

24<sup>th</sup> January 2023

Elite Soil Testing Pty Ltd  
P O Box 644  
KALLANGUR QLD 4503

Job No. **22-10-42364**  
Report No. **R-14041**

Site Address

Lot 9 Rise Avenue  
WOODFORD QLD 4514

Commission

Geotechnical Investigation





---

## 1.0 INTRODUCTION

APOD Soil Testing Pty Ltd was commissioned to undertake a geotechnical investigation for **Elite Soil Testing Pty Ltd**, (28/10/2022 by email), at the site of the proposed development located at **Lot 9 Rise Avenue, Woodford**. Investigation was carried out on the 16/01/2023.

The aim of the investigation was to determine the following:

- The strength capacity of the subsurface profile;
- The nature and characteristics of the subsurface profile;
- Site classification in accordance with AS 2870-2011.

It is understood that a new dwelling is to be constructed.

## 2.0 SITE OBSERVATIONS

VEGETATION: Sparse grass cover.

SLOPE: Virtually flat.

ON SITE DRAINAGE: Poor to fair.

WATER TABLE: No water table was encountered in the test holes drilled to the target depth of our commission.

## 3.0 INVESTIGATIONS

Two test holes were drilled within the area of the proposed footings using a 4WD mounted 100mm diameter power auger. Numerous disturbed samples were collected and hand classified. One tube sample was returned to the laboratory and tested for its shrink/swell (Iss) parameters. A pocket penetrometer (PP) was used to determine the strength of the cohesive soils.



#### 4.0 SITE CONDITIONS

The existing soil encountered generally consists of a **silty sand(SM) and silty clay(CI) fill** material underlain by a **natural silty clay(CI)**. **Fill was encountered across the proposed site at the following depths:**

Bore Hole #1	Bore Hole #2
0-600mm	0-300mm

At the time of writing this report, documentation complying with AS 3798 had been sighted, therefore the fill is described as **controlled fill** (Elite Soil Testing Pty Ltd – Project No. J22069).

#### Minimum allowable bearing capacity:

Bore Hole #1	Bore Hole #2
100kPa	100kPa @ 400mm

For detailed soil descriptions and bore hole locations refer to the log section located in the appendix of this report.

#### 5.0 RESULTS

Bore hole #1 @ 0.3m – 0.6m:- I.s.s. = 2.2%  $Y_s = 40\text{mm}$

$Y_s$  calculation for zone of influence of trees:-  $Y_{st} = 60\text{mm}$

**$Y_{st}$  calculation is a guide only. Design engineer to refer to appendix H & CH of AS2870-2011.** The predicted surface movement calculation in this report has been assessed using clause 2.3 of AS 2870 – 2011. **0 cracked zone adopted.** Refer to the appendix of this report for full laboratory results.

#### 6.0 CONCLUSIONS

The shrink/swell index of 2.2% indicates that the silty clay(CI) material is moderately reactive. The calculation of predicted total surface movement of  **$Y_s 40\text{mm}$  (Class "M" reactivity)** is subject to seasonal moisture variation due to climatic changes, but not abnormal moisture build up due to leaking pipes, excess watering, poor drainage, large trees or other similar scenarios.

Based on site conditions encountered, soil tests carried out and observations on site, the site is classified **Class "P"** in accordance with Australian Standard 2870-2011 "Residential Slabs and Footings". **Class "P" due to the depth of controlled fill and abnormal moisture conditions. As per AS 2870-2011 Clause 2.1.3 (c) & (e).**

**The design engineer must be aware the above quoted  $Y_s$  does not take into account ground movements generated by "abnormal" conditions. The design engineer must use calculation provided in appendix H & CH of AS 2870-2011 to ensure that the design provides acceptable performance.**



---

## 7.0 CONDITIONS OF CLASSIFICATION

The site classification is subject to the following conditions:

- a) Site drainage is adequately provided to direct water away from footings and walls.
- b) Trees are to be located well away from the house in order for aggressive root systems to not aggravate the soil moisture conditions.
- c) This classification does not support the scenario of plumbing leaks. Any identified anomalies are to be rectified immediately to prevent further damage to the superstructure.

