



Canterbury Claims – Assessment Report

Site Visit

Claim Number: 2011/122912

Property Address: 427 Armagh Street,
Linwood,
Christchurch, 8011

Customer: A & G Calje Family Trust

Date: 02.12.2024

Author: M. Wright

Title: Technical Specialist

Version: V1

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Property Address: 427 Armagh Street, Linwood, Christchurch, 8011.

Attendance on Site: David Rogers (NHC CA), Esther Calje (Customer) & myself

Site Visit Date: 18 November 2024

Reason for visit: To review home regarding adequacy of previously settled EQ damage.

Discussion with Customer:

A site visit to assess the dwelling was suggested after exterior damage was noted during a recent visit to discuss drainage damage with the Drainlayer.

Property Description:

- A circa 1950's, ~100m² two-bedroom unit, one of two adjoining homes (*1) constructed with a conventional timber frame supporting a heavyweight tile roof and brick exterior wall cladding. The structure rests on a type B2 foundation (concrete ring foundation & piles). Interior wall & ceiling linings are plasterboard & flooring is T&G timber.

(*1 Note: the abutting flat, 425 Armagh Street is commonly referred to as the adjoining unit or flat throughout this report)
- The Land is classified as TC2.

Claim History – Canterbury Earthquake Sequence:

- Two EQC Scope of Works (SOW) assessments were completed on the home, both being paper assessments. The first was undertaken on 14 February 2011, and the second on 23 May 2011 for the September 2010 and February 2011 events, respectively.

The following summarises the damage included in each SOW:

14 February 2011:

Interior: Wall & ceiling linings cracks in the Kitchen/Dining room and Entry Hallway; wall lining cracks in the Lounge, Bedrooms 1 & 2, and the Bathroom; cornice cracking in the Lounge and Bedroom 1; tile grout cracking (walls) in the Kitchen & Bathroom and floor tiles in the Kitchen (1x cracked tile). The Bedroom 1 door was noted as binding and damage recorded in the Rear entry (conservatory) included 1.8m² of mortar cracking and soffit/fascia separation.

Exterior: 1.0m of mortar cracking was recorded on the East (E) elevation (plus the cracking recorded in the rear porch (above)) and plaster cracking in the front porch; 1.0m of ring



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foundation cracking; 15m of Roof ridge tile mortar cracking and; cracking to the Chimney top plaster.

23 May 2011: Additional damage to that recorded in the January SOW was as follows:

Interior: The ceiling was added in the Lounge & Bedrooms 1 & 2 and: walls added for painting in the Conservatory (Rear porch). The Bedroom 2 door was noted as binding.

Exterior: plaster cracking (top of walls) was included on the E elevation plus 1 broken brick; 0.4m of mortar cracks, plaster cracking (similar to E elevation) and 2 broken bricks on the N elevation, and stucco damage only on the S elevation; Roof ridge mortar cracking was reduced to 2m, but the chimney was recorded as structurally damaged above the roof.

Possible drainage damage was recorded as under review by the customer's plumber.

- In March 2011, the customer had the damaged chimney top removed, and roof secured under EQC's Emergency Works (EQ) provisions.
- The property changed hands in early 2012.
- The customer applied to opt out of the PMO repair program in early 2012. EQC's subsequent cash settlement of the claim was then based upon a customer provided Spence Consultants Ltd. quotation, paid on invoice.
- A bump in the wall in the neighbouring unit (425 Armagh Street) was raised with EQC in March 2015. This was assessed by EQC in January 2016 and concluded as not EQ-related.
- The property changed hands again in February 2018.

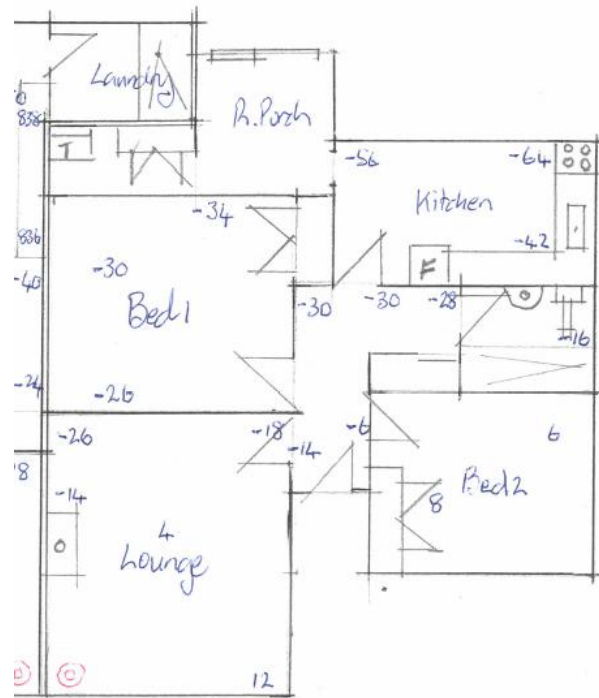


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Observations:

Foundation Dislevelment

The level survey undertaken on site is reproduced in part below (the full plan is included in the Appendix).



