

12A Forth Street

House Damage Assessment

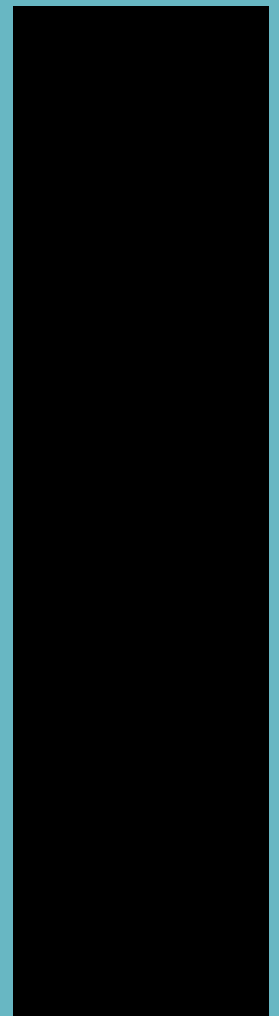
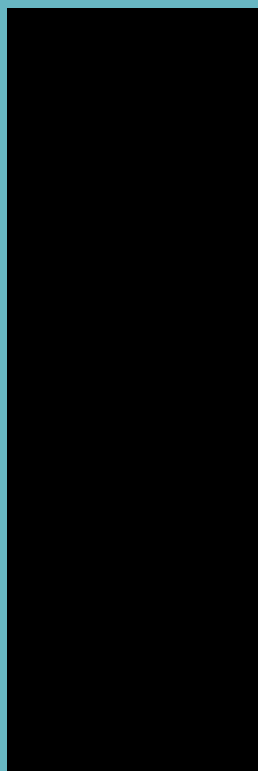
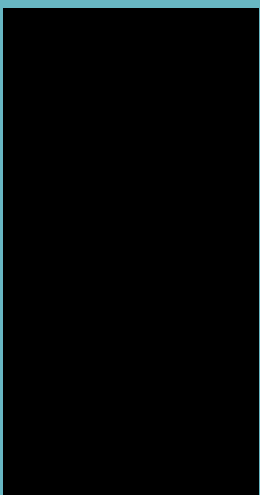
Job No. 17431

December 2019

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REVISION HISTORY

REVISION	DATE	DESCRIPTION	PREPARED BY	REVIEWED BY	APPROVED BY
1.0	13/12/2019	Preliminary Issue	KTS	ML	ML

Client:	Aaron McGuinness
Client Reference:	17431
Project Title:	12A Forth Street house repairs
Document Title:	12A Forth Street, House Damage Assessment

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20/12/2019

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1. INTRODUCTION

Lumen Limited (Lumen) have been engaged by Aaron McGuinness to provide a structural inspection report for the property at the above-mentioned address.

Our inspection and assessment were conducted on the 20th November 2019. They include the visual inspection to the interior and exterior of the building to determine the structural damage caused by the earthquakes since September 2010 to the inspection date.

1.1. BUILDING DESCRIPTION

Constructed on this property is a single storey timber framed dwelling with an attached garage. Figure 1 below shows the dwelling relative to the property boundaries. The dwelling roof is clad with corrugated metal tiles and the walls are clad with brick. The floor is concrete slab on grade with perimeter and local thickenings.

