



**Canterbury Earthquakes Royal Commission**  
**Te Komihana Rūwhenua a te Karauna**

**UNDER THE COMMISSIONS OF INQUIRY ACT 1908**

**IN THE MATTER OF CANTERBURY EARTHQUAKES ROYAL COMMISSION**

Before: The Honourable Justice M Cooper  
Judge of the High Court of New Zealand

Associate Professor Richard Fenwick  
Commissioner

Appearances: S Mills QC, M Zarifeh and M Elliott as Counsel Assisting

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**TRANSCRIPT OF HEARINGS ABOUT INDIVIDUAL BUILDINGS (EXCEPT CTV  
AND PGC) WHOSE FAILURE RESULTED IN LOSS OF LIFE**

**COMMENCING ON 23 JANUARY 2012 AT CHRISTCHURCH**

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**JUSTICE COOPER:**

This week Commissioner Fenwick and I will not be joined by Sir Ron Carter. He's in Auckland undergoing some minor medical treatment. The Royal Commission's terms of reference enables two of the three Commissioners to proceed in the absence of the other provided they concur in that course being followed and I record that in fact all three Commissioners concur in Commissioner Fenwick and I proceeding on our own. What today involves enquiring into the collapse of a building at 116 Lichfield Street on the south western corner of the intersection of Lichfield and Manchester Streets in the city. As a result of the collapse of the eastern wall of that building into Manchester Street four lives were lost – Kelsey Moore and her daughter Taneysha Prattley, an infant of only five weeks died on the footpath near the corner and Owen McKenna and Lisa Willems died in separate cars stopped at the lights in Manchester Street opposite the building. We extend our deepest sympathy to the family and friends of those who died, some of whom I note are present here today.

**MR ZARIFEH:**

The building that was situated at 116 Lichfield was an unreinforced masonry building on the south west corner of Lichfield and Manchester Streets. It was adjacent to other unreinforced masonry buildings on either side and it was classified as a heritage building. A Christchurch City Council seismic building survey in December 1991 gave the building a rating of 15 and classification of A which meant that immediate remedial action was recommended under the then Municipal Corporations Act. There is no record of such remedial work having been carried out.

Following the September 2010 earthquake there was a level one rapid assessment on 7 December, 7 September, sorry with a result that the building was green placarded. On the 20<sup>th</sup> of September the building was inspected by R V Sullivan, a structural engineer on behalf of the owner, who found that parapets around an internal central area of the roof had been damaged and repair work was recommended. Then on the 7<sup>th</sup> of December Sean Gardiner from Structex completed an earthquake damage assessment and concluded

that the building had suffered moderate damage. He was of the view that the parapets to the fire escape, that's the internal fire escape, remained a fall hazard to the area below but there were no apparent structural hazards to the remaining areas of the building. In relation to the building strength he  
5 concluded that it was possible that the building was earthquake-prone, in other words had a strength of less than 33% of the current code and that if requested a detailed engineering strength assessment could be completed.

A level one rapid assessment on the 27<sup>th</sup> of December following the Boxing Day aftershock noted minor damage near a parapet wall to  
10 110 Lichfield Street and the building was green placarded. However a USAR report of the same date noted severe damage to the parapet at 114, the adjacent building, and that a cordon was required on that street.

On the 29<sup>th</sup> of December, 2010, the council wrote to the owner enclosing a Building Act notice which noted structural defects including damage to  
15 parapets. The owner was given until 31 January 2011 to make, to complete make safe work. Further inspections by Structex and in particular Mr Gardiner noted additional damage from the Boxing Day aftershock and make safe works were directed by Structex. This work was completed by Glenn McConnell who was then with Fortis and on the 2<sup>nd</sup> of February, 2011 the  
20 council was provided with sign off certification by Mr Gardiner of Structex in relation to the cordons that were in existence then on Lichfield Street.

The next day, that's the 3<sup>rd</sup> of February, Glenn McConnell, the contractor, noticed on inspecting 116 Lichfield Street that the parapet and corbel on the Manchester Street frontage was dislodged and that the south east corner on  
25 Manchester Street was fractured from floor to ceiling. He also noted that a parapet over the south wall was cracked, broken and dislodged and would fall on the building next door from two stories above. He indicated that there should be a cordon on Manchester Street.

The next day the 4<sup>th</sup> of February Mr Gardiner inspected the building and prepared an engineer's instruction in relation to the additional damage that he  
30 had been advised by the contractor and indicated on that instruction that high level bricks and stone blocks were a potential fall hazard to areas directly adjacent and should be secured as soon as possible or the fall areas

cordoned off. Mr Gardiner forwarded the same to the insurers for approval of works required and he also sent a copy to the Christchurch City Council. It seems that despite numerous follow ups with the insurer authorisation for those works was not received prior to 22 February.

5 In the 22<sup>nd</sup> of February earthquake the building suffered essentially a complete collapse of the Manchester Street facade on to the footpath and onto Manchester Street. Kelsey Moore was carrying her five week old daughter Taneysha Prattley and was walking with her partner Glen Prattley near the intersection of Lichfield and Manchester Streets outside Ruben  
10 Blades Hair Academy which was at 116 Lichfield Street. The Honeypot Cafe was the business at 114 Lichfield Street.

**JUSTICE COOPER:**

Just pausing there Mr Zarifeh and looking at the photograph which does not  
15 appear to be very good in resolution does it but am I right in thinking we're looking at the building from the sort of north east and that Manchester Street is on the left?

**MR ZARIFEH:**

20 Yes.

**JUSTICE COOPER:**

And Lichfield on the right?

25 **MR ZARIFEH:**

Yes sir.

**JUSTICE COOPER:**

So the Honeypot Cafe which you've referred is, is it sort of adjacent to the –

30

**MR ZARIFEH:**

It's adjacent to 116 and it's from my understanding it is behind that vehicle that you can see by the intersection and I'm not sure if it's where the red sign is or the next building. I think it's the next building.

5 1015

**JUSTICE COOPER:**

Yes, well it looks to me like this building on the corner, the one that's, the Manchester Street façade of which has collapsed, if that's 116 Lichfield Street  
10 the next building to the right where the red sign is might be 114 mightn't it?

**MR ZARIFEH:**

Yes sir.

15 **JUSTICE COOPER:**

Which is where the café was.

**MR ZARIFEH:**

Yes Sir.

20

**JUSTICE COOPER:**

Thank you.

**MR ZARIFEH:**

25 And there is some written evidence from Ms Moore's sister who was also with them which establishes that Kelsey Moore and her daughter were at that corner but slightly into Manchester Street from the corner at the time the earthquake struck. Ms Moore was last seen by Glen Prattley on that footpath and when the earthquake struck and the building at 116 collapsed Ms Moore  
30 and their daughter were trapped under rubble. Their bodies were located by USAR beneath collapsed rubble. Owen McKenna was in his vehicle which was stationary, the middle one of three vehicles at the traffic lights in the north-bound lane of Manchester Street at the intersection of Lichfield. A large

amount of debris, building debris fell from 116 onto the three cars that were there trapping the occupants. Rescuers moved rubble and found Mr McKenna in the driver's seat of his vehicle but he was deceased. Lisa Willems was in her motor vehicle, the third of those three vehicles that were stationary. Following the earthquake she was rescued from her vehicle and carried across the road but did not respond to first aid and died at the scene.

The issues that I have listed in the summary and that are likely to concern the Commission in relation to this building are, firstly, the application of the council's earthquake-prone policy to the building; secondly, the assessment of the building following the September earthquake and the Boxing Day aftershock; thirdly, the assessment of the building and the cordons required following the Boxing Day aftershock and the make-safe works in early February of 2011; and, fourthly, the issue of cordons and I've put there in the summary, "The adequacy of cordons prior to their removal," but I think that, probably to be more precise that's going to be the issue of whether there should have been a cordon irrespective of its extent on the Manchester Street frontage.

20 **JUSTICE COOPER:**

Because there wasn't one there was the?

**MR ZARIFEH:**

No there was never one there Sir.

25 Turning to the witnesses, they are listed in the summary. There is an additional statement, he is not going to be called, come in late in the day in the sense once his details were obtained but there is a written statement from a Jason Lavington who was the, worked for the loss adjuster concerned.

30 **JUSTICE COOPER:**

What is his name?

**MR ZARIFEH:**

Jason Lavington, L-A-V-I-N-G-T-O-N, and I think, see how it transpires but I think it may well be that we don't need to have him give evidence. His written statement will be sufficient and can be covered and any gaps filled in hopefully by Mr Gardiner.

5

**JUSTICE COOPER:**

Didn't you say there was a statement from Ms Moore's sister as well?

**MR ZARIFEH:**

10 Yes Sir, there's an email. That's coming Sir, but it essentially says, it essentially says what I said about the location Sir.

**JUSTICE COOPER:**

What, what's her name?

15

**MR ZARIFEH:**

Rochelle Prattley. Sorry, Glen Prattley's brother, I had that wrong.

**JUSTICE COOPER:**

20 Wait on. What was the name again?

**MR ZARIFEH:**

Rochelle Prattley.

25 **JUSTICE COOPER:**

Well I don't think she can be anyone's brother can she.

**MR ZARIFEH:**

30 Sorry. I'll read the statement out. Perhaps it would be the easiest way. "My name is Rochelle Prattley. My brother Glen Prattley's partner Kelsey Moore and daughter Taneysa were killed on 22 February 2011 as a result of the collapse of the Ruben Blades building on the corner of Manchester Street and Lichfield Streets in Christchurch. I was with Glen, Kelsey and Taneysa when

the earthquake hit. My recollection is that Glen and I were walking slightly in front of Kelsey who was with Taneysa. When the earthquake hit we were all near to the corner of Manchester and Lichfield Streets but more on the Manchester Street side of the corner.

5 Apologies for getting that name wrong Sir.

**JUSTICE COOPER:**

So is she Glen's sister? Is that the relationship?

10 **MR ZARIFEH:**

Yes Sir.

**JUSTICE COOPER:**

Right.

15

**MR ZARIFEH:**

As to the witnesses to be called, Your Honour, they are listed there on the summary and what I intend to do is firstly to call the owner of the building. His evidence should be reasonably short. He instructed engineers of course but  
20 wasn't involved with the engineering assessments himself. That's Mr Wiersma. Then, and it's slightly out of order chronologically but I want to call then Mr McConnell, then Mr Gardiner and Mr Campbell, then Mr Smith of Spencer Holmes Limited and then Mr McCarthy from the council. So I'll  
25 commence Sir by calling Mr Eelco Wiersma.



**MR ZARIFEH CALLS:****EELCO WIERSMA (SWORN)**

- Q. Can you give the Commission your full name please?
- A. My name is Eelco Wiersma.
- 5 Q. You live here in Christchurch?
- A. Yes sir.
- Q. And were you the owner of the building that was situated at 116 Lichfield Street?
- A. Yes sir.
- 10 Q. And we've referred to it as, sometimes as the Ruben Blades building. Was Ruben Blades a tenant on the ground floor?
- A. Correct.
- Q. How long had you owned that building?
- A. Probably seven or eight years.
- 15 Q. And did you own any of the other buildings in that area?
- A. Yes next door in Manchester Street, 149 Manchester Street.
- Q. Right. Now looking at that photo can we see 149 Manchester on there?
- A. Correct, on the left-hand side of the Ruben Blades building.
- Q. So there's a motor vehicle in that photo on Manchester Street. Can you
- 20 see that?
- A. Correct, yep.
- Q. Whereabouts in relation to that?
- A. It's right next to it, with the two darker window frames.
- Q. So immediately adjacent to 116?
- 25 A. Correct.
- Q. Any other buildings in that vicinity?
- A. No I don't.
- Q. How long had you owned 149 Manchester?
- A. Six years.
- 30 Q. Were you aware whether or not 116 Lichfield had had any structural strengthening in the past?
- A. No.
- Q. So when you bought it you didn't, weren't made aware of that?

A. None, no.

Q. Did you get an engineer's assessment when you bought the building?

A. No I didn't.

5 Q. Were you aware of the Christchurch City Council's policy in relation to earthquake-prone buildings?

A. No I didn't.

Q. So you had no knowledge of those –

A. No.

Q. – kind of matters?

10 A. No. All I knew is that the parapets of the Ruben Blades had been removed before I bought, bought the building, sometime.

1025

Q. And was that something you had been told?

15 A. Yes because you could see it from the actual picture. I always wondered why we didn't have that kind of nice top at the top of the building.

Q. The ornate?

A. The ornate, yeah.

Q. Stone?

A. Yeah, yeah.

20 Q. Were you aware that that was to prevent any fall hazard or not?

A. I guess so, yes.

Q. So it follows that you were not aware of how your building sat in terms of structural strength?

A. Correct, I didn't.

25 Q. And 4<sup>th</sup> of September earthquake occurs, 2010, what did you do as a result of that in relation to this building?

A. I phoned an engineer R D Sullivan and they duly came and inspected the building.

30 Q. And what were your instructions to him? Can you recall what you asked him to do?

A. I had a report and I contacted Mr Gardiner –

Q. No, no, just going back to Mr Sullivan?

A. Yeah.

- Q. 4<sup>th</sup> of September occurs?  
A. Yeah.
- Q. You said you contacted Mr Sullivan?  
A. Yeah.
- 5 Q. Who is a structural engineer.  
A. Yeah.  
Q. What did you ask him to do?  
A. To inspect the building and give me a report.  
Q. What did you want to know?
- 10 A. Well what I wanted to know is the report so I know what there is to know.  
Q. But what in particular was it you wanted to know about?  
A. If my building, what kind of repairs if any needed to be, needed to be made to the building.
- 15 Q. Had you been to the building after the 4<sup>th</sup> of September earthquake?  
A. Yes I have.  
Q. And were you able to see visible damage?  
A. Yes.  
Q. What kind of damage?
- 20 A. As reported by as you earlier said inside the building, on the inside there was parapets came down, bricks came down.  
Q. Is that in the internal part?  
A. Internal part, correct.  
Q. So there's a stairwell, internal stairwell?
- 25 A. Yeah, stairwell was damaged, couldn't be used.  
Q. Was the building tenanted at that stage prior to the 4<sup>th</sup> of September?  
A. Yes, I owned a business that actually was a tenant there.  
Q. Which business was that?  
A. Ruben Blades Hair Dressing Academy.
- 30 Q. Okay.  
A. But it was, there were at the time there was only about three weeks before the students were leaving so we were closed for a week, we

finished and there were only people on the ground floor at the time after the 4<sup>th</sup> of September.

Q. And prior to the 4<sup>th</sup> of September you were using the upper floors (inaudible 10:28:18)?

5 A. No, only my office.

Q. So after the 4<sup>th</sup> of September you were only using the ground floor?

A. For another two and a half weeks to three weeks, yes.

Q. And then the students left you say?

A. Yes.

10 Q. So from that point on was the building occupied by any tenants or not?

A. No because, well we were still a tenant but we didn't have any students because I felt the business was not safe enough to have anybody in there.

Q. Why did you feel that?

15 A. Well, I felt it 'cos it was, the thing is the fire escape was not, was broken so we couldn't use it anyway, down the fire escape.

Q. Couldn't use the upper floors?

A. No we couldn't use the upper floors and it was no good using the bottom floor if we can't use the upper floors.

20 Q. So the hairdressing academy occupied both ground floor and upper floor?

A. All three floors, yep.

Q. So physically there was no one in occupation after the few –

A. Correct.

25 Q. – weeks after the 4<sup>th</sup> of September?

A. Correct.

Q. So Mr Sullivan provided you with a report?

A. Yep.

Q. About repairs that were required?

30 A. Ah, I don't know whether the information you have.

Q. Right, and how was it then that Mr Gardiner from Structex became involved?

- 5 A. Well because the next door neighbour, the Honey Pot, which is right next to us, Mr Gardiner probably, 'cos I knew Mr Gardiner and Mr Gardiner contacted me and said we might do a repair at the same time rather than having crane coming in one week for the Honey Pot and then two weeks later going to crane in for your building so we can combine the job.
- Q. And you said you knew Mr Gardiner? How did you know him? Was that from –
- A. I know him from church.
- 10 Q. Not from structural engineering?
- A. No, no, no.
- Q. So that made sense to you?
- A. Yeah, definitely.
- Q. So did Mr Gardiner essentially take over then as the structural engineer advising you or –
- 15 A. Yes.
- Q. – the insurers for you?
- A. Yep.
- Q. And he has been to the building, we're going to hear from him, but he's been to the building a number of times?
- 20 A. Correct.
- Q. Did you go when he went? Did you go with him or not?
- A. Yep.
- Q. On every occasion?
- 25 A. Mmm, yes, yep.
- Q. And can you remember, he's going to talk to us about an inspection he made I think the 7<sup>th</sup> of December. Can you recall that?
- A. If that's the same time as Mr Lavington was there, then I recall that, yes.
- Q. Lavington, the loss adjuster?
- 30 A. Yes.
- Q. Okay.
- A. I think.

- Q. What I was wanting to know was when you first, prior to Mr Gardiner first inspecting the building, did you have any specific instructions about what you wanted to know from him?
- A. Well I wanted to know the damage and what needs to be done to fix it.
- 5 Q. And were you concerned at all about, you talked mentioned before whether the building was safe, did you have any concerns about that?
- A. Not necessarily, no. I mean for the amount of shaking that took place the building was actually in a remarkable condition really, yeah.
- Q. The amount of shaking in September you mean?
- 10 A. Yeah, yeah it was amazing, I mean there was a bit of damage and some wallpaper and stuff but it was quite –
- Q. So your concerns about safety were more in relation to that stairwell –
- A. Correct.
- Q. But not moving round in the ground floor?
- 15 A. No, or upstairs even.
- Q. He did that inspection on the 7<sup>th</sup> of December and did a report, dated 20<sup>th</sup> of December, which you would have got a copy?
- A. Yes.
- Q. And in that report he said that the building was likely to be earthquake-prone. Do you remember reading that?
- 20 A. Yes.
- Q. And that essentially he suggested that there should be or there could be a, what he called a detailed engineering strength assessment carried out. Do you remember –
- 25 A. Yep.
- Q. – reading that? Now did you ever ask him to do that?
- A. Ah, I never, I always said do what it takes, go ahead.
- Q. Right.
- A. Whatever it takes, do it.
- 30 Q. Do it?
- A. Do it, yep, 'cos he's the expert. He knows what needs doing, I don't.
- Q. But he in that report he's suggesting that that sort of should be done?
- A. That what?

Q. He's suggesting that that could be done but someone's got to tell him to go ahead and do it. Are you saying that you didn't ever have a conversation about having such a thing done?

A. No. I cannot recall that.

5 Q. Can you remember reading that in the report though and wondering whether that should be done?

A. Yeah –

Q. It obviously hadn't been done if he's suggesting that it should be done?

10 A. You know, I wasn't stopping anything. I mean I don't know what the stage is. Do a report and then I said well do whatever it takes, right I want it fixed 'cos I want to lease the building.

15 Q. Just, I'll read you out what it says: "If," this is in paragraph 8 of that report, "If requested we can complete a detailed engineering strength assessment to determine the building's strength relative to current code and identify strengthening options sufficient for cost estimates to be made."

1035

20 A. Yeah, I remember that and then there was even talk about thirty-three percent and sixty-six percent and I said, "Well I want to go to sixty-six percent. That's what needs to be done," but whether anything has happened since I have no idea 'cos at the time they were repairing it so I don't know what stage they were at.

Q. Right, so you remembered saying that you wanted it to be at the higher figure – the sixty-six or sixty-seven percent figure?

25 A. Yeah, yeah 'cos I remember him saying that they did another building for thirty-three percent and then they did a costing for sixty-six percent and it didn't actually cost that much more. I said, "Well that's fine, it's probably similar to mine." There would be higher and larger numbers of money involved but, you know, that's fine.

30 Q. Well do you remember ever receiving any strengthening proposal then that talked about that?

A. Not for the whole building, just for the repairs.

Q. I'm not talking about the repairs. I'm talking about a strengthening programme that might go up to a certain level?

A. Not yet, no.

Q. The building has been demolished now though hasn't it?

5 A. Yes, it's a vacant section now.

Q. But between December and the February earthquake had you received anything, had any discussions about that proposal then?

A. No.

10 **JUSTICE COOPER ADDRESSES MR ZARIFEH:**

Q. What you've just read from Mr Zarifeh is a report dated 26 January. Am I right?

15 A. 20 December I was reading from. It's got a similar paragraph though in the later report. It's Tab 5. It's exactly the same sentence Sir in the earlier report which is under Tab 5. It's 0014.20 is the page. That's the page on the screen now on 20 December.

Q. Well that's not in my file. We won't get held up over this. It's not clear to me why the same thing was being said twice in letters some months apart.

20 A. Well I'm coming to that.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. If I can just deal with that point there's a further inspection by Mr Gardiner in January, on the 21<sup>st</sup> of January, Mr Wiersma?

