



21st December, 2017

To Whom it May Concern

Site Classification for Proposed Residential Development Lots 41 and 42, Argentia, Palm Cove Report Reference PGC1217013

1. Introduction

This report by Phi Ground Innovations (PGI) summarises the results of a site classification investigation for a proposed residential development at Lots 41 and 42, Argentia, Palm Cove. The work was commissioned by Kerdic Homes Pty. Ltd.

For the purposes of classification, intrusive investigation and associated in situ and laboratory testing was undertaken. Details of the field work are given in this report, together with our recommended site classification and comments relating to appropriate construction practice.

2. Site Description

The location of the proposed development, Lots 41 and 42, Argentia, Palm Cove comprises an undeveloped flat residential lots currently stripped of vegetation and levelled.

3. Field Work

Field work for this investigation comprised augered boreholes, put down to a maximum depth of 2.00m below existing ground level. Materials arising from the augering were logged by an experienced field engineer, who also took representative samples before backfilling the exploratory holes. DCP testing was undertaken to confirm the strength of near surface soil.

Materials encountered in the boreholes are summarised in the following table.

Exploratory Hole	Strata Thickness (m)	Material Description
C7714 - BH01	0.00 – 0.10	TOPSOIL
	0.10 – 1.20	CL: Silty CLAY pale brown, low plasticity, moist
	1.20 – 2.00	CL: Silty sandy CLAY yellow brown, fine to coarse sand, low plasticity, moist
C7715 - BH02	0.00 – 0.10	TOPSOIL
	0.10 – 1.10	CL: Silty CLAY, low plasticity, moist
	1.10 – 2.00	CL: Sandy CLAY, fine to coarse sand, low plasticity, moist

No free groundwater was encountered at either location however ground water levels can fluctuate due to seasonal and other factors.

Document Revision & Approval History:

Rev	Date	Description	Prepared	
1.0	2 nd Feb 2017	Classification	AWH	QBCC15020091

4. Comments

4.1. Proposed Development

It has been assumed for the purposes of this report that the proposed development will comprise a relatively light single storey dwelling constructed at or near grade.

4.2. Predicted Surface Movement

The results of investigation and testing indicate that the site may be considered to have characteristic surface movement due to seasonal changes in moisture content ranging from 20mm to 40mm.

4.3. Allowable Bearing Capacity

Results of in situ testing indicate the near surface strata within the proposed development footprint are likely to provide an allowable bearing capacity for conventional footings of 100kPa under normal site conditions.

4.4. Site Classification

In accordance with AS2870 a classification of **Class S** is applicable to the subject site.

5. Site Preparation

Prior to construction of ground bearing slabs, foundations or placement of additional fill within the building footprint, it is recommended that the following site preparation methods are adopted:

- strip all remaining vegetation and soil containing organic matter from within the building footprint and grub out all remnant roots from the building area;
- then moisture condition (wet or dry) the exposed subgrade to approximate optimum moisture content;
- then compact the subgrade with at least 4 passes of a minimum 12 tonne static weight roller or similar, with a final test roll to identify any areas requiring further rolling or removal.

Any additional fill to the building footprint should comprise a granular soil placed in layers of maximum 250 mm loose thickness with each layer compacted to at least 98% Standard maximum dry density ratio, within 2% of the optimum moisture content for Standard compaction. Placement of additional fill should be subject to Level 1 geotechnical inspections and testing as per the requirements of AS 3798 – 2007.

6. Foundation Maintenance

The soil moisture around the buildings should be maintained and extremes of wetting and drying should be avoided. The following general measures are recommended to reduce the potential for footing and building damage caused by abnormal moisture variations within the site:

- Tree planting adjacent to the buildings should be restricted.
- Irregular or excessive watering of the gardens adjacent to the house should be avoided.
- Any leaking or damaged underground services should be repaired promptly.
- Provide paving (graded away from the building) to the edge of the building.

The site classification presented in Section 4.4 of the report is provided on the basis that the performance expectations set out in Appendix B of AS2870-2011 are acceptable and that site maintenance complies with the provisions of CSIRO Information Sheet BTF 18, "Foundation Maintenance and Footing Performance: A Homeowner's Guide", available from the CSIRO website.

7. Limitations

This report has been prepared for the proposed development at Lots 41 and 42, Argentia, Palm Cove for the sole use of Kerdic Homes Pty. Ltd. The report has been produced for this project only and for the purpose(s) described in the report. It should not be used for other projects or by a third party. In preparing this report PGI has necessarily relied upon information provided by the client and/or their agents.

It should be noted that the materials encountered at the test locations represent the ground conditions at those locations only. The nature and continuity of the materials away from the test locations are inferred. Variations to the ground conditions are likely. The findings contained within this report are the result of limited investigations conducted in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

8. References

Australian Standard AS 2870-2011 "Residential Slabs and Footings - Construction", June 2011, Standards Australia.

Australian Standard AS 3798 – 2007 "Guidelines on Earthworks for Commercial and Residential Developments", Standards Australia

Yours faithfully

On Behalf of PGI

A handwritten signature in blue ink, appearing to read 'Andrew Horspool', is written over a faint, light blue circular stamp or watermark.

Andrew Horspool
Engineering Geologist