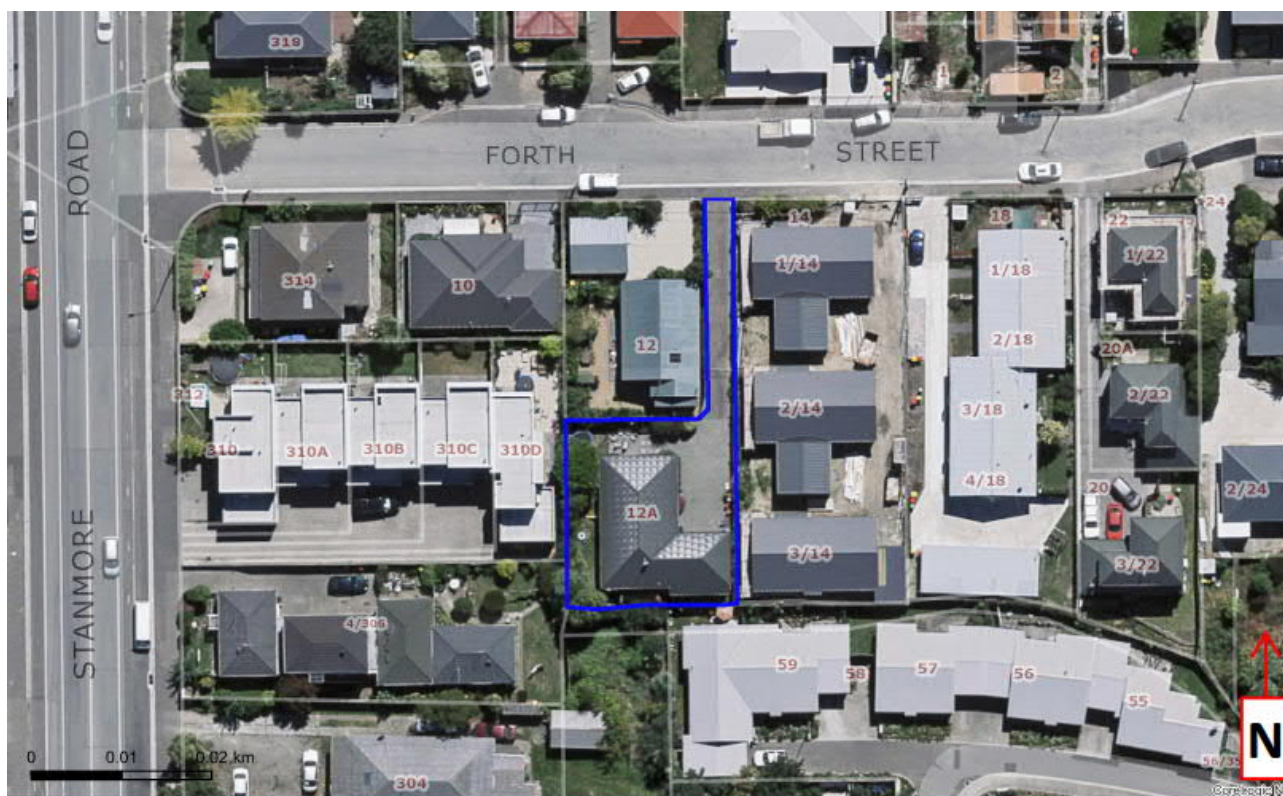


Figure 1: Aerial of 12A Forth Street (<http://emap.co.nz/emap/>).

1.2. GEOTECHNICAL PROPERTIES

The site is classified as "Technical Category 3". This means that moderate to severe land damage from liquefaction is possible in future significant earthquakes. The New Zealand Geotechnical database records that there was minor observed liquefaction in the 23rd December 2011 earthquake and moderate to severe observed liquefaction in the 22nd February and 13th June 2011 earthquakes.

2. OBSERVED DAMAGE

2.1. EXTERIOR

- There is minor cracking in the patio and driveway pavers. This is believed to be historical.
- There is negligible damage to the exterior of the dwelling itself. It is believed to have undergone some repairs.

2.2. INTERIOR

- Some doors do not sit square in their frames.
- There is otherwise negligible damage to the interior of the dwelling. Cosmetic repairs have occurred prior to our inspection.

2.3. FLOOR

A floor level survey using a Zip-level Pro-2000 instrument of a typical accuracy of ± 3 mm was carried out during the inspection.

The purpose of the floor level survey is to provide assistance in determining the possible structural damage to the building and therefore should be treated as indicative only. Where a high-level independent survey, and a more accurate presentation of the survey information is required, a registered professional surveyor should be engaged.

The floor level survey found:

- 52 mm differential settlement over the dwelling floor, refer to the floor plan in Appendix B.
- Floor slopes exceed 1:200 over distances greater than 2 m in the lounge, west bedrooms and study.