25 A. Yes.

Q. And I think you attended with him then?

A. Yes.

Q. And he did a written report again dated 26 January?

A. Yep.

30 Q. And a similar clause is in that January report?

A. Yep.



- Q. No, that's the December one. The January one I'll get it brought up, 0014.40. That's the December one you're look at at the moment and I'll just get the January one brought up, under "Strengthening", and you'll see a similarly worded suggestion that if requested we can complete a detailed engineering strength assessment, right?
- 5 A. It says, "The Council will likely require a strength assessment". I have never received that request from the Council.
- Q. No, that's just part of any consent so if you were going to do the strengthening programming or up to thirty three or sixty seven are you saying the Council would likely require a consent and then you're saying, "If requested we can complete a detailed engineering strength assessment".
- 10 A. Mhm, mhm.
- Q. So you said that you had had discussions with Mr Gardiner about the thirty three or the sixty seven?
- 15 A. Yep.
- Q. When did you have those?
- A. Well during one of his visits.
- Q. Was it the early one in December or this one in January?
- 20 A. That would be January.
- Q. Not December?
- A. Could well be in December too. I can't remember exactly. It would be more likely January.
- Q. Okay so are you saying that your recollection is that you had that discussion and that you in fact requested or said something you wanted to do the higher figure?
- 25 A. Yep.
- Q. So in other words you wanted to spend some money and make the building stronger?
- 30 A. No I didn't want to spend any money but I knew I had to.
- Q. Well you were willing to?
- A. That's right.

- Q. I just want to refer you to a paragraph from Mr Gardiner's brief of evidence that he's going to give today, paragraph 25, and I'll just read it out to you and he's talking about, just to set the scene, he's talking about his report of 26 January. He says, "I noted in my report that it was not a detailed structural strength assessment and did not provide detailed strengthening options, noting that these may be required by the owner following consideration of the report. I suggested that we undertook that report now to progress the reinstatement of the building. I was aware that the owner's business interruption insurance ran out in September 2011 and he was keen to complete the repairs and required strengthening prior to that date." So that's the conversation that you were talking about?
- 5
- A. Mhm, mhm.
- Q. "I was not instructed to proceed with a structural strength assessment." That's the bottom of that page you can see up on the screen. What do you say about that? Can you recall instructing him or not? He's obviously saying he wasn't instructed.
- 10
- A. No he wasn't instructed, he wasn't because he's an honest person so I had not instructed at that particular time to do that.
- Q. And you don't have any recall now of any other conversations?
- 15
- A. No. It was my impression that the Council would make me, instruct me to take action, you know. I thought they would be the ones that's coming to inspect and then say, "You need to do this. You need to do that and other things." It was always my impression.
- Q. Right so were you waiting till the Council told you what you had to do?
- 20
- A. Yeah.
- Q. Okay so you were agreeable to doing it?
- A. Mmm, definitely.
- Q. And you told Mr Gardiner that?
- 25
- A. Yep.
- Q. But you were just waiting till the Council said, "Look you've got to do this." Is that fair?
- 30
- A. Yes that's my impression.

Q. And I think that in relation to a Building Act Notice that was served on you by the Council after the Boxing Day aftershock gave you till the 31<sup>st</sup> of January to complete repair work?

A. Yep.

5 Q. You in fact requested an extension didn't you?

A. Yes because I asked Mr Gardiner how I should react to that because of time restraints.

Q. And we've got that letter of yours, 19 January. You're requesting till the 31<sup>st</sup> of May 2011. Why was it so far out?

10 A. Well I didn't know what it took to do whatever repairs needed to be taken. I didn't know how much time it would take for these people to do that.

Q. Right, did you have discussions with Mr Gardiner about the time?

A. Yes.

15 Q. And did he give you any idea of a time-frame?

A. Well given a bit of time. I thought by 31<sup>st</sup> of May, yeah fine, yeah.

Q. And as far as you were aware was repair work underway?

A. Yes.

1045

20 Q. Did you have any difficulty with insurers or loss adjusters in terms of getting approval?

A. I had very, if any, contact with the insurance company about it. The only time I saw an assessor was Mr Lavington, when Mr Sean Gardiner was present at the time and for the rest I heard nothing from the assessor.

25 Q. Okay now is that because someone else was doing the contact or –

A. I think somebody else, the, the – I think Mr Lavington was not continuing on with the same claim and there was continually, I think there was other people involved, I'm not quite sure.

Q. What I meant was from your end –

30 A. Mmm.

Q. – was, were you aware Mr Gardiner was in contact with them?

A. Yes because he was at the same time present when Mr Lavington was inspecting the building.

Q. Okay but was he the one in contact with insurers and loss adjusters in relation to the property?

A. I believe so, yes.

Q. So he was doing it on your behalf, assessing it?

5 A. Yes.

Q. Were you aware of the inspection, inspections after the 2<sup>nd</sup> of February? So 4<sup>th</sup> of February there was a visit by Mr Gardiner to the building with Mr McConnell, contractor?

10 A. I think, I think I can remember. Yeah I don't think I stayed with them but I think they were there at the time, yeah, yes I do now, outside the building, yep.

Q. Sorry outside, you were outside the building?

A. We, you know all, all three of us were.

15 Q. What about on the 16<sup>th</sup> of February? Mr Gardiner in his brief talks about going back and looking at the building. Were you there then?

A. I can't recall.

Q. Can't recall, okay. Were you aware of concerns that Mr McConnell had raised on the 3<sup>rd</sup> of February about the Manchester Street frontage and the south-east corner?

20 A. No.

Q. You weren't aware of that?

A. No.

Q. What about from Mr Gardiner? Did you have any discussions with him about any concerns?

25 A. Not in particular, no. I wasn't there all the time with them.

Q. So as at the 22<sup>nd</sup> of February then there was no-one physically in occupation in the building?

A. Correct.

30 Q. Were you aware of the issue about the cordons on the Lichfield Street side?

A. There was a cordon around the entrance to go upstairs, it's in the Lichfield Street part of the building. There was a cordon around that. So you couldn't go upstairs.

Q. Okay. There's been a reference made to retailers wanting to get that cordon removed as soon as possible. Were you aware of anything?

A. No I wasn't aware of that.

Q. You weren't part of that group –

5 A. No.

Q. – or anything?

A. No. It didn't worry me because I didn't have to go, if I wanted to go in I could just get in and pick something up and go out again so it was not in my way at all. So I wasn't worried about it being there.

10 Q. And you weren't in business at the time?

A. No we weren't operating at the time because this building, you know because the fire escape wasn't safe.

#### **CROSS-EXAMINATION: MR ELLIOTT**

Q. Mr Wiersma.

15 A. Correct.

Q. Can I just refer you to a photograph please. It's BUILIC1160014.53. Because you're familiar with the area I'm just going to ask you to confirm –

A. Yes.

20 Q. The person who took that photograph would have been looking towards the east of the building, that's the –

A. Yep.

Q. – Manchester Street frontage which has collapsed. Is that right?

A. Yep.

25 Q. And is it right to say that the debris has fallen right across Manchester Street so that the footpath we can see there is the footpath on the opposite side of Manchester Street?

A. Correct.

Q. Is that right?

30 A. Yep.

Q. Thank you. Just a few brief questions. You had insurance in place?

A. Correct.

Q. And did that consist of business interruption insurance and property damage insurance?

A. Yes, yes.

Q. Mr Lavington was the loss adjuster.

5 A. Apparently.

Q. And he's provided a statement to the Royal Commission. I'm just going to read out a section of what he says and ask you if you agree. He says that on the 23<sup>rd</sup> of September 2010 he explained to the building owner, which I take to be you, "That his insurer has requested a full engineer's report and cost estimate of associated repairs before confirming claim acceptance," and he explained that as the owner of the building, "he," that is, you, "is responsible for ensuring the elimination of any hazards, safety concerns that may be identified on site and that any associated costs in addressing these issues would, in the meantime, be for his account." Is that accurate?

10

15

A. Ah, I never seen that report.

Q. I'm asking you if it's, if it's correct that he said those things to you –

A. No.

Q. – on the 23<sup>rd</sup> of September?

20 A. No, no. I have no recollection of the report.

Q. You have no recollection. So he may have said them but you've forgotten or you know for sure that he didn't?

A. No, no recollection at all, none. If there is a report I need to have it in writing and, and I have never, he never told me that, never. I can't recall that at all.

25

Q. Just to be clear this is what he tells us –

A. That's fine.

Q. – that he said to you.

A. That's fine.

30 Q. There's no report.

A. And I tell you that I can't recall any of that.

Q. You, your evidence was that you said, "Do whatever it takes. I want it fixed." So is it right to say that throughout the period following September your focus was on getting the building fixed –

A. That's true.

5 Q. – rather than on safety?

A. Safety, everything, fixing, safety, everything, it's one unit, it's not separate.

Q. Right so document BUILIC116.0014.17. [Your Honour this is the December 20 report. I'm told that that report is at tab 2, sub tab 5.]

10

**JUSTICE COOPER:**

Yes so it is.

**MR ELLIOTT:**

15 And the January report is sub tab 11 of sub tab 2. There were two separate reports which –

**JUSTICE COOPER:**

20 Yes well it's also at tab 5 in its role as an attachment to Mr Gardiner's brief I think. So that's where I found it. That's the January version I think. Anyway –

**MR ELLIOTT:**

Yes Your Honour.

25 **JUSTICE COOPER:**

I've got this now thanks.

**CROSS-EXAMINATION CONTINUES: MR ELLIOTT**

30 Q. Just a question about this document which is dated 20 December 2010 and I think you said that you did receive a copy of this report. Is that right? Mr Zarifeh has already referred you to a comment that, in the report, that it was possible the building was earthquake prone.

A. Mmm.

- Q. I think you recalled that and do you see just in the third paragraph of the report, which we can highlight. It says, "This report does not cover a detailed structural strength assessment or strengthening options which may be required by the client following consideration of this report."
- 5 That's not the section which has been highlighted.
- A. No.
- Q. Looking at the third paragraph from the top.
- A. I think it's not the highlighted part that you read is it?
- Q. No it's not. We're just having that brought up for you so you can see it
- 10 there. There we are, third paragraph there, "This report does not cover a detailed structural strength assessment ... which may be required by the client."
- A. Yeah.
- Q. And then the third paragraph of the next section, last sentence, "Any
- 15 subsequent loading by aftershocks, or high winds, may initiate further damage."
- A. Where is that, okay, yeah.
- Q. So my question really just is as at 20 December this building was still green stickered wasn't it?
- 20 A. Yes.
- Q. And you didn't instruct the engineer to proceed with a full detailed inspection. Is that right?
- A. Correct.
- 1055
- 25 Q. At that point the insurer hadn't yet admitted liability for the claim?
- A. I'm not sure.
- Q. So the question just is, given that it was identified as possibly earthquake prone and that a further report was available to you following consideration and the possibility of subsequent loading, do you
- 30 not think in the interests of safety of those in and around the building that really you should have instructed the engineer to proceed –
- A. Yes I probably should have at the time, yeah, yeah, I thought that everything was in control with other people that were going to follow up



and do it 'cos I said do whatever it takes, all right? So I never stopped anybody from continuing to process of whatever needs to be done to the building to make it safe and repair it.

**CROSS-EXAMINATION: MR LAING**

5 Q. Good morning, just one question for you. You've said that you were the owner of the building, is that correct?

A. Yeah.

Q. Are you the only owner of the building or is it a trust or some other structure?

10 A. Well the family trust is my wife and I.

**CROSS-EXAMINATION: MS SMITH**

Q. Mr Wiersma, you have given evidence this morning that you were not aware of Mr McConnell's concerns that he expressed in early February around the building? But you were there for the meeting with  
15 Mr McConnell and Mr Gardiner on the 4<sup>th</sup> of February, is that right?

A. I was there for part of the time, not for all of the time.

Q. And you were aware, weren't you, of the nature of the damage that had been sustained to the building and that was observed at that meeting?

A. Yes. The damage that occurred in September you mean?

20 Q. No, Mr McConnell has given some information to the Commission that suggests there was some further damage that occurred in relation to a corbel and the southern parapet of 116 Lichfield Street?

A. He didn't convey that to me at all. I didn't see that report.

Q. He hadn't given that information by report. He'd raised those issues  
25 verbally with Mr Gardiner and you're aware that Mr Gardiner had recommended that some securing works be carried out?

A. Yes.

Q. And those instructions were presented by Mr Gardiner in a report dated the 4<sup>th</sup> of February which is, I'll bring it up for you now,  
30 BUILIC1160014.47?

A. Yep.

Q. And you'll see in that report Sir that that refers to following advice from the –

**JUSTICE COOPER:**

This is 14.45. Did you want that page or did you want another page?

5

**MS SMITH:**

I have got a completely different number in my set so I apologise for that Sir. 14.45 is correct.

**CROSS-EXAMINATION CONTINUES: MS SMITH**

10 Q. So you will see in that report, Mr Gardiner's reporting following advice from the contractor that he re-visited the property to view further damage from recent earthquakes. Is that correct?

A. Yep. Correct.

15 Q. And he goes on to describe that damage and specify some works that needs to be done?

A. Correct.

Q. And Mr Gardiner's evidence is that he forwarded a copy of that report to you?

A. Yes he had.

20 Q. So it is fair to say that you were aware of the nature of the damage that was suffered, that was examined on the 4<sup>th</sup> of February?

A. Yes.

Q. Thank you Sir.

**RE-EXAMINATION: MR ZARIFEH**

25 Q. Just on that last point, were you aware of what was being done about that damage that was highlighted in that 4<sup>th</sup> of February report?

A. All I was aware of that repairs were in process, in progress. How far they were at the time, at any time I did not know.

Q. And who did you understand to be overseeing all that?

30 A. I understood that Mr Gardiner would be.

**WITNESS EXCUSED**

**MR ZARIFEH CALLS****GLEN SAMUEL MCCONNELL (SWORN)**

Q. Mr McConnell, can you give your full name to the Commission please?

A. Glen Samuel McConnell.

5 Q. You live here in Christchurch?

A. I do.

Q. What is your occupation?

A. Um, currently?

Q. Yes, currently.

10 A. Senior project manager for MWH Mainzeal who are a project manage office for (inaudible 11:01:22) re-insurers in the recovery.

Q. I just want to ask you firstly about any qualifications you have in the building industry?

15 A. Well, um, from a long period of time a builder and owner of my own company, worked my way into project management.

Q. So went from building to project managing, is that correct?

A. Correct, yeah, yeah.

20 Q. And how many years do you think it would be that you have been involved in the, if I could call it the building industry, either as a builder or project manager?

A. About 25 years.

Q. Prior to your current job where were you employed?

A. Ah, I was senior project manager for Fortis Construction, prior to that?

Q. Well, okay, prior to that?

25 A. Prior to that for my own company for a number of years had specialised in earthquake strengthening and repair of heritage buildings in Christchurch.

Q. What was your company called?

30 A. Aplus Group Project Management and within that Aplus Builders who carried out the work.

Q. So you mentioned specialising in strengthening of heritage buildings. Can you give us some examples of buildings that you have been involved in?

A. Um, some in the area would be buildings such as 225 High Street which is still standing, will survive. 139 Lichfield Street which runs through into Bedford Row also still standing.

5 Q. In the building that we're concerned with 116 Lichfield, how did those buildings compare? Are they similar construction?

A. 116 Lichfield would be similar to 225 but probably in better condition to start with. 139 is a lower structure.

Q. But in the sense of unreinforced masonry elements I'm talking about.

A. Yeah, very similar.

10 Q. So is it fair to say that that is a specialisation for you?

A. Ah, yes it is.

Q. And just in general terms when you say earthquake strengthening of such buildings, what does that involve?

15 A. Um, well working with the engineers, architects and owners to develop ways of, and with Heritage, of strengthening the building to code and preferably as aesthetically pleasing from the heritage point of view as possible.

Q. What about your current position then? Just tell us a bit about that?

20 A. Well at MWH Mainzeal I am the senior project manager so I have a group of project managers work under me. My particular area of the city that I'm responsible for goes from the Square to the Ocean and from Linwood Ave to the Waimak River so we've got some fairly damaged old buildings in that area. Also have a role as head of commercial demolition now and also have been charged with developing a plan for replicating our response system for the re-insurers around the world.  
25 They're rather impressed by the way our particular project management office works and so they want to see that developed as a system to be re-used around the world.

1105

30 Q. This is the Mainzeal's project?

A. Well the MWH Mainzeal which is a joint venture which is put together. My particular focused area in that I'll be undertaking as my own part of that is emergency response so based on experience on the way that

we've been through a number of quakes here we've developed systems for early triage of buildings so it's fairly relevant to what we're talking about here.

5 Q. Okay. Well let's turn to this building. You would have heard I presume Mr Wiersma the owner talking about the 4<sup>th</sup> of September earthquake. When did you first become involved in any way in this building?

A. We're casually involved from before Christmas where we were working on 112 which is the Honeypot building –

Q. Right did I get that right about which building that is?

10 A. Yes the one with the red sign on the lower level there.

Q. And what were you doing in relation to that building?

A. Earthquake repairs. We also had the building next to it, the blue one and Honeypot the major issue there was that part of the knuckle wall had dropped on to the blue building next door and so there was some plaster repairs had to be done there. It was also identified that part of the corbel and parapet was shifted, probably not dangerously shifted but it's still not a good look, and dangerous is a questionable thing anyway in terms of how large the next event might be.

15 Q. All right so you were involved as, in what role in that –

20 A. Well as senior project manager for the company and we had a project manager assigned to that building but I had oversight with Sean, with the project manager unless there were other people owners, builders –

Q. When you talk of Sean is that Sean Gardiner?

A. Sean Gardiner yep.

25 Q. Who was at that time at Structex?

A. Correct.

Q. So he was the engineer involved in that, in those buildings?

A. That's right yes. Not initially in 116.

Q. No, no but I'm talking about the next door.

30 A. That's right.

Q. Because you said you were casually involved in 116 because of your involvement there. What was your involvement with 116?

- 5 A. Well when I say casually because when we were on the roof of the Honeypot we could see 116. It has a shared parapet wall between the two and continuous parapet wall across the back and a party wall in between so we had to put some consideration into that building at the time but only really in relation to our own building.
- Q. And were you aware that Sean Gardiner became involved with 116 and you heard reference to a written assessment on the 7<sup>th</sup> of December that resulted in a report 20 December were you aware of that?
- 10 A. Yes, yes I was. Initially I think one of our first inspections from Sean indicated that he had no connection to that building but later I understand that he now did.
- Q. And Mr Wiersma said that that came about because of Sean Gardiner's connection with the building next door and the fact they were doing repairs there it made sense to him to have him involved in his as well. Is that, was that your understanding?
- 15 A. They, well I hadn't heard that part but it certainly is logical yes.
- Q. All right. And how well did you know Sean Gardiner at that stage? Had you worked with him before?
- A. He was involved in a number of other buildings throughout town but had not in fact met him before the September earthquake.
- 20 Q. When did you then actually become involved in terms of any assessment or work carried out in relation to 116?
- A. It would have been, I think Sean did the first inspection of that. I think that's the one with the loss adjuster.
- 25 Q. 7<sup>th</sup> of December is it?
- A. Yeah so I never met the loss adjuster but later we did some brief inspections of some of the fire escape area and the internal shaft and a courtyard and looked at some rear parapets so at that stage that's all that we were briefed to have a look at.
- 30 Q. And who were you, if you weren't dealing with the owner or the loss adjuster any instructions for any involvement by you would come from who?
- A. From Sean.

Q. All right. And that internal fire escape and parapets, they weren't a fall hazard to pedestrians or motorists were they?

A. No just anyone that worked in that area at the time in the internal area.

5 Q. What about the Lichfield, the facade of 116 and the Lichfield facade of the other two buildings adjacent to it on Lichfield? We've heard reference to a cordon being erected at one stage on Lichfield Street. I don't want to go into too much detail about that unless you have to but can you tell us a bit about that? Why was there a cordon there? What was the danger and what work was being done?

10 A. As was referred to USAR had identified a piece of corbel and parapet had shifted on top of the Honeypot so the cordon was put as a fall zone protection there. So our involvement was to strengthen that. At that stage not to shift it back into position where it was out for maybe 10 millimetres but just to fix it strongly in position so it was no longer a fall hazard which we did.

15 Q. Okay. And that USAR report was 27 December, so that's following the Boxing Day aftershock?

A. I wouldn't guarantee that. I haven't seen that report but yeah.

Q. But is that consistent with your record of when it was?

20 A. Yes.

Q. Or roughly when it was?

A. Yes it is.

25 Q. The USAR report said 'severe damage to parapet of 114 Lichfield, requires cordon on street, also threatens 110, 110 Lichfield has fallen on to the roof of 110, still trading'. That's the general comment of the USAR report.

A. Right.

Q. Right. So you were involved as overseeing the contracting work to restrain that?

30 A. That's correct.

Q. And that would have taken place obviously in late December from the USAR report?

A. No it would have happened in January.



Q. Early January was it?

A. Yes.

Q. How long did it take that work?

A. The actual –

5 Q. Or roughly how long?

A. Yeah it was undertaken in stages so the high parapet wall between Honeypot and the Mexican which is 110 was, took about two weeks to attend to. Had to be more or less completely removed and then replaced with a timber and ply structure as an interim process just to make safe and the other area was undertaken actually a little bit later so the cordon was left in place and it was at the end of the month or the beginning of February that it was finally signed off for that work.

10

Q. Well can you tell us the extent of the cordon? How far out into the street did it go?

15

A. It was on the footpath so it didn't go out onto the street. There was a walkway outside of it on the street so no one could actually go on the footpath.

Q. So what was the cordon there to prevent?

20

A. The, basically if stone or any piece of the building was to drop directly from the parapet down, it had been known to happen, on to the roof of the veranda there and some verandas had been seen in September to collapse onto the footpath so that was identified as the main danger.

