

## **7 Riccarton Road**

### **Statement of Nigel Harwood**

My name is Nigel John Harwood. I studied Civil Engineering at the University of Canterbury from 1973 – 1977 graduating with a BE and ME.

After returning from overseas in 1979, I was a graduate structural/civil engineer working in New Plymouth specialising in structural design ranging in size from house beams through to an eight story building. (The eight story building was designed using the “capacity design” philosophy). After becoming a Registered Engineer in 1983, (this title has now changed to “Chartered Engineer”), I joined the McConnell Dowell Construction Group where I held a variety of positions ranging from site engineer through to manager of their Fijian operations.

After completing my MBA (Otago) in 1990, and leaving McConnell Dowell in that year, I worked as a management consultant for two years before becoming the Dunedin City Council Water Manager for nine years until 2001. I then joined *DELTA* Utility Services Limited as the leader of the asset management capital and maintenance team. I left *DELTA* after ten years in October 2011 and have formed my own engineering consultancy.

I therefore have a wide range of experience ranging from structural design/ construction/ strategic thinking/ asset management and Civil Defence involvement based on my civil/structural engineering training.

### **Events on Monday 6<sup>th</sup> September 2010**

My recollection of events on this day is as follows.

We assembled at the Art Gallery, were given a briefing, and formed into teams. I was one of two teams that were to assess buildings on Riccarton Road from Hagley Park to Church Corner. The teams were made up with a Chartered Civil Engineer, a Building Inspector, a support person from the CCC, and a member of Urban Search and Rescue.

I was in charge of a group on the North Side of Riccarton Road and Henri (I cannot recall his surname) was in charge of the group on the south side.

We started up at Church Corner where we calibrated our eyes by going through the church there. By memory we gave the church a yellow card.

Then Henri led the south side team and I the north side one, with the proviso that if we were not sure about anything then we would talk to each other. (I suggested this course of action as I had undergone building assessment training by David Brunnsden in Dunedin along with quite a few Building Inspectors. I was also older than Henri with more management experience).

By memory most of the damage was on the North Side of Riccarton Road – I think Henri only had to red card one building.

We returned to the Art Gallery and were tasked with going back and putting cards on all buildings – we had only red and yellow carded buildings in the morning. I am not sure whether Henri came back in the afternoon or was tasked with other work. In effect in the morning we had triaged the buildings into Red, Yellow, and Green (not carded) so green carding the majority in the afternoon gave us a chance for a 2<sup>nd</sup> look at all of them.

So when I filled in the Level 1 form at 12.38 p.m. I wrote on it time: A.M. and 12.38.

Thus this building was externally inspected twice on Monday by 2 different Chartered Engineers and given a Level 1 green card.

A green card does not mean that the building is safe. It means that no apparent structural or other safety hazards have been found. The green card encourages owners to “obtain a detailed structural engineering assessment of the building as soon as possible.” It also advises that “subsequent events causing damage may change this assessment”.

In looking at the photos sent to me on 10 November 2011, the building’s paint was poorly maintained and there appeared to be a mixture of old and new cracks. I do not recall seeing a crack behind the parapet – that is not unreasonable given the number of buildings that I inspected. In looking at the photo of the crack behind the parapet, if it was there on the Monday we would have seen it and we collectively would have agreed to the green card. (I have seen worse cracks on buildings in Dunedin that have not been as stressed as those buildings in Christchurch were).

With the knowledge that I now have after being a volunteer with a lot more post earthquake building assessment I would almost certainly green card it. The photos do not show the scale of a building compared to standing near it, so I cannot say with certainty if I inspected that building today whether I would recommend a Level 2 inspection and so tick that option on the Level 1 inspection sheet.



