

Site Classification Summary Report

Client	Calibre Consulting (ACT) Pty Ltd	Project No.	77374.09
Project	Site Classification	Date	06 Sep 2017
Address	Block 1 Section 29, Throsby	Doc No.	R.001.Rev0

Classification Procedure

Existing Subsurface Conditions:

Test Pit 198: Located in the northwest corner of Block 1 Section 29. Dry to moist topsoil filling to 0.15 m depth, hard, dry to moist gravelly silty clay filling to 0.4 m depth, very stiff, moist sandy silty clay to 0.5 m depth, stiff to very stiff, moist clay to 1.1 m depth, then loose/ firm to stiff, moist to wet clayey sand/ sandy clay to 1.7 m depth overlying stiff to very stiff, moist, medium plasticity clay to the limit of investigation depth of 2.0 m.

Test Pit 199: Located in the northeast of Block 1 Section 29. Dry to moist topsoil filling to 0.05 m depth, medium dense, dry to moist sandy silt to 0.2 m depth, stiff to very stiff, moist silty sandy clay to 0.4 m depth, then very stiff, moist, medium plasticity clay to 1.0 m depth overlying extremely low to very low strength, extremely to highly weathered rhyodacite to the limit of investigation depth of 1.4 m.

Test Pit 200: Located in the centre of Block 1 Section 29. Moist to wet topsoil filling to 0.15 m depth, soft, wet low plasticity sandy silty clay to 0.4 m depth, soft to firm, wet, low plasticity sandy clay to 0.7 m depth, then stiff to very stiff, moist, medium plasticity clay to 1.3 m depth overlying very low to low strength, highly to moderately weathered dacite to the limit of investigation depth of 1.6 m.

Test Pit 201: Located in the southwest corner of Block 1 Section 29. Dry to moist topsoil filling to 0.05 m depth, then hard, dry to moist, high plasticity clay to 0.8 m depth overlying extremely low to very low strength, extremely to highly weathered dacite to the limit of investigation depth of 1.1 m.

Test Pit 202: Located in the most southern part of Block 1 Section 29. Moist to wet topsoil filling to 0.2 m depth, very stiff, dry to moist sandy clayey silt to 0.5 m depth, very stiff to hard, dry to moist sandy clay to 1.0 m depth, then medium dense to dense, dry to moist clayey sand to 1.3 m depth overlying medium strength, highly to moderately weathered dacite to the refusal depth of 1.4 m.

Test Pit 203: Located in the southeast corner of Block 1 Section 29. Moist to wet topsoil filling to 0.15 m depth, very stiff, dry to moist sandy clayey silt to 0.3 m depth, then stiff to very stiff, moist to dry, medium plasticity clay to 0.8 m depth overlying very low strength, highly weathered dacite to the limit of investigation depth 1.1 m.

No free groundwater was observed during excavation of the test pits. However the pits were backfilled immediately following excavation precluding longer term monitoring of groundwater levels. Groundwater conditions rarely remain constant and can change seasonally due to variations in rainfall, temperature and soil permeability. For these reasons, it is noted that the moisture condition of the site soils may vary considerably from the time of the investigation compared to at the time of construction.

Bulk Earthworks:

Filling within the block placed under Level 1 control as defined in AS 3798 – 2007 (Ref 1).

Site Classification

Site classification in accordance with AS2870 – 2011 (Ref 2) provides guidance on the patterns and magnitude of moisture related seasonal ground movements that must be considered in design. Due to the presence of abnormal moisture conditions arising from the presence of former and existing trees, the site is classified as Class P (problem site). Notwithstanding the Class P classification, based on soil reactivity including the additional tree-induced suction change and allowing for variation in the subsoil profile, the site would be equivalent to Class M conditions (moderately reactive). The classification must be reassessed should the subsurface profile change by either cutting or filling and/or if the presence of service trenches, retaining walls or submerged structures are within the zone of influence of the proposed footings.

Footing Systems

Reference must be made to AS2870-2011 (Ref 2) which indicates footing systems that are appropriate for each site classification. All footings must be found within a uniform bearing stratum of suitable strength/material, below the zone of influence of any service trenches, backfill zones, retaining walls or underground structures. Masonry walls should be articulated in accordance with current best practice. Footing systems must be confirmed by a structural engineer taking into consideration any onsite or offsite constraints.

Building design will need to ensure uniform moisture conditions are maintained in the vicinity of the footings. Design must be based on engineering principles (i.e. Class P conditions). The Class P detail could include the inclusion of root barriers. This advice is only valid if all footings and slab thickenings are founded in natural soils and the recommendations in CSIRO Sheet BTF18 (attached) are considered in the design.

Maintenance Guidelines

Reference should be made to the attached CSIRO Sheet BTF 18 'Foundation Maintenance & Footing Performance' to comments about gardens, landscaping and trees on the performance of foundation soils.

Comments

- The successful purchaser must make their own interpretations, deductions and conclusions from the information made available and will need to accept full responsibility for such interpretations, deductions and conclusions.
- The site must be subject to a development specific geotechnical investigation.
- The classification must be reassessed should the subsurface profile change either by adding fill or removing soil from the block.
- Additional topsoils/filling may have been spread subsequent to the investigation.

- Some variability in subsurface conditions must be anticipated.
- Moisture condition of site soils and/or the presence of groundwater may vary considerably from time of investigation compared to at the time of construction.
- Depending on the depth of site cut and trenches, rock excavation may be required.
- All new filling must be placed under controlled conditions (AS 3798-2007).
- All footings should found within a uniform bearing stratum of suitable strength/material. It is recommended that footing excavations be inspected by a geotechnical engineer.

References

1. AS 3798-2007 'Guidelines on Earthworks for Commercial and Residential Developments' Standards Association of Australia.
2. AS 2870-2011 'Residential Slabs and Footings,' Standards Association of Australia.

Limitations

This report must be read in conjunction with the attached notes "About this Inspection Report".

Douglas Partners Pty Ltd

Reviewed by

Anthony Hooper
Geotechnical Engineer

Michael Jones
Principal

Attachments: About this Inspection Report
CSIRO Publication