Q. Right. In that photo that's on the screen at the moment can we see the parapet that you're talking about or the parapets?

25

A. There is two. One you can't see. One is more or less just an extension of the party wall between the blue building and Honeypot and that runs back down the length between the two buildings and had no potential to drop on the street so it's not really relevant to anything there but the high decorative piece of parapet at the front of the, one of the red signs of the Honeypot and the end nearest to Ruben Blades 116 had one block that had moved forward. Now they're fairly substantial limestone blocks so we're probably talking in the vicinity of a quarter tonne block.

30

Q. Right. And so this cordon was to prevent anyone being hit if that had fallen?

A. If that one block had dropped through and anything else that it might knock off in its way.

5 Q. So the cordon extended beyond the Honeypot and covered some of 116?

A. Yes it did.

Q. How far to the corner did it go?

A. It went to the corner and returned back in at the doorway which is the  
10 angled doorway you see facing you behind the cyclist.

1115

Q. It didn't go down Manchester Street at all or the footpath on Manchester, apart from –

A. Probably extended maybe a metre onto it by coming in there.

15 Q. Now if 0024.11 can be brought up there's actually a photo of it, I'll just keep going while I'm waiting for that, but you said that some weeks that work continued and the cordon remained there. Were you aware of Sean Gardiner doing an inspection of 116 on the 21<sup>st</sup> of January?

A. Um, approximate date, yes.

20 Q. I'm just looking at a report he completed 26 January and it refers to an inspection on the 21<sup>st</sup> of January?

A. Right okay.

Q. What I'm asking is were you a part of that or not? Did you go through it with him or...?

25 A. We went across the roof at that time. I didn't go through the interior of the building.

Q. So he's inspecting as a structural engineer and you were with him for part of it for the roof?

A. For part of it, yes.

30 Q. Had you been in that building before then?

A. No.

Q. And when you say you went across the roof, just tell us, are you talking about on the exterior of the roof?

- 5 A. Yes. It's a fairly, well it was a fairly steep roof. You had to be very careful on it and, as Mr Wiersma mentioned, the parapets had been removed so not one that you'd walk along the edge of the parapet. It was only a couple of hundred mils high around the parapet so the area we were particularly paying attention to was the south parapet at that stage which had potential to drop on Vida Hair underneath.
- Q. So the south parapet is between the boundary of 116 and I think 149 Manchester?
- A. Correct, yeah.
- 10 Q. All right. Did you go inside 116 at any stage?
- A. Not on that date, not myself. I did go later.
- Q. Okay so you hadn't been in before that date?
- A. No.
- Q. We'll just return to the cordon issue, you can see that photo. Does that  
15 accord with your memory of it?
- A. Yes it is.
- Q. And presumably it cuts in where that chap in the hard hat and vest is because that encompasses the area where that block was?
- A. Yeah. It's probably, just looking at it, it's probably a little close to where  
20 that block is but yes, yeah that would be the reason I would imagine. I wasn't involved in the thinking behind the instruction of that.
- Q. Presumably the Council would have set that up?
- A. Yes, yeah or their sub-contractors.
- Q. Right, when you said a moment ago maybe it's a bit close, what do you  
25 mean?
- A. Well just looking where you see the colour change from dark brown or, say, black where on the outside of the balcony there. That's the change between the two buildings which is where the loose block is above. So if that block was to fall right there perhaps that's a little close to it.
- 30 Q. [reference: photograph number 0024.11 MCCWIT.MCC.0024.11] I think you said a moment ago you didn't have anything to do with the setting up of the cordon. That would have been the Council that would have done that?

A. Ah, well that's before I was involved in the building so I have no knowledge of what happened there.

Q. You became involved, aware that that was a problem with that parapet and there was a cordon there?

5 A. That's correct and our job was to make the parapet safe so the cordon could be removed.

Q. All right, now were you aware of any views expressed about the cordon and the time-frame that it was obviously in place for?

10 A. Yes we had views from local retailers, and I don't know who, expressed to our project managers and builders on site that why was it taking so long and that eventually turned into, ah, been called to a meeting hosted by the Council to explain why it was taking so long. So we actually had been, our reason was simply design of the repair and then waiting for the steel company to produce the steel so the work was undertaken,  
15 completed, signed off and the cordon was removed the day before the meeting was actually due to happen so there was no issue raised at that meeting in the end.

Q. Okay so I think, and we'll come to it in a moment, that was the 2<sup>nd</sup> of February I think?

20 A. Yes.

Q. So are you saying there was a meeting set up for the next day, the 3<sup>rd</sup> was it?

A. Well I think we first heard of that meeting three or four days before it was due to happen, sometime in that week and at that point we were  
25 close to carrying out the work anyway. It was completed and then the Council were able to remove the cordon.

Q. Okay, who was it at the Council that you had any dealings with over that cordon?

A. Well our usual point of contact on these was Vincie Billante or her office  
30 and so that was who we spoke to on matters like this.

Q. Now were you actually going to go to this meeting?

A. I did go to the meeting.

Q. And what was your understanding in terms of attitudes towards the cordon remaining there for that period?

A. There was a fair degree of hostility from local retailers that the cordon was frightening people away from their businesses in the area and gave the impression that it wasn't safe to be there.

5

Q. Right and was any pressure directed to you in relation to the cordon?

A. Indirectly to me. It was to the staff working on site.

Q. And was that meeting going to address this?

A. That was our understanding that the retailer group wanted us to respond to them at the meeting.

10

Q. And justify why it was needed?

A. Something along those lines.

Q. Something along those lines, right, and you said Vincie Billante from the Council was your point of contact. Was she at the meeting?

15

A. Ah, no she wasn't going to be at the meeting. She just informed us that the meeting was taking place and so we prepared a response which unfortunately because I'm no longer at Fortis I don't have a copy of.

Q. But in terms of the Council's view they obviously were satisfied the cordon had to remain there until it was safe to remove it?

20

A. Yes. We never had any suggestion otherwise.

Q. And you said that on the 2<sup>nd</sup> of February the work had been completed and the cordon could be removed. Just tell us about that process then. The work's completed, who okayed the cordon to be removed?

A. Ah, the usual process on that sort of thing would be for either Council or our engineer to sign off on it. Eventually the Council's own engineers had to inspect it and sign off that it was okay for it to be removed so that process must have taken place as they did remove it.

25

Q. All right now I'll get a document brought up. It's at Tab 14, BULLIC 116.0014.42. I'm just going to refer you to an email from yourself dated 2<sup>nd</sup> of February to Vincie Billante. If you look at the bottom of the page and the first one in time. Is that an email from yourself to Vincie Billante then to Sean Gardiner?

30

A. Yeah. There looks like there's a bit of a mix, oh yeah okay.

Q. They are in a chain so I'm looking at the bottom one first.

A. That would be an email trail so it has various communications but the part at the bottom is from me, yes.

5 Q. We'll come to the one on the top in a minute. So looking at that one dated 2 February at 8.12 am.

A. It's from me.

10 Q. Right and at the second paragraph you say, "As I write this the parapet at 112 Lichfield is being pinned in its current position by means of a welded angle iron-bracing structure in both front corners. The work has been carried out by Mark III Engineering on the instructions of Sean Gardiner from Structex", correct, and then the next page anticipated they'll have the work completed by 10.00 am today and then you talk about some of the details of the work that has been required in the bolts and the fact that someone is going to have to go on a harness, correct?

15 A. Correct.

1125

Q. And in the fourth paragraph on that page, "So usual processes will be followed in which Sean will sign off the building and advise you that the cordon can be removed."

20 A. Correct.

Q. That is the process you're talking about?

A. Yes, yes.

25 Q. And then do you refer to that meeting, "As you are aware there is a meeting regarding among other things the cordon with Bob Parker tomorrow and it would be advantageous for us if the cordon had been removed by the start of that meeting at 10.00 am."?

A. Correct.

Q. Is that a reference perhaps to the pressure that you knew was on?

30 A. Yes, our staff were getting a fair degree of comment from local retailers, some of it quite hostile.

Q. Now in terms of that pressure then and hostility did that affect the degree of care that was taken by you or anyone under you to ensure that the right work was done and that it was safe?

A. No.

Q. So on that date from your position you were satisfied with the work done for that restraining?

A. Correct.

5 Q. And obviously Sean Gardiner then signed it off from the council's point of view?

A. Correct.

Q. And the cordon was removed?

A. The cordon was removed.

10 Q. I want to turn now to the next day, the 3<sup>rd</sup> of February, and if we look at the, go back to page 42 and in an email sent by you to Sean Gardiner the next day, the 3<sup>rd</sup> of February, and you refer then to Vincie's phone in order the cordon be removed so that process we just talked about had been completed, and then you go, you say, "However...on inspection of  
15 116 it should have a cordon on Manchester Street. The parapet and corbel are dislodged. The south-east corner on Manchester Street is fractured from the floor to ceiling in multiple case on the top floor. The parapet over the south wall is cracked, broken and dislodged. This would fall on the building next door from two storeys above." Then you  
20 say, "Did you get the pics I linked to you? Regards, Glen." Okay?

A. Yes, yeah.

Q. So I want you to tell us about this. It's dated the 3<sup>rd</sup> of February so when did you inspect? You say on inspection of 116. When did you look at 116?

25 A. On the 3<sup>rd</sup> of February actually visited Vida Hair and Mr Wiersma's staff were, may have even been his daughter, someone in there, gave us a key, took us to the building, opened the door and let us in.

Q. To 116?

A. Yes so, so we'd heard that we were now going to be carrying out the  
30 work but we hadn't seen the work so we wanted to have a look at it so this was not an official inspection, it was us taking a project manager's look at the building to assess what might be involved.

Q. So when you'd heard that you were going to be doing the work, was that repairs on 116?

A. Correct.

Q. And who had you heard that from?

5 A. Ah from Sean.

Q. Sean?

**JUSTICE COOPER:**

Sorry?

10

**MR ZARIFEH:**

Sean Gardiner.

**EXAMINATION CONTINUES: MR ZARIFEH**

15 Q. So prior to that date had you been inside the building? You'd been on the roof you told us?

A. Ah, this is the first time inside the building.

Q. And whereabouts in the building did you go on that morning?

20 A. Well everywhere so without climbing inside the roof space we went into every room, through the hallways, looked in cupboards, just everything, get a general idea. Something similar maybe to what you'd see an EQC inspector walking through your house, that sort of thing.

**JUSTICE COOPER:**

Q. Tell me, who were you with?

25 A. At that stage it would have been probably, I don't actually recall who all the people were that attended but probably the project manager from next door, Mark Tonks, as he would be likely to have taken over that building as well since he was doing the one next door. Later on I took Fred Herring one of our more experienced project managers with me but I think it was just Mark and I on this occasion.

30 **EXAMINATION CONTINUES: MR ZARIFEH**

Q. How long were you there for? Inside the building roughly?

A. Oh, um, probably took an hour.



Q. Did you take, you said, "Did you get the pics I linked to you?"

A. Yes.

Q. What was that reference to? What photos?

5 A. Um, probably if I was linking pics at that stage it would be what I had put on the company server which you could outside link to.

Q. What were they pictures of?

A. Just damage that we'd sighted in the building.

Q. On that morning?

A. That's correct.

10 **JUSTICE COOPER:**

Q. In which building?

A. 116.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. And have you forwarded those to the Commission?

15 A. Ah, anything that I've been able to get access to, so Fortis hasn't made their information available because I am no longer working there and they haven't been asked to so they didn't but the stuff that I have access to, so the things that were still on my camera or in some of my files I've been able to make available. Attached to one of Sean's reports are  
20 similar photos or some of my photos.

Q. Well let's go through those. Firstly, there's a photo which is BULLIC116.0019.3. That's a photo I think you attached to an email you sent to the Commission recently.

**COMMISSION ADJOURNS: 11.31 AM**

25

**COMMISSION RESUMES: 11.48 AM**

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. Mr McConnell I was just going to refer you to some photographs to see if we can, if you can point out where the damage was that you saw on that 3<sup>rd</sup> of February occasion. Now these are not I think or not all the photographs that you took but just see if we can, nevertheless you can use them to point to the damage and you'll see one on the screen which is up now.

10 **JUSTICE COOPER:**

Just read the number of them.

**MR ZARIFEH**

The number there is BUILIC1160019.3. It's also the same photos in the folder Sir on a different number

15

**JUSTICE COOPER:**

Yes, yes.

**MR ZARIFEH:**

20 But that's going to happen all the time but I'm pretty sure it's the same photograph.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. Can you tell us, what does that photograph show?

A. This is the south-east corner on the third floor.

25 Q. Right so that's the top floor?

A. Yes it is.

Q. And which wall is the east wall and which wall's the south?

A. So the one to the left is the east or Manchester Street wall.

Q. Yes.

30 A. The one coming off that is the south wall.

Q. And the crack that we can see, can you tell us how far that extended?

A. It went down below the floor and up inside the roof so fairly extensive.

Q. Okay and is that the crack that you referred to in your email?

A. That would be one of the cracks.

5 Q. That's the south-east corner crack?

A. Correct, yes.

Q. Correct?

A. Yes.

10 Q. All right. Now I'll get you to look at a, I'll get a photograph up on the screen, WITGAR001.16. [And Your Honour the photos I'm referring to now are attached to Mr Gardiner's brief].

**JUSTICE COOPER:**

Yes, thank you.

15 **EXAMINATION CONTINUES: MR ZARIFEH**

Q. I think this might be a photograph that Mr Gardiner took on some, on an occasion but can we use that for you to direct us to any cracking or damage that you observed on the 3<sup>rd</sup> of February?

20 A. Yes, we all took similar photos. The, Sean has marked this up to show some of the cracking, what he will have marked there is probably the most extensive cracking but there was substantial other, what you call stepping where the mortar between the bricks has got a crack line in that, through those areas. So it was, it was a fairly loose wall.

Q. So you mean in a step pattern?

25 A. Yes but in, in this case it was sort of almost crazed stepping. So it was criss-crossing and, and overlapping in many areas.

Q. Okay and we can't really that in this photograph?

A. No we can't. There are other photos in existence which were taken with a higher capacity camera which pick it up a little better than this.

30 Q. All right. Are they the ones you're referring to as –

A. That I don't have access to.

Q. You sent, that you sent to Sean?

A. Some of them will have been sent to Sean.

Q. Okay we're going to get those in a moment. I think we're getting them now but let's just carry on. So the crack that we looked at a moment ago from the inside third floor, south-east corner, where would that correspond to on that exterior shot?

5

A. Well we're now looking just at the outside of the same corner.

Q. Yes.

A. So I would have been standing where you see that window and looking into the wall taking that photo.

10 Q. Right and the cracks that are marked. There's a diagonal one, a horizontal one and a vertical one. See those?

A. Yes I do.

Q. On the south side. Were they of a concern or not?

15 A. Well I thought they were and that was why I did point this out to Sean, why he was there to take these I guess.

Q. Now you also mentioned the parapet and corbel are dislodged. Where's that a reference to on the building?

A. Well the corbel section would be further along Manchester Street above some of those windows.

20 Q. Right so I'll just get WITGAR001.17 brought up, or 0001.17. Now that's the Manchester Street façade?

A. Correct.

Q. Can we see it there?

25 A. Yeah look it's not easy to see and this is a zoomed shot. So for people standing on the ground, the average person, you wouldn't even see any problem there but there's a slight area highlighted there as a dropped stone block which if you look at it has shade lines around it. That shows that it has moved and there were other areas like that along there. That's probably the worst one. It's not a substantial movement but it just tells you things aren't really holding together particularly well on that spot.

30

Q. And what's the potential danger from that dropped stone block?

A. Well at that stage we hadn't identified whether this was a face mounted block or something that ran right through so the concern was whether that block itself on its own might drop directly down onto the street.

5 Q. And that's Sean Gardiner's writing with the figures and the, presumably the, a diagram of what work could be done to strengthen or restrain?

A. Yeah that would mean tying that section together.

Q. Right.

**JUSTICE COOPER:**

10 Q. With the other sort of faded or pale lettering there, it looks odd.

A. That is where some very brave person has tagged on the roof in the past and it's been painted out.

Q. I see.

**EXAMINATION CONTINUES: MR ZARIFEH**

15 Q. Maybe on a harness?

A. Yeah, hopefully.

Q. You also said the parapet over the south wall is cracked, broken and dislodged. This would fall on the building next door from two storeys above. Now, if this is any better, but if photograph WITGAR0001.19 is brought up, it's an unmarked photograph. Can we see it there or not?

20 A. Well that just looks like dirty lines on - the creamier section of the wall there is actually cracking but it also runs down into the white section as well and, and it just looks like faint shading there. That's cracking as well. So that area was the one that I was referring to that could drop  
25 down onto the pink building just there.

Q. And when you said parapet in that email which section are you referring to?

A. Well you can see the parapet cap as the dark section.

Q. Right.

30 A. It doesn't continue into the front area, has already been removed but there was some going back further and that was very loose and dislodged. You could have just picked that up in your bare hands.

Q. So what section of that whole south face were you concerned could fall?

A. Any part of it to be honest.

Q. Any part of the wall?

A. Yeah.

5 Q. Just going back to the crack that we saw on the inside of the south-east corner. I'll just get that brought up again.

A. I've just noticed my computer screen's not on, whoever's running that.

### **WITNESS REFERS FURTHER TO COMPUTER SCREEN**

#### **10 EXAMINATION CONTINUES: MR ZARIFEH**

Q. It's WITGAR0001.24. It's a different number but the same photo. That crack, I'm just referring to your email and you said the south-east corner on Manchester Street is fractured from the floor to ceiling in multiple case on the top floor. What do you mean by "in multiple case?"

15 A. Well again the picture's probably not very clear but you can see some movement in some bricks in the centre right of that photo and if the photo had been taken from, I think the problem there is you couldn't get far enough back in the room to get a wide enough shot because there were other cracks in that wall as well.

20 1158

Q. So is that what you mean about multiple cracks –

A. Multiple cracks.

Q. More than just that one crack?

A. More than just that one crack. That's certainly the worse of the cracks  
25 but there were other smaller cracks in the wall.

Q. Right. Now in terms of the damage that you highlighted to Sean Gardiner in that email that you sent on the 3<sup>rd</sup> of February, I think we've covered those by reference to the photograph. Did that cover your concerns on that day, the email and the damage that you...

30 A. Yes it bringing that to attention saying that we need to go and have a look at it really.

Q. I understand but I mean the extent of it. Was there any other damage that's not mentioned in the email that you were concerned about?

A. I wouldn't say enormously. Not that I was aware of.

5 Q. And what was it that concerned you about this crack on the south east corner?

A. Well sitting as it sits right there it's not about to drop. If a building got some motion on there was potential for that wall to have failed at that point.

10 Q. All right so you sent that email on the 3<sup>rd</sup> of February to Sean Gardiner? What happened as a result of that?

A. I understand he carried out another inspection.

Q. Right. Did you go with him?

A. I went with him on one inspection across the roof area. I didn't go with him on any internal inspections.

15 Q. Okay. So you only went back on one occasion?

A. I did.

Q. Yes.

20 A. With him. I think at some stage in between there I had actually returned to take further photos. I think it was before he went back. I returned to take further photos inside the roof space and again I don't have access to those photos.

Q. Right. What was it you saw in relation to those photos? What damage?

A. The, just further evidence of the same sort of thing. The crack extending further up inside the roof space.

25 Q. That same crack?

A. Yes.

Q. What about down on the levels below. Did you see that crack extending at all?

30 A. No you didn't see that one. You just saw because these are lined in the lower levels. They have, there's lining on them so you can't see that sort of thing in there but there's cracking which suggests you know the building has been at work.

Q. So it's in the upper level that it's, obviously there's no lining that you can, the cracks are more apparent?

A. Yep.

5 Q. Could you see any cracking corresponding to that crack when you looked at the exterior?

A. If you look very, very carefully and only because you'd seen it on the inside you knew where to look and this is part of what concerned me is the realisation that the building appeared okay and it's been assumed to be okay but actually wasn't okay.

10 Q. Right. What was part of that realisation?

A. Because people that had inspected it – the USAR team, the council beforehand hadn't done internal inspections. They'd looked at this outside and rated it at a certain level but they weren't privy to the knowledge of earthquake and other cracks similar to this inside the building.

15

Q. But in terms of structural integrity this was the crack that concerned you the most?

A. Well I presented this photo because it was good evidence of the type of thing that was there and the worst one that you could see.

20 Q. Okay.

**JUSTICE COOPER:**

Q. Was that the crack that made you write to the council referring to the need for a barricade on Manchester Street?

25 A. Well I didn't write to the council.

Q. Well you sent an email?

A. Yeah I sent, the email I sent was to Sean.

Q. Was it?

A. Yes.

30

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. Let's just deal with that. You sent your email 3<sup>rd</sup> of February to Sean Gardiner?



A. Yes I did.

Q. We're going to hear from him that he went on the 4<sup>th</sup> of February and had a look at the site but you don't recall being with him?

A. No.

5 Q. Right. And that he detailed some securing work he thought should be done and we can see some reference to that from the photos that I showed you before and he did a engineer's sketch, if that's the right word, I think dated 9 February with some of that detailing of securing works. Have you seen that?

10 A. That would be the design for repair. Yes I have seen that.

Q. I will just get them brought up WITVAR0001.14 was the 4<sup>th</sup> of February. So that's obviously signed by Sean Gardiner and it looks like a copy has gone to Glen at Fortis in the middle there at the top.