The plan records global dislevelment of 76mm with the high point on the floor locating in the SE corner of the lounge and low point in the NE corner of the Kitchen.

This dislevelment exceeds MBIE guidance tolerance recommendations for releveling (50mm).

The building presents a general tilt to the North (N) and the floor also falls towards the party/fire wall between the two flats.

Similarly, localised slopes are shown to exceed MBIE's guidance tolerances in some areas, this issue presenting similarly in both flats. 425 Armagh Street additionally presents a similar global tilt albeit recording a lesser variance.

The following has been considered in relation to the dislevelment presenting:

- 1) Limited measures were taken on benchtops, windowsills etc. in the flat due to contents constraints, but measures taken were generally reflective of the corresponding floor slopes. Some measures in the neighbouring flat were shown to be contradictory, particularly the E Kitchen bench which measured a 2mm rise against a 14mm fall (opposing slope) on the floor beneath.

Such measures confirm a degree of as-built and/or age-related settlement has occurred over time. This would be expected given the heavy nature of the building's construction.

- 2) Generally, heavyweight homes of this era present a floor level pattern where levels taken close to the perimeter ring foundation are lower than those measured away from the exterior walls. This is often most noticeable in the centre of rooms and is known as crowning.

Crowning results from an imbalance in weight or load distribution to the foundations. Foundation elements beneath or near the load bearing walls

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	(ring foundation & piles) typically settle to a greater degree than those lesser-supporting elements (such as the piles in the centre of rooms) over time. Crowning is evident in this dwelling, but this historical pattern fails to explain the tilt measured. Soft or poor bearing ground beneath the ring foundation can facilitate localised settlement, but the tilt noted here appears too uniform to be related to this type of static settlement. 3) Review of EQC claim and other available documents, although the former records fundamentally cosmetic repairs only, revealed the following: a) Neither EQC SOW notes floor dislevelment. b) Two doors (Bedrooms 1 & 2) were noted for easing. The extent of door and window binding can be an indicator of the degree of EQ related floor dislevelment or structural racking resulting from EQ shaking. Typically, EQ related foundation damage is reflected in doors and windows binding. Both doors in this instance lie in the direction of the main tilt on the structure. Similarly, a door eased in the adjoining flat also lies in this plane. c) The fascia/frame separation noted in the conservatory may have resulted from structural movement. d) Although showing no signs of repair by the customer's contractor, EQC's repair strategy for the ring crack damage is deficient in that it fails to include a crack repair component. e) Similarly, discrepancies between the two EQC scopes (e.g., the Lm of ridge tile damage) do not appear to have been resolved prior to settlement. 4) No land damage was recorded in the EQC land assessment undertaken on 6 September 2011, but minor land damage (undulations) was settled for the neighbouring flat (425 Armagh Street). No liquefaction was observed on this TC2 site, but it was recorded on land two plots North of the subject along Stanmore Road. The property is in an area classified as prone to medium Liquefaction Vulnerability under EQ shaking. To conclude, although the home presents some evidence of age & build-related (pre-EQ) dislevelment, there is a lack of evidence to support the conclusion that
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	the tilt measured is entirely pre-existing. Additionally, a similar pattern of dislevelment is noted to the adjoining flat. It is thus recommended that the home be referred for an Engineering assessment to confirm the cause of the dislevelment measured - Possible EQ. Given the adjoining nature of this unit & 425 Armagh Street, the Engineering review & assessment will need to consider the performance of the entire building. (Note: Pending the outcome of the recommended Engineering assessment, the following remains outstanding: 1) Drainage 2) Ring crack remediation)
Relevant Documents:	• EQC 2010 SOW 14.02.2011 • EQC 2011 SOW 23.05.2011 • EQC Land Assessment 06.09.2011 • Spencer Consultants Ltd Quotation 16.01.12

Summary:

- A level survey has been undertaken across the entire building (425 & 427 (the subject) Armagh Street.
- The EQC SOWs have been reviewed for completeness.

