Lot 23, Marong Run, Stage 7 Marong

Geotechnical Investigation for Arbor Estates

Report 21C 1165 (Lot 23)
December 2021

GTS
GEOTECHNICAL TESTING SERVICES

Lot 23, Marong Run, Stage 7
Marong

Geotechnical Investigation
for
Arbor Estates

Revision

Revision	Authorised	Date
21C 1165 (Lot 23)	BAB	3/12/2021

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Recipient	Format	Date
GTS	On file	3/12/2021
Darren Pitson Arbor Estates	Email PDF	3/12/2021

1 INTRODUCTION

Arbor Estates commissioned Geotechnical Testing Services (GTS) to conduct a geotechnical investigation for the proposed development at Lot 23, 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 22nd of November 2021 using a vehicle mounted drill rig to drill 2 boreholes to a depth of 1.5 metres within the designated area. The soil profiles are presented on page 4 and the location 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 formed to create a surface that is relatively flat. 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 including trees and known details of the proposed development, 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:

- Silty CLAY, medium to high plasticity, brown, pale brown, very stiff to hard, trace fine to medium sand
  Below 0.2 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.

- 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.

Benj Beatty BA/BSc (Hons), MPA, MAusIMM
Senior Engineering Geologist

www.gts.com.au

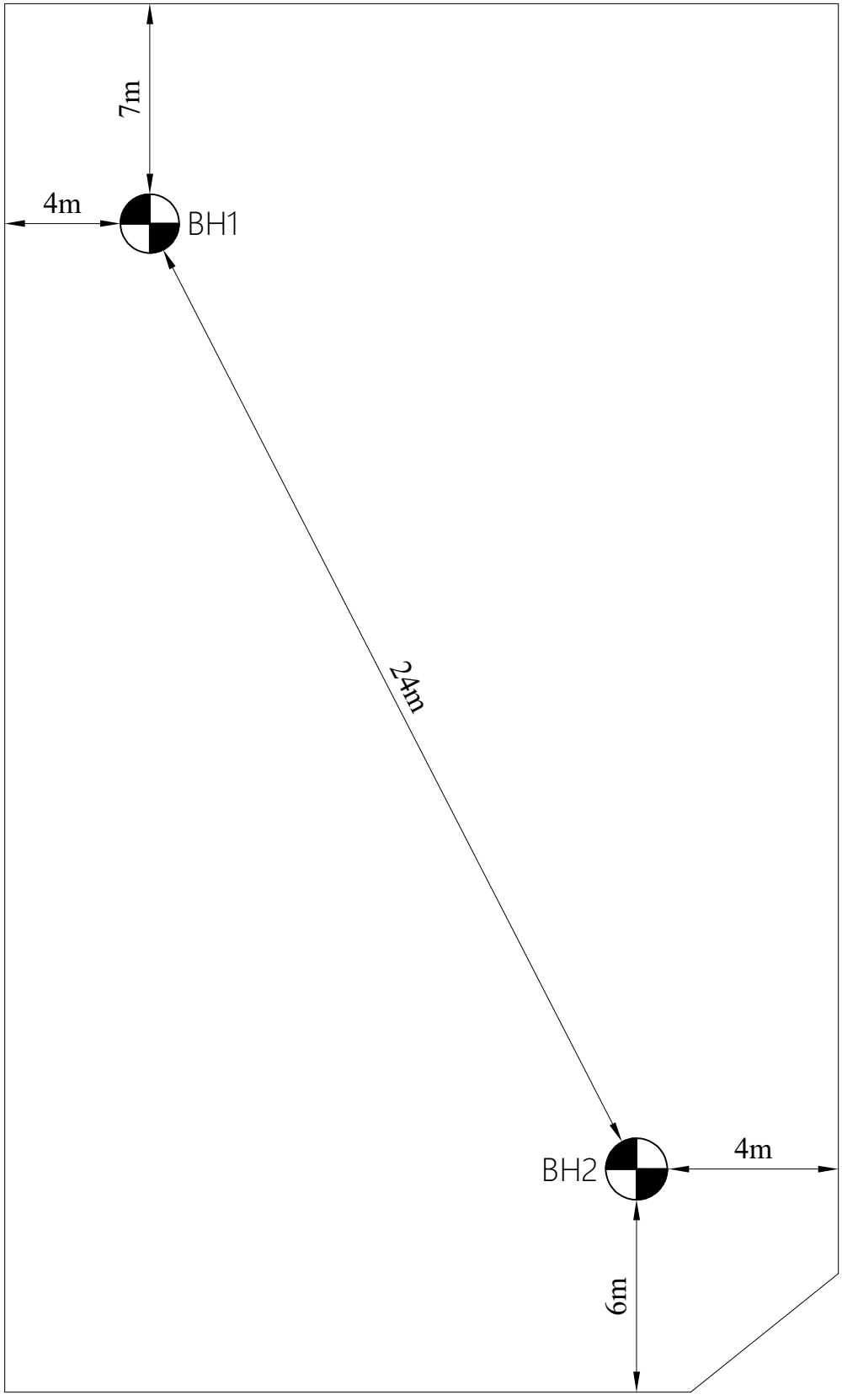
BOREHOLE LOGS

Client:	Arbor Estates	Borehole log no:	1-2
		Report number:	21C 1165 (Lot 23)
		Date drilled:	22/11/2021
Project:	Lot 23, Marong Run, Stage 7 Marong	Logged by:	BT
		Drilling method:	AS

Profile (mm):	* Structure: (see key)	Material Description:	Moisture Description:	Cohesion Density:	Plasticity:	Testing / Sampling:
0 To 200	FILL	**BH1** Clayey SAND Fine to medium, brown	M	L – MD	Low – medium	
To 1200	Soil profile	Silty CLAY Brown, pale brown, trace fine to medium sand	D – M	VSt – H	Medium – high	
To 1500		Silty CLAY Brown, trace fine to medium sand and fine gravel	M	VSt – H	Medium – high	
0 To 200	FILL	**BH2** Clayey SAND Fine to medium, brown	M	L – MD	Low – medium	
To 1200	Soil profile	Silty CLAY Brown, pale brown, trace fine to medium sand	D – M	VSt – H	Medium – high	
To 1500		Silty CLAY Brown, trace fine to medium sand and fine gravel	M	VSt – H	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



GTS GEOTECHNICAL TESTING SERVICES

GEOTECHNICAL INVESTIGATION

APPROXIMATE LOCATIONS
NOT TO SCALE

CLIENT: ARBOR ESTATES
PROJECT: LOT 23 MARONG RUN STAGE 7
GOLDIE ST, MARONG

GTS REF: 21C 1165 (23)
CLIENT REF:

DRAWN BY: CP
DATE: 24 NOVEMBER 2021