A. Correct.

15 Q. And you'll see reference to some of the damage that you had pointed out?

A. Yes.

Q. The vertical cracks to the wall pointing to the south east corner, horizontal and diagonal cracks to wall on the exterior. We saw vertical  
20 cracks to parapet, grade of parapet bricks on the south. That was all damage that you had, you pointed us to in those photos?

A. Yes.

Q. And the loose drop corbel or stone on about the middle of the Manchester Street façade and again that photo you referred to. So you  
25 received a copy of this?

A. Yes it would have come through the company to us.

Q. And you didn't have any direct contact with the council yourself?

A. No not on this no.

Q. Were you aware that Sean Gardiner had?

30 A. I was under the impression he may have been relayed to me but I don't have any evidence of that.

Q. Okay. So can you recall him telling you that or talking about that or not?

A. I was, yeah it may have happened in some conversation but I've no clear recollection of it.

Q. Okay. But we're going to hear from him. We've got an email record of him sending that 4<sup>th</sup> of February detail to the council.

5 A. Yeah.

Q. You didn't have any contact though subsequently with the council about this issue?

A. No.

10 Q. Did you go, you said you went on one other occasion with Sean Gardiner?

A. No with Fred Herring, one of our other project managers.

Q. Fred Herring. Did you go with Sean Gardiner?

15 A. We looked at some roof together at some stage around about here. It would have been before he sent that drawing so it must have been all of, around those days maybe on the 3<sup>rd</sup> or 4<sup>th</sup> or something like that.

20 Q. All right. I will just read you a portion from Mr Gardiner's brief of evidence statement he's going to give to the Commission. He's talking about 15 February some contact with the insurers or loss adjusters and he says at para 39 "Later that day I received another email from Andrew Bell saying that he had spoken with Jason Lavington. He wanted to meet on site. That meeting was arranged for 16 February 2011. I arranged for Mr McConnell to be present on 16 February 2011 also. My recollection is that Mr Bell agreed with my findings and would see the insurer about approval for the works". Can you remember that?

25 A. No I don't, no I haven't seen that and no recollection of that and I don't actually recall meeting the insurers ever.

Q. Okay. Right so you don't recall going to that meeting?

A. I met Sean and others on these buildings and around here at various stages but I don't recall meeting anyone from the insurers.

30 Q. Okay. Well just leave aside the meeting with the insurers. Subsequent to your email to the 3<sup>rd</sup> of February highlighting these concerns did you meet with Sean Gardiner at all at the site?

A. I think we met on the street across the road at one stage to again discuss the same areas that had been in the photos.

Q. And when was that in relation to the 3<sup>rd</sup> of February when you first noticed these things?

5 A. Sorry?

1208

Q. When was that that you met with Sean Gardiner?

A. I remember it well because we were working a lot of buildings in the area. We would sometimes discuss these issues as we were passing or whatever.

10

Q. Okay, what I'm getting at is how long after the 3<sup>rd</sup> of February would that have been?

A. I couldn't tell you. Look on the actual day of the 22<sup>nd</sup> we inspected buildings in the area together, climbed onto the roofs of them and this was one that we talked about going to visit as well, ran out of time otherwise we would have been on the building at the time of the quake.

15

Q. Right. In any of those occasions after the 3<sup>rd</sup> of February when you went to the building or were near the building did you see any cordon on the Manchester Street frontage?

20 A. No.

Q. And did you think anything of that when you saw that there wasn't one?

A. Um, no. I guess we were under the expectation that something was going to happen when the work started but no didn't really think that.

Q. You didn't give any thought to asking Sean Gardiner what was going on or did you ask him?

25

A. No, we had conversations around authority to do any work on the building and that that had been turned down.

Q. Were you aware that Sean Gardiner was dealing with insurers or loss adjusters to get approval for the work?

30 A. Yes we were, yes.

Q. And as at 22 February had you received any notification that the work could begin?

A. I think we were in the design phase at that stage.

Q. But no discussions about why there wasn't a cordon there or whether that should be chased up?

A. No actually, no.

5 Q. You said you went with Fred Herring who was a senior project manager with Opus?

A. He's a project manager not a senior.

Q. Sorry, project manager. When was that roughly?

A. It would have been around about the date of the 3<sup>rd</sup> because this is when we were trying to get attention and action on the building.

10 Q. So before you highlighted your concerns to Sean Gardiner?

A. Yeah.

Q. And –

A. It may have been, yeah, around about that date.

15 Q. I just want you to tell us when you did talk, we can see what you put in your email to Sean Gardiner on 3<sup>rd</sup> February and you said that you would have discussed it after that, you can't say exactly what dates. In your discussions with him about that damage that you highlighted what did you say to him about it and the extent of it or your concerns?

20 A. As it became more apparent that he'd been successful in getting action and drawing other people's attention to it I think it became less urgent to me. I realised that the message had got through but the general tone of the conversations throughout had been, this is more serious than people think and once Sean accepted that, inspected it and realised that it was, then I'd pass the baton on so from that point I was probably more  
25 concerned about my other buildings in the area.

Q. Well you said once Sean had accepted it. When you first raised them what was his reaction?

A. Oh look this was very early on in the piece but he would have –

Q. I mean after 3<sup>rd</sup> February when you first raised it.

30 A. Look I'd probably commented on them even prior to then but from that point on he was, "okay I'm gonna take some action on this, I'm gonna inspect it, I'm gonna see what the story is". Up until then I think most people's attitude had been that this has been inspected, it's been

passed, but we were trying to raise people's attention to the fact that it certainly wasn't in as good a condition as people thought.

Q. Right, and when you say most people's attitude are you talking about in relation to this building or generally?

5 A. A number of buildings around town but this one in particular.

Q. And who do you mean when you say most people in relation to this building?

A. Anyone I could talk to about it at that stage.

Q. Who were you dealing with it in relation to it apart from Sean Gardiner?

10 A. Had passing conversations with Mr Wiersma or family just in dropping into their buildings or that sort of thing.

Q. Were you able to get your concerns across to them?

A. I would say that they were fairly sensible about it in that they would like to have seen, you know, if we said, "Look this is in not good condition" then they weren't going to go into the building, they wanted action taken seemed to be the attitude. Certainly they gave us the keys and didn't go in themselves when we were doing our inspections.

15 Q. Right. I just want to refer you to some comments that Mr Gardiner's made. He's obviously read in particular your email of 18 January to the Commission and at paragraph 46 of his brief he says, "I have seen recent comments made by Mr McConnell that the building was in imminent danger of collapse in any significant seismic event. I do not recall Mr McConnell expressing those concerns to me. He raised with me the specific damage noted in his email of 3 February 2011 in which I inspected. I did not consider that the nature of the damage observed meant that the building was structurally compromised or in danger of collapse." Now he's putting perhaps a slightly different interpretation of the damage and its danger. What was said between the two of you about that. Did you tell him that you thought it was serious?

25 A. Um, yeah. I think you would probably have to identify what I was even anticipating as being dangerous. We hadn't seen any buildings throw themselves across streets to this stage and so what we were expecting might happen in a quake is maybe partial collapse of a wall in which

30

case you're talking about bricks dropping on footpaths that sort of thing and so what Sean is probably saying is something along the same lines. He's not think that it's in danger of collapse, ie throwing itself across the street or going in a direct heap but, yeah.

5 Q. Okay so just talk about what you thought. Is it fair to say then that you didn't anticipate what did happen in February might happen?

A. No I wouldn't have expected that.

Q. No, but you could anticipate partial collapse of parapets or walls or bricks coming off –

10 A. That's what I was concerned that we had to take action on to stop the potential for that to happen.

Q. And you mentioned in your email that you had concerns about other buildings. You mentioned the Clock Tower in Victoria Square. Just tell us why did you point that out and what was your concern there?

15 A. I think I just used that as a case in point where probably engineers have looked at the building or the structure and instructed a cordon around it. With the wisdom of hindsight and knowing what we now know from buildings like 116 probably that cordon should be larger. We're talking about the fall zones I think in reference there.

20 Q. On the 22<sup>nd</sup> of February you said that you were in the area looking at another building I think?

A. During the morning Sean and I had been inspecting a number of buildings that we were doing in Manchester Street and in the general area.

25 Q. And what happened when the earthquake hit?

A. Well at that time we'd stopped, gone to lunch. I think Sean had another appointment that he had to get to after lunch so we didn't go and inspect that one which hadn't been on our list but we'd still been talking about it so we thought we might have another look at it but didn't so I was in Cathedral Junction a couple of blocks away when the quake happened.

30 Q. And did you go to 116 Lichfield Street at any stage?

A. Well initially I was attending to some injured people right where I was, getting first-aid kits out and getting them out of town and clearing the

area and then got my vehicle and made my way down there. Fred had been with me just after the quake.

1218

Q. That's Fred Herring?

5 A. Fred Herring and he said he would go down there and check on our teams. We had 38 buildings in the general area that we had under our control at the time so we had various staff and a lot of buildings that we wanted to have a look and make sure they were safe and the buildings were safe. From right where we were we didn't understand how bad the  
10 quake had affected some buildings in the city at the time but Fred ran down there and got involved in the rescue straightaway and so did a number of our staff, about a dozen were climbing through there. I cleared out the area where I was and it took probably 30 minutes to get where I was before I discovered that that building had collapsed. There  
15 weren't any phones on at the time.

**CROSS-EXAMINATION: MR ELLIOTT**

Q. Mr McConnell, you've been asked some questions just about what you thought and what you said and I'd just like to ask you to be very clear about that. In an email to the Royal Commission on the 18<sup>th</sup> of January  
20 you said, "Fred and I agreed that the building was in imminent damage of collapse in any significant seismic event".

A. That's correct.

Q. Is that what you believed as at the 3<sup>rd</sup> of February?

A. Yeah probably again our understanding of collapse at that stage wasn't  
25 as dramatic as what actually did turn out to happen. Our idea of collapse was walls collapsing onto footpaths and things like that not the entire building.

Q. Are you talking about the collapse of the Manchester Street façade as part of that are you?

30 A. That would have been in our minds at the time yes.

Q. And you also said in your email, "I again passed on my concerns this time with interior pictures to support our opinion". So when you say that

do you mean that you said to Sean Gardiner, "I think the building is in imminent building of collapse?"

5 A. No I would have inferred that I thought it was dangerous but I don't think I would have used those exact words to him. I believe my, the email to him in there is probably the only email on the subject at that time. There was probably earlier communications where I didn't express it as strongly as this one. There is a fair amount of other communication that's not available to me.

Q. What communication is that?

10 A. Well I can't get into the email files of my old company so I can't look at everything else that I wrote on any subjects like this.

Q. All right. No doubt we can make some further enquiries on those issues and supplement this evidence if necessary.

A. Yep.

15 Q. Secondly and finally Mr Smith in his report to the Royal Commission says that and Mr Peter Smith was an engineer who was instructed to prepare an expert report for the Royal Commission and in his report he said that indications were that the building failed through an outward collapse of the Manchester Street façade due to inadequate restraint at the level of each elevated floor and the roof. You obviously, you've  
20 been in the building and my question is, if obviously prior to its collapse, one was considering assessing the adequacy of those restraints, that would not have been possible from a visual inspection of the interior alone would it?

25 A. No it wouldn't no.

Q. It would have been necessary to have removed the interior linings?

A. That's correct yes.

**CROSS-EXAMINATION: MR MCLELLAN**

30 Q. Mr McConnell, your email of the 3<sup>rd</sup> of February relates to your then recent inspection, which was when?

A. Possibly on even the same day or maybe the day before.

Q. Had you inspected that building previously?



A. Not internally.

Q. No. But you looked at the outside had you?

A. Yes.

5 Q. And you hadn't observed the damage that you referred to in your email to Mr Gardiner?

A. No and as I've said unless you really knew where to look you couldn't even tell that there was much wrong with the building.

10 Q. And the photograph that we had a look at of the interior cracking of the south-east corner, was it that that alerted you to the extent of the damage?

A. That was the worst area in the building but as you'll have also seen in the exterior photo of the same area you don't see that crack.

Q. No so it was as a result of seeing the interior damage that caused you to then go and take the, or to have a look at the exterior?

15 A. Correct.

Q. And the photographs that we've seen of the exterior south-east wall, did you take those photographs?

A. Those aren't mine but I have similar photos.

**CROSS-EXAMINATION: MS SMITH**

20 Q. Just to be clear Mr McConnell you never at any point said to Mr Gardiner that the building at 116 Lichfield Street was in imminent danger of collapse?

A. No I never used those words to him.

25 Q. You've indicated in evidence this morning that the crack in the south-east corner was of concern to you?

A. Yes.

Q. And that was one of the issues you raised in your email of the 3<sup>rd</sup> of February to Mr Gardiner?

A. Correct.

30 Q. And you're aware aren't you that he inspected 116 Lichfield Street on the 4<sup>th</sup> of February?

A. Correct.

Q. And you were with him on that day?

A. For part of that inspection. I didn't go inside with him.

5 Q. And as a result of that inspection you're aware that he considered that the crack in the south-east corner did not present a concern in terms of the structure of the building?

A. He did relay that.

Q. But he did indicate to you and to others that there was some security work that was required in relation to the parapet and the corbel stone on Manchester Street?

10 A. Yes and supplied us with the design for that.

Q. And to be clear about that the corbel stone was on Manchester Street, correct?

A. Correct.

Q. But the parapet was on the southern side of the building?

15 A. Correct.

Q. Not on Manchester Street?

A. That's correct.

Q. But between 116 Lichfield Street and 149 Manchester Street?

A. Yes it was.

20 Q. So in relation to a cordon on Manchester Street Mr Gardiner's evidence will be that if a cordon was to have been erected it would have only been in relation to the potential fall hazard created by the corbel stone that had dropped slightly?

A. That would be correct.

25 Q. And neither you or Mr Gardiner, sorry you never suggested to Mr Gardiner that a cordon should encompass the entire footpath on Manchester Street?

A. I would never have used those exact words.

30 **JUSTICE COOPER:**

Q. Well apart from the question whether you would use the exact words what was the extent of the cordon that you thought should be constructed on or put in place on Manchester Street?

A. Well my expectation would be that the entire footpath would be a cordon along that face.

Q. Why?

5 A. Because if we had one dropped corbel stone there was potential that other areas may be damaged as well and I had seen internal cracking in the wall so there's a possibility that those walls were also dropping out.

**CROSS-EXAMINATION CONTINUES: MS SMITH**

Q. You were aware however that on the 4<sup>th</sup> of February Mr Gardiner had inspected the corbel stone that you had referred to that had dropped?

10 A. Yes.

Q. And he had also inspected along that length of the building?

A. I would imagine he would have if he inspected the building.

Q. And he had not noted had he any other stones along that section which had dropped?

15 A. No that's right.

Q. And if I can refer you to his engineer's instruction dated the 4<sup>th</sup> of February, 2011 which is BUILIC1160014.45 I think.

**WITNESS REFERRED TO ENGINEER'S INSTRUCTION**

20 Q. And if I can refer you to the second to last paragraph of that instruction you'll see he's referring to high level brick and stone block being potential fall hazards. If we're talking about Manchester Street however the only block that could be a potential fall hazard and that was evident on inspection was the one corbel stone in the middle of that section on 116 Lichfield wasn't it?

25 A. The one that was obvious yes.

1228

**RE-EXAMINATION: MR ZARIFEH**

30 Q. Just on this issue of that crack in the south-west corner which you said was the worst crack you saw and presumably the most, the thing that most concerned you?

A. Correct.

Q. Was that fair?

A. Yes.

Q. You said that you were aware that Mr Gardiner thought the crack did not pose any structural concern or something to that effect. Did he tell you that?

5 A. Yes he did.

Q. And was there any discussion about that?

A. Yes there probably was, yes, well there was, yes.

Q. Can you remember the nature of that or what was said?

A. Well generally over a number of conversations it was referred to that  
10 and other areas of the building which is even again why we would, had  
a look at it on the 22<sup>nd</sup> 'cos I felt that ongoing minor aftershocks were  
worsening the condition of the building and even in viewing from the  
street you could see that that block had moved a little further, the  
cracking had got a little worse. Same thing was happening in most  
15 buildings around town but I did still point that out to Sean and Sean was  
aware of it. His opinion still being that it was no more urgent than before.

Q. And if there was a, not a disagreement but a point of difference between  
he and yourself on an issue like this, in terms of any –

**JUSTICE COOPER:**

20 Not sure he said there was a point of difference.

**RE-EXAMINATION CONTINUES: MR ZARIFEH**

A. Well it's, there was, without being an argument over it, there was, I had  
it, my estimation of it was that it was more serious and Sean's  
assurances to me were having assessed it from an engineering  
25 perspective while it looked bad it wasn't a major issue.

Q. And he was the structural engineer of course?

A. Yes.

Q. So could you take it any further or did you?

A. Only that I would occasionally send in another photo or something like  
30 that.

Q. To him?

A. Yeah, just tracking anything that worsened.

**JUSTICE COOPER:**

Q. Are you saying that you sent in a series of photographs of this building over the days in February?

5 A. Yeah, just so we could keep a track of any changes that were happening. They weren't substantial but there were slight worsening of some cracks.

Q. Can I just ask you about the strengthening works that were carried out on the building at 114 Lichfield Street and which were completed, I think, on the 2<sup>nd</sup> of February?

10 A. Yes.

Q. How did they fare in the –

A. They worked.

Q. – 22<sup>nd</sup> of February earthquake?

15 A. Yeah, they worked. There are photos we have of 116 down where you can still see that block has held up there by the steel.

Q. See if we can find a photo. So the photo now displayed has the suffix 14.53 and the building in question that we have just been discussing is in the centre of that photograph so that shows the Lichfield Street frontage and the parapet on the top of that building?

20 A. Yes it does.

Q. We can't see the building, the parapet of the building adjacent to the next door building which you also strengthened, is that right?

A. No, so what we strengthened was the one that in that picture no longer has the red sign on it.

25 Q. Yes.

A. But 112 the one with the brick sections that you can see in it.

Q. Yes.

30 A. At the very top there you can see the steel angle which was externally bolted along the side is still there and the block work although it is slumped back internally hasn't dropped.

Q. Yes.

A. So it's actually all still up there, you can see there is no debris on the street and the parapet's still intact.

Q. So in that you are talking about the top left-hand side of the photograph there?

A. Yeah.

5 Q. Wasn't there strengthening work though also to the parapet as you went back from Lichfield Street and above the building next door?

A. Yes and if you look there while the 116 is gone and the party wall between them is gone the actual parapet block is still hanging there in space. It's the straight section you can see angled down on a 45 degrees so the top blocks, the ones that are held together by the steel are still hanging up there back inside the building at that point.

10

Q. Yes I see. You were of the view that there should be a cordon along the Manchester Street frontage of 116 Lichfield Street?

A. Yeah.

15 Q. Do I infer that you thought a cordon so close would be sufficient to guard against any risk of collapse?

15

A. Our experience at that point was that damage would be blocks dropping off and bricks dropping out and maybe walls partially collapsing and everything going straight down on to the footpath so that is what we'd seen to date so that's what we would have probably designed to protect against.

20

**WITNESS EXCUSED**

**MS SMITH CALLS****SEAN JULIAN GARDINER (SWORN)**

Q. Is your full name Sean Julian Gardiner?

A. It is.

5 Q. And do you have a Bachelor degree Honours in Civil Engineering and are you a chartered professional engineer?

A. I am and I do.

Q. And have you been practising as a qualified structural engineer for 10 years?

10 A. I have.

Q. Mr Gardiner you are currently employed as a structural engineer by CPG New Zealand Limited and have been since June 2011?

A. That's correct.

15 Q. And prior to this you were employed by Structex for five years and before that for four and a half years by Holmes Consulting Group. Is that correct?

A. That's correct.

Q. And you've prepared a brief of evidence for the Commission?

A. I have.

20 Q. You have that before you?

A. I do.

Q. If I can get you to read that statement from paragraph 4?

25 A. After the earthquake of 4<sup>th</sup> September 2010 I was involved with the building at 112–114 Lichfield Street. That building shared a common fire escape and party wall with 116 Lichfield Street. 116 Lichfield Street is the corner property and also shares a common party wall to the south with 149 Manchester Street. After inspecting 112–114 Lichfield Street I made some temporary repair recommendations to the fire escape that the building shared with 116 Lichfield Street. I was aware that  
30 R D Sullivan and Associates Limited (R D Sullivan) was assisting the owner of 116 Lichfield Street. On the 22<sup>nd</sup> of September 2010 I advised R D Sullivan by email of the design proposal to make safe the common fire escape and asked him to obtain his client's or its insurer's approval

to undertake the works on their building. That work was subsequently undertaken with the exception, I recall, of the water tank being removed. On the 1<sup>st</sup> of November 2010 I was engaged by Cunningham Lindsey to prepare a report of damage to the building at 116 Lichfield Street caused by the earthquake on the 4<sup>th</sup> of September 2010. We were also asked to prepare a repair scope so that Cunningham Lindsey could put the works to tender. Cunningham Lindsey is the loss adjusters appointed by the owner's insurer.

On the 7<sup>th</sup> of December, 2010 I undertook a visual inspection of 116 Lichfield Street. The building owner Mr Wiersma was present during the inspection. I was aware that the building had been given a green placard following a council inspection on 7<sup>th</sup> September, 2010. I had also been provided with a copy of Mr Sullivan's building and valuation reported dated the 20<sup>th</sup> of September, 2010.

