



lewis bradford
CONSULTING ENGINEERS

2 December 2011

Mark Zarifeh
Canterbury Earthquakes Royal Commission
PO Box 14053
Christchurch Mail Centre 8544
Christchurch

Attention: Mark Zarifeh

Dear Sir,

CANTERBURY EARTHQUAKES ROYAL COMMISSION ENQUIRY–753-759 COLOMBO STREET

In response to your letter dated 21st November 2011, we provide the following information.

1. My name is Hamish David Mackinven BE (Hons) Civil, MIPENZ, CPEng. I have five years experience working as a structural engineer.
2. Lewis Bradford Consulting Engineers were engaged by Andy Bell on 6th September 2010, on behalf of Simes Property Management (now Knight Frank), to carry out visual structural inspections on buildings managed by Simes to determine if they were safe for the building tenants to occupy. An email report was provided on 9th September 2011 outlining that apart from 757 Colombo Street the remainder of the building was safe to occupy. This ended our engagement with Simes with regards to this building.

Lewis Bradford was subsequently engaged by Ivan Hatton of Hawkins on 7th October 2010 to provide a report for 757 Colombo Street outlining the structural damage to the building and required repairs. These repairs were completed by Barry Nuttridge from Hawkins on 21st October 2010, a letter report was provided to Ivan Hatton on 26th October 2010 (incorrectly dated 8th October, see attachment A) that the repair works had been completed to a satisfactory standard and that 757 was now safe to occupy. This ended Lewis Bradford's involvement with Hawkins and this building.

3. Email advice was provided to Andy Bell on 14 September 2010 that potential tenants could be shown through 757 Colombo Street. However the tenants could not move in until the repair work had been completed. (See attached email dated 14 September 2010, attachment B).
4. An inspection of the front façade of the building was completed on the 8th September 2010 from the canopy, roof level, street level and internally. A further inspection of the façade was completed at roof level and from the opposite side of the street on 9th September 2011 using a pair of binoculars. There was no apparent structural damage to the façade of 753 Colombo Street, caused by the September earthquake.
5. In the email dated 9th September 2010 reference is made to possible strengthening works in 759 Colombo Street. During the inspection of the roof space of 759 Colombo Street it was noted that the roof structure consisted of DHS purlins spanning between boundary and intertenancy walls and secured to an equal angle ledger. In addition a PFC (approx 300mm deep) had been installed at ceiling level to the perimeter of this tenancy. The PFC section was on the flat indicating that it may have been installed to carry wall face loadings. During our inspection no strengthening works to 753 Colombo Street was observed.

6. The only repairs carried out on the building were to 757 Colombo Street. These repairs consisted of raking out mortar joints and reinstating with a cement based mortar, several existing bricks were replaced due to cracking through them.

These repairs were to the western end (rear) of 757 Colombo Street.

We are not aware if our recommendations to remove the chimneys to 753 and 755 Colombo Street were carried out.

- 7.
- i. When carrying out the inspection and in coming to the conclusion that the buildings were safe to occupy consideration was given to the impact of the 4th September 2010 earthquake and subsequent aftershocks on the structural integrity of the building. Following the visual inspection, and apart from the minor damage to the rear of 757 Colombo Street, we had no reason to believe that structurally the building was not in a similar condition to what it was on 3rd September 2010.

Therefore, we did not have reason to believe that the buildings capacity to withstand future aftershocks (which at that time were believed to be confined to the Greendale fault) was diminished.

This general assumption across the industry was significantly changed by the Boxing Day aftershock and the realisation that we were dealing with multiple faults, and also given the different orientation of strong shaking to the September 4th event.

We were not asked to reinspect the building after the Boxing Day event, and assume this was carried out by another party.

- ii. To our knowledge, GNS or any other source did not make available any information about the likelihood, location and extent of further aftershocks in September and October 2010. This information became more widely available following the 22nd February 2011 earthquake.
- iii. To our knowledge the Christchurch City Council did not make available any information relating to building standards or the inspection of buildings immediately following the earthquake.
- iv. We did not review any information from any other external party relating to building standards or the inspection of buildings following an earthquake as part of this inspection.
- v. The building plans were not reviewed as part of our inspection.
- vi. No structural damage was evident within the building. It was considered that the building would still fall under the council's damaged building policy and timeframes with regards to strengthening, refer attached flow chart provided by CCC (attachment C).

The opportunity to trigger these potential strengthening timeframes would have been provided when the necessary consenting of repair works was discussed between CCC and contractor. (Refer our letter dated 8 October 2010, attachment A).
- vii. As noted previously strengthening works may have been carried out on 759 Colombo due to the presence of new steel work, however it was not clear at the time to what extent. There was no evidence within the remainder of the building that strengthening works had been carried out. Therefore it was considered that strengthening works had not been carried out on the remainder of the building.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'H Mackinven'.