Attached is a copy of the paper *CSIRO "Foundation Maintenance and Footing Performance: A Homeowner's Guide"* for further information.

## 8.0 SITE RECOMMENDATIONS

The ground immediately surrounding the residence is to be graded away from the residence with a fall of 1:20 for the first 1.0 metre to ensure adequate draining away from the residence. A spoon drain is recommended to be installed to drain the water away from the residence.

## 9.0 REPORT LIMITATIONS

This report does not take into consideration the long-term or short-term effects of any previous, current or potential subsurface work by mining companies or any other body, or potential slope instability problems. At the time of writing this report neither our clients nor the local authority (or any other agent) has made us aware of any problems affecting this allotment.

This investigation is limited in scope and extent, and it is possible that areas may exist which differ from those shown on the test hole records used for this classification. Should any variation from those shown be encountered during excavation work or subsequent earthworks carried out, reappraisal of the classification will be required. Should you require any further information or clarification regarding this report, please contact the undersigned.

APOD Soil Testing Pty Ltd  
QBCC Act Licence No: 1064604

Patrice Le Pla  
Managing Director  
QBCC Act Licence No: 731863  
Adv.Dip.Lab.Op

# APPENDIX

Log Sections

TEST SITE 1					TEST SITE 2					
Address: Lot 9 Rise Avenue, Woodford			Job No: 22-10-42364		Date: 16/01/2023		Technician: Patrice Le Pla			
Location: Refer to site sketch			Location: Refer to site sketch		Location: Refer to site sketch			Location: Refer to site sketch		
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	
100	SILTY CLAY(CI) (mott.gy-or-br)			350	100	SILTY SAND(SM) (gy-br)			250	
200	- with minor sand & trace gravels				200	- fine to medium grained				
300	moist & controlled				300	moist & controlled				
400					400	SILTY CLAY(CI) (or-gy.mott.rd)				
500					500	- with trace sand & gravels				
600					600					
700	SILTY CLAY(CI) (or-br.mott.rd&gy)			320	700	moist & stiff/very stiff			420	
800	moist & very stiff				800					
900	(lt.gy.mott.or&rd)				900					
1000	- with trace sand & gravels				1000					
1100					1100	(lt.gy.mott.or&rd)				
1200					1200					
1300					1300					
1400					1400					
1500	moist & very stiff				1500					
1600					1600	moist & very stiff				
1700		1700								
1800		1800								
1900		1900								
2000		2000								
2100	END – with power auger			450	2100	END – with power auger			500	
2200					2200					
2300					2300					
2400					2400					
2500					2500					
2600					2600					
2700					2700					
2800					2800					
2900					2900					
3000					3000					
3100					3100					

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger  
 XW=ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-2017 gy=grey or=orange yell=yellow rd=red  
 wh=white br=brown bk=black bl=blue gr=green Refer AS1726-2017 Clause 6.1 for classifying soils.



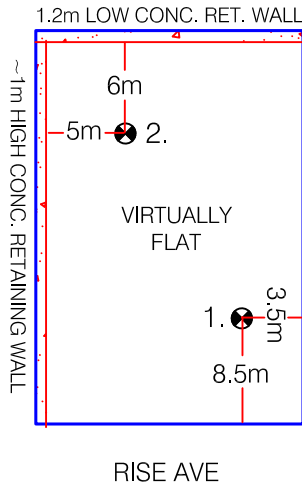
## SITE SKETCH

NOT TO SCALE

Address: Lot 9 Rise Avenue, Woodford

Job No: 22-10-42364

Date: 16/01/2023



⊗ TEST SITES

→ SLOPE DIRECTION

### TEST METHODS:

Hand Auger  Small Rig(100mm dia.)

