



The Island Engineer
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21 April 2023

Meagan Sheppard

Re: 71 Woodlands Circuit

RUSSELL ISLAND Qld 4184

Dear Meagan,

Re: PRELIMINARY FOUNDATION ADVICE: Above Address

References: Island Soil Testing Site Classification Report 504151

SITE CLASSIFICATION "P" (Trees) / Weak Underlying Soils / Underlying "Class S" (Slightly Reactive)

The Site Classification of "P" (Problematic) is due to a layer of inadequate bearing capacity and is likely to be an indication of the presence of loose sands, collapsing soils and/or swampy deep silt deposits. The Site Classification of "P" (Problematic) is also due to the presence of trees (*whether recently or likely to be removed*) that may affect the foundations of buildings. This means that, the site is not appropriate for a standard "off the shelf" foundation design to AS2870 Residential Slabs & Footings for a Classification "S" soil. The most appropriate design, and likely to be the most cost effective will be a specialist foundation design for this site undertaken by The Island Engineer that will include inspections during foundation construction.

Following review of the above referenced document I advise that, depending on a review of the proposed structure and type of construction:

1. The removal of trees (including root balls) is likely on this site and where this occurs the foundation bearing capacity in these locations will be inadequate and deeper founding will be required. The design of foundations in these areas will need to consider Appendix H of *AS2870-2011 Residential Slabs & Footings* and the proposed structure.
2. A stiffened raft slab designed to STANDARD DESIGNS at *AS2870-2011* is not suitable without supporting bored piers. The bore-log report indicates that bored piers supporting a concrete slab designed to *AS3600:2018 Concrete Structures & AS2159:2009 Piling – Design & installation* are likely to be founded at a depth of 1.4-1.6m. **The undersigned, being a structural engineer, is best placed to undertake the appropriate design based on the proposed supported structure.**
3. Subject to consideration of item 1 above, a post supported structure for light framed residences to two levels would require the use of bored concrete piers designed to *AS2159:2009 Piling – Design & installation*. The bore-log report indicates that supporting bored piers are likely to be founded at a depth of 1.4-1.6m.
4. **The undersigned, being a structural engineer, is best placed to undertake the appropriate design based on the proposed supported structure.**

Note that a formal foundation design by a RPEQ Structural Engineer is required, along with an inspection of the strength of the base of bore holes. This opinion letter is preliminary only, no proposed building plans have been considered in the formation of this opinion and is not intended to substitute for RPEQ certified design.

Please contact this office for a quote to undertake any foundation design or other structural engineering (wind load assessments, building bracing, floor, frame & roof design) requirements and assessment of *Redland City Council* imposed *Coastal Protection Overlays, Flood & Storm Tide Overlays or Landslide Hazard Overlays* that may be relevant to your property at the number or email below or if you seek any clarification of the above.

Yours faithfully

A handwritten signature in black ink, appearing to read 'R.J. Saunders', written in a cursive style.

Raymond J Saunders BE(Civil), MIEAust, CPEng, NER, APEC Engineer IntPE(Aus), Member Australian Geomechanics Society, RPEQ 11020 (Civil & Struct)

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