are located on the N side of the house and pool. Apart from the moisture in the foundation space and the undercut pier and cracked



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wall, no signs of movement associated with slope instability were observed on the grounds. No cliffs or large rock faces were observed on the property or in the near vicinity. The adjoining neighbouring properties were observed to be in good order as seen from the road and the subject property.

#### 5.0 Recommendations

The proposed development and site conditions were considered and applied to the Council Flow Chart.

It is interpreted that water seepage in the foundation space has formed a hole in the sandy soil under the undercut pier (Photo 1) and has caused settlement of the cracked brick wall (Photo 2). Drainage measures could be installed on the N and E sides of the house to reduce water seepage in the foundation space. We can provide drainage advice upon request.

It is recommended the undercut pier (Photo 1) be underpinned to 400mm below the base of the hole/washed out soil area or to the top of Medium Strength Rock, whichever comes first.

Allowing for backwall drainage, the proposed excavation comes flush with the S brick wall supporting the existing house. The S brick wall is to be underpinned to the base of the excavation or the top of Medium Strength Rock, whichever comes first, prior to the excavation commencing.

Provided the above recommendations and good engineering and building practice are followed, no further Geotechnical assessment is recommended for the proposed development.

White Geotechnical Group Pty Ltd.

Felit

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Photo 1



Photo 2

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## Preliminary Assessment Flow Chart – Northern Beaches Council (Warringah)





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#### Information about your Preliminary Assessment

This Preliminary Assessment relies on visual observations of the surface features observed during the site inspection. Where reference is made to subsurface features (e.g. the depth to rock) these are interpretations based on the surface features present and previous experience in the area. No ground testing was conducted as part of this assessment and it is possible subsurface conditions will vary from those interpreted in the assessment.

In some cases, we will recommend no further geotechnical assessment is necessary despite the presence of existing fill or a rock face on the property that exceed the heights that would normally trigger a full geotechnical report, according to the Preliminary Assessment Flow Chart. Where this is the case, if it is an existing fill, it is either supported by a retaining wall that we consider stable, or is battered at a stable angle and situated in a suitable position on the slope. If it is a rock face that exceeds the flow chart limit height, the face has been deemed to be competent rock that is considered stable. These judgements are backed by the inspection of over 5000 properties on Geotechnical related matters.

The proposed excavation heights referred to in section 2.0 of this assessment are estimated by review of the plans we have been given for the job. Although we make every reasonable effort to provide accurate information excavation heights should be checked by the owner or person lodging the DA. If the excavation heights referred to in in section 2.0 of this assessment are incorrect we are to be informed immediately and before this assessment is lodged with the DA.