Lot 218 Discover Marong Stage 8 Marong

Geotechnical Investigation for Arbor Estates

Report 22C 0677 (Lot 218)
October 2022

GTS
GEOTECHNICAL TESTING SERVICES

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Marong

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for
Arbor Estates

Revision

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22C 0677 (Lot 218)	HT	26/10/2022

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GTS	On file	26/10/2022
Arbor Estates Attn: Darren Pitson	Email PDF darren@kpdgroup.com.au	26/10/2022

1 INTRODUCTION

Arbor Estates commissioned Geotechnical Testing Services (GTS) to conduct a geotechnical investigation for the proposed development at Lot 218 Discover Marong Stage 8, 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 20th of October 2022 using a vehicle mounted drill rig to drill 2 boreholes to depths of 3.0 metres within the designated area. The soil profiles and borehole locations are presented at the end of this report.

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 has a slight fall to the northwest and is currently vacant. At the time of the investigation, the surface of the site was dry to moist with no grass cover. There are no trees within the vicinity of the site. There was visual evidence of surface cracking. There was no visual evidence of 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 including trees and known details of the proposed development, the site has been classified as **Class P,** due to uncontrolled fill in excess of 0.4 metres across the site.

The general reactivity of the site is Class H1-D. Class H1-D sites have an expected characteristic surface movement (y_s) of 40 to 60mm.

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:

- Silty CLAY, high plasticity, orange/brown, trace fine to coarse sand, trace fine gravel, stiff At depths below 0.4 metres in the region of BH2, and at depths below 0.5 metres in the region of BH1

An allowable bearing pressure of 100kPa is available for edge beams, strips and stump footings founded in the undisturbed natural silty clays. All foundations should extend a minimum of 100mm into the above foundation material. The base of all footing excavations must be free of tree roots.

The maximum fill thickness under slab should not be more than 0.4 m in clay or 0.8 m in sand.

It is understood the site will undergo topsoiling. This layer of topsoil is unsuitable as a founding medium and footings should extend through this layer of 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.

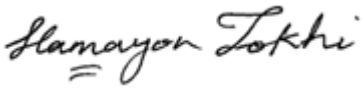
- Strength characteristics of soils often exhibit a large variation between wet and dry conditions. Soil characteristics of a soil profile are given on the soil conditions at the time of the investigation.

- In the event of significant earthworks being undertaken on the site after this investigation, this report may require an amendment if appropriate.

- If 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.