3. CONCLUSIONS

Based on our observation and structural assessment, we recommend the following repairs to the dwelling:

- The floor requires releveling. This can be carried out by pouring floor levelling compound (FLC) throughout the affected areas. Due to the position of joinery, some may require removal and reinstallation following the levelling process. If releveling using FLC becomes unfeasible, underpinning may be considered.
- To restore floors levels in accordance with MBIE guidance, the total differential settlement across the dwelling must be less than 50 mm and there must be no floor slopes greater than 1:200 over distances greater than 2 m.
- Following releveling, repairs to any exterior or interior damage may be completed where necessary.
- The driveway and paths are in a functional condition and do not require repair.

We propose to measure the floor levels after repair.

4. LIMITATIONS

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Lumen. No responsibility is accepted by Lumen or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

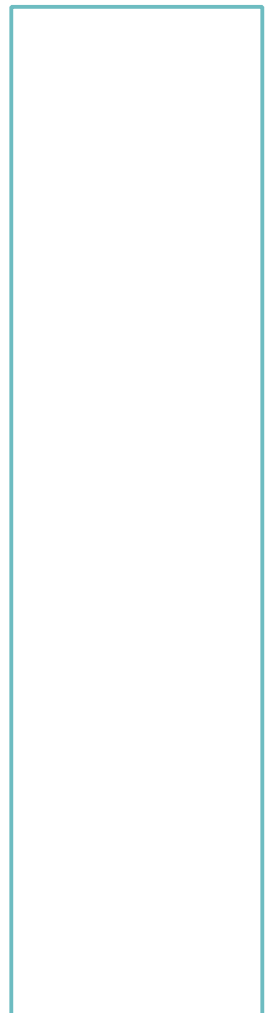
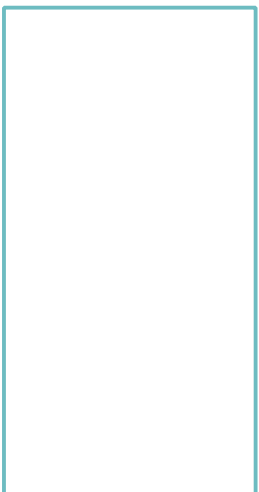
This report provides the building's overall structural integrity assessment only, not for the detailed and/or local strength assessment.

Our assessment is based on a visual inspection of accessible areas only. No liability is accepted for damage, loss or injury in connection with the building incurred after our inspection.

It is possible that there are unobserved issues that may require future remedial work. Future events may exacerbate or cause new damage. Such issues should be brought to the attention of the engineer.

Note also that our review has not extended to detail checking of structural members and connections under snow, wind or gravity loading, other than where related to the building's overall structural resistance. This report does not cover weather-tightness, nor the stability, suitability or potential liquefaction of the site.