### SITING:

Existing  Plans  General Setback

Pegged  Met on site  Cut/Fill Pad

### EXCAVATION PROBLEMS:

Access to Site  Shallow Rock

Rubbish in Fill  Wet/Dry Collapse

Gravels/Cobbles/Boulders

Fluctuating Water Table  Services

VEGETATION: Sparse grass cover, . . . . .

### ON SITE DRAINAGE:

Poor  Poor/Fair  Fair

Fair/Good  Good

### SLOPE:

Virtually Flat  Slight  Gentle

Moderate  Steep  Very Steep

## SHRINK/SWELL TEST RESULTS

<b>Client:</b>	ELITE SOIL TESTING PTY LTD	<b>Lab. No:</b>	33210
<b>Project:</b>	LOT 9 RISE AVE, WOODFORD	<b>Job No:</b>	22-10-42364
<b>Location:</b>	B.H. 1 @ 0.3m - 0.6m	<b>Date Sampled:</b>	16/01/2023
<b>Test Procedure:</b>	AS1289 7.1.1/2.1.1	<b>Description:</b>	mott.gy-or-br SILTY CLAY with minor sand & trace gravels

### Swell Test

Moisture Content - Initial %	<b>22.5</b>	Applied Load kPa	<b>25</b>
Moisture Content - Final %	<b>27.6</b>	Water Used:	<b>Distilled</b>

### Shrink Test

Moisture Content %	<b>22.8</b>	Wet Density t/m <sup>3</sup>	<b>1.95</b>
Extent of Cracking of Specimen	<b>Minor</b>	Inert Inclusions %	<b>-10</b>
Extent of Crumbling of Specimen	<b>Minor</b>		

<b>Shrinkage %</b>	<b>3.8</b>	<b>Swell %</b>	<b>0.2</b>	<b>Shrink/Swell Index %</b>	<b>2.2</b>
--------------------	------------	----------------	------------	-----------------------------	------------

Prepared by:



Date: 24/01/2023



This form is to be used by an appointed competent person for the purposes of section 10 of the *Building Act 1975* and sections 73 and 77 of the *Building Regulation 2021* (Design-specification certificate) stating that an aspect of building work or specification will, if installed or carried out as stated in this form, comply with the building assessment provisions.

### 1. Property description

Street address	LOT 9 RISE AVE, WOODFORD 4514
Lot and plan details ( <i>attach list if necessary</i> )	PART OF LOT 1 ON RP 905601
Local government area the land is situated in	MORETON BAY REGIONAL COUNCIL

### 2. Description of aspect/s certified

Clearly describe the extent of work covered by this certificate, e.g. all structural aspects of the steel roof beams.

SITE CLASSIFICATION AS PER AS 2870-2011
---

### 3. Basis of certification

Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications were relied upon.

AS 2870-2011
--------------

### 4. Reference documentation

AS 2870-2011 – RESIDENTIAL SLABS & FOOTINGS - CONSTRUCTION
--

### 5. Building certifier reference number and building development approval number

Building certifier reference number		Building development application number	
-------------------------------------	--	---	--

### 6. Appointed competent person details

Under Part 6 of the *Building Regulation* a person must be assessed as a competent for the type of work (design-specification) by the relevant building certifier.

Name ( <i>in full</i> )	PATRICE LE PLA		
Company name ( <i>if applicable</i> )	APOD SOIL TESTING PTY LTD		
Business phone number	07 3264 6995	Mobile	0411 278 525
Email address	<a href="mailto:apodsoil@bigpond.com">apodsoil@bigpond.com</a>		
Postal address	53 DRAPERS RD, EATONS HILL 4037		
Licence or registration number	QBCC LICENCE NO. 1064604		

### 9. Signature of appointed competent person

This certificate must be signed by the individual assessed and appointed by the building certifier as competent to give design-specification help.

Signature		Date	24/01/2023
LOCAL GOVERNMENT USE ONLY Date received	Click or tap to enter a date.	Reference number/s	