15 1238

Q. If I can just stop you there Mr Gardiner if you look on the screen before you document number BUILIC1160014.7. Is that the document you're referring to when you refer to Mr Sullivan's building report of the 20<sup>th</sup> of September?

20 A. It is.

Q. Thank you. Continue reading from paragraph 8 please?

A. 116 Lichfield Street was constructed around 1900 and was a category four heritage building. The building was three stories constructed with an unreinforced masonry URM exterior with timber floor, timber framed floors, roof and floors. The street facing parapet had been previously lowered. The chimney at the rear of the building had also been removed at some time prior to the September event. All parts of the outside of the building and central core were visible during my inspection. I inspected the interior and exterior of the building. The western wall was inspected from the stairwell and I was also aware of its condition from my inspections of 112 to 114 Lichfield Street. No internal linings were removed to inspect the damage however the central stairwell core area was already exposed as were some other areas of

30



internal structure where there was a suspended tile ceiling or no ceiling at all. Much of the supporting wall structure was also exposed particularly on the exterior. I did not inspect the roof from the exterior. I was aware that R D Sullivan had inspected the roof and identified damage principally to the fire escape parapets. Those parapets could be seen. I inspected the ceiling for damage and the lack of ceiling damage indicated no damage to the roof structure. I also inspected the roof from the interior and parts of the southern end of the building where there were no ceiling tiles. No damage to the roof structure was noted. My findings were set out in an earthquake damage report dated the 20<sup>th</sup> of December, 2010.

Q. And again if I can just stop you there and bring up document BUILIC1160014.17 and is that the document that you're referring to as your report dated the 20<sup>th</sup> of December?

A. It is.

Q. Continue on.

A. I described the damage observed and commented on remedial work options for both temporary securing of the building and long term repair. I considered that the building had suffered moderate damage. On level two I noted that the north west corner of the building where there is a party wall with 112 to 114 Lichfield Street had moved towards, slightly towards Lichfield Street. Given the small amount of movement, I recollect about 20 millimetres, I did not consider that there was any structural concern but that I would monitor it for future movement. I considered that the parapets to the fire escape remained a fall hazard to the area below and was preventing access to the upper levels of both 112 to 114 and 116 Lichfield Street. A roof water tank was also supported on the unsecured parapet. This is the water tank that still needed to be removed from the initial securing works. In terms of temporary securing of 116 Lichfield Street I recommended that the roof water tank be replumbed and removed to allow the removal of the remaining parapet around the fire escape, the air conditioning units have diagonal braces installed and the fire escape stair treads and

handrails to be repaired. I also recommended a number of items for the long term repair of the building. I noted in particular that damaged brick work should be repaired with the sections of wall with loose and/or dislodged bricks carefully lowered and rebuilt and new reinforced concrete capping beam formed over-tying the walls together and new parapet constructed and the roof structure tied into the concrete beam. I also recommended cracks being stitched with helifix ties and the upper level north façade being stitched to the western wall. I indicated that the report did not cover a detailed structural strength assessment or strengthening options. I indicated however that the long term repair items would require council consent. As the building was likely to be earthquake prone the council would likely require a strength assessment of the building as part of any consent. I indicated that if requested we could complete a detailed engineering strength assessment to determine the building's strength relative to current code and identify strengthening options. I did not have plans available to me and none were likely to be available having regard to the age of the building. The building was unreinforced masonry with assumed construction details consistent with other similar constructed buildings of the era. As a structure of the building was exposed in several locations this allowed me to view the construction details and the exposed elements confirmed my assumptions.

On Boxing Day I attended 112 to 114 Lichfield Street as there had been a partial collapse of the western wall onto the neighbouring building, the Mexican Cafe. I viewed the buildings from 110 to 116 Lichfield Street including inspecting the central stair area and northern and southern sections of roof at 116 Lichfield Street from the adjacent roof. There was further damage to the stair area parapets. I do not recall observing any new damage that led me to concern for the building at that time.

I understand that following the Boxing Day earthquake Urban Search and Rescue reported on the buildings at 112 to 116 Lichfield Street noting severe damage to 114 Lichfield Street. Parapets requiring cordon to the street. I do not know when but a cordon was erected on

Lichfield Street. Although the cordon extended from 112 to 114 Lichfield Street to near the north-east corner of 116 Lichfield Street it was to protect from potential parapet fall hazards from 112 to 114 Lichfield Street not 116 Lichfield Street.

5 I'm aware that on the 29<sup>th</sup> of December, 2010 the building owner was served with a section 124 Building Act notice requiring that the owner not use or occupy the building and repair the building. The damage noted was that there were structural defects to the building and damage to parapets and/or chimneys and/or ornamental features. I was familiar  
10 with the extent of damage given my involvement with the building to date. The principal damage able to be seen from the outside was the damaged areas in the fire escape area and I assume this is what is referred to by the structural defects. I understand that the owner sought an extension of time to complete the works to the 31<sup>st</sup> of May, 2011. On  
15 the 18<sup>th</sup> of January, 2011 I prepared an engineer's instruction relating to 112 to 114 Lichfield Street and 116 Lichfield Street. The instruction primarily related to 112 to 114 Lichfield Street but some of the works affected the parapets around the fire escape shared with 116 Lichfield Street.

20 Q. And if I can just stop you there and just refer you on your screen to document BUILIC1160014.32. Is that the document that you're referring to there as your engineer's instruction?

A. It is.

25 **JUSTICE COOPER:**

Q. Is it possible by reference to that diagram just to point out the parapets around the fire escape area?

A. In the middle of that picture there is a rectangle. That rectangle is a void which is the fire escape or common fire escape to both properties.

30

**MS SMITH:**

And I think Sir if you look on the left hand side you'll see about four down there's 'repair stair treads and handrails' and an arrow pointing to that.

**JUSTICE COOPER:**

Yes that rectangle.

5

**MS SMITH:**

Yes that's the area he's referring to Sir.

**JUSTICE COOPER:**

10 Q. Yes all right so, well the issue with the parapets around the fire escape area then was falling into that void was it?

A. That's correct.

Q. And just wondering whether there is a photograph which –

15 **MS SMITH:**

There is Sir, if I can take you to WITPAR0001.21.

**JUSTICE COOPER:**

Q. Yes.

20 A. This shows the central area. The parapets have, it's difficult to tell if the parapet lowering work had been completed at this stage or not.

Q. That's a photo taken when, do you know?

A. I can't recall from which report that is from.

1248

25

**MS SMITH:**

Sir there is also another photograph WITGAR0001.18 which shows it from the top.

30 **JUSTICE COOPER:**

Q. So is that your writing on that photograph Mr Gardiner.

A. Yes it is.

Q. So do you know when that photograph was taken?

A. Well this was probably one of the ones taken by Glen McConnell. This was taken after the, sometime after the 4<sup>th</sup> of February and details the securing works to the courtyard area that were detailed in my report of the 9<sup>th</sup> of February.

5 **EXAMINATION CONTINUES: MS SMITH**

Q. Mr Gardiner if I can get you to continue reading your brief from paragraph 20 please.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE FROM PARAGRAPH 20**

10 A. "On the 21<sup>st</sup> of January 2011 I inspected 116 Lichfield Street. Mr Wiersma was present for that inspection along with Andrew Bell. Mr Bell is from Sergon Building Services and was I understand engaged by Cunningham Lindsey. At this time the building had a red placard. I visually inspected the building including the exterior from ground level  
15 and the fire escape and the interior throughout. I did not inspect the roof, however I had been on the roof on Boxing day and had not noted any change to the condition of the roof as compared with R D Sullivan's assessment and my assessment following the September earthquake. The underside of the roof was also inspected in the areas where there  
20 was no ceiling and selected areas where ceiling tiles were lifted. My report dated 26<sup>th</sup> of January 2011 details my assessment of the structural condition of 116 Lichfield Street and follows on from the previous report."

25 Q. If I can just stop you there, sorry Mr Gardiner, and just refer you to BUILIC1160014.38. Is that the document that you're referring to your inspection report dated the 26<sup>th</sup> of January?

A. It is.

Q. If I can get you to continue reading from, "It was not."

**WITNESS CONTINUES READING BRIEF OF EVIDENCE**

30 A. "It was not a detailed structural assessment. It sets out the additional damage I noted from the latest series of earthquakes. Whilst there were changes to the parapets, internal courtyard parapets, not street facing

parapets, cracking within the building was relatively minor throughout the primary walls and my opinion was it had not significantly reduced the seismic capacity of the building. The parapet around the stairwell and the roof water tank had been removed as previously instructed. The walls around the fire escape remained a fall hazard to the area below and I therefore advised that the fire escape should not be used. I noted that there were areas of loose bricks to the perimeter of the level 2 ceiling and stated that level 2 should not be used. I commented that if access was desired to the fire escape or level 2 then the hazardous walls and bricks should be lowered, propped or re-fixed in place. The report also provided options for the long-term repair and strengthening work required.

In my report I noted that there were no apparent structural hazards to the remaining areas of the building. I noted that the crack on the south-east corner of the building had increased in size and had extended up toward the parapet. The crack also extended down through level 1. Having regard to the construction of the building I did not consider this was a significant concern and that it did not significantly affect the global structural stability of the building as the physical offsets were minor. When completing a detailed assessment to determine the face load capacity of the wall one would also generally not consider the benefit the connection to the return wall would provide in that it is limited by the capacity remote from the return walls. This section of wall was no worse than the other sections of wall along Manchester Street without return walls.

My position remained that no cordon was required on the Manchester Street side of the building as there were no apparent parapet fall hazards in the area. There was also no cordon required on Lichfield Street arising from potential parapet fall hazards from 116 Lichfield Street. The cordon in respect of the potential fall hazards from 112 to 114 Lichfield Street still remained in place at the time of my inspection. I noted in my report that it was not a detailed structural strength assessment and did not provide detailed strengthening options noting

that these may be required by the owner following consideration of the report. I suggested that we undertook the report now to progress the reinstatement of the building. I was aware that the owners' business interruption insurance ran out in September 2011 and he was keen to complete the repairs and required strengthening prior to that date. I was

5

not instructed to proceed with structural strengthening assessment. On the 2<sup>nd</sup> of February 2011 I was copied into an email from Glen McConnell of Fortis to Vincie Billante of the council regarding the cordon which extends from 112 to 116 Lichfield Street. He noted that the parapet at 112 Lichfield Street was being pinned on my instructions and once the work was complete I would sign off the building and advise that the cordon could be removed. I was on site later that day and I

10

inspected the parapet bracing. My advice is recorded in a report dated 2<sup>nd</sup> of February 2011. I noted that the parapet bracing to 112 to 114 Lichfield Street had been installed by means of a welded angle iron bracing structure in both front corners. Part of this work required threaded rods to be bolted through from the outside face of the building. It was installed generally as instructed but some aspects had been modified. These modifications were appropriate and are detailed in my

15

report. From the street it appeared as if some mortar between stone blocks on the north-west corner had been lost but no movement was apparent on inspection. Although there was no apparent movement an angle brace was also installed to the north-east – sorry that should say north-west – corner parapet as instructed. I certified the work undertaken at 112 to 114 Lichfield Street noting that the 116 Lichfield Street fire escape, that is, the common fire escape, remains a hazard and there should be limited access to the fire escape and upper levels of the building.”

20

Q. Mr Gardiner if I can just take you to document BUILIC1160016.11. Can you confirm that that is your report dated the 2<sup>nd</sup> of February in relation to the cordon at 112 to 114 Lichfield Street?

25

A. It is.

30

Q. And document BUILIC1160016.10 is the certification that you provided with respect to those remedial works undertaken on that particular property?

A. It is.

5 Q. Thank you if you can continue reading at paragraph 28.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE FROM PARAGRAPH 28**

10 A. "The bracing secured the parapet to at least the condition that existed prior to the 4<sup>th</sup> of September 2010 in a condition consistent with that generally achieved in other parts of the building. As the cordon was protecting the footpath from a parapet stone block on the 112 to 114 Lichfield Street which was the potential falling hazard and as the hazard was secured by the pinning works I suggested that the cordon to the Lichfield Street footpath could be removed. I recall someone from the council being present on site that day who appeared satisfied with our assessment tabled in the report dated the 2<sup>nd</sup> of February 2011 but I cannot now recall who that person was.

15 On the 2<sup>nd</sup> of February 2011 I sent the certification and photos of the parapet securing to Ms Billante at the council and Mr McConnell to allow removal of the cordon at Lichfield Street."

20 Q. And if I can just refer you Mr Gardiner to document BUILIC1160016.8 and that's your email is it not to Ms Billante with the documents referred to attached?

A. It is.

25 Q. Thank you. If you can continue reading at paragraph 31.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE FROM PARAGRAPH 31**

30 A. "I have seen some recent comments by Mr McConnell about pressure from various parties to remove the cordon. There was some pressure from tenants to have the cordon removed but that did not factor into the certification process. Only once the repair works were complete did I suggest that the cordon on the Lichfield Street footpath could be removed.



On the afternoon of 3<sup>rd</sup> of February 2011 I received an email from Mr McConnell noting that the council had ordered the cordon be removed. He went on to say that he thought that 116 Lichfield Street should have a cordon on Manchester Street. He said, 'The parapet and corbel are dislodged. The south-east corner on Manchester Street is fractured from the floor to ceiling and notable case on the top floor. The parapet over the south wall is cracked, broken and dislodged. This would fall on the building next door from two storeys above.'

5

Q. Mr Gardiner we've referred to that already in this morning's evidence but just for the record the document in front of you is BUILIC1160014.42. Is that the document you are referring to?

10

A. It is.

1258

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH**

15

**33**

A. During my previous inspections of this aspect of 116 Lichfield Street, I had noted a vertical crack in the south-east corner of the building in addition to the initial vertical crack to the parapet part way along the southern elevation and assessed that it did not pose a structural risk as noted previously. I understood there to be further damage to the southern parapet and corbel stone block on Manchester Street. Given Mr McConnell's concerns I arranged to meet him on site the following morning.

20

On the 4<sup>th</sup> of February 2011 I conducted a further site inspect of 116 Lichfield Street, specifically looking at the hazards identified by Mr McConnell, some of which I had noted in my previous reports. I inspected the crack at the south-east corner of the building. I did not consider that there had been any significant movement since my inspection of the 21<sup>st</sup> of January 2011. I did not consider that the crack was of structural concern. I also inspected the parapet and corbel referred to by Mr McConnell in his email. My findings are detailed in a report dated the 4<sup>th</sup> of February 2011. I identified high level bricks along the southern wall as potential fall hazards to the areas directly adjacent.

25

30

The cracking indicated the onset of damage and identified the areas as points of potential future damage in further earthquakes. I also identified a loose corbel stone on the Manchester Street side of 116 Lichfield Street which appeared to have dropped slightly. At the  
5 time of the inspection it was my opinion that the strength of the elements had not been significantly compromised but that they were a risk and should be secured or cordoned off.

Q. And If I can just get you to refer to the document on screen – BUILIC1160014.45. That is your inspection report following your  
10 inspection on the 4<sup>th</sup> of February?

A. That's correct.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH  
35**

15 A. I detailed some securing works for 116 Lichfield Street and on the 9<sup>th</sup> of February 2011 I sent these along with my original report of 4<sup>th</sup> of February 2011 to Mr Bell of Sergon, Mr Wiersma, Mr McConnell and Mr Jason Lavington at Cunningham Lindsey. I commented that the contractor should obtain insurer approval before doing so to ensure a  
20 payment for the work.

Q. And If I can get you to refer to BUILIC1160014.46. Are those the instructions for the securing work that you forwarded to those persons referred to?

A. It is.

25 **WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH  
36**

A. A copy of this instruction was also sent to Mr John Barry at Council by email on 9 February 2011. In my covering email to Mr Barry I noted that Mr Wiersma had earlier received a s 124 notice for 116 Lichfield Street.  
30 I said that I trusted that our involvement in assessing and securing work was sufficient to satisfy the Council that work was progressing. I do not recall receiving a reply.

Q. And Mr Gardiner if I can refer you to the document BUILIC1160017.3. Is that a copy of your email to Mr Barry at the Council?

A. It is.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH**

5 **37**

A. On the 11<sup>th</sup> of February 2011 I emailed Andrew Bell and Jason Lavington in relation to the securing works asking whether we could instruct the works. I said that the Council is aware of the issue and I'm sure will start putting out cordons and restricting access to neighbouring buildings if the hazards are not addressed.

10

Q. And Mr Gardiner if you refer to document WITGAR0001.25. If you look at the bottom of that email that is a copy of your email to Mr Bell, Mr Wiersma, Mr McConnell, Mr Lavington with the details of the securing works, is it not?

15

A. It is.

Q. And then following on in that email chain at the top of that, that is your email to Mr Bell and Mr Lavington asking whether you could instruct those works?

A. It is.

20

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH**

**38**

A. On the 15<sup>th</sup> of February 2011 Andrew Bell emailed me asking whether I had any joy with 116 Lichfield Street by which I understood him to mean whether I had received authority to instruct the works. I replied saying, "Not yet I'm afraid".

25

Q. And the document before you is WITGAR0001.26, and that is your email exchange with Mr Bell on that day?

A. It is.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH**

30 **39**

A. Later that day I received another email from Andrew Bell saying that he had spoken with Jason Lavington who wanted to meet on site. That meeting was arranged for 16<sup>th</sup> of February 2011. I arranged for

Mr McConnell to be present on 16<sup>th</sup> of February 2011 also. My recollection is that Mr Bell agreed with my findings and would see the insurer about approval for the works. After the meeting I emailed Mr Bell with copies of photographs taken at the meeting on site. I asked whether he was happy that we proceed with the securing works. I also asked whether he wanted us to start a detailed strength assessment and strengthening report.

5 Q. And, Mr Gardiner, the document WITGAR0001.31 is a copy of your email to Mr Bell? It should be on the screen in front of you now.

10 A. It is.

Q. And there are a number of photographs that follow that email – documents 32, 33, 34 and 35 which are the photographs that you sent to him in that email. Is that correct?

A. The first one is, as is this one and this one and this one, yes.

15

**JUSTICE COOPER:**

Q. So the reference to the documents with the suffix 0.32–0.35 inclusive. We are looking down on Manchester Street is that right?

A. No, this is taken actually at the north-western corner of 116 Lichfield Street. The steel angle you can see is part of the securing works that had previously been done at 112–114 Lichfield Street parapet. This was a further dislodged corbel stone that was identified during our inspection of the 16<sup>th</sup> on the north-west corner. This is above Lichfield Street of 116 Lichfield Street.

25 Q. So where's that photo taken from?

A. This is taken from the roof, looking down. It appears to have been rotated. I was obviously not hanging above it. I just put the camera over the edge.

30 Q. Yes, so if that photo were rotated through 180 degrees it might be more immediately understandable. Thank you.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH**

**42**

5 A. Mr Bell replied on the 18<sup>th</sup> of February 2011 saying that he had forwarded all the information to Jason Lavington recommending that he authorise the remedial work. He said that as Mr Lavington was the loss adjuster on this claim he would be the best person to contact. I replied thanking Mr Bell and included Mr Lavington in that reply. I asked whether he was in a position to authorise the securing works. I did not receive a reply to that email prior to the 22<sup>nd</sup> of February 2011.

10 Q. And the last document for you to refer to, Mr Gardiner, WITGAR0001.36. Can you just confirm that's your email exchange with Mr Bell and Mr Lavington?

A. It is.

1308

Q. If I can get you to continue reading your brief at paragraph 43?

15 **WITNES CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH 43**

20 A. During this time I had thought that the securing works were imminent. A cordon had not been erected in the meantime but I had noted that a cordon was required on my instruction dated 9<sup>th</sup> of February 2011 which was circulated to Mr Bell, Mr Wiersma, Mr McConnell, Mr Lavington and Mr Barrie at the council. Like many Christchurch engineers I was involved in a voluntary capacity in the days immediately following the September earthquakes. I therefore attended many of the briefing sessions conducted by the Civil Defence and Urban Search and Rescue prior to undertaking building safety evaluations. I had read the building safety evaluation during a state of emergency guidelines, for territorial authorities dated the August 2009 and was familiar with the NZSEE 25 2006 guidelines pertaining to the assessment improvement of the performance of buildings in earthquakes. The latter document outlines procedures for evaluating buildings albeit undamaged ones. I was aware and had a copy of the earthquake inspection guidance and certification documents from council. This is evidenced in the certification which I provided on the 2<sup>nd</sup> of February 2011 confirming that 30 cordons around 112–114 Lichfield Street could be removed. The

guidance provided to me was that during a visual inspection of a building we were to assess the structural integrity and performance of the building having regard to the condition that existed prior to the earthquake on 4<sup>th</sup> of September 2010. That is to ensure that the condition was the same or that interim securing measures had been undertaken to restore the structural integrity and performance of the building to at least the condition of that existed prior to the earthquake on the 4<sup>th</sup> of September 2010.

If the securing works specified were not completed I recommended a cordon where respect to the parapet and corbel on the Manchester Street side of 116 Lichfield Street. I have seen recent comments made by Mr McConnell that the building was in imminent danger of collapse in any significant seismic event. I do not recall Mr McConnell expressing those concerns to me. He raised with me the specific damage noted in his email of 3<sup>rd</sup> of February 2011 which I inspected. I did not consider that the nature of the damage observed meant that the building was structurally compromised or in danger of collapse.

