



Whalan and Partners Ltd, Bayleys
Licensed under the REA Act 2008

This information Memorandum, title or other supplementary property information (the "Information") has been prepared by Whalan and Partners Limited, trading as Bayleys ("Bayleys") as agent for "the Vendor". The Information contains information that is publicly available and/or sourced from third parties and capable of independent verification. It has been prepared solely to assist interested parties in deciding whether to further their interest in the Property and Whalan and Partners Limited is acting as a conduit and merely passing this information over. Prospective purchasers must not confine themselves to the contents of the Information but should, in conjunction with their professional advisors, make their own evaluation of the Property and conduct their own investigation, analysis and verification of the data contained in the Information and otherwise concerning the Property. Such evaluation should extend to and include whether there has been a change in the affairs or prospects of the Property since the date of the Information or since the date as at which any information contained in the Information is expressed to be applicable.

Bayleys and the Vendor have not verified any of the detail contained in the Information and Bayleys and the Vendor make no representation or warranty as to the accuracy or completeness of the information and neither Bayleys nor the Vendor accept and/or shall have any liability whatsoever for the accuracy of any part of the information including any liability for any statements, opinions, information or matters (expressed or implied) arising out of, contained in or derived from the Information, or any omissions from, or failure to correct any information, or any other written or oral communications transmitted to any recipient of the Information in relation to the Property.

2021-02-01

Greg Dewe
Land Operations Manager
Fulton Hogan Ltd

Via email: Gregory.Dewe@fultonhogan.com

The contents of this documentation are strictly subject to the terms and conditions of the disclaimer contained at the front of this documentation. Prospective purchasers must accordingly read and acquaint themselves with the disclaimer prior to reading the documentation

Dear Greg

Rosemerry Subdivision – Stage 16 Geotechnical Completion Letter Report

This geotechnical completion letter report is submitted to fulfil the geotechnical requirements of Condition 21 of the Selwyn District Council Resource Consent RC185574.

1 Introduction

As part of the Fulton Hogan Land Development Limited (FHLD) Rosemerryn Subdivision Development located at Lincoln, Aurecon has completed a geotechnical investigation and assessment for Stages 10 to 18, including the area now known as Stage 16. The investigation and assessment are detailed in the Aurecon geotechnical report “*Rosemerryn Subdivision, Lincoln, Stages 10 to 18 Geotechnical Investigation Report*”, dated 25 September 2015.

2 Liquefaction Hazard Assessment

The report was issued following the publication of the Ministry of Business Innovation & Employment (MBIE), guidelines in December 2012 and subsequent updates in 2014, which define the Technical Category zoning and the liquefaction induced deformation limits for each Technical Category.

The categories and corresponding criteria are as follows:

- **Technical Category 1 (TC1)** – Future land damage from liquefaction is unlikely, and ground settlements are expected to be within normally accepted tolerances.
- **Technical Category 2 (TC2)** – Minor to moderate land damage from liquefaction is possible in future large earthquakes.
- **Technical Category 3 (TC3)** – Moderate to significant land damage from liquefaction is possible in future large earthquakes.

The indicative vertical and horizontal displacements associated with each Technical Category classification, together with the impact of liquefaction on house foundations, are presented in Table 1 below.

Table 1 Liquefaction Deformation Limits and House Foundation Implications

Technical Category	Index Liquefaction Deformation Limits				Likely Implication for House Foundations (subject to individual assessment)
	Vertical		Lateral Spread		
	SLS	ULS	SLS	ULS	
TC1	15mm	25mm	Nil	Nil	Standard NZS3604 type foundations with tied slabs are acceptable subject to shallow geotechnical investigation.
TC2	50mm	100mm	50mm	100mm	MBIE enhanced foundation solutions.
TC3	>50mm	>100mm	>50mm	>100mm	Site specific foundation solution.

A liquefaction hazard assessment was carried out as part of the site assessments in 2015 using the prescribed in the Ministry of Business, Innovation, and Employment (MBIE, 2014) guidelines for residential development in Canterbury following the Canterbury earthquake sequence.