Conclusions:

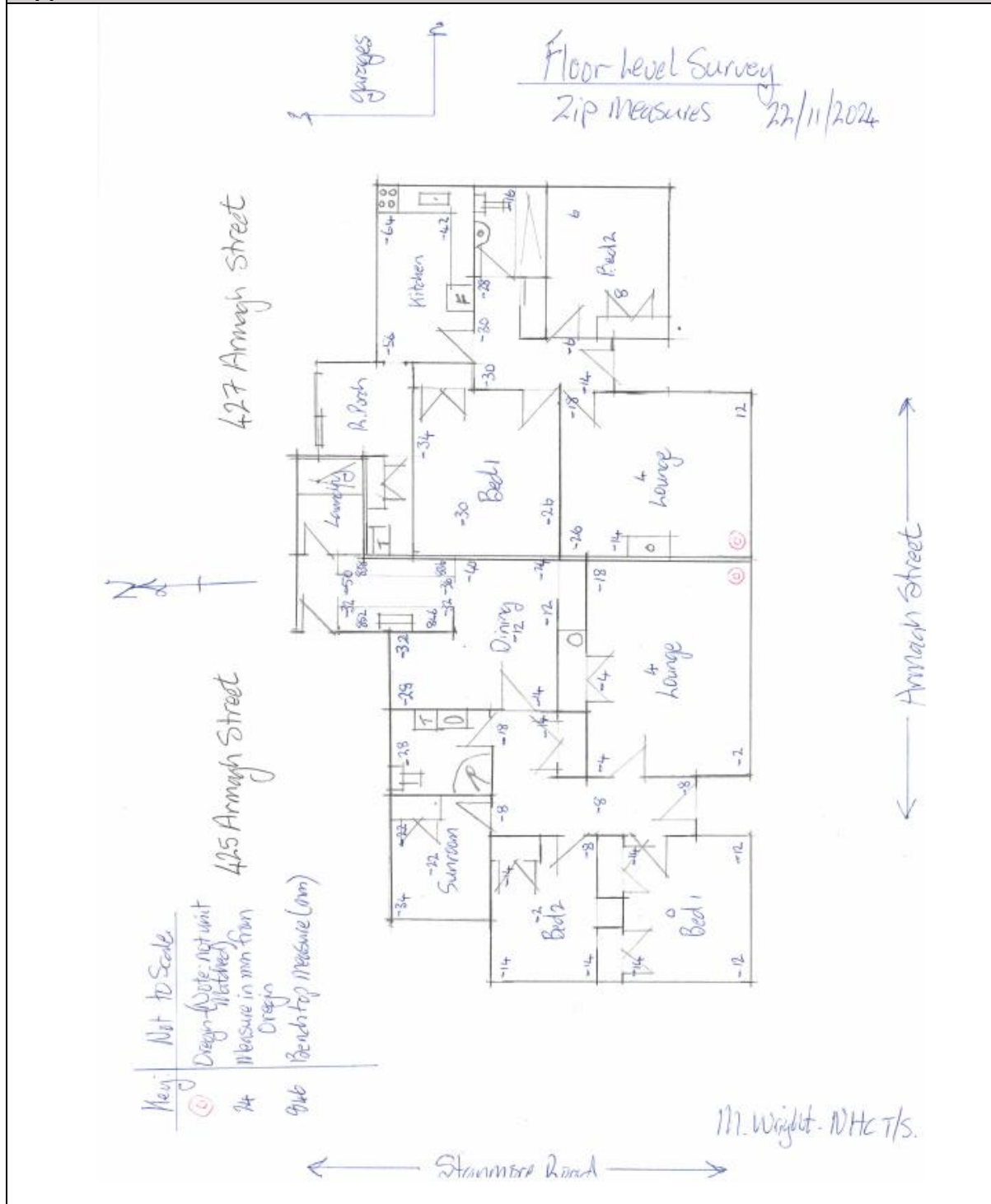
- Floor dislevelment across the home exceeds MBIE guidance tolerances both on a global and localised basis and as the cause of the global tilt is not clear, this dislevelment should be assessed by an appropriately qualified Engineer.
- Ring foundation crack repairs, although not undertaken by the customers contractor, were inadequately scoped by EQC and will thus require remediation.
- Drainage issues on the property remain unresolved at the time of this report.

Next Action:

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- The SS is to advise the customer of the findings of this report and provide any necessary assistance for the engagement of a suitably qualified Engineer to review the foundation damage.

Appendix



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Site Visit Photos

