

# Lot 195 – Discover Marong Stage 7 Marong

Geotechnical Investigation for  
Arbor Estates

Report 20C 0831 (Lot 195)  
September 2020

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## Geotechnical Investigation for Arbor Estates

### Revision

Revision	Authorised	Date
20C 0831 (Lot 195)	BAB	22/09/2020

### Distribution (this version only)

Recipient	Format	Date
GTS	On file	22/09/2020
Arbor Estates Attn: Darren Pitson	Email PDF darren@kpdgroup.com.au	22/09/2020



## 1 INTRODUCTION

Arbor Estates commissioned Geotechnical Testing Services (GTS) to conduct a geotechnical investigation for the proposed development at Lot 195 – Discover Marong 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 16<sup>th</sup> of September 2020 using a trailer mounted drill rig to drill 2 boreholes to depths of 1.5 to 3.0 metres within the designated area. The subsequent soil profiles are presented on pages 4 and the location of the boreholes is presented on page 5.

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

## 3 SITE CONDITION

The site is relatively flat surface and is currently vacant. At the time of the investigation, the surface of the site was dry to moist with a sparse coverage of natural grasses. There were no trees near the investigation site. There was no visual evidence of surface rock, however, there was visual evidence of surface cracking. 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, and known details of the proposed structures, 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, red/brown, brown, some fine to medium sand, stiff to very stiff  
At depth below 0.1 metres in the region of BH1, and below 0.3 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 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.
- 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.



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**Senior Engineering Geologist**

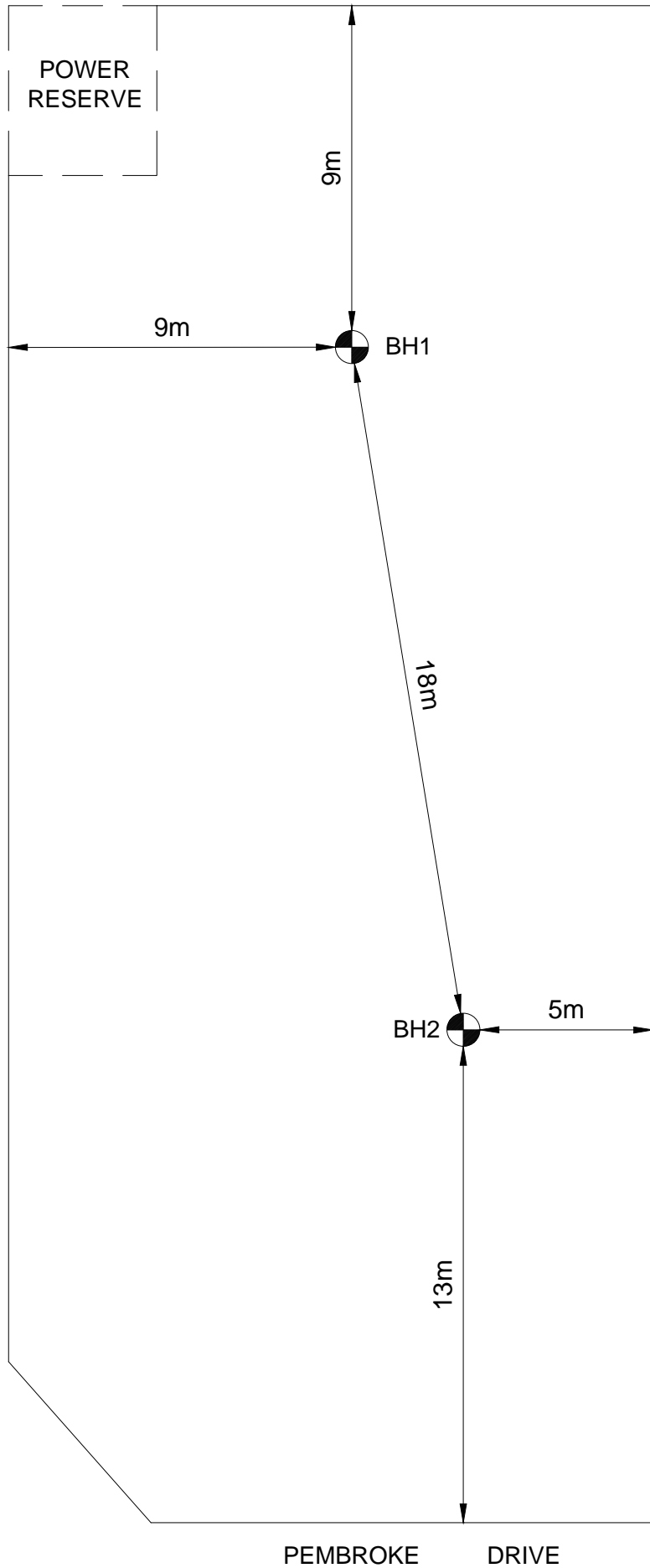
## BOREHOLE LOGS

Client:	Arbor Estates	Borehole log no:	1-2
		Report number:	20C 0831 (Lot 195)
		Date drilled:	16/09/20
Project:	Lot 195 – Discover Marong Stage 7, Marong	Logged by:	TP
		Drilling method:	AS

Profile (mm):	* Structure: (see key)	Material Description:	Moisture Description:	Cohesion Density:	Plasticity:	Testing / Sampling:
0 To 100	FILL	<b>BH1</b> Clayey Sandy SILT Dark brown	M	St	Low	-
100 To 600	Soil Profile	Silty CLAY Red/brown, brown	M	St - VSt	High	-
600 To 2100		Silty CLAY Brown, pale brown, some fine gravel	M	VSt	High	-
2100 To 3000		Silty CLAY Pale brown mottled yellow/grey	M	VSt	High	-
0 To 300	FILL	<b>BH2</b> Gravelly Silty CLAY Dark brown, some fine to medium sand	M	F	Medium	-
300 To 600	Soil Profile	Silty CLAY Red/brown, some fine to medium sand	M	St	High	-
600 To 700		Silty CLAY Red/brown, some fine to medium sand	M	VSt	High	-
700 To 1500		Sandy Gravelly CLAY Pale brown, fine to coarse sand, fine gravel	M	VSt	Medium – High	-

### 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 195 - DISCOVER MARONG  
STAGE 7, MARONG

GTS REF: 20C 0831 (LOT 195)  
CLIENT REF:

DRAWN BY: ED  
DATE: 21 SEPTEMBER 2020