Lot 139 - Discover Marong Stage 5 Marong

Site Classification for Arbor Estates

Report 19C 0356 (Lot 139)
June 2019

GTS
GEOTECHNICAL TESTING SERVICES

Lot 139 - Discover Marong Stage 5
Marong

Site Classification
for
Arbor Estates

Revision

Revision	Date	Authorised
19C 0356 (Lot 139)	25/06/2019	BAB

Distribution (this revision only)

Recipient	Format	Date
GTSS	On file	25/06/2019
Arbor Estates	Email PDF	25/06/2019

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1 INTRODUCTION

Arbor Estates commissioned Geotechnical Testing Services to conduct a geotechnical investigation for the proposed development located at Lot 139 - Discover Marong Stage 5, 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 by a technician on the 16th May 2019 using a trailer mounted drill-rig and drilling 2 boreholes to depths of 1.5 to 3.0 metres within the designated area as pegged by the client. The subsequent soil profiles are presented in page 6 and the location of the boreholes are presented on page 7.

At the time of this investigation, the type of development proposed was unknown to GTS.

3 SITE CONDITIONS

The site has been filled under controlled conditions (supervised and tested by GTS) to form the current surface level and is vacant. At the time of the investigation the surface of the site was dry and had no ground cover. There were no trees present on the site. There was no visual evidence of surface cracking or surface rock. No groundwater seepage was encountered over the investigated depths.

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

4 SITE CLASSIFICATION

After allowing due consideration to the site geology, soil conditions, the controlled fill (GTS Report 19C 0356), vegetation, drainage and known details of the proposed development, the site has been classified as **Class H1-D** (AS2870 – 2011).

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

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:

- Silty CLAY, high plasticity, pale brown, brown, very stiff, trace fine to medium gravel
  At depths below 0.15 metres in the region of BH1
- Controlled FILL: Silty CLAY, medium plasticity, dark brown, brown, stiff, trace fine gravel
  At depths below 0.2 metres in the region of 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 founding material.

The proposed dwelling should be located a minimum distance of 1 x the mature height of all trees. This distance can be increased by 50 % for groups or lines of trees. If this distance is impeded, then the size and distance from the dwelling 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.

- If uncontrolled FILL is found during this investigation, it is an indication of what was found during the investigation and it may vary over the site. It may be in the best interest of the buyer / seller to undertake a more detailed investigation, in this instance.

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

Benj Beatty (BA/BSc(Hons), MPA)
Geotechnical Engineer – Ballarat District Manager