Appendices

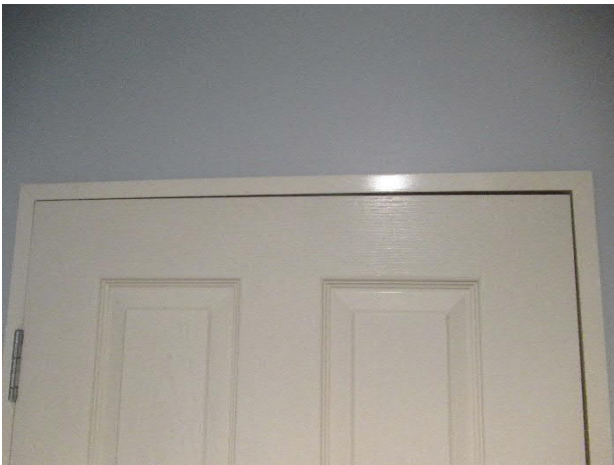


APPENDIX A PHOTOGRAPHS

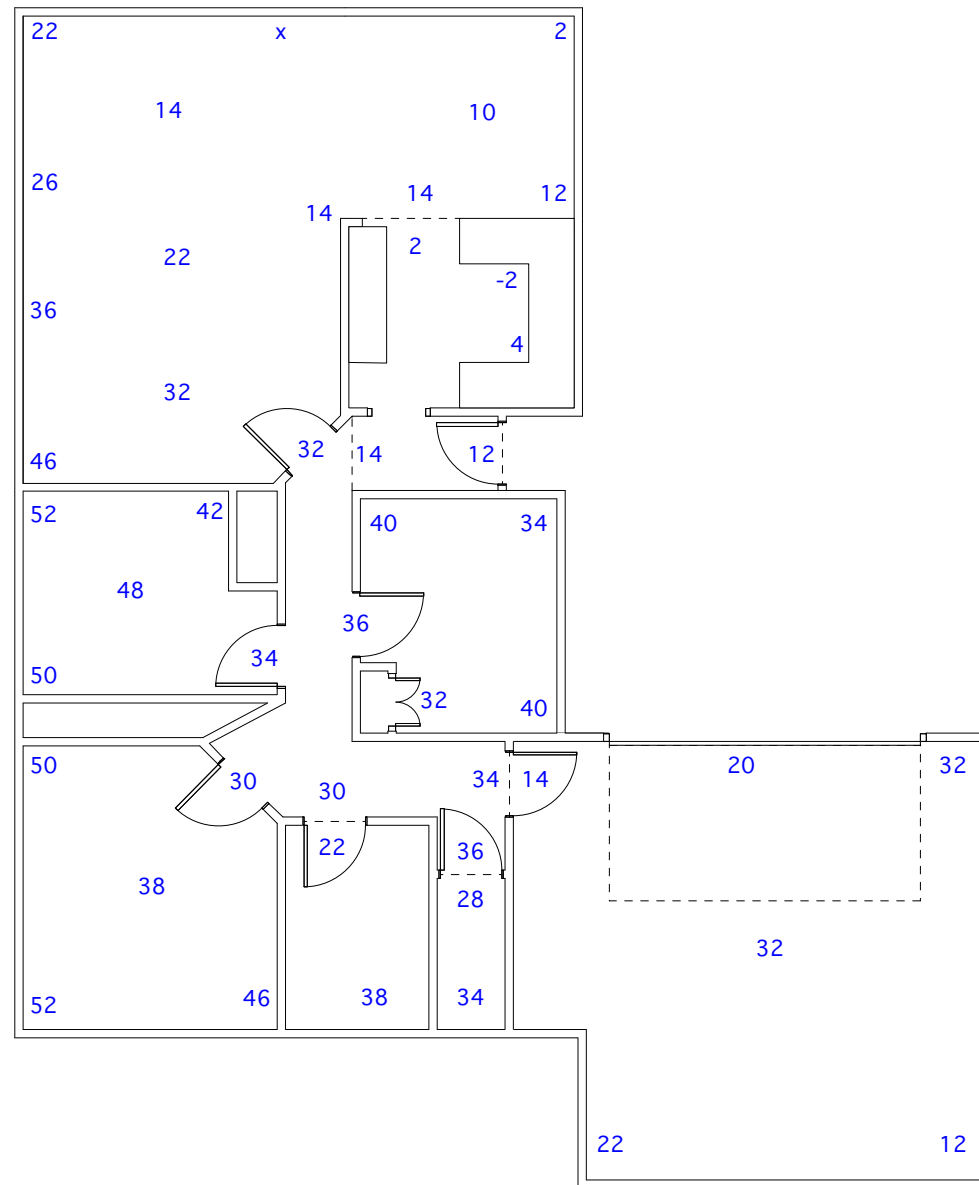








APPENDIX B FLOOR LEVELS



NOTES

ALL DIMENSIONS TO BE CONFIRMED ON SITE BY CONTRACTOR

KEY:

76 existing levels

1 2.12.19 For Approval ML

Issue	Date	Comments	Chkd

LUMEN

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**Proposed
 EQ Repairs
 for
 Aaron McGuinness
 at
 12A Forth Street
 Richmond**

Floor Plan

Scales: 1:100 @ A3

Designed: **KS** Drawn: **KS**

Checked: Approved:

Date: **December 2019**

Project	Drawing	Issue
17431	S200	1