

# Lot 5, Marong Run, Stage 7 Marong

## Geotechnical Investigation for Arbor Estates

Report 21C 1165 (Lot 5)  
December 2021

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## Geotechnical Investigation for Arbor Estates

### Revision

Revision	Authorised	Date
21C 1165 (Lot 5)	BAB	22/12/2021

### Distribution (this version only)

Recipient	Format	Date
GTS	On file	22/12/2021
Darren Pitson Arbor Estates	Email PDF	22/12/2021



## 1 INTRODUCTION

Arbor Estates commissioned Geotechnical Testing Services (GTS) to conduct a geotechnical investigation for the proposed development at Lot 5, Marong Run, Stage 7, Marong.

The investigation has been conducted for the purpose of assessing general subsurface conditions at the site and consequently assigning a Site Classification in accordance with *AS2870 – 2011 Residential Slabs and Footings*.

## 2 INVESTIGATION

The investigation was conducted on the 15<sup>th</sup> of December 2021 using a vehicle mounted drill rig to drill 2 boreholes to depths of 1.5 to 3.0 metres within the designated area. The soil profiles are presented on page 4 and the locations of the boreholes are presented on page 5.

At the time of this investigation, the type of development proposed is understood by GTS to be a new residential building. If the actual construction varies from this, then changes may be necessary to this classification report.

## 3 SITE CONDITION

The site is currently vacant and has been filled under controlled conditions (supervised and tested by GTS) to form a relatively flat surface. At the time of the investigation, the surface of the site was dry with no grass cover. There were no trees near the investigation site, though a review of aerial photography indicates small to large trees were removed from at or near the site sometime between January 2018 and January 2019. There was no visual evidence of surface cracking or surface rock. No groundwater seepage was encountered over the investigated depths.

Full details of the soil conditions are presented in the borehole logs.

## 4 SITE CLASSIFICATION

After allowing due consideration to the site geology, soil conditions, drainage, vegetation, siteworks, GTS Level 1 Report 21C 0077 and known details of the proposed structure, the site has been classified as **Class M-D** (AS2870-2011).

Foundations designed in accordance with this classification are to be subject to the overriding conditions of Section 5.

## 5 DISCUSSION

Particular attention should be paid to the design of footings as required by *AS2870 – 2011*.

In addition to the normal founding requirements arising from the above classification, particular conditions at the site dictate that the founding medium and minimum depth below existing surface levels for all footings should be as follows:

- Controlled FILL: Silty CLAY, high plasticity, brown, grey, very stiff, some fine gravel in places  
At depth below 0.1 metres in the region of BH1 & BH2

An allowable bearing pressure of 100kPa is available for edge beams, strips and stump footings founded as above. All foundations should extend a minimum of 100mm into the above foundation material.

The proposed development should be located a minimum distance of 1 x the mature height of all trees. This distance should be increased by 50% for groups or lines of trees. If this distance is impeded, then the size and distance from the development of the tree(s) needs to be taken into account when designing the foundation.

## 6 IMPORTANT NOTES ABOUT THIS REPORT

- The site classification presented in Section 4 assumes that the current natural drainage and infiltration conditions at the site will not be markedly affected by the proposed site development work. Care should therefore be taken to ensure that surface water is not permitted to collect adjacent to the structure and that significant changes to seasonal soil moisture equilibria do not develop as a result of service trench construction or tree root action.
- Attention is drawn to Appendix B of AS2870 and CSIRO document *BTF 18 – Foundation Maintenance and Footing Performance: A Homeowner’s Guide* as a guide to maintenance requirement for the proposed structure.
- This is not a comprehensive investigation nor is it economic or practical to determine every subsurface feature on the site. Although this investigation indicates that soil conditions are relatively uniform across the site, it is recommended that the base of all footing excavations be inspected to ensure that the founding medium meets that requirements referenced herein with respect to type and strength of founding materials. If further variations in descriptions in soil types, colour or depths are discovered during construction, this office should be notified immediately so that potential influence on the footings may be assessed.
- The soil colours provided in the borehole logs attached may vary with soil moisture content and individual interpretation, therefore colour alone should not be used to identify these soils.

- Strength characteristics of soils often exhibit a large variation between wet and dry conditions. Soil characteristics of a soil profile are given on the soil conditions at the time of the investigation.
- In the event of significant earthworks being undertaken on the site after this investigation, this report may require an amendment if appropriate.

Should you have any further queries concerning these results, please do not hesitate to contact GTS on 03 5441 4881.



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**Senior Engineering Geologist**