Hamish Mackinven
Structural Engineer

A handwritten signature in blue ink, appearing to read 'Craig Lewis'.

Craig Lewis
Director



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8 October 2010

Attachment A (1)

Church Property Trustees
C/O Hawkins Construction
P.O. BOX 42127
CHRISTCHURCH

Attention: Ivan Hatton

Dear Sir/Madam,

STRUCTURAL INSPECTION AND REPAIR OF 757 COLOMBO STREET, CHRISTCHURCH

A brief walk through inspection was carried out on the above commercial premises on the 8th September 2010, and follows the 4th September 2010 earthquake and subsequent aftershocks.

Scope of Work

Lewis Bradford Consulting Engineers have been engaged by Andy Bell of Simes Property Management on behalf of the owners Church Property Trustees, to carry out a structural inspection of the property located at 753 thru 759 Colombo Street following the 4th September 2010 earthquake.

This report outlines structural damage found, and repair works completed, in 757 Colombo Street, it does not provide comment on the other tenancies within the building.

This inspection is by no means exhaustive and is not intended as a pre purchase inspection.

Our conditions of engagement are the ACENZ/IPENZ short form agreement for consultant engagement dated March 2010.

Nature of Building

The original two storey building is located on the corner on Colombo Street and is of brick construction with a timber first floor and light weight roof. The building is subdivided into four separate tenancies, 753 thru 759 Colombo Street. Several additions have occurred throughout the years at the rear of the original building.

Repair Works

From the initial inspection on 8th September 2010 it was assumed that flexural cracking had occurred in an insitu concrete column, however upon further investigation the column was found to be was plastered brick. Referring to attached site report 101018-01, the existing mortar either side of the crack was raked out and all exposed joints were re-mortared with a cement based mortar, to NZS 4210. The works were inspected on 21st October 2010, refer

A(2)

attached site report 101021-02. Photos of the completed works were provided by the contractor on 22 October 2010.

The blockwork wall at the ^{sp}repair of the property was found to be of unfilled construction, therefore the original detailed repair works using a 150x10mm EA and drilled and epoxied anchors was not carried out. Further investigation on site indicated that the separation of the blockwork wall appears historic and most likely not caused by the recent seismic activity. Restraint is provided by a wall, forming part of 759 Colombo Street, perpendicular to the masonry wall. Restraint is also provided to the top of the wall by the roof.

Two chimneys located on the roof of the building have suffered cracking due to the recent seismic activity. They are not in immediate danger of falling however it was recommended that they be removed as part of the repair work to 757 Colombo Street. The two chimneys have not been removed as part of the repair works to 757 Colombo Street as they are not part of this tenancy. However it is our understanding that the contractor is discussing the removal of these chimneys with the building owner. ? when.

The contractor is to discuss the above works with the Christchurch City Council to determine what their requirements are with regards to consents and documentation.

Conclusion

The repair works have been completed to a satisfactory standard and we believe that 757 Colombo Street has been repaired to the condition it was in prior to the 4th September Earthquake.

Following the completion of these repair works we believe that it is safe for the tenants to occupy, and the public to access, the building.

Limitation

It is important to note that this report is based on a visual walk through inspection of the building only. It is possible that there are unobserved issues that may require future remedial work, such issues should be brought to the attention of the undersigned.

Yours faithfully,



Hamish Mackinven
MIPENZ, CPEng
STRUCTURAL ENGINEER

110081 Le101026 757 Colombo Street.doc

Attachments

- Site report 101018-01
- Site report 101021-02

A(3)



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Site Report

Project Name: 757 Colombo Street Page: 1 of 1
 Project No: 110081
 Site Report No: 1
 Reviewed by: Date: 18 October 2010

Work Reviewed:

1. Cracking of wall at rear of the building

Site Report issued from the office

Observations and Comments:

The cracking at the rear of the building has occurred along the mortar lines between bricks, and also between an insitu concrete lintel and bricks. Repairs to cracking along the mortar lines are to be carried out as follows

Carefully clean out crack surface and remove all loose debris. Locally rake out existing mortar either side of crack for a full brick width into the wall on both side of wall. Remove any loose bricks. Re-mortar all exposed joints with a cement based mortar, to NZS 4210, and replace any loose bricks. Point all new mortar surfaces to both sides of wall. All brickwork and repair work to be completed by an experienced bricklayer.