If erected the cordon that I recommended on the Manchester Street side of 116 Lichfield Street would not have protected against the total failure of the building as occurred in the 22<sup>nd</sup> of February earthquake. The reason for the cordon was not due to global instability of the building but rather potential fall hazards. In that sense the cordon would have been limited to a portion of the footpath on Manchester Street immediately below the corbel and would not have extended the entire length of 116 Lichfield Street.

I did not consider that a cordon was required to protect against the failure of the building. There was nothing from my inspections which suggested that the damage sustained to the building would cause a significant failure and I had no concerns about the global structural stability of the building. I was aware that the building was earthquake-prone but it was earthquake-prone prior to the 4<sup>th</sup> of September 2010 and it had not suffered damage to compromise its structural integrity. I did not consider that the lateral load resisting system and connections

that would have been present had been compromised to that extent that a total failure of the building was likely. In my reports I had recommended certain long-term repair options which involved strengthening of the building to bring it to current code. A detailed inspection and report was required in order to progress that work if required by the owner.

I did consider the structural integrity of the building following the aftershocks. I noted in my reports that any subsequent loading by aftershocks or high winds could initiate further damage. I considered however that any aftershocks would be of a lower shaking intensity. The building had also not sustained significant further damage in the Boxing Day earthquake and that earthquake was at a level which I expected following the September earthquake being one less in magnitude.

I have seen Peter Smith's report where he recommends that prior to occupancy of an unstrengthened, unreinforced masonry building or public access within the fall zone of the building after a significant earthquake the controlling authority should establish minimum strength criteria and require an engineering assessment establishing that the building achieves the minimum strength requirement. There are two types of reports that could be produced,. An initial evaluation procedure can be undertaken in a day and will give an indication of the likely undamaged strength of the building based on its construction type, location and age. A significantly damaged building or one that is likely understrength as a result of the initial evaluation procedure would require a more detailed report and invasive site-specific investigations. This could take four weeks. I had recommended that we undertake a detailed strength assessment and strengthening report in order to determine the building strength relative to current code and identify strengthening options. I had not been instructed to proceed.

With the benefit of hindsight I agree with Mr Smith's comments but at the time of my inspections, like other engineers, I was assessing the damage which had been caused by the earthquakes as compared with the building's condition prior to the 4<sup>th</sup> of September 2010. My opinion

was that the structural integrity and performance of the building when I last inspected on 4<sup>th</sup> of February 2011 was not significantly less than the condition of that which existed prior to the earthquake on the 4<sup>th</sup> of September 2010.

- 5 Q. Thank you Mr Gardiner. I do have some supplementary questions which I will address to Mr Gardiner after the break.

**COMMISSION ADJOURNS: 1.15 PM**



**COMMISSION RESUMES: 2.00 PM**

**SEAN GARDINER (ON FORMER OATH)**

**EXAMINATION CONTINUES: MS SMITH**

- 5 Q. You heard evidence from Mr McConnell this morning that after he met you on the 4<sup>th</sup> of February there seemed to be a suggestion that he had emailed you further about concerns and had emailed you photographs. Do you recall any of those communications from Mr McConnell?
- A. I recall a series of photos were sent through to me on the 10<sup>th</sup> of  
10 February. I believe these pertain mostly to the outside of the building, particularly the, the parapets and the southern extension of 116 Lichfield Street.
- Q. Can I refer you to document BUILIC1160024? Is that the email that you're referring to from Mr McConnell?
- 15 A. It is.
- Q. Is there – and you say that those are a series of shots aren't they?
- A. They are.
- Q. But was there any suggestion from Mr McConnell that any of the, the crack in the south-east corner of the building had got worse?
- 20 A. No, not that I'm aware of.
- Q. When you inspected 116 Lichfield Street on the 4<sup>th</sup> of February you've said that you looked at the specific areas referred to you by Mr McConnell in his email?
- A. I did.
- 25 Q. Did you inspect or view any other areas of the property?
- A. It is, while I cannot recall specifics it is likely that I would have revisited the areas that had suffered damage previously, particularly around the central core stair area and also more than likely the offset at the, on the northern façade at the north-western corner of the building for, for signs  
30 of further movement at those areas but I don't believe anything was noted as it's not recorded in my report.

Q. And if you had noted further damage would you have noted it in a report?

A. Yes.

5 Q. If we can just talk about the crack on the south-east corner of the building for a moment. You've given evidence that you inspected that crack after the September earthquake. Is that correct?

A. I did.

Q. And you also inspected after Boxing Day's earthquake?

A. That's correct.

10 Q. And that inspection was around the 19<sup>th</sup> of January from memory. Is that right?

A. Around that date, yes.

Q. And you've given evidence that between those two inspections the crack had increased in size. Is that right?

15 A. That's correct.

Q. Can you recall the nature of that increase, the measurement?

A. The extent was fractionally more than hairline at, as at December's inspection and had grown to near the extent that is visible in the photographs at, that have been shown at the Commission today.

20 1404

Q. One of the things that the Commission and some lay people might want addressed is how could you have seen that crack and concluded that the structural integrity of the building and its ability to withstand aftershocks had not been compromised. Do you have any comment about that?

25

A. When considering the face load capacity of an unreinforced masonry wall, in this particular case these walls resist lateral loads by expanding vertically between the floors and/or the roof. The presence of a return panel such as the south wall increases the strength of that element but also the stiffness and it is likely to be subject to damage earlier than other elements. The presence of that crack does not mean that it is, that that section of wall is any worse than the remaining sections of wall along that elevation. Furthermore for the front façade to resist lateral

30

loads it deforms into a shape away from the building and locks into that position and for, for the wall to be able to resist out-of-plane loads there is a displacement in compatibility between the rigid southern wall and the flexible out-of-plane nature of the front façade so it is likely that a crack would occur at that location but that it would not affect the structural performance of that wall in further seismic events.

5

Q. Okay and Mr McConnell referred this morning to some cracks that he had seen on the southern wall. Did that cause you any concern at all in relation to the cracks themselves and in play with the south-east corner?

10 A. The, sorry can you clarify?

Q. Sorry Mr McConnell referred to some cracks that he had seen on the southern wall of 116 Lichfield Street.

A. Are these parapet cracks or the inside of the wall?

Q. The parapet cracks?

15 A. Yes.

Q. That didn't cause you any concern in relation to those particular cracks at all?

A. The cracks that I, the significant cracks are the ones that I noted on my strengthening report and I suggested that they should be addressed. In my opinion they were potential fall hazards. They had not displaced or degraded such to the extent that they had lost a significant amount of structural integrity, however given that they had suffered the onset of damage they were locations of potential future damage in further earthquakes and as such I requested that they be secured.

20

25 Q. Thank you. In relation to the cordon you had instructed those security works on the 9<sup>th</sup> of February?

A. I had.

Q. And you had indicated in that instruction that the fall hazards and adjacent areas should be secured as soon as possible?

30 A. I did.

Q. And if they weren't that those particular areas should be cordoned off?

A. That's correct.

Q. So over the next week what you've recorded in your brief is that you were trying to get authorisation for those securing works to proceed?

A. I was.

5 Q. So you were aware by the nature of those communications obviously that the works hadn't been done?

A. That's correct.

Q. And were you also aware that the cordon, a cordon wasn't in place?

A. I was aware.

10 Q. So why didn't you chase a cordon in that particular area of Manchester Street?

A. I give a number of instructions. I rarely follow up on an instruction once it is given. That being said I was under the impression that the works would be authorised immediately and that the securing works would be done probably before a cordon would have been put in place.

15 Q. So when you say that you give an instruction and you don't follow it up, why's that?

A. Well I mean obviously when it comes to certification of works we need to make sure that the works are complete but we don't chase contractors to make sure that works are undertaken.

20 Q. So you simply rely on the fact that you've given an instruction and it will be undertaken?

25 A. Yes. Furthermore the damage that was observed in my opinion had significantly reduced the structural capacity of the elements in the parapets in those locations. They had suffered the onset of damage as I noted previously. Had they become unstable or had suffered significant loss of strength I would have followed up with cordons and probably the evacuation of the building to the south.

Q. Okay. And that part of the building is the one that is, shares the wall with 149 Manchester Street?

30 A. That's correct.

Q. If we can just talk for a moment about a cordon for 116 Lichfield Street which would protect against the fall zone of the façade. You knew that this building was likely to be earthquake prone?

A. I did.

Q. And you also knew that it was constructed of unreinforced masonry?

A. I did.

5 Q. So what do you say to the suggestion that you should not have let people occupy that area or access the fall zone of the façade?

A. The context of my inspections was to assess the capacity of the building relative to its pre-earthquake condition. Given that the façade had gone through a large earthquake and a significant aftershock and had not shown significant signs of deterioration I felt that there wasn't the  
10 damage to warrant such a cordon. An effective cordon would have crossed at least one lane of Manchester Street and Lichfield Street.

Q. And what you're saying to the Commission is that based on what you were seeing a cordon of that nature wasn't warranted?

A. No the damage observed did not warrant a cordon of that nature.

15 **CROSS-EXAMINATION: MR ZARIFEH**

Q. Mr Gardiner, just on that last issue, the crack in the south east corner.

A. Yes.

Q. That's effectively a crack between the east wall and the south return wall?

20 A. That's correct.

Q. And I am just struggling to understand some of the engineering terms with you explaining as to why you weren't too concerned about it in terms of the façade, the stability of the facade but given that crack and certainly the fact that it had increased in width, didn't, wasn't that an  
25 indicator that the façade might well part with the return wall in a significant enough shake?

A. It would be possible.

Q. Isn't that what would happen if the façade did collapse, it might well collapse along that crack?

30 A. It, well it could. The offsets of the crack were not such that would lead me to concern for the connections between the wall and the floors and the roof so although there is a large crack there unless there's a

significant offset the structural capacity of that connection has not reduced.

Q. What do you mean by an offset?

5 A. For instance if the crack had grown to a size particularly at the floors and the roof level whereby there was a reduction in connection between the floor and the wall then there would be less capacity for the wall to resist base loads and it had not grown to an extent that that was likely to have affected the structure.

Q. So are you talking about vertically if it ran between floor and –

10 A. Yes at the floor level if it had offset by for instance 20, 30, 40 millimetres then that would have led me to concern for the capacity of the floors to resist the wall base loading.

Q. Because in any strengthening programme for that building ...

A. Yes.

15 Q. It would include wouldn't it ensuring that the walls and the floors and ceilings were tied into the wall?

A. It would.

Q. Because that's often the weak connection if you like or the problem with URM buildings isn't it?

20 A. It is.

Q. And that was a problem or a potential problem anyway with this building? That's why it would need that kind of strengthening work.

A. Yes, but the connection between the walls would not necessarily be enhanced.

25 Q. The connection between walls and floors?

A. No between the two walls.

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30 Q. No. Okay. Right but if the front façade collapsed outwards then or there was a crack, a sufficient crack to cause that, then and weak connections between walls and floors or ceiling diaphragms then that could potentially mean that the façade would fall out or collapse wouldn't it?

5 A. Yeah, the mechanism for the transferring of face loads into the return walls is vertically via the span of the façade elements spanning vertically between floors and the roof and that is where the connections are important. We then rely on the floor diaphragm to transfer those loads into the perpendicular walls for an earthquake attack in that direction. We would not rely on the certainly not solely on the connection between a return wall and the front façade. There is an exception. If the wall was horizontally spanning for instance and there were return walls at regular centres but given the nature and the geometry of this building that this wall could not span horizontally.

10

Q. You're talking about all URM buildings?

A. Yes.

15

Q. What about on the outside though? Mr McConnell talked about seeing, he said tiny I think or hairline cracks on the outside, on the south-east corner. He said weren't visible if you just looked up from the street.

A. Mhm.

Q. Is it a concern if you can see a crack or what seems to be a crack corresponding to an internal crack or did that not necessarily concern you?

20

A. Well, yes, but I took it into consideration as I did the larger internal crack.

Q. In your report of 26 January you talked about the south-east corner crack?

A. Yes.

25

Q. And you said that it had increased in size. Is that what you're saying before that it had been a hairline crack before and then when you inspected it on 21 January, I think, for that –

A. Yeah.

Q. – report?

30

A. I'm afraid I don't recall the specifics. There may be a photo attached to both reports that would confirm the extent.

Q. Okay, what I was just trying to understand is that obviously in the photos we've seen this morning, taken in February –

- A. Yes.
- Q. – it's a significant crack, isn't it?
- A. In the order of five, possibly 10 millimetres, yes.
- Q. It's not a hairline crack is it?
- 5 A. No it's not.
- Q. But you said when you first saw it, it was a hairline crack?
- A. I said largely larger than a hairline, yes.
- Q. And then in January when you mentioned it in your report was it more like what we've seen in those photographs taken in February?
- 10 A. It was.
- Q. So and did you mean that between January and February it hadn't changed much?
- A. That's correct.
- Q. So can we assume that it was perhaps the Boxing Day aftershock that increased it from a bit more than a hairline to what we see in those photos?
- 15 A. I think you probably misunderstand the, 'a bit more than a hairline'. My idea of a bit more than a hairline is probably halfway as big as they are now so it probably, possibly doubled in size.
- 20 Q. Had you seen it at all in September?
- A. Yes.
- Q. So the same dimensions in September?
- A. No, it's, no the, it's noted in my report.
- Q. Okay. You said in that report that it's increased in size and inspection above the ceiling has revealed the crack extends upwards towards the parapet?
- 25 A. That's correct.
- Q. The crack also extends down through level one?
- A. Yes.
- 30 Q. So it was quite a lengthy crack?
- A. Yes.
- Q. And that, the length of it didn't concern you?



5 A. No. Indeed, a crack has to form for the facade to resist lateral loads it must move outwards to allow a moment to be generated between the centre of axial load and the centre of resistance and that means that the building, that the wall has to move outwards for that resistance to face loads to occur and a crack would be generated behind the wall at that time.

Q. Right.

10 A. That same movement would have occurred all the way along Manchester Street but it was only evident as a crack at that location because of the return wall.

Q. Right, so when would a crack like that in a front façade or the corner when would it become a concern structurally?

15 A. As I mentioned if the offsets go to an extent such that I would have concern for the connection between the floor and the wall. So if there was, at the moment there, assuming that the floor relies on largely friction between the floor joists and the wall for its face load capacity, obviously that would be addressed as part of a strengthening exercise. If there is nominally somewhere probably around about 100 millimetres of bearing at that point if the offset had been such that it was for  
20 instance 20 millimetres of offset then you would have lost 20% of your capacity and you would only have 80% remaining.

**COMMISSIONER FENWICK:**

25 Q. Excuse Mr Gardiner, can I just question you a little bit more about that. Can we, the picture is up there. It looks to me as though that crack is a good 15 millimetres wide judging by the width between the blocks. As we have heard that crack extended into the ceiling and down, you said, to level one?

A. Yes.

Q. At the floor, if it is extended down to level one –

30 A. Um through level two, sorry

Q. – through level two, down to level one?

A. Not significantly below that –

Q. All right. Extended through –

- A. From the floor, yes.
- Q. The third storey, down through the second storey?
- A. To the top of the underside of the second floor.
- Q. You can see it there that the crack is quite wide. I assume that the black  
5 thing there is a table or something in the room?
- A. Yes. It's a –
- Q. And the floor is below that?
- A. Yes.
- Q. So you got down and you had a look at the width of the crack at the floor  
10 level?
- A. Yes. From both the top and the underside.
- Q. And what was the width of the crack at the floor level?
- A. Sorry?
- Q. And what was the width of the crack at the floor level?
- 15 A. I cannot recall but it was smaller than this.
- Q. Smaller than that? I mean something is holding as you are saying the  
structural resistance comes from supporting this wall between the floor,  
at floor level if I can carry it back into the tower, and at the roof level?
- A. Yes.
- 20 Q. Between the two. Now there is a connection between that should be  
some form of connection between the floor and the wall to hold the wall  
in place?
- A. Yes.
- Q. What sort of connection do you envisage can absorb a crack width that  
25 you are saying of half this width, let us call it seven and a half  
millimetres? What sort of material would you put in there which would  
take that crack width and still be a viable load transfer mechanism?
- A. Well the, we're relying primarily on friction so there's –
- Q. Friction –
- 30 A. – between the joists and either a top plate, sorry a timber plate or  
between the directly depending I thought was embedded in the wall.
- Q. The joists were spanning into that wall, were they?
- A. Yes.

Q. Not into the side wall?

A. No they were spanning east-west.

Q. You are quite sure of that?

5 A. There is an interior beam line that runs north-south near the middle of the building which supports the floor joists.

Q. Can we go to WITGAR0001.16 please? You notice there that there is a, at the top corner of the wall in the middle of the picture there is a diagonal crack.

A. Sorry which?

10 Q. The corner of the building?

A. Oh yes, yes.

Q. At the top

A. Yes.

15 Q. It has got a label just below it saying, "150x150x10' and that is referring to angles you are proposing to go in.

A. Yes.

Q. What do you think generated that diagonal crack?

A. It more than likely is the front façade.

Q. The face load from the –

20 A. Front façade.

Q. – front façade?

A. Yes.

25 Q. So does that not tell you the load is going into that part of the wall and it has failed. It has cracked that part of the wall. Now would you not see that and think hey this is no longer a viable load path? Wouldn't that cross your mind? Wouldn't you consider that as a – what is your alternative load path with that crack there?

A. Well, the remaining members of the roof. This would have been the stiffest element which would have suffered damage first.

30 Q. So you are –

A. And there is still the remaining friction between each of the bricks. I agree we've lost any bond that may have existed in the mortar however there is still the frictional component to resist lateral loads.

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Q. But there's not, there's not a lot of dead, I mean the friction depends on the dead load doesn't it?

A. It does.

5 Q. And it's when you've got to the top of the building –

A. Yes.

Q. – you've got the highest lateral forces and the lowest friction?

A. That's correct.

Q. Did you look at the crack width in that wall at the level of the ceiling?

10 We talked about –

A. Yes.

Q. You said it was about half the width or something at the, at the top floor level and at the ceiling, what was the, did you have a look at the crack width up there?

15 A. I did.

Q. Yes and what sort of width was that?

A. I didn't measure it but again I don't recall it as being as, as large as, near the middle of the storey height. There are photographs.

Q. But not close up photographs that you've produced?

20 A. Sorry?

Q. There are no close-up photographs which would allow you to assess it?

A. Well there's a photograph taken with the ceiling tile removed looking straight up so the, what, what you can see from that. You will see that the crack extends towards the parapet.

25 **CROSS-EXAMINATION CONTINUES: MR ZARIFEH**

Q. Mr Gardiner in that same report where you talked about the, the length of that crack you also mentioned that the north-west corner of the building had pulled away from the party wall.

A. Yes.

30 Q. Towards the street.

A. Yes.

Q. And that the eastern façade, is that the Manchester Street frontage?

A. Yes.

Q. The eastern façade may have moved away from the level 2 ceiling and floor slightly up to 10 millimetres in the middle of the building.

A. Yes.

5 Q. Was that not a concern in terms of this façade and the forces on that?

A. At, the reason that I put a question mark at it in the report was because it wasn't clear that that movement was seismic related. There was one electrical conduit I recall that had a scuff mark on it which suggested that the building had moved but there was very little evidence to suggest  
10 that there was movement. If there had been movement in the order of 10 millimetres that would not have led me to significant concern.

Q. What about though in combination all these things, in particular the crack that we've just been talking about?

A. Yes. It had been through a very large earthquake and I believe the structural integrity had not been significantly compromised.  
15

Q. You're talking about the September earthquake?

A. Well yes the main earthquake and the large aftershock.

Q. And the Boxing Day?

A. Yes.

20 Q. Right, but in terms of the potential for even more aftershocks it's still a significant aftershock.

A. It certainly warranted monitoring.

Q. So when you say monitoring, were you doing that regularly?

A. I would more than likely be called to the site after a, any significant  
25 aftershock.

Q. So you, you don't agree with Mr McConnell that his view was that a cordon the full length of the Manchester Street façade, blocking off the footpath effectively would have been required?

A. In, in my report I suggest that if the strengthening, the securing works that I've recommended aren't completed then a cordon should be  
30 installed. The extent of cordon I had envisaged would have been locally around the fall hazards identified.

Q. Who would have decided on the extent of the cordon anyway? Would it have been for you to decide that or not, assuming one had been put up?

A. I would likely have had a significant influence on the extent of the cordon given that I had asked for it to be in place.

5 Q. But the council would have been responsible for erecting the cordon if it was blocking the footpath or the road wouldn't it?

A. Yes.

Q. So presumably their engineer would have had some input?

A. More than likely.

10 Q. Is that your experience?

A. More than likely, yes.

Q. But that assessment as to the extent of the cordon was never made was it we know, for Manchester Street?

A. No.

15 Q. No, and you said that, a moment ago that if you, you gave that instruction and you generally didn't follow-up on instruction. You just assumed that it would implied or carried out?

A. Yes.

20 Q. Are you talking about the instruction that you gave to the council about the damage and the need for a cordon?

A. No I mean with regards to the securing works that I had specified and –

Q. So the instruction to the insurers or the loss adjuster?

A. Yeah well that was given to the, excuse me, to the contractor.

25 Q. What about then the notice you effectively gave to the council when you sent that, a copy of that 4<sup>th</sup> of February sketch to, was it Mr Barry from the council?