Reviewed by



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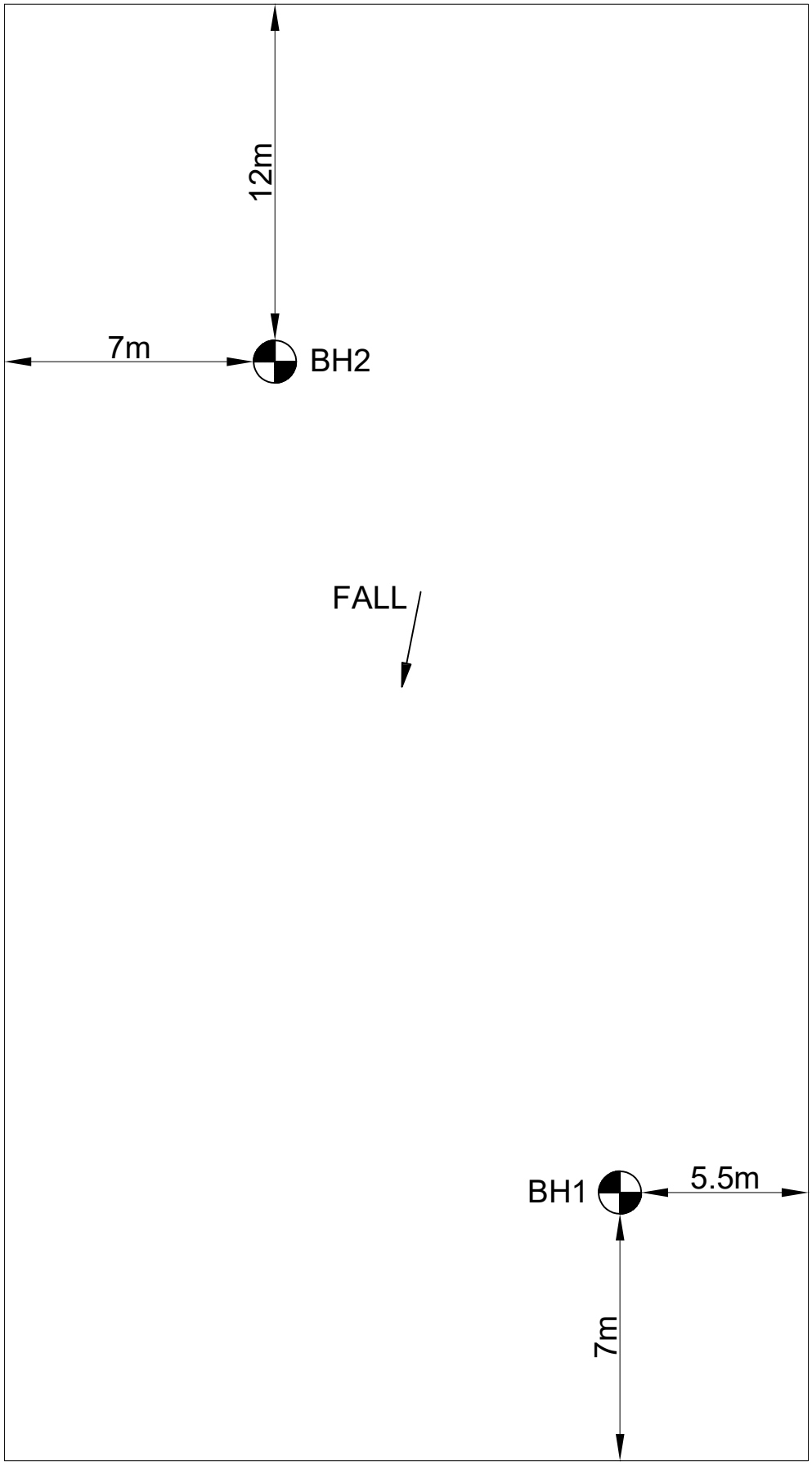
Senior Geotechnical Engineer

Email: hamayont@gts.com.au

Client:	Arbor Estates	Borehole log no:	1-2
		Report number:	22C 0677 (Lot 218)
		Date drilled:	20/10/22
Project:	Lot 218, Discover Marong Stage 8 Marong	Logged by:	PB
		Drilling method:	AS

Profile (mm):	* Structure: (see key)	Material Description:	Moisture Description:	Cohesion Density:	Plasticity:	Testing / Sampling:
0 To 500	FILL	**BH1** Silty CLAY Brown, trace fine to coarse sand, trace fine gravel	M	F	High	*DCP @ 0.0m 2,3,2,2,5,7, 7*
To 1200	Soil Profile	Silty CLAY Orange/brown, trace fine to coarse sand, trace fine gravel	M	St	High	-
To 3000		Silty CLAY Orange/brown, with fine to coarse sand, trace fine gravel	M	St	High	-
0 To 400	FILL	**BH2** Silty CLAY Brown, trace fine to coarse sand, trace fine gravel	M	F	High	-
To 1100	Soil Profile	Silty CLAY Orange/brown, trace fine to coarse sand, trace fine gravel	M	St	High	-
To 3000		Silty CLAY Orange/brown, with fine to coarse sand, trace fine gravel	M	St	High	-

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
	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 bore location page



GTS GEOTECHNICAL TESTING SERVICES

GEOTECHNICAL INVESTIGATION

APPROXIMATE LOCATIONS
NOT TO SCALE

CLIENT: ARBOR ESTATES
PROJECT: LOT 218 DISCOVER MARONG STAGE 8, MARONG

GTS REF: 22C 0677 (LOT 218)
CLIENT REF:

DRAWN BY: CP
DATE: 26 OCTOBER 2022