The liquefaction analysis for Stage 16 was based on the boreholes and CPT testing carried out as part of the geotechnical investigations for the larger subdivision. The geotechnical investigation information used to assess Stage 16 is part of a large group of geotechnical information and only the tests that are relevant for this stage have been assessed. Consideration was given to information and data from outside the stage boundary when assessing geotechnical hazards and issues.

3 Technical Category Classification

Based on this assessment and, observed site performance, we consider that:

- **Lots 592 to 612, 638 to 658, and 675 to 677 fulfil the requirements of a TC1 Classification.**
- **Lots 1021, 1022, 7007 and 7008 are roading and reserve areas; therefore, no Technical Category Classification is applicable for these lots.**

4 Clayey-Silty Soils

Soft to firm clayey silty soils may be encountered in isolated pockets within Stage 16. Based on the available investigation logs, where this silty material has been encountered during the subdivision wide investigations, it is unlikely that shallow bearing for a typical house foundation of 300kPa could be achieved in these areas. Therefore, despite Stage 16 being expectant to have a performance equivalent to TC1, if these soils are encountered 'Good Ground' as per NZS3604 is unlikely to be met and specifically designed foundations may be required based on the building consent investigations. However, it is anticipated that any additional foundation requirements for these lots due to the presence of soft soils are likely to be readily accommodated by a TC2 type foundation system, pending detailed foundation design at building consent stage.

5 Recommendations

Due to the identified underlying ground conditions (TC1 but with the potential for softer silty soils) lot and building specific shallow geotechnical investigations shall be undertaken for all lots in Stage 16 in accordance with NZS3604.

This report is not intended to be used for detailed design of site specific shallow foundations and is not suitable to support a building consent application. Site specific investigations are required at building consent stage.

6 Reference

Aurecon, 2015. *Rosemerryn Subdivision, Lincoln, Stages 10 to 18 Geotechnical Investigation Report, Rev3* - dated 25 September 2015. Aurecon New Zealand Limited, Christchurch, New Zealand.

MBIE, 2012. *Repairing and rebuilding houses affected by the Canterbury earthquakes*. Ministry of Business, Innovation and Employment, Wellington, New Zealand – December 2012.

MBIE, 2014. *Repairing and rebuilding houses affected by the Canterbury earthquakes*. Ministry of Business, Innovation and Employment, Wellington, New Zealand – October 2014.

7 Explanatory Statement

The contents of this letter are for the sole use of the Client and no responsibility or liability will be accepted to any third party. Information or opinions contained within this letter may not be used in other contexts or for any other purposes without our prior agreement.

The comments in this letter are based on our investigations of the site for the sole purposes of the geotechnical aspects only, as requested by the Client. Only a finite amount of information has been collected and this letter does not purport to completely describe all the site characteristics and properties.

The extent of our investigations and the results of all the tests carried out are as presented in the geotechnical report for Stages 10 to 18 “*Rosemerryn Subdivision, Lincoln, Stages 10 to 18 Geotechnical Investigation Report*”, dated 25 September 2015.

We trust this meets your requirements and if there are any further queries please do not hesitate to contact us.

Yours faithfully


Dr Jan Kupec
Technical Director – Ground Engineering

Enc: SDC Approved Subdivision Plan for Rosemerryn Subdivision Stage 16



REVISIONS	DATE	DESCRIPTION

NOTES:

- This plan has been prepared for Earthfill Asbuillt purposes only. No liability is accepted if the plan is used for any other purpose.
- Any measurements taken from information which is not dimensioned on the electronic copy are at the risk of the recipient.

LEGEND

CONTOUR SHOWING ARE APPROXIMATELY
CUT (red) AND FILL (grey) AT
0.1m INTERVALS.

CUT

FILL ± 0.2m

ASBUILLT KERB

ASBUILLT FOOTPATH

ESCAPEMENT UNDER CONSTRUCTION

DAVE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Myrtle Road
P.O. Box 479 Christchurch 8140, New Zealand
Telephone: 03 979-0798 Website: www.dls.co.nz Email: office@dls.co.nz

ROSEMERRYN - Stage 16

Earthfill Asbuillt

Asbuillt

SCALE: 1:7500(A)
1:15000(A3)

DATE: January 2021

SHEET No: **E.20081.AB.EF01**

REVISION: **RO**