A. Yes.

Q. Was that just giving them notice that a cordon was required?

30 A. The, the primary reason for sending that to the council was to demonstrate that an engineer was involved with the building and that works were progressing and that securing works had been instructed.

Q. Right and is that because the council had written to the owner, Mr Wiersma, hadn't he?

A. Yes.

Q. And in fact I think he had sent you the letter he got from the council?

A. Yes.

Q. And it was really, that letter was an attachment to your email, wasn't it?

5 It was that letter that prompted you to write to the council to say, look, we're doing something?

A. Yes, yes that's correct.

Q. So was it just coincidence then that you were, you'd got that letter from him, Mr Wiersma, and that you were wanting to let the council know that you were undergoing or under, you were carrying out securing works?

10

A. I thought it was of benefit to let them know that these works were required so it was, it was helpful that it –

Q. Right.

A. – met both requirements.

15

Q. But was your main purpose then to tell them that a cordon should be put up or not?

A. That wasn't the main purpose of the email, no, but I did want them to be aware of the hazards and that a cordon should be required if, if these works aren't addressed.

20

Q. Right well why I ask that is because, I mean it says in your instruction in your bottom of your diagram that there should be a cordon put up if securing works aren't completed straightaway or whatever the word you used. That, I suggest that's not, it doesn't seem that clear to, as an instruction to the council that look we've had another look at this building and there's some damage there that should be cordoned off. Do, do you accept that?

25

A. It, it wasn't an instruction to the council to put up a cordon.

Q. Or even a request.

A. It wasn't a request to the council to put up a cordon, no.

30

Q. Right so how was the council going to know about that damage and the need for a cordon other than that, it's up on the screen now, a copy of that instruction. That was the only way wasn't it?

A. If, if works weren't to progress I would have relied on the contractor to arrange a cordon.

Q. The contractor being Mr McConnell?

A. Yes or this instruction was to Mr McConnell.

5 Q. Right. So, but you sent a copy of this to the council?

A. Yes.

Q. Just to let them know that you're doing securing work?

A. Yes and to let them know what had been recently identified on the site.

10 Q. So, so we're clear, so you had presumed that Mr McConnell would contact the council and request a cordon?

A. If the securing works weren't to proceed, yes.

Q. And, what, you would tell him whether they were or not because you're in touch with the insurers weren't you?

A. Sorry there was a car.

15 Q. You were in touch with the insurers?

A. Yes.

Q. So you'd have to tell Mr McConnell whether they're proceeding or not?

A. Yes. My understanding from the insurers was that authorisation was imminent.

20 Q. I don't think Mr McConnell understood that he was to contact the council. Did you tell him that or is that just (inaudible 14:33:19)?

A. Only via, only via the instruction.

Q. Right so this instruction of 4 February was an instruction to Mr McConnell, this is what you've got to do.

25 A. Yes.

Q. And if you don't, if we don't get approval straightaway then you'll have to go to the council and request a cordon?

A. Or put up their own, yes.

Q. Or get them to put it up?

30 A. Either Fortis puts up their own cordon or they request the council to put up one on their behalf.

Q. And you said before that you might then have become involved as to the extent of the cordon?



A. It is likely that if the council had been asked to put up a cordon they would ask for an engineer's opinion on the extent of such a cordon.

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5 Q. Do you think that you made it clear to Mr McConnell that he was to contact the Council if securing works weren't carried out immediately?

A. My words are 'these high level bricks and stone blocks are potential fall hazards to the areas directly adjacent and should be secured as soon as possible or the fall areas cordoned off'. I go on further to say that the contractor has to wait for insurer approval. I guess that helps clarify who this instruction was addressed to because I had sent it to the contractor.

10 Q. Right. So when you went to the building on the 16<sup>th</sup> of February it's, what, a week after that, or more than a week after that 4<sup>th</sup> of February?

A. Yes.

15 Q. Twelve days later there's no securing works carried out, correct?

A. Yes.

Q. There's no cordon up anywhere?

A. No.

20 Q. Did you not say to Mr McConnell, "What are you doing, you haven't started the securing works?", well you probably knew why he hadn't because you hadn't had approval then had you?

A. That's correct.

Q. But did you not say to Mr McConnell, "Look what are you doing, you've got to get a cordon up there?"

25 A. No I did not say that to Mr McConnell.

Q. Why not?

A. Again we were assured that insurer approval was imminent. Also, as I mentioned, I didn't believe that either of the four hazards had significantly lost integrity. If I believed that they had, then I would have more aggressively pursued a cordon.

30

Q. So had things changed since the 4<sup>th</sup> of February when you went on the 16<sup>th</sup>, in terms of the damage?

A. Of which particular aspects?

Q. Well any of the damage that we've talked about – the Manchester Street façade or that south-east corner. Had any of that changed?

A. Slightly, yes.

Q. What, got worse?

5 A. Well yes, obviously the crack in the south-eastern corner had enlarged. Also, as noted in my report, there was further damage to the internal parapet around the courtyard, the stairwell, fire escape.

Q. Right, maybe I'm not understanding it, so between the 4<sup>th</sup> of February and the 16<sup>th</sup> of February?

10 A. Sorry I thought you said September. Between the 4<sup>th</sup> of February and the 16<sup>th</sup> of February there was no –

Q. No change?

A. – no significant change, no.

15 Q. So it sounds like on the 16<sup>th</sup> of February you weren't as worried as you were on the 4<sup>th</sup> of February when you said that cordons should be put up if securing works can't be carried out straight away?

A. I was continuing to pursue the insurers to try and get them to get the works done. Had authorisation been given to do these works if the contractor was still in process they probably would have died with the earthquake on the 22<sup>nd</sup> of February. Had the works been completed and any cordon, if erected, removed, they would likely have had no impact on the eventual collapse of the building.

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Q. Right well we'll never know because we don't know what extent a cordon would have been erected do we because it might have involved the Council and other assessments, correct?

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A. We won't know.

Q. We won't know, no, but just in terms of this issue of communication, have you struck that before in other buildings in relation to cordons? It just seems, can I suggest to you, that seems slightly obtuse in terms of an instruction. Certainly I thought that that 4<sup>th</sup> of February instruction you sending it to the Council was a way of saying to the Council, "Look this is what we're doing and we'll need a cordon there", but you're saying no that's not what you intended. You always intended Mr McConnell as the

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contractor to arrange that and I don't think he understood that. It certainly wasn't suggested this morning so is there a problem with communication in relation to cordons generally or did it just happen in this case because this is what we're looking at, what can we learn from this?

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A. Yes.

Q. It's not a problem –

A. In terms of communication, well, um, I mean I believe I had told the contractor what needed to be done, um, I don't see that there was –

10

Q. Okay, well in this case Mr McConnell goes on the 3<sup>rd</sup> of February, sees damage he's concerned about and he's an experienced contractor isn't he?

A. Yes.

15

Q. And he's concerned enough to email you on the 3<sup>rd</sup> of February and raise these issues with you and say that Manchester Street needs a cordon, right?

A. Yes.

Q. You go on the next day, the 4<sup>th</sup> of February, and have a look for yourself?

20

A. Yes.

Q. It seems that he may have thought it was more serious than you. Is that fair?

A. Yes.

Q. But in any event you agree that securing works have to be carried out?

25

A. Yes.

Q. And that a cordon is necessary, leave aside the extent of it, a cordon is necessary pending those securing works if you can't get basically immediate approval?

30

A. It's not phrased that way. The intent was if securing works weren't done then a cordon should be installed as an alternative.

Q. Right but we know that between the 4<sup>th</sup> of February and the 22<sup>nd</sup> of February there was no securing works done were there?

A. That's correct.

Q. So when you say if they weren't done, what kind of period are you talking about? I thought it would be a couple of days if that.

5 A. Well again they weren't, well they were potential fall hazards and I believe that the insurer, authorisation to proceed was imminent. At each stage I believed that it was the next day sort of thing. At each stage I was happy that a cordon not be erected.

Q. But 12 days later when you were there on the 16<sup>th</sup> and nothing had happened?

10 A. I was with the insurer on that day trying to get his authority to do the work so I was physically with the man trying to get the work done.

Q. Do you think that there's a problem with work such as this where there is a potential for fall hazards if you have to wait for insurer approval?

A. Absolutely.

15 Q. Right so is that a problem you've struck in other buildings or just this one?

A. Well contractors obviously are unwilling to do work if they are not to get paid for it so it comes down to who's going to pay for that work to be done.

20 Q. Right and I would have thought that if there's emergency work required then that can be done and you can claim later, and I think that applies to residential, does it not apply to commercial buildings?

25 A. Well I mean for instance this building after September (a) the insurer hadn't accepted the claim until early February I understand so they did not say that they would pay for any works until February. Obviously that's a long time for any emergency securing works to be done and I recall for instance the initial securing works around the courtyard area before I was formally engaged on 116 but when I was working on 112 Lichfield Street that there was hesitation to ask for the work to be done because the owner would have been personally liable for the costs of such repair works and obviously he wasn't very interested in wearing  
30 those costs.

Q. Do you think then that in a situation where there are securing works required that there needs to be more cordons erected following a substantial earthquake and this kind of damage becoming apparent?

5 A. Well I guess it comes down to who needs to access and how close they need to access the building.

Q. Okay, but just dealing with the Manchester Street frontage where the potential was to pedestrians or even motorists for fall hazard, correct?

A. From, on Manchester Street from the potential stone block, yes.

Q. Or the loose stone?

10 A. Yes.

Q. So there's a potential hazard for pedestrians say?

A. Yes.

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Q. And so that's why a cordon was required if it wasn't going to be –

15 A. – that's correct.

Q. - attended to straightaway. What you're saying is that there is, you experienced that there was a delay in trying to get approval.

A. Yes.

20 Q. And you wanted to get approval because otherwise the owner would have to pay and you felt reluctant to either go to him or just simply do it without a guarantee of payment which is understandable but that was the position wasn't it?

A. I was, I mean I instructed the contractor and I imagine that they would have been hesitant to do the work without assurance of payment.

25 Q. Right. And so even more important if there was going to be a delay while that was being sorted out to get a cordon in place don't you agree?

A. If there were ongoing delays or if the hazard was significant then yes a cordon should be put in place.

30 Q. Well I accept that 22 February was a big event but something like a loose stone could have come off in a lesser earthquake couldn't it? We'll never know of course but the potential is there hence the need for a cordon as in your instruction?

A. The potential was there but I don't believe that the strength of it had been significantly deteriorated at that stage.

Q. Okay.

5 **JUSTICE COOPER:**

Q. You were concerned enough to say that these areas, potential fall hazards should be secured or there should be a cordon?

A. Yes.

Q. And you said in your instruction secured as soon as possible?

10 A. Yes.

Q. So how long would it have been acceptable for nothing to happen? Did you have a timeframe in mind?

A. We were playing it I'm afraid a little bit by ear in that we were trying, I had assurances from the insurer that these works were imminently going to be approved and at each stage they seemed to be denying us that authorisation. We were progressing with them though so we had the, we had Andrew Bell out on site on the 16<sup>th</sup> so he had come so he had come to visit and to view the works that were going to be undertaken but I felt as though although we weren't, didn't actually have the securing work done we were progressing.

15

Q. So was it, were you prepared to be infinitely flexible about the timing of this?

A. I'm sure at some point I would have said we need to put a cordon up.

Q. I'm trying to work out when that point might have been.

25 A. I hadn't reached it at that time.

**CROSS-EXAMINATION CONTINUES: MR ZARIFEH**

Q. In terms of responsibility if that's the right word for doing something about it I'm trying to understand that, do you say that you passed that on to the contractor?

30 A. I had instructed them to do the work yes.

Q. Right. And so that once you got, given that instruction you generally wouldn't have followed it up?

A. I gen, well on subsequent visits I would have looked to see if the work had been completed yes but I wouldn't actively be calling the contractor to say have you done my, the work instructions in my report.

5 Q. Right. But how about monitoring it? If you weren't going to have a cordon, you talked about it being monitored but would you just take that on yourself to monitor it or would you wait for instructions from the owner or wait for an aftershock and be instructed?

A. We were engaged by the insurers so I would have after any significant aftershock visited, revisited the site.

10 Q. Right.

A. Or had there been further word from the contractors to suggest that there had been further damage.

15 Q. Just in relation to the cordon though Mr McConnell said that you and he discussed the damage and you being the structural engineer he really had to accept your assessment.

A. Yes.

Q. Of the extent of the damage and whether it affected the structure –

A. This is with regards to the crack.

20 Q. Yes. So isn't it really you as the engineer who has got the qualification to decide whether you need a cordon and really to convey that to the council? Did you see that as part of your role or not?

25 A. Yes I, in this, I had instructed the works to be done and I would have envisaged that the contractor had as much access to fencing equipment to be able to install a cordon as easily as the council in this particular case.

Q. Right. But the contractor and yourself were presumably waiting for approval before you did too much, to get payment. If you'd on the 4<sup>th</sup> of February if you'd gone there and seen and decided as you had that there should be a cordon if the works weren't done, carried out –

30 A. Shortly.

Q. Shortly. Wouldn't it have been more effective for you to contact the council and say look this needs a cordon pending this work and then leave it to the council who ultimately will be responsible probably for

erecting it or at least assessing it if the contractor put it in over the street and put it in their hands to put, to erect a cordon? Do you think in hindsight that would have been better way of doing it? Doesn't that get around the problem of you having to monitor it and as we know you know 12 days before you go back and still nothing?

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A. That would be another way of approaching it yes. The damage I still don't think it has significantly compromised its capacity to this earthquake load.

Q. No I understand –

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A. But it would be another way yes.

Q. But even if it was simply a potential danger to pedestrians from falling block or blocks, that would still require a cordon wouldn't it?

A. Yes.

Q. I'm talking about the cordon issue and the communication of it.

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A. Yes.

Q. Right. Just on another issue your inspections 7 December you went and 21 January and there was those two reports.

A. Mhm.

Q. The loss adjuster Jason Lavington talks about in his written statement.

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Have you read that? He talked about requesting a what he called a full engineer's report.

A. Okay.

Q. The 'Cunningham Lindsey could not authorise any repairs as it was waiting for a full engineer's report to enable insurers to consider the claim'.

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That was back in September, end of September. So what was your understanding? Your reports that you eventually did 20 December and 26 January.

A. Yes.

Q. Were they sufficient for the insurers?

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A. I haven't heard that they weren't.

Q. They weren't. Okay. I'm just trying to be clear about what might have been meant by that because would you call your reports full engineer's reports. I know we don't know what that means but –



- 5 A. No. Well the, our report outlined what the likely repairs were and what the likely strengthening would be required. From that the insurers are able to put together a cost estimate on what the likely repairs are. However before a, any detailed strengthening work could be done a full structural engineering assessment would be required which would involve detailed calculations.
- Q. And would that entail going behind linings if there were linings?
- A. Yes and lifting floorboards and ceilings and such to confirm the connections between the floors and the walls and -
- 10 Q. Okay and you talked about Peter Smith's recommendations at the end of your brief. That's the kind of report more along the lines of what he's talking about after a significant earthquake?
- A. There are, as I mentioned in my brief there are a couple of types of reports that could be done – the conservative approach and the quicker approach would be to do an IEP or an initial evaluation procedure which is mostly based on the age of construction of the building so you could undertake a, based on its age and construction type and a few other things with regards to kind of irregularities if, you could do a relatively quick assessment of the building and you would have an idea as to where it sits in relation to current code relatively quickly but to have a, I guess a site specific, building specific, damage specific report you would need to have a detailed engineering evaluation done and that would take into consideration the damage that had occurred, the site specific wall thicknesses and connections.
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- 25 1454
- Q. So in terms of the structural integrity of the building –
- A. Yes.
- Q. – following the September and Boxing Day –
- A. Yes.
- 30 Q. – do you think that your reports that you did in inspections you did were sufficient to be able to conclude whether or not the structural integrity had been significantly affected and might, there might well be collapse or partial collapse of parts of the building in a significant aftershock?

A. It wasn't a strength assessment of the building.

Q. No, that's what I was getting at, that the report you did, the kind of depth that you went into, was that sufficient to be able to conclude that?

5 A. The report I did was a damage assessment. So it was comparing the building's condition to that which would have existed prior to the earthquakes.

Q. Which might have been low anyway.

A. Sorry, it's initial strength?

Q. Yes.

10 A. Yes. Well the building was probably, it was likely to be earthquake prone.

Q. So it could well have been quite low?

A. Yes.

Q. And all that might have meant is that it's still low, maybe a bit lower.

15 A. But that it had survived a very large earthquake and a significant aftershock without signs of significant damage and we, we could not anticipate the magnitude of the earthquake of the 22<sup>nd</sup> of February.

20 Q. No, no, I understand that but on top of that you've got some, however you want to characterise them but you've got some reasonable cracks in the building.

A. Yes.

Q. And if I understood you right you've got no strength from mortar because it's all been shaken down from those two earthquakes and you've just got bricks sitting on top of each other effectively?

25 A. I don't know ...

Q. Isn't that what you said. The strength is from the friction between the bricks rather than any strength from the mortar?

A. There's, there's, yep, there's cohesion component and a friction component.

30 Q. And the cohesion would have been gone?

A. Yeah as soon as the crack forms, yes.

Q. So that, that's what you've got?

A. Yes.

Q. You need a –

A. But the cracks in the locations that they were in my opinion hadn't significantly compromised the strength of the building. They were in locations of expected, well they were expected damage.

5 Q. Right so was it a building, if the securing works that you were suggesting had been done was it a building that could be occupied in your opinion?

10 A. Yeah if the hazards had been addressed and there was no evidence to suggest that the building's strength had been compromised then more than likely.

Q. Right but in hindsight as I understand you you're saying that you, you agree with what Peter Smith was recommending?

A. Yes in hindsight his recommendations that a minimum strength be achieved prior to occupation is in my opinion a good idea.

15 Q. Well prior to occupation or even to people approaching the fall zone?

A. Indeed. At the time I, I was satisfied that our assessment against its pre-earthquake condition was appropriate.

Q. Right and I'm not suggesting that you were doing something different from other engineers necessarily –

20 A. No.

Q. – but you might do it differently next time because of what you've learnt, what we've all learnt?

A. Yes. We did not anticipate an earthquake of such magnitude close to 200% code, of the code at the time but obviously we, we have learned.

25 Q. I notice that in one of your engineer's instructions, I think it was the 18<sup>th</sup> of November you noted, I think it was the connection between the 116 and 114 on Lichfield Street that had moved away.

A. Yes.

Q. And you said it should be measured carefully and photographed.

30 A. Yes.

Q. So who was that an instruction to? Was that to the contractor?

A. Yes.

Q. And do you know if that was done?

A. I cannot recall.

Q. So is that an example of an instruction you give and you don't necessarily follow it up? I'm not necessarily saying you should have but I'm just –

5 A. I cannot recall what happened with that particular instruction. I wouldn't, I imagine, I mean the contractors that I work with have been very good in following up all of my instructions so generally I have no questions or, or comments. The work is usually done promptly.

Q. So do you know if that was measured then and whether it changed?

10 A. I, I – well I mean I obviously inspected it at the time and at subsequent aftershocks I would have re-inspected it and I don't recall seeing any increase in (inaudible 14:59:56).

Q. As the engineer you've really got to have the oversight don't you?

A. Yes I would, they would refer any further movement to me.

15 Q. That photo, those photographs that you put up just before lunch and do you recall the photograph of Lichfield Street that His Honour got turned around so that –

A. Yes.

Q. – it had a better orientation. Were they taken on the 16<sup>th</sup> of February?

20 A. Yes.

Q. So that one that was turned around, that appeared to show a loose stone. We can see it now.

A. (inaudible 15:00:45).

Q. Is that a loose stone on the edge of 116?

25 A. Yes.

Q. Should that not have had a cordon?

A. A stone that had moved.

Q. Should that not have had a cordon underneath it?

30 A. It's likely that that stone is embedded a significant depth into the parapet below but, yeah, I don't think any instructions were given with regards to that corbel prior to the 22<sup>nd</sup> of February.

Q. But presumably you've had the photograph or taken the photograph to show that damage?

A. Yes.

Q. And because the damage is a concern?

A. Yes, well certainly worth monitoring that's for sure.

5 Q. But in terms of the Manchester Street one was that something similar in terms of a loose stone or a potentially loose stone or had that one in fact dropped, the one on the Manchester façade?

A. It's difficult to tell if they were, if there had been, looked as though it had dropped slightly, yes.

Q. Therefore the need to take precaution?

10 A. Yes.

Q. So did you not apart from that email to Mr Barry at the council –

A. Yes.

Q. – you didn't have any contact with the council about the securing works or the cordon issue apart from that email?

15 A. That's correct.

Q. And what, what then prompted you to say, I think it's in paragraph 30, I just can't find the paragraph but it's a paragraph where you referred to an email to the insurers or the loss adjuster where you said that I'm sure that the council will be –

20 A. Will come up with a cordon.

Q. – as we speak setting up a cordon or something like that. Here it is, 37, on 11 Feb, so two days after –

A. Four days after, after the, well two days after the 9<sup>th</sup>.

Q. Seven days after the 4<sup>th</sup>.

25 A. Yep, yep.

Q. "The council's aware of the issue and I'm sure will start putting out cordons." So firstly how could you say that the council was aware? What, what led you to say that?

A. Because I'd sent the email to John Barry.

30 Q. But I thought that that wasn't a means of communicating the need for cordons necessarily to him but you just thought he'd read it.