Signed:

Hamish Mackinven
Lewis Bradford
 110081 SR101018-01

Copies To:

CC:

Name:

Ivan Hatton

Company:

Hawkins Construction

Fax No:

Email

AL4)



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Site Report

Project Name: 757 Colombo Street Page: 1 of 1
 Project No: 110081
 Site Report No: 2
 Reviewed by: Date: 21 October 2010

Work Reviewed:

1. Cracking of wall at rear of the building

Site Report issued from the office

Observations and Comments:

The cracking at the rear of the building has been locally raked out and all loose mortar and bricks have been removed. All surfaces have been wetted down prior to installation of new cement based mortar. Please provide photos of completed work.

As discussed with Barry Nuttridge on site this morning, cracking on the Colombo Street side of the wall needs to be raked out and re-mortared with a cement based mortar, ensure all new mortar surfaces are pointed. Please provide photos of completed work.

Investigations of the rear masonry block wall indicate that the wall is of unfilled construction. Therefore the EA as specified in the report dated 8 October 2010 cannot be installed. No further works are required in this area.

Signed:

Hamish Mackinven
Lewis Bradford
 110081 SR101021-02

Copies To:	CC:	Name:	Company:	Fax No:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ivan Hatton	Hawkins Construction	Email

Attachment B.

LBA - Hamish

From: LBA - Hamish [hamishm@lewisbradford.com]
Sent: Tuesday, 14 September 2010 1:17 p.m.
To: 'Andy Bell'
Subject: RE: 753, 755, 757 and 759 Colombo Street

Good afternoon Andy

We do not have a problem with you showing a potential tenant the property. As I outlined in my email the strengthening/repair work needs to be completed before any potential tenant moves in.

Regards

Hamish

Lewis Bradford Consulting Engineers

Level 2, 71 Armagh Street
PO Box 2919, Christchurch
Phone 03 379 9096 | Facsimile 03 379 9095
www.lewisbradford.com

Job Name:
Job Number:

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From: Andy Bell [mailto:Andy.Bell@simes.co.nz]
Sent: Tuesday, 14 September 2010 1:05 p.m.
To: LBA - Hamish
Subject: RE: 753, 755, 757 and 759 Colombo Street

Hamish,

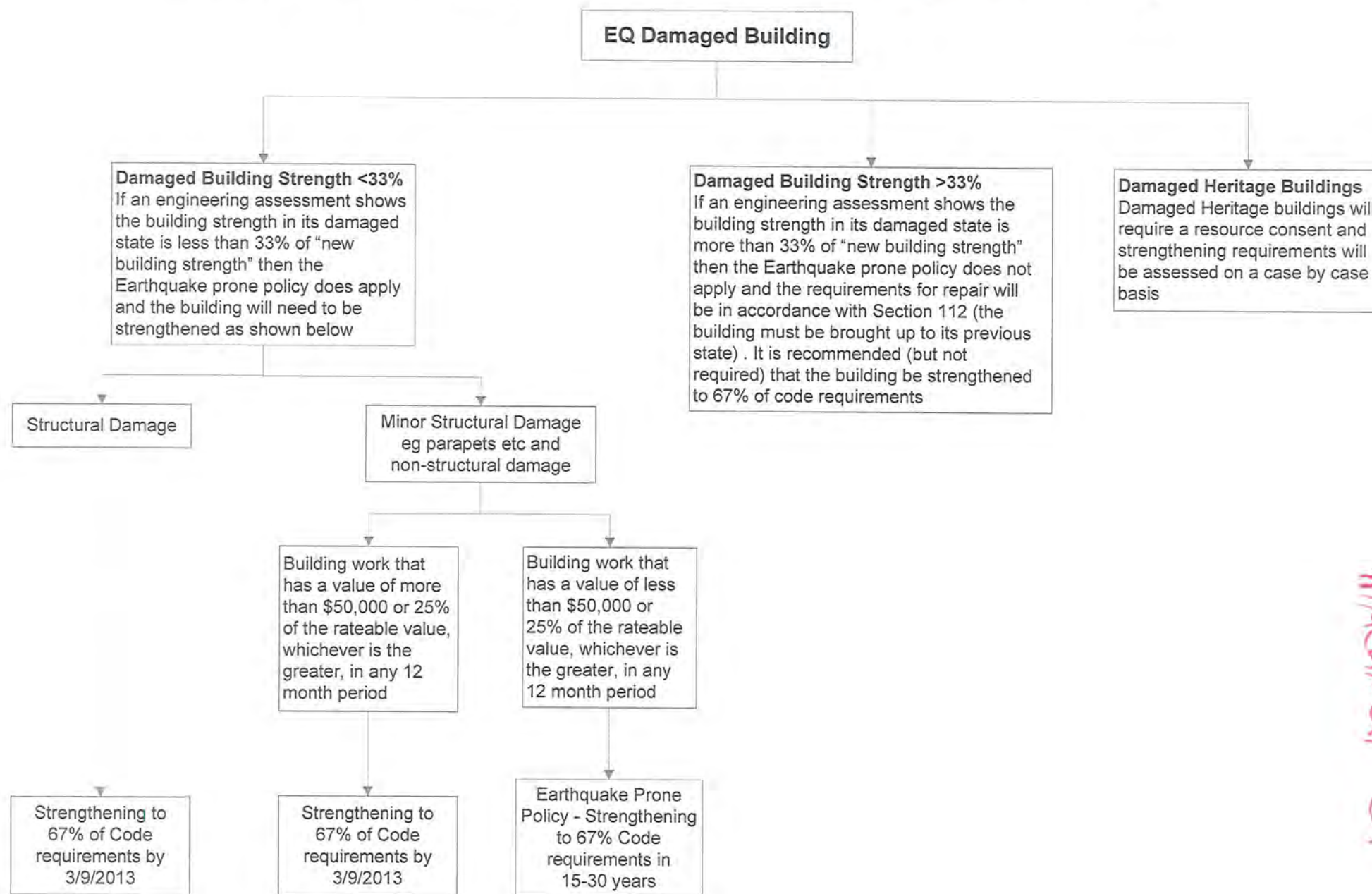
Is it safe to allow a potential tenant to view 757 Colombo?

