

GROUND TESTING:

Remedial Works at 53 Londonderry Drive, Killarney Heights

1. Scope

The aim of this assessment is to determine the ground conditions at the location of the existing rendered masonry retaining wall that will be remediated.

The site was inspected on the 26th May, 2022.

2. Proposed Development

- 2.1** Remediate the existing rendered masonry retaining wall on the N side of the house.

3. Geology

The Sydney 1:100 000 Geological sheet indicates the site is underlain by Hawkesbury Sandstone. It is described as a medium to coarse grained quartz sandstone with very minor shale and laminite lenses.

4. Subsurface Investigation

Five Dynamic Cone Penetrometer (DCP) tests were put down to determine the relative density of the overlying soil and the depth to bedrock. The locations of the tests are shown on the site plan attached. It should be noted that a level of caution should be applied when interpreting DCP test results. The test will not pass through hard buried objects so in some instances it can be difficult to determine whether refusal has occurred on an obstruction in the profile or on the natural rock surface. This is not expected to have been an issue for this site. But due to the possibility that the actual ground conditions vary from our interpretation there should be allowances in the excavation and foundation budget to account for this. We refer to the appended "Important Information about Your Report" to further clarify. The results are as follows:

DCP TEST RESULTS – Dynamic Cone Penetrometer					
Equipment: 9kg hammer, 510mm drop, conical tip.			Standard: AS1289.6.3.2 - 1997		
Depth(m) Blows/0.3m	DCP 1 (~RL98.6)	DCP 2 (~RL98.6)	DCP 3 (~RL98.7)	DCP 4 (~RL96.9)	DCP 5 (~RL96.9)
0.0 to 0.3	5	1F	4F	9	7
0.3 to 0.6	8F	F	3F	10	9
0.6 to 0.9	10	3	3	#	#
0.9 to 1.2	4	5	6		
1.2 to 1.5	20	6	#		
1.5 to 1.8	40	25			
1.8 to 2.1	30	30			
2.1 to 2.4	12	#			
2.4 to 2.7	#				
	Refusal on Rock @ 2.3m	Refusal on Rock @ 2.1m	Refusal on Rock @ 1.2m	Refusal on Rock @ 0.4m	Refusal on Rock @ 0.4m

#refusal/end of test. F = DCP fell after being struck showing little resistance through all or part of the interval.

DCP Notes:

DCP1 – Refusal on rock @ 2.3m, DCP thudding, light brown sandy fill on damp tip.

DCP2 – Refusal on rock @ 2.1m, DCP bouncing off rock surface, brown and grey sandy soil on damp tip.

DCP3 – Refusal on rock @ 1.2m, DCP bouncing off rock surface, brown soil on muddy wet tip.

DCP4 – Refusal on rock @ 0.4m, DCP bouncing off rock surface, dark brown soil and yellow sand on wet tip.

DCP5 – Refusal on rock @ 0.4m, DCP bouncing off rock surface, dark brown soil and yellow sand on wet tip.

5. Geological Observations and Interpretations

The test area is underlain by fill, a thin sandy topsoil and sand over sandstone bedrock. Fill to a maximum depth of ~2.1m provides a level platform for a filled garden area at the uphill side of the rendered masonry retaining wall that will be remediated. In the test locations, the depth to rock ranged from ~0.4m to ~2.3m below the current surface, being deepest

immediately behind the existing retaining wall. The sandstone underlying the property is estimated to be Medium Strength or better.

The E portion of the retaining wall was determined to be brick by observation through a small gap in the external render at the base of the wall (Photo 1).

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Photo 1

Important Information about Your Report

It should be noted that Geotechnical Reports are documents that build a picture of the subsurface conditions from the observation of surface features and testing carried out at specific points on the site. The spacing and location of the test points can be limited by the location of existing structures on the site or by budget and time constraints of the client. Additionally, the test themselves, although chosen for their suitability for the particular project, have their own limiting factors. The testing gives accurate information at the location of the test, within the confines of the test's capability. A geological interpretation or model is developed by joining these test points using all available data and drawing on previous experience of the geotechnical consultant. Even the most experienced practitioners cannot determine every possible feature or change that may lie below the earth. All of the subsurface features can only be known when they are revealed by excavation. As such, a Geotechnical report can be considered an interpretive document. It is based on factual data but also on opinion and judgement that comes with a level of uncertainty. This information is provided to help explain the nature and limitations of your report.

With this in mind, the following points are to be noted:

- If upon the commencement of the works the subsurface ground or ground water conditions prove different from those described in this report, it is advisable to contact White Geotechnical Group immediately, as problems relating to the ground works phase of construction are far easier and less costly to overcome if they are addressed early.
- If this report is used by other professionals during the design or construction process, any questions should be directed to White Geotechnical Group as only we understand the full methodology behind the report's conclusions.
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.
- This report should not be applied to any other project other than that outlined in section 1.0.
- This report is to be read in full and should not have sections removed or included in other documents as this can result in misinterpretation of the data by others.
- It is common for the design and construction process to be adapted as it progresses (sometimes to suit the previous experience of the contractors involved). If alternative design and construction processes are required to those described in this report, contact White Geotechnical Group. We are familiar with a variety of techniques to reduce risk and can advise if your proposed methods are suitable for the site conditions.

The site plan illustrates a property with a 'ONE & TWO STOREY RENDERED BRICK HOUSE' and a 'TILE ROOF'. The house is situated on a lot with a 'GARAGE UNDER BALCONY'. To the right of the house is an 'INGROUND POOL' with a 'SPA' and a 'COVERED PERGOLA'. The property is bounded by a 'FENCE' and a 'WALL ON BDY'. The plan includes various setbacks and dimensions: '10.655 ARC SETBACK (6.79)', '10.67', '47.735', '49.35', and '10.67'. The plan also shows 'D.P.' (Drainage Point) and 'D.C.P.' (Drainage Collection Point) locations. The plan is labeled 'SITE PLAN - showing test locations'.