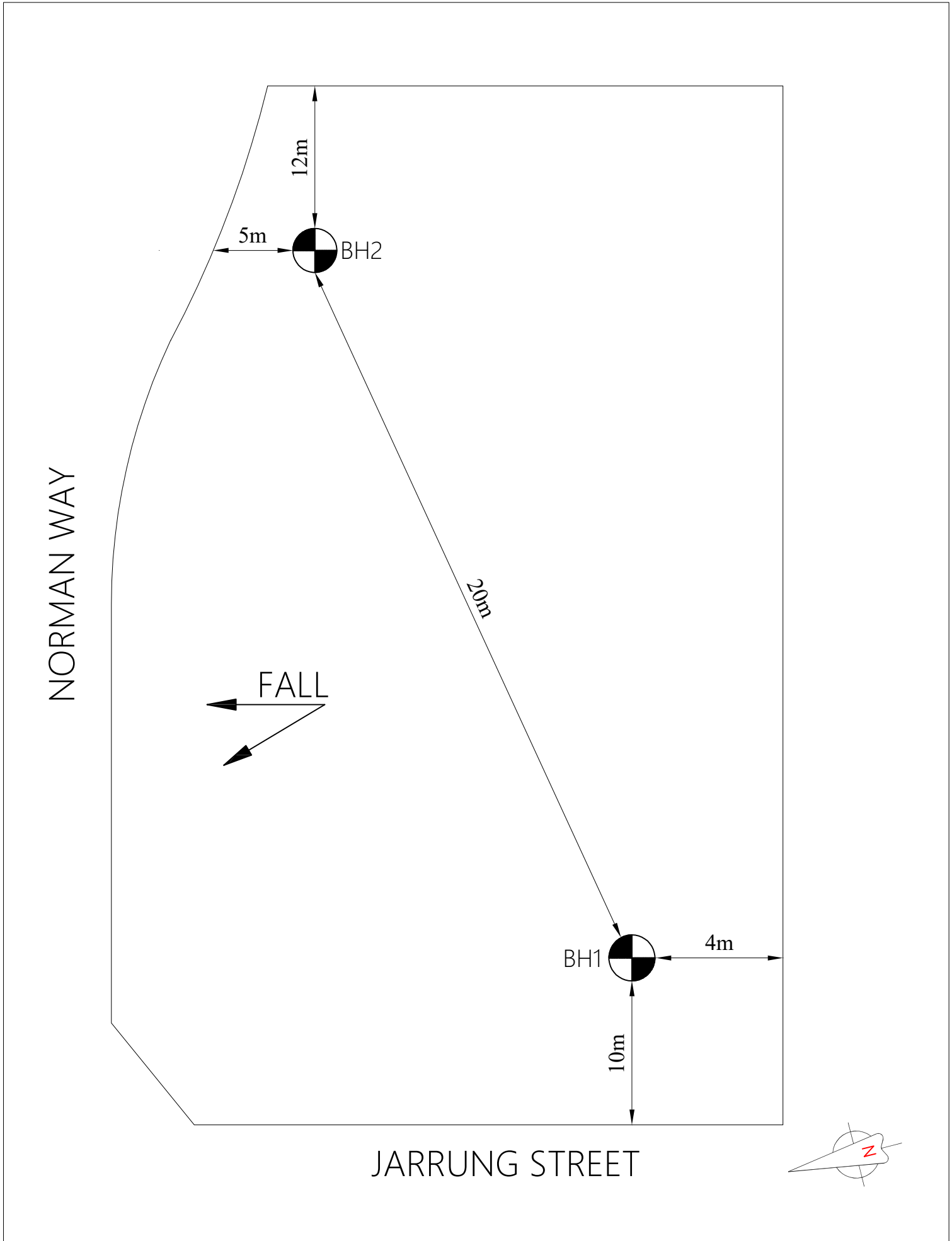
# BOREHOLE LOGS

Client:	Arbor Estates	Borehole log no:	1-2
		Report number:	21C 1165 (Lot 5)
		Date drilled:	15/12/2021
Project:	Lot 5, Marong Run, Stage 7 Marong	Logged by:	MM
		Drilling method:	AS

Profile (mm):	* Structure: (see key)	Material Description:	Moisture Description:	Cohesion Density:	Plasticity:	Testing / Sampling:
0 To 100	Topsoil	<b>BH1</b> Clayey SILT Pale brown	D	MD	Low	
To 600	Controlled FILL	Silty CLAY Brown, grey, some fine gravel	M	VSt	High	
To 1500	Soil profile	Silty CLAY Mottled grey, orange, then brown, trace tree roots and fine gravel	M	VSt	High	
0 To 100	Topsoil	<b>BH2</b> Clayey Sandy SILT Pale brown	D	MD	Low	
To 400	Controlled FILL	Silty CLAY Brown	D – M	VSt	High	
To 1700	Soil profile	Silty CLAY Mottled brown, grey	M	VSt	High	
To 2600		Silty CLAY Mottled pale brown, pale grey, trace fine sand	D	VSt	High – medium	
To 3000		Sandy CLAY Red/brown, fine to coarse sand	D	VSt	Low	

## Key

Drilling Method	Moisture Condition	Cohesion	Density	Testing/Sampling
AS – auger screwing	D – dry	VS – very soft	VL – vey loose	PP – pocket penetrometer
HA – hand auger	M – moist	S – soft	L – loose	V – hand vane sheer
	VM – very moist	F – firm	MD – medium dense	DCP – dynamic cone penetrometer
	W – wet	St – stiff	D – dense	SPT – standard penetration test
		VSt – very stiff	VD – very dense	US – undisturbed sampling
		H – hard		DS – disturbed sampling
		VH – very hard		* see notes on bore location page



**GEOTECHNICAL INVESTIGATION**

APPROXIMATE LOCATIONS  
NOT TO SCALE

**CLIENT:** ARBOR ESTATES  
**PROJECT:** LOT 5 MARONG RUN STAGE 7  
GOLDIE ST, MARONG

GTS REF: 21C 1165 (5)  
CLIENT REF:

DRAWN BY: CP  
DATE: 20 DECEMBER 2021