tk

Andy Bell | Director Property Management | Simes Ltd, Licensed Agent (REAA 2008), MREINZ
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P O Box 13-341, Level 2, HSBC Tower, 62 Worcester Blvd, Christchurch www.simes.co.nz

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Strengthening of Earthquake Damaged Buildings



Attachment c.



Canterbury Earthquakes Royal Commission

Te Komihana Rūwhenua a te Karauna

21 November 2011

Lewis Bradford Consulting Engineers
Unit 6, 75 Peterborough Street
CHRISTCHURCH

Attention: Hamish Mackinven

753-759 Colombo Street

The Royal Commission of Inquiry into building failure caused by the Canterbury earthquakes is currently examining the failure of a number of buildings in the Christchurch CBD, including the building that was situated at 753-759 Colombo St (the building).

I understand from the property manager for the owners of the building that Mr Mackinven conducted a number of inspections of the building, including:

- Brief walk through inspection, resulting in an email report by you on 9 September 2010 to Andy Bell of Simes. _____
- Report of 8 October 2010 covering structural inspection and repair of 757 Colombo St
- Site reports for 757 Colombo St dated 18 and 21 October 2010.

The hearing for this building is set down for Monday 30 January 2012 at 2.15pm. It will be necessary for you to give brief evidence in relation to your assessments of the building.

For that purpose I **enclose** a summons and accompanying letter. If you have any queries please do not hesitate to contact the writer (phone: 7413014, email: mark.zarifeh@royalcommission.govt.nz).

In the meantime would you please provide the following information, by **2 December 2011**:

1. Your full name, qualifications and years of experience.
2. An outline of how you became involved with the building and in particular what you were asked to do.
3. Details of any other advice given or conclusions reached in relation to the building (other than contained in the documents referred to above) and copies of the same if relevant.

4. A pedestrian was killed when the façade and veranda at 753 Colombo St collapsed. In relation to that portion of the building, it would appear that there was not any structural damage observed after the September earthquake. Was that correct?
5. The documentation I have seen is unclear as to exactly what structural strengthening had been carried out in the past. There seems to be a suggestion that there may have been structural strengthening of 753 in the past. Are you aware of this and if so could you please provide details?
6. It appears from your report of 8 October 2010 that the only structural repairs carried out on the building were to 757 Colombo St (other than removal of a chimney to 753 Colombo St). Could you please confirm this.
7. When carrying out any of the inspections you did in relation to the building did you take into consideration any of the following:
 - i. The impact of the 4 September 2010 earthquake and any subsequent aftershocks on the structural integrity of the Building and, in particular, whether the Building's capacity to withstand future aftershocks was diminished as a result?
 - ii. Any information from GNS or any other source about the likelihood, location and extent of further aftershocks? If so, please provide details of this information.
 - iii. Information from the Christchurch City Council relating to building standards or the inspection of buildings following an earthquake? If so, please provide details of this information.
 - iv. Any information from any other party relating to building standards or the inspection of buildings following an earthquake? If so, please provide details of this information.
 - v. The Building plans.
 - vi. The Christchurch City Council's earthquake prone policy and whether the Building complied with that.
 - vii. Whether any previous structural strengthening had been carried out.

The above information is requested pursuant to the Royal Commission's powers of investigation under s 4C Commissions of Inquiry Act 1908.

Thank you for your assistance.

Yours faithfully


Mark Zarifeh
Counsel Assisting
Canterbury Earthquakes Royal Commission