

# Lot 138 - Discover Marong Stage 5 Marong

Site Classification for  
Arbor Estates

Report 19C 0356 (Lot 138)  
June 2019

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## Site Classification for Arbor Estates

### Revision

| Revision           | Date       | Authorised |
|--------------------|------------|------------|
| 19C 0356 (Lot 138) | 25/06/2019 | BAB        |

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| Recipient     | Format    | Date       |
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## 1 INTRODUCTION

Arbor Estates commissioned Geotechnical Testing Services to conduct a geotechnical investigation for the proposed development located at Lot 138 - 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 16<sup>th</sup> June 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 0.1 metres in the region of BH2
- Controlled FILL: Silty CLAY, high plasticity, pale brown, stiff, trace fine sand and gravel  
At depths below 0.3 metres in the region of BH1

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)

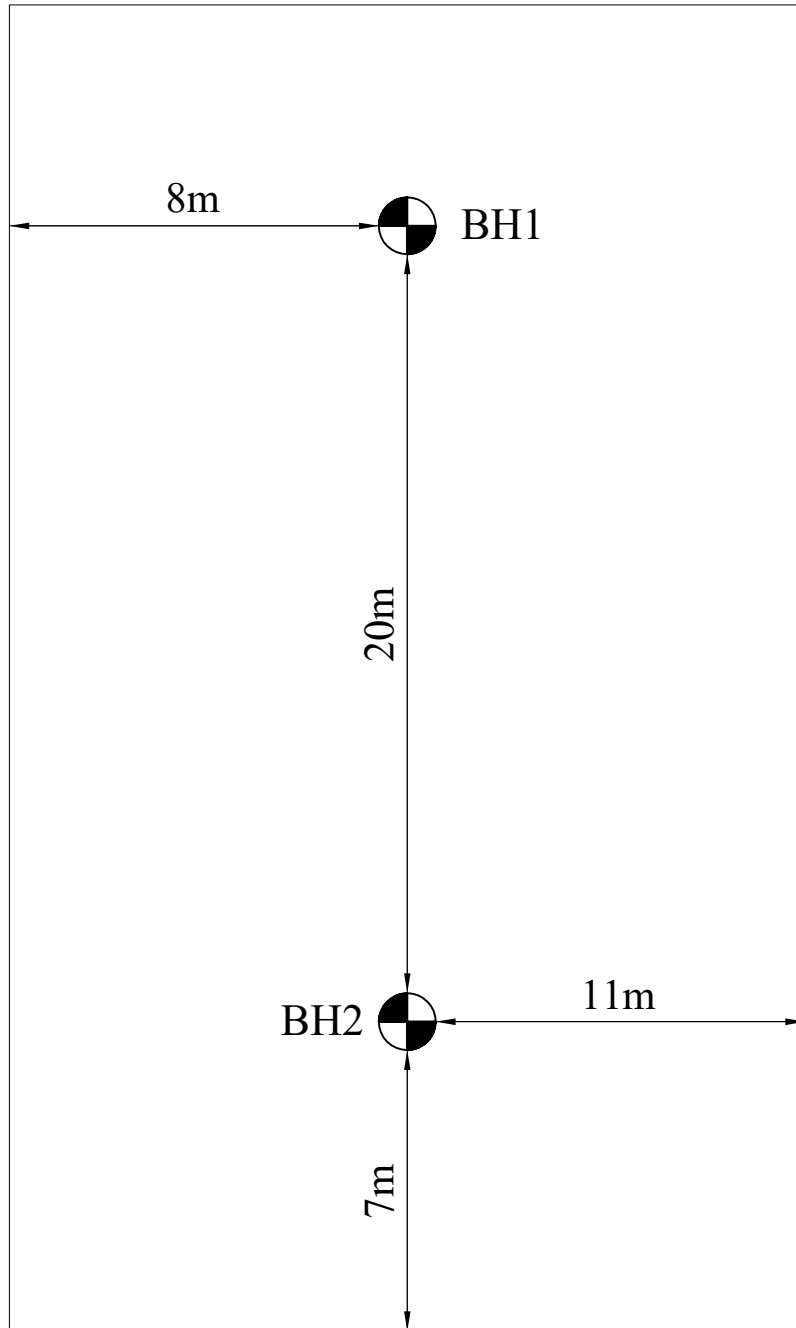
## Borehole Logs

|          |                                              |                   |                       |
|----------|----------------------------------------------|-------------------|-----------------------|
| Client:  | Arbor Estates                                | Borehole Log No.: | 1-2                   |
|          |                                              | Report Number:    | 19C 0356<br>(Lot 138) |
|          |                                              | Date Drilled:     | 16/05/19              |
| Project: | Lot 138 - Discover Marong Stage 5,<br>Marong | Logged By:        | BT                    |
|          |                                              | Drilling Method   | AS                    |

| Profile (mm): | * Structure: (see key) | Material Description:                                                    | Moisture Description: | Cohesion Density: | Plasticity: | Testing / Sampling: |
|---------------|------------------------|--------------------------------------------------------------------------|-----------------------|-------------------|-------------|---------------------|
| 0 to 300      | FILL                   | <b>BH1</b><br>Clayey Sandy SILT<br>pale brown, brown                     | Moist                 | Medium dense      | Low         |                     |
| 300 to 600    | Controlled FILL        | Silty CLAY<br>pale brown, trace fine sand and gravel                     | Moist                 | Very stiff        | High        |                     |
| 600 to 1200   | Soil Profile           | Sandy Silty CLAY<br>pale brown, fine sand                                | Moist                 | Very stiff        | Medium      |                     |
| 1200 to 2500  | Soil Profile           | Sandy Gravelly CLAY<br>brown, fine to medium gravel, fine to coarse sand | Moist                 | Very stiff        | High        |                     |
| 2500 to 3000  | Soil Profile           | Silty CLAY<br>pale brown, mottled grey, some fine to medium gravel       | Moist                 | Very stiff        | Low         |                     |
| 0 to 100      | FILL                   | <b>BH2</b><br>Clayey Sandy SILT<br>brown, pale brown                     | Moist                 | Medium dense      | Low         |                     |
| 100 to 1500   | Soil Profile           | Silty CLAY<br>pale brown, trace fine to medium gravel                    | Moist                 | Very stiff        | High        |                     |

### 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 Shear                  |
|                     | 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 |



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