BASELINEGROUP

Appendix 6: Flood Hazard Assessment

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

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15 August 2017

Baseline Group
40 Welles Street
Christchurch Central
Christchurch 8011
Attn: Jalesh Devkota

Dear Jalesh

LOT 1, 2, 3, & 4 DP 82846, LOT 1 DP 9138, LOT 2 DP 319397, LOT 2 DP 365379, PART RS 5482 & 5483, SECTION 7 LEESTON SETT – HIGH STREET, LEESTON

Flood Risk

The property is located in an area that can be affected by surface water runoff and ponding during local rainfall events.

The property has not been regularly monitored by Environment Canterbury following local rainfall events, and information on past flooding is limited to photographs taken in 1986 and 2013.

Photograph No. **621** was taken on 24/08/1986 following a rainfall event where 72.7 mm was recorded at Greenpark, 81.3 mm at Lincoln, 96.8 mm at Burnham and 105.1 mm at Dunsandel in the 72 hours to 9 am on 23/08/1986. The return period of the rainfall at Greenpark and Lincoln is estimated at 2 - 5 years, with the slightly heavier rainfall at Burnham and Dunsandel having an estimated return period of 5 - 10 years. Antecedent conditions at the time were relatively wet due to rainfall earlier in the month.

Photographs No. **0393**, **0408**, **0421**, **0788**, and **0802** were taken on 23/06/2013 following a rainfall event where 117.6 mm was recorded at Leeston in the 72 hours to 9 am on 22 June 2013. This rainfall had a return period of approximately 10 years, however this was following a rainfall of more than 60 mm earlier in the week.

The photographs show rainfall runoff flowing across the property and ponding behind barriers to flow and in natural depressions. Note that in both cases the photographs were taken 24 hours or more after the bulk of the rain had fallen, and therefore will not show flooding at its peak. In larger flood events it is likely that more extensive areas than those shown as flooded in the photographs will be affected.

The property is within part of the Selwyn District that has been flown by LiDAR; an airborne laser system that maps the ground topography. The accuracy of this topographical survey is considered to be in the order of ± 150 mm or better. Enclosed for your information is a **map showing ground level variations** at the property derived from LiDAR data obtained in 2015. These levels are presented in meters above mean sea level (m.a.m.s.l.) – Lyttelton 1937 Datum.

Selwyn District Council have begun modelling of rainfall runoff across the district and this investigation is due to be completed early next year. Until this work is completed, the best available information about rainfall runoff at the property is limited to the flooding photographs and LiDAR data.

Our Ref: HAZA/FLD/ASS/CHC/17556
Your Ref:
Contact: Callum Margetts

Chapter 11 of the Canterbury Regional Policy Statement provides a framework for managing natural hazard risk in Canterbury. Policy 11.3.2 of this document states that development should be avoided in areas subject to inundation in a 200 year return period flood event unless a range of conditions are met. These include the requirement for new buildings to have a floor level above the 200 year return period design flood level.

Yours sincerely

Callum Margetts

Natural Hazards Analyst

Encl. Photograph No. 621 (24/08/1986)
Photographs No. 0393, 0408, 0421, 0788, & 0802 (23/06/2013)
2015 LiDAR Map

621. Leeston. (West) 621 24/08/1986


0393 - Leeston. Looking west - 23-06-2013

0408 - Leeston. Looking south toward Leeston Dunsandel Road - 23-06-2013

0421 - Leeston. Looking north-east along High Street - 23-06-2013

0788 - Looking south-east across Harmans Road toward Leeston - 23-06-2013

High Street, Leeston - 2015 LiDAR Map