

UNDER

THE COMMISSIONS OF INQUIRY ACT 1908

IN THE MATTER OF

ROYAL COMMISSION OF INQUIRY INTO BUILDING  
FAILURE CAUSED BY CANTERBURY  
EARTHQUAKES

KOMIHANA A TE KARAUNA HEI TIROTIRO I NGA  
WHARE I HORO I NGA RUWHENUA O WAITAHA

AND IN THE MATTER OF

THE CTV BUILDING COLLAPSE

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STATEMENT OF EVIDENCE OF GRAEME SMITH  
IN RELATION TO THE CTV BUILDING

DATE OF HEARING: COMMENCING 25 JUNE 2012

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*WGS*

**STATEMENT OF EVIDENCE OF GRAEME SMITH IN RESPECT OF THE CTV BUILDING**

1. My full name is Graeme Robert Smith. I live in Christchurch. I operate a business, Concrete Protection and Repair Limited, based in Christchurch.
2. I am a qualified Civil Engineer, having graduated from the University of Canterbury in 1994. Since that date I have worked in the concrete repair industry.

**Involvement with the CTV Building**

3. After the 4 September 2010 earthquake Concrete Protection and Repair was heavily involved in carrying out inspections and preparing estimates of the cost of repairing cracks in concrete buildings caused as a result of the earthquake.
4. We were instructed to prepare an estimate in relation to the CTV Building following the inspection and report of David Coatsworth of CPG Limited [BUI.MAD249.0082]
5. We were provided with a copy of Mr Coatsworth's report by the CTV Building Manager, John Drew.
6. I made three visits to the CTV Building in early 2011.
7. I recall that on my first visit I inspected the two shear walls of the building from the outside, namely the north shear wall (**North Core**) and the wall to the south of the building (**South Coupled Shear Wall**). I could see no cracking in the exterior side of the walls. The exterior walls were covered by a textured coating.
8. On my second visit to the CTV Building I met with John Drew and looked at both the outside and the inside of the Building.
9. My third visit was specifically to look at the inside of the lift shafts and the two lifts inside the Building were stopped so that I could do this.
10. The instructions that Concrete Protection and Repair received from John Drew were to quote on crack injections into the shear walls, the columns and facing panels, concrete repair of the south facing panels and siloxane exterior waterproofing to the southern and northern shear walls as identified in the CPG report. I do not recall receiving any additional verbal instructions from Mr Drew.



11. As a general comment, the cracking that I observed in the CTV Building and which I will discuss shortly was, in my experience, unremarkable and did not give me cause for concern. I can think of another building where the cracking did concern me and I advised the owner to contact a structural engineer. I can also say that the damage I observed in the CTV Building was consistent with and did not appear to go beyond what was identified by Mr Coatsworth in the CPG report, namely fine hairline cracks.

#### **South Coupled Shear Wall**

12. I recall on my second visit looking inside looking at a vertical crack in the plasterboard which was covering the South Coupled Shear Wall and which ran from the ground floor through to the floor above.
13. I did not see this crack on the outside of the building, however, the exterior of both the South and North Shear Walls were covered with a textured coating which meant that it was very difficult to see any cracking from the outside. I did not inspect whether this crack continued into higher floors as this was not referred to in the CPG report. I could not access the outside of the South Coupled Shear Wall via the fire escape any higher than the first floor (Level 2) due to a locked gate blocking access to any higher levels. I recall that when I was looking at this crack I was behind the reception area for CTV on the ground floor and the room I was in had a lot of routers, servers and post production electronic equipment in it. The first floor room above this was someone's office. I needed to go behind a desk to observe the crack.
14. I did not see the diagonal cracking that Mr Coatsworth referred to at the base of the South Coupled Shear Wall in his report and the accompanying photograph [WIT.COATSWORTH.0001D.11].

#### **North Core**

15. Like the South Coupled Shear Wall, the North Core was coated with a textured finish which meant it was very difficult to see any cracking from an outside inspection.
16. On my second visit to the CTV Building I inspected the stairwell on each level. The cracking I observed here was consistent with what Mr Coatsworth had recorded in his report. I do not remember seeing any cracking in the toilets.





17. I remember looking closely at the cracking by the stairs because I was concerned that I may have had to remove the bulkhead under the stairs in order to repair the cracking on the wall adjacent to where the lifts were.
18. It was for that reason and to view any cracking on the inside of the North Core where the two lift cars were that I asked John Drew to arrange for the lifts to be stopped so that I could get into that area.
19. The lifts were stopped and I was able to get inside the lift shaft in that area. I noticed both horizontal and vertical cracking. There was horizontal cracking at each level in the approximate location of the construction joints of each floor. There was also cracking about half way up each floor which appeared to correspond with the landing for the stairs in the adjacent stairwell. Both types of horizontal cracking were present the full height of the western and northern walls of the lift area of the North Core but not in the eastern wall.
20. There were two vertical cracks which ran the length of the lift shaft. One was approximately 1 metre from the western side of the lift shaft and the second was approximately 1.5 metres from the western side of the lift shaft. Both were in the range of 0.2 to 0.5mm wide. I recall that this vertical cracking was just in the northern wall of the North Core.
21. None of the cracks that I have referred to in the North Core had any spalling.

#### **Other areas inspected**

22. I did look at the beam column joints in the building where these were not covered by internal linings.
23. I also looked at the columns referred to in the CPG Report.
24. I did not look at the blockwork on the western wall as this did not require crack injection treatment.
25. I had understood that I would be returning to the building a fourth time once painters had started their work on the outside of the building so that I could have a look at the exterior columns of the building on higher floors. However, I was never

contacted to advise that this could occur and I do not believe that the painting had started prior to 22 February 2011.

26. Having heard nothing further from Mr Drew we prepared an estimate for repairs which was dated 22 February 2011 [WIT.DREW.0001.RED.49]

Signed: \_\_\_\_\_



Dated: \_\_\_\_\_

15/06/12.





051 Sth shear wall, fire escape



# Concrete Protection & Repair Ltd

*Structural Strengthening, Concrete Repair and Corrosion Protective Coatings*

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22 February 2011

Madras Equities Ltd  
249 Madras Street  
Christchurch

by email: 

Dear John,

**Re: Repairs to 249 Madras Street**

Further to CPG's report, ref 702974, and our site visits Concrete Protection & Repair Limited is pleased to submit the rates and fee estimate below for the following repairs.

1. Crack injection to shear walls (including inside the lift shaft), columns and facing panels.
2. Concrete repair to southern facing panels.
3. Siloxane to southern and northern shear walls.

We estimate the work will take four weeks to complete. Crack injection of the lift shaft requires us to install a fixed scaffold. During the injection work one of the lifts will be shut down.

Description	Quantity	Cost	Margin	Total
Wall cracks	200	195	NA	39,000.00
Conc Repairs to southern facing panels	LS	9,950	NA	9,950.00
Siloxane to southern and northern shear walls	LS	18,265	NA	18,265.00
Scaffold hire	LS	22,890	10%	25,179.00
<b>Fee Estimate</b>				<b>\$92,394.00</b>

Our fee estimate is based on the following.

1. GST exclusive.
2. Valid for 30 days.
3. Payment within 20 working days from invoice date.
4. Working hours are between 07.30 and 16.30 Monday to Friday and exclude public holidays.
5. All repair work is concurrent.

Any queries please do not hesitate to contact us.

Yours faithfully



Katrina Roy M.C.M.  
Manager