Enclosed
Borehole Logs (Page 6)
Site Map (Page 7*)*

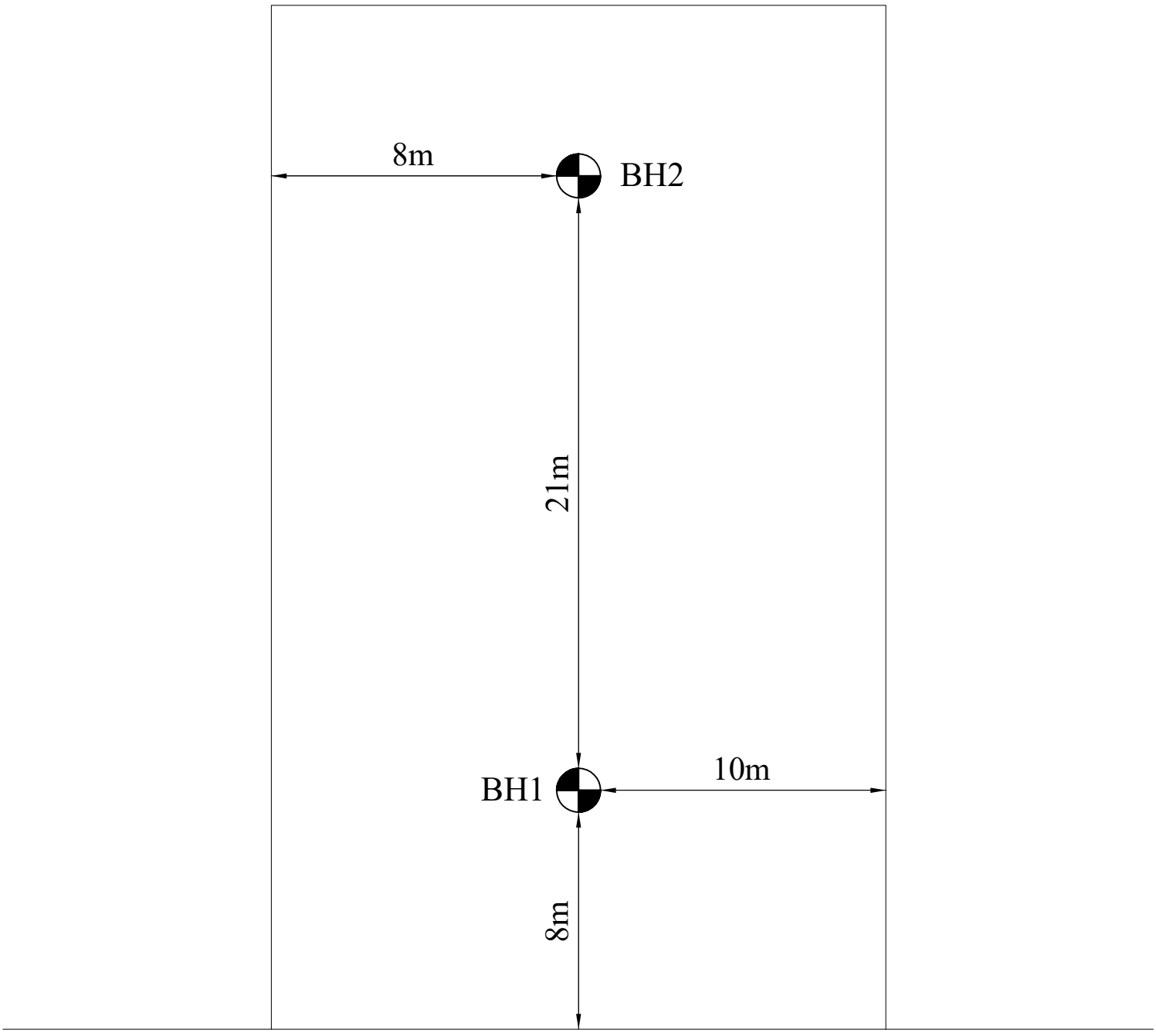
Borehole Logs

Client:	Arbor Estates	Borehole Log No.:	1-2
		Report Number:	19C 0356 (Lot 139)
		Date Drilled:	16/05/19
Project:	Lot 139 - Discover Marong Stage 5, Marong	Logged By:	BT
		Drilling Method	AS

Profile (mm):	* Structure: (see key)	Material Description:	Moisture Description:	Cohesion Density:	Plasticity:	Testing / Sampling:
0 to 150	FILL	**BH1** Clayey Sandy SILT brown, dark brown	Moist	Medium dense	Low	
to 1900	Soil Profile	Silty CLAY pale brown, trace fine sand and gravel	Moist	Very stiff	High	
to 3000	Soil Profile	Silty CLAY pale brown, mottled pale grey, some fine to medium gravel	Moist	Very stiff	Low to Medium	
0 to 200	FILL	**BH2** Clayey Sandy SILT pale brown	Moist	Medium dense	Low	
to 400	Controlled FILL	Silty CLAY dark brown, brown, trace fine gravel	Moist	Stiff	Medium	
to 1800	Soil Profile	Silty CLAY brown, reddish brown, some fine to medium sand and fine gravel	Moist	Very stiff	High	
to 3000	Soil Profile	Silty CLAY pale brown, mottled off brown, some fine to medium gravel	Moist	Very stiff	Low to Medium	

Key:

Drilling Method:	Moisture Condition	Cohesion:	Density:	Testing/Sampling:
AS - Auger Screwing	D - Dry	VS - Very Soft	VL - Very Loose	PP – Pocket Penetrometer
HA - Hand Auger	M - Moist	S - Soft	L - Loose	V – Hand Vane Sheer
	W - Wet	F - Firm	MD - Medium Dense	DCP – Dynamic Cone Penetrometer
		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 borelog location page



ANTRIM STREET

GTS GEOTECHNICAL TESTING SERVICES	**GEOTECHNICAL INVESTIGATION**	**CLIENT:** ARBOR ESTATES **PROJECT:** DISCOVER MARONG ESTATE STAGE 5, MARONG
	APPROXIMATE LOCATIONS NOT TO SCALE	GTS REF: 19C 0356 (Lot 139) — DATE: 18 JUNE 2019