Nigel Harwood ME, MBA, FIPENZ, CPEng, IntPE

Copy of the level 1 inspection form by the team led by me

**RICE 28**

**Christchurch Eq. RAPID Assessment Form - LEVEL 1**

Inspector Initials: MT Date of inspection: 6/4/10 Exterior Only:   
 Territorial Authority: Christchurch City Time: RICE Exterior and Interior:

Building Name: St Charles RC Church No: 9  
 Short Name: BOOK ROOM  
 Address: 7 ROBERTSON RD

GPS Coordinates: 38° 21' 15" S 174° 50' 15" E  
 Contact Name: \_\_\_\_\_  
 Contact Phone: \_\_\_\_\_

Storey(s) above ground level: 2 Below ground level: 1  
 Total gross floor area (m<sup>2</sup>): \_\_\_\_\_  
 No of residential units: 1

Photo Taken: Yes  No

Type of Construction:  
 Timber frame  
 Steel frame  
 Tilt up concrete  
 Concrete frame  
 Reinforced masonry  
 Concrete shear wall  
 Unreinforced masonry  
 Reinforced masonry  
 Confined masonry  
 Other

Primary Occupancy:  
 Dwelling  
 Other residential  
 Public assembly  
 School  
 Religious  
 Commercial/Office  
 Industrial  
 Government  
 Heritage Listed  
 Other

Investigate the building for the conditions listed below:

Overall Hazards / Damage	Minor/None	Moderate	Severe	Comments
Collapse, partial or total, of floor/roof	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building or storey leaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water or other structural damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Overhead falling hazard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground movement, settlement, slips	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Neighbouring building hazard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Choose a posting based on the evaluation and team judgement. Severe conditions affecting the whole building are grounds for an UNSAFE posting. Localised Severe and overall Moderate conditions may require a RESTRICTED USE. Place INSPECTED placard at main entrance. Post all other placards at every significant entrance.

INSPECTED GREEN  RESTRICTED USE YELLOW  UNSAFE RED

Record any restriction on use or entry:

Further Action Recommended:

Tick the boxes below only if further actions are recommended:  
 Erection of site hoarding (state location):  
 Level 2 or related engineering evaluation recommended:  
 Structural  Geotechnical  Other:  
 Other recommendation(s):

Estimated Overall Building Damage (Exclude Contents)


None	<input type="checkbox"/>	31-50 %	<input type="checkbox"/>
0-1 %	<input type="checkbox"/>	61-80 %	<input type="checkbox"/>
2-11 %	<input type="checkbox"/>	100 %	<input type="checkbox"/>
11-30 %	<input type="checkbox"/>		

Signature: \_\_\_\_\_  
 Date & Time: 6/4/10  
 ID: \_\_\_\_\_

Inspection ID: R114628 (Office Use Only)  
 Prop: 873627  
 Lot 2 DP 29778

## Copy of a blank Green Card

GREEN

Christchurch City Council 

# INSPECTED

## NO RESTRICTION ON USE OR OCCUPANCY

This building has received a brief inspection only. While no apparent structural or other safety hazards have been found, a more comprehensive inspection of the exterior and interior may reveal safety hazards.

Exterior Only  
 Exterior and Interior

Facility/ Tenancy Name and Address  
 \_\_\_\_\_  
 \_\_\_\_\_

Please ensure the owners are advised of this notification. Owners are encouraged to obtain a detailed structural engineering assessment of the building as soon as possible. Report any unsafe conditions to the Territorial Authority. Subsequent events causing damage may change this assessment. Re-inspection may be required. Secondary damage (partitions, windows, fittings and furnishings) may be hazardous. Electrical and mechanical equipment, gas connections, water supplies and sanitary facilities have not been inspected.

**Do Not Remove this Placard. Placed on Behalf of the Civil Defence Emergency Management Controller Under the Authority of the Civil Defence Emergency Management Act 2002**

This facility was inspected pursuant to the Civil Defence Emergency Management Act 2002

Inspector ID: \_\_\_\_\_

Acting under the authority of the Civil Defence Emergency Management Controller: \_\_\_\_\_

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

Contact for information: ph. (03) 941 8998  
 or  
 TXT: 021 02069175 with following details: Address, Placard colour, contact name, contact phone number