A. Well, yeah, they were aware of the issue. So I imagine if they had not seen progress then they would have been asking the questions and, and probably putting out cordons themselves.

Q. Right so they'd be monitoring as well?

5 A. Well they were aware of the issues.

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Q. And we'll start putting out cordons, cordons you say cordons plural, you mean, where were you referring or thinking there'd be a cordon?

10 A. Well this was just as per my report to address the concerns of the stone block and –

Q. So that –

A. – potentially the corner if –

Q. So they could decide where to put the cordons?

A. Well, they would but I'm sure they would talk to me first.

15 Q. Yes, but when you say cordons plural it would have been up to them to decide in conjunction with you perhaps –

A. Yes.

Q. – as to where.

A. The extent and size of such a cordon.

20 Q. And restricting access to neighbouring properties, you mean the 149 Manchester?

A. Yes.

Q. Because of the potential fall hazard there?

A. Yes.

25 Q. You didn't think about contacting the council after that when you knew that there was no cordon?

A. Well this was following up on –

Q. It's the 11<sup>th</sup>.

A. Yes.

30 Q. So five days later you are there at least, maybe in-between but there is still no cordon up five days after you've written that?

A. Yeah, I'm encouraging the insurers to authorise works.

Q. I understand that but I'm just talking about the cordon issue when they hadn't authorised it.

A. Yes.

Q. Thank you Mr Gardiner.

5 **CROSS-EXAMINATION: MR ELLIOTT**

Q. Mr Gardiner, I think you gave evidence that like other engineers the test, if you like, that you were providing was to assess the structural integrity and performance of the building having regard to the condition that existed prior to the earthquake on 4 September 2010. Is that right?

10 A. That's correct.

Q. And did that guidance come from the Christchurch City Council?

A. Ah, well it was consistent with s 112 of the Building Act with regards to alterations to existing buildings whereby the strength of the building is not to be made worse as a result of alterations. It was also part of the certification process that when we said that a building could have a placard change or be occupied the measure that was in the wording of that certification was that the building was no worse than existed, or have been secured to a position that it was no worse than the condition that existed prior to the earthquakes.

20 Q. Well you may have answered my next question which was, I appreciate that during the emergency response period when you were volunteering for the council and you were applying a particular test based upon what the council said, that would explain why you applied the test then?

A. Mmm.

25 Q. Why was it that you applied the same test in your private capacity instructed by the owner's insurer?

A. Yeah, as I mentioned there was council certification which required us to say that the building was no worse.

Q. So you're acting for the insurer?

30 A. Yes.

Q. And generally an insurer's financial interests would be met by keeping a building like that open I suppose?

A. I don't follow.

Q. Well wouldn't an insurer generally be wanting to keep a building open if possible?

A.

5 **MS SMITH:**

Sir, Mr Gardiner cannot answer questions about what an insurer might or might not want.

**JUSTICE COOPER:**

10 It is probably a fair point Mr Elliott. The question is on the way to something else, isn't it? So why don't you go for the something else?

**MR ELLIOTT:**

Yes, well I'll just put the question which I was wanting to put and if Mr Gardiner doesn't want to answer it or my friend doesn't want him to, that is  
15 fine Your Honour.

**JUSTICE COOPER:**

Well, he is an engineer, he is not an expert on what insurance companies see as to their financial advantage, is he?

20 **CROSS-EXAMINATION CONTINUES: MR ELLIOTT**

Q. No. My point really just is on the question is that engineers have an ethical obligation around the issue of safety, that is to take reasonable steps to safeguard health and safety in the course of their engineering activities and just whether there is any tension between that ethical  
25 obligation and the role that an engineer plays when inspecting a property for insurer effectively.

A. I don't believe so.

Q. So despite the ambit of any instructions safety will still be a factor in your considerations?

30 A. Absolutely.

Q. Mr Smith's, you've said that you have accepted Mr Smith's recommendation that before occupancy of an unstrengthened URM



building public access to the fall zone there should be no access until there is an assessment based on minimum strength criteria. As I understand it Mr Smith will say that that fall zone would be defined as 1.5 times the height of the building?

5 A. Okay.

Q. Would you still agree with his recommendation on that basis?

A. That would seem appropriate.

Q. Even if that recommendation was taken up is it right to say there is still some room for error in assessing whether the building meets the nominated minimum strength criteria?

10

A. When it comes to a detailed strength assessment?

Q. Yes.

A. Well there's always going to be I guess different interpretation between different engineers on material properties and assumptions but they should be pretty close.

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Q. I just wanted to ask you about one particular element of your assessment which really relates to that point, and Commissioner Fenwick has already covered this so I will try to just keep it brief, but if we could have photograph BUILIC116.0014.53. So we know from that photograph and Mr Smith says that the frontage collapsed outwards. In paragraph 23 of your statement you said in reference to the crack in the south-east corner of the building that, "Having regard to the construction of the building I did not consider this was a significant concern in that it did not significantly affect the global structural stability of the building as the physical offsets were minor." So is it right to say that, or is it evident from that that what you were looking at in assessing concerns such as, issues such as that crack was the global instability of the building?

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A. Yes.

Q. The photograph shows us that the building post-earthquake was still standing to some extent, the northern and southern and western walls are standing and the floors are intact and the roof is partially intact. Mr Smith says that the reason that the wall collapsed outwards was inadequate connections. So my question really is just whether in an

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assessment of the overall structural or the global instability, to use your words, of the building whether you considered the possibility that a wall could come away?

5 A. My assessment of the building was to its condition that existed prior to the earthquakes. I didn't assess or try to calculate what the capacity of the wall was.

Q. So you didn't put your mind to the question of whether that wall might physically come away even though the remainder of the building might stay more or less intact?

10 **COMMISSIONER FENWICK:**

Q. Perhaps I can just follow-up with a question that you posed. You said that you were not concerned about the crack at the floor level which you indicated was about half that in the middle of the picture we saw that you put up on that south-east corner so assuming the crack at the floor level was the order of seven and a half to five millimetres in width –

15 A. Yes.

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Q. And you said that that did not raise a concern of you because though it is hard to imagine any ties or nails or anything else holding it, moving seven and a half millimetres. You said it was all right because there was friction there. Is that correct?

20 A. Well that was really probably the only mechanism that was available.

Q. So what was available – it was the friction between the dead load of the floor and the wall. That's the only friction available isn't it?

25 A. Yeah.

Q. So the wall weighs roughly, my calculations in my head which could be well out, round about four kilonewtons per square metre giving us probably about 15 kilonewtons of wall which would be supported at each floor level, half that presumably at the roof, roughly. You would agree that figure is about right?

30 A. Sorry I'm lost but it sounds as though –

Q. Okay, well maybe out quite appreciably but it's of the order of 10–20 kilonewtons in that sort of range I imagine you would agree with that.

The dead load of the floor spanning six metres, I don't know what it was. You said there was support, a wall running north-east or a beam or something running north-south and then there's the wall on the east face which runs north-south, so you had timber members supporting through there. What do you think the dead load would be between that floor and the wall? I get about something in the range of a few kilonewtons – 2–3–4 kilonewtons. I don't know what the span was but I don't know what your figure is. Do you agree that's reasonable?

5

A. It would not have been a significant weight, no.

10

Q. It probably would have been less. So what sort of co-efficient of friction did you have in your mind that it would be safe to hold it?

A. As I say I wasn't calculating the capacity, because these are the assessments that would be done as part of a detailed structural strength assessment.

15

Q. If you saw a crack width at that level of 5mm and you've agreed before it's unlikely that any connection through there could withstand that 5mm and you've replied that it could therefore okay because of friction. Now just very crudely in your head and my head we know that co-efficient of friction would have had to have been of the order of 5, 6, 7, 8 or 9 to resist that force. Do you agree?

20

A. I was, yeah, as a percentage of the capacity that existed before the earthquakes it would have been not significantly less.

Q. Mr Gardiner, did you consider the possibility that that crack did not exist before the earthquake?

25

A. Yes.

Q. If it had not existed before the earthquake there could have been other devices connecting the two together so that the force, the strength, could have been much higher like nails into, holding the members together?

30

A. It is possible.

**CROSS-EXAMINATION: MR ELLIOTT**

- 5 Q. My point really, Mr Gardiner, is that there are unreinforced masonry buildings all round the country now. There are no doubt inspections of them which are going to be happening. There will be big earthquakes in Christchurch in future. There will be post earthquake inspections and just really looking to see if we can learn something about how this sort of thing might be prevented and the question I was really getting to was whether you had given specific consideration to those connections that Mr Smith says were inadequate?
- 10 A. I was comparing the strength of the building with that which existed before the earthquakes. I mean there would have been a nominal tie before the earthquakes and the building had gone through a large earthquake and a significant aftershock and it didn't appear to have moved or suffered significant damage. That was the extent of my report.
- 15 Q. So I think Mr Smith's evidence will be that for this particular building the lateral co-efficient at ground level would have been no more than about 0.2g. Would you accept that as roughly accurate?
- 20 A. I don't recall those specifics. I know that the response spectra for this earthquake was, well for stiff buildings, was pretty close to twice what we, this is sorry in September or February?
- Q. I'm asking about the lateral co-efficient for the building as opposed to the horizontal accelerations from the earthquake?
- A. The lateral co-efficient for the building?
- 25 Q. By that I think he means, and he'll correct me if I'm wrong when he gets up here, but just the strength?
- A. Oh, the capacity of the building.
- Q. The capacity?
- A. As a percentage of current code?
- 30 Q. Well .2g is the measure that's used –
- A. – so he's saying that acceleration –
- Q. – as an indicator of the –
- A. – of the building's capacity would have been exceeded.

Q. Well his evidence will be, as I understand it, that 0.2g was the building's capacity at ground level and I asked you whether you agreed and I think you said, "Well haven't really put my mind to it".

5 A. I mean being earthquake prone I mean the connections I mean I hadn't undertaken a detailed strength assessment to determine what the capacity of the building was.

Q. Your letter BUILIC 1160014.38 in paragraph 3, the third paragraph from the top, it appears from that that you raised the possibility of a more detailed assessment with the owner but you didn't urge that upon the owner. Would that be right?

10 A. Ah yes. I mean I would have expected that the insurer, well the insurers who I was more actively following up on, and you'll see in my emails that I had asked that if we had approval to continue with a detailed strength assessment.

15 Q. I'm just going to put something in lay person's terms and it may have been superseded by Commissioner Fenwick's questions in terms of the technical issues but just from a lay person's point of view, given that you were aware of this crack down the south-east of the building inside and given that I think in your report you identified that there was movement away from the building in the middle on the Manchester Street side –

20 A. – possible, yes.

Q. – and given the builder's evidence about the corbel and the parapet issues which he raised with you around 3<sup>rd</sup> February, wouldn't those things have at least put you on notice of the possibility that the whole wall was at risk of coming away?

25 A. Those were elements, yeah. The parapets were substantially non-structural. The movements were, in my opinion, not significant enough to cause me concern.

Q. I think you gave evidence that you didn't assess the crack in the south-east corner as posing a structural risk. Is it possible to form a view either way about, or a good view, about structural risk or risk of outward failure without physically looking at the connections?

30 A. Ah, sorry can you clarify your question?

Q. Wouldn't it have been better to have physically looked at the connections –

A. – well as part of the, that would have been undertaken as part of a detailed strength assessment, yes.

5 Q. Do you think it would have been better to have, rather than allowing the building, certainly in December, to remain open and no cordon being in place, wouldn't it have been better to recommend to the Council that a cordon be put in place so that you could then do invasive testing and look at the –

10 A. – We hadn't seen any damage to suggest that the capacity of the building had been compromised.

Q. And if that capacity was no more than .2g at ground level that's what it remained?

A. And it had successfully gone through a number of large earthquakes.

15 Q. Were you aware of GNS data demonstrating that horizontal accelerations in the Boxing Day aftershock were 0.4 in the Botanical Gardens and 0.2 in the CBD?

A. I cannot recall specifics.

20 Q. Theoretically horizontal accelerations anywhere above 0.2, if that is the right figure, would have put that building in danger of collapse wouldn't it?

A. I haven't done a specific detailed strength assessment of building.

1524

#### **CROSS-EXAMINATION: MR LAING**

25 Q. Mr Gardiner, just one or two questions about who your client was. If we look up on that document before you, you say which may be required by the client. Are you referring there to the insurance company or are you referring to the owner?

30 A. Well our engagement was with the, with the loss, well with the insurer, loss adjuster in this case, however it would have been extended to the building owner.

Q. Yes. So do I take it that at no stage you had any instructions from the loss adjuster or the insurer between the loss adjuster to undertake that detailed structural assessment?

A. No.

5 Q. The answer to the last question was no is that correct?

A. The answer to the last question was no.

Q. And would I be correct in assuming that if you were to do a detailed structure assessment it would have to be some sort of dialogue between the owner and the insurer as to who was going to be paying for that, is that correct?

10

A. I'm not aware of the processes for insurers.

Q. But at this stage at least you didn't have any instructions of that nature did you?

A. No.

15 Q. Did you have any reason to believe that you would not receive approval for the remedial works in February from the insurers?

A. No.

Q. There was never any suggestion to you that that approval would not be forthcoming?

20 A. No. As far as I could tell at each stage, each correspondence the work was likely to be imminent.

Q. Yes. And do I take it that was still your understanding as at 22<sup>nd</sup> of February?

A. Yes.

25 **CROSS-EXAMINATION: MR MCLELLAN**

Q. Yes Mr Gardiner could we have Mr McConnell's email to you put up please 116.0014.42? If you can just highlight the first line please. It says "By the way Vincie phoned and has ordered the cordon removed". That's on the 3<sup>rd</sup> of February. With reference to that or anything else you can recall do you know when the cordon and this is the cordon on the Lichfield Street frontage was removed?

30

A. It would have been on or around the 3<sup>rd</sup> of February.

Q. You weren't involved in that process I take it?

A. I certified that the securing works of the parapet had been completed.

Q. And it –

A. But I didn't ask the council to pull down the cordon no.

5 Q. But your certification that the Lichfield Street works had been completed was what the council required before removing the cordon?

A. That's correct.

**RE-EXAMINATION: MS SMITH – NIL**

10 **COMMISSIONER FENWICK:**

Q. Point 11 of your document you say "I noted the north-west corner of the building (where there is a party wall with 112–114 Lichfield Street) had moved outwards slightly towards Lichfield Street. Given the small amount of movement (I recollect about 20 millimetres) I did not consider  
15 there was any structural concern but I would monitor it for future movement". Now a movement of 20 millimetres presumably implies there's a crack 20 millimetres or two or three cracks which mount up to 20 millimetres or a movement between the walls and the floors which stand into that wall. What sort of movement would give you concern?

20 A. My recollection of this was that it didn't extend down to the extent of the floor or the roof that it was only quite localised around as I recall a window frame.

Q. There's a crack in the middle of the wall was it?

A. Yes between the wall and façade.

25 Q. Sorry between?

A. Between the internal party wall and the front façade but it was right at a window frame location.

Q. You have a structural explanation for how that crack formed?

30 A. Part of the central portion of the façade must have moved outwards slightly relative to the internal party wall.

Q. So without separating from the floor? It's hard to imagine that 20 millimetres of movement.



A. We have photos. I recall it being quite localised.

**JUSTICE COOPER:**

5 Q. Can I just ask you about this issue of your instructions that Mr Laing pursued with you to some extent. You were instructed initially by loss adjusters, is that right?

A. That's correct.

Q. And they're appointed by the owner's insurer?

A. That's correct.

10 Q. And presumably your fees are met by the insurer, are they?

A. I understand our invoices went to Cunningham Lindsey and they would have passed on those costs to the insurer.

15 Q. So when I look at the instruction of the, your engineer's instruction of the 4<sup>th</sup> of February which is the document suffix 1.14 I see that it's distributed to the loss adjusters Cunningham Lindsey, to the owner, to Fortis Construction Mr McConnell and to Mr Bell of Sergon, just remind me who, what Sergon are doing?

A. My understanding is that Sergon are contracted to Cunningham Lindsey to aid their loss adjustment.

20 Q. To advise them in relation to the costing issues, that sort of thing?

A. Yes.

Q. So then you arrive at your, your instruction is for the remedial works to be carried out as soon as possible?

A. Those are my words yes.

25 Q. All the fall areas cordoned off. Now is the way it works you issue an instruction such as this and you don't expect to hear any more about it until the work's been done and you'll call in to check it's been properly done. Is that generally the way you envisage it would be working?

30 A. I had hoped that the insurers would have, that evening or the following day said please proceed and that they would have undertaken the works immediately and I would have, well I mean that would have been the end of it to be honest. There would have been no certification process.

Q. I see.

A. It was only a securing –

Q. So as far as you were concerned it was something you might never hear about again, it would just be done?

5 A. Yes I mean I would have obviously seen it as I drove past that I would have seen that the work had been completed.

Q. So presumably you don't know why the works weren't done, do you?

A. I've seen correspondence between the loss adjuster and Sergon but I don't know what matters arose between the insurers as to why the works weren't able to proceed immediately.

10

1534

Q. Well when you wrote that instruction and recommended these works be done as soon as possible, all the fall areas cordoned off, who did you think would be actioning the cordon issue, if that was the alternative that in the end had to be pursued? Or was that really none of your business as you saw it?

15

A. I guess I had envisaged that the contractor would do that. I mean the contractor for instance on Lichfield Street had arranged for its removal, on the 114 Lichfield Street had arranged for its removal so knew the right people to talk to, to get that sort of work done.

20

Q. So who, who would be paying for the erection of the cordon?

A. Well if it was the council it would have been, if it was a council cordon it would have been a council cost.

Q. So I'm just wondering how as a matter of practice how you saw this working. Supposing that's, it's going to have to be cordoned because there's going to be a very long delay about these works or they might never be done.

25

A. Yep. I guess there are –

Q. Who would be paying the construction company in that scenario to do anything about a cordon or what would oblige the construction company in that scenario to do anything about a cordon?

30

A. I guess it would be relatively low cost to construct such a cordon so, but you're right, there was no insurer instruction, no guarantees that if the contractor had put together the cordon that they would be paid for it.

Q. Well, so why would you assume that they would do it?

5 A. I guess, I mean I had anticipated that the works would be done. I thought it unlikely that the cordons would be required but certainly if they weren't then given that I was in close dialogue with a contractor they would have approached, perhaps approached the council to arrange such a cordon or at least notify me that –

10 Q. Well if the work wasn't proceeding what would be the point of them notifying you? Would you have, if you'd been notified that the works weren't proceeding would you have seen it as your duty to do something about a cordon?

A. Yeah if there was continued delay and I was the only person aware of it  
15 then it would have, more than likely, fallen to me.

Q. So how, how would you have acted then?

A. I would be guessing.

Q. Do you think that somebody in your position would be assisted if there were a legal obligation directly to bring to the attention of a council a  
20 dangerous condition which existed in a building of which you'd become aware?

A. Sorry, the question, could you clarify?

Q. Well let me ask this, you didn't regard it as your duty to bring this state of affairs to the attention of the council. Is that, is that right?

25 A. I had made them aware of the issues.

Q. How?

A. By sending them a copy of this report.

Q. Which report is that?

A. This is the, the 9<sup>th</sup> of February details. They were sent to Mr John Barry  
30 on the 9<sup>th</sup>.

**MS SMITH:**

Sir the email that's about (inaudible 15:38:44), it's LIC1160017.3 whereby he sends the report that he's referring to there to the council.

**JUSTICE COOPER:**

5 Q. Well in that, in that email you suggest to the council that work is progressing but in fact you were the only one that was doing any work at that stage, weren't you? The work wasn't progressing. The work had been designed. Isn't that the point?

A. Yeah, well, was in the process of getting insurance approval.

10 Q. So was it the case that if the work didn't progress you'd told, the council knew that you'd recommended it and if there were then to be any subsequent issue about a cordon well that would be a matter for the, for the council. Is that, is that your position?

A. I mean I, I was hoping to keep the council informed of –

15 Q. Yes.

A. – the hazards that had been identified and the actions that I suggested be taken.

20 Q. There's nothing, there's no mention of the cordon issue though in either this email or your instruction of the, if that's what it is, of the 9<sup>th</sup> of February.

A. The instruction of the 9<sup>th</sup> was attached to my site instruction of the 4<sup>th</sup> which covered the, as soon as possible but if, if –

Q. And referred to the cordon?

A. Yes.

25 Q. So your instruction of the 4<sup>th</sup> of February in which the cordon issue is raised had been given to the council. Is that right?

A. Yes my understanding is that attachment has both the 4<sup>th</sup> plus the 9<sup>th</sup> and the attached details.

30 **JUSTICE COOPER ADDRESSES MS SMITH**

**QUESTIONS ARISING: MS SMITH - NIL**

**WITNESS EXCUSED**

**COMMISSION ADJOURNS: 3.41 PM**

**COMMISSION RESUMES: 3.59 PM**

**MR MCLELLAN CALLS**

**PAUL ARTHUR CAMPBELL (SWORN)**

Q. Your full name is Paul Arthur Campbell?

5 A. Yes.

Q. And you are a structural engineer at, (inaudible 16:00:23)?

A. Yes I am.

Q. If you could read your brief of evidence (inaudible 16:00:28)

A. I hold a BSc in –

10

**JUSTICE COOPER:**

He can take this as read, we are familiar with Mr Campbell Mr McLellan if that is all right with