PRELIMINARY GEOTECHNICAL ASSESSMENT:
61 Wyadra Avenue, North Manly

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 Install a new pool in the NE corner of the property by excavating to a maximum depth of ~1.5m.

2.2 Landscaping works beside the proposed pool requiring filling to a maximum height of ~1.7m and minor levelling.

2.3 Details of the proposed development are shown on 4 drawings prepared by Space Landscape Designs, project number 242179, drawings numbered DA-01 to DA-04, Revision B, dated 25/6/24.

3.0 Site Location

3.1 The site was inspected on the 11th June, 2024, and previously on the 15th June, 2022, and the 9th July, 2021.

3.2 This residential property is on the low side of the road and has a N aspect. It is located on the gentle to moderately graded upper middle reaches of a hillslope. Medium Strength Hawkesbury Sandstone bedrock outcrops on the downhill side of the property. Where sandstone is not exposed, it is expected to underlie the surface

at relatively shallow depths. The natural surface of the block has been altered with an excavation for the lower ground floor of the house and with filling used for landscaping on the downhill side of the property. The proposed development will require an excavation to a maximum depth of ~1.5m for the proposed pool and filling to a maximum height of ~1.7m for the proposed landscaping works.

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 falls across the site at an average angle of ~11°. At the road frontage, a concrete driveway runs down the slope to a parking area on the uphill side of the house. The fill for the road is battered to stable angles and is supported by a low stable concrete block retaining wall that lines the road frontage. Between this wall and the house is a gently sloping lawn area. The part three-storey brick and timber framed and clad house is supported on brick walls and brick piers. No significant signs of movement were observed in the supporting walls of the house and the supporting brick piers stand vertical. Some of the supporting walls were observed to be supported directly onto outcropping sandstone bedrock on the downhill side of the house. A gently sloping lawn-covered fill extends off the downhill side of the house. Competent Medium Strength Sandstone outcrops through the W side of this lawn. The fill batter is lined with stable stacked rocks reaching ~1.2m high. The area surrounding the house and driveway is mostly lawn or garden covered with some paved areas. No signs of movement related to slope instability were observed on the grounds that could have occurred since the property was developed. 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 street and subject property.

5.0 Recommendations

The proposed development and site conditions were considered and applied to the current Council requirements.

Due to the proximity of the proposed pool excavation to the sewer main and the E neighbouring structures, the recommendations below are to be followed.

5.1 Vibrations

Excavations through rock should be carried out to minimise the potential to cause vibration damage to the subject house, E neighbouring house, E neighbouring pool and the sewer main (150mm diameter salt glazed ware pipe, invert at ~0.9m). The excavation is set back ~4.0m from the subject house, ~3.0m from the E neighbouring pool, ~7.0m from the E neighbouring house and ~1.3m from the sewer main.

Dilapidation reporting carried out on the E neighbouring property is recommended prior to the excavation works commencing to minimise the potential for spurious building damage claims.

Excavation methods are to be used that limit peak particle velocity to 5mm/sec at the subject house, E neighbouring house, E neighbouring pool and the sewer main. Vibration monitoring will be required to verify this is achieved. The vibration monitoring equipment must include a light/alarm so the operator knows if vibration limits have been exceeded. It also must log and record vibrations throughout the excavation works.

In Medium Strength Rock or better, techniques to minimise vibration transmission will be required. These include:

- Rock sawing the excavation perimeter to at least 1.0m deep prior to any rock breaking with hammers, keeping the saw cuts below the rock to be broken throughout the excavation process.

- Limiting rock hammer size.
- Rock hammering in short bursts so vibrations do not amplify.
- Rock breaking with the hammer angled away from the nearby sensitive structures.
- Creating additional saw breaks in the rock where vibration limits are exceeded.
- Use of rock grinders (milling head).

Should excavation induced vibrations exceed vibration limits after the recommendations above have been implemented, excavation works are to cease immediately and our office is to be contacted.

It is worth noting that vibrations that are below thresholds for building damage may be felt by the occupants of the subject house and neighbouring houses.

See the required inspection below that is to be carried out during construction and is a requirement for the final geotechnical certification. Apart from this inspection and the above recommendations, it is not expected additional geotechnical input will be required provided good design and building practices are followed.

REQUIRED INSPECTION ON NEXT PAGE

6.0 Inspection

The client and builder are to familiarise themselves with the following required inspection as well as council geotechnical policy. We cannot provide geotechnical certification for the owners or the regulating authorities if the following inspection has not been carried out during the construction process.

- All footings are to be inspected and approved by the geotechnical consultant while the excavation equipment and contractors are still onsite and before steel reinforcing is placed or concrete is poured.

White Geotechnical Group Pty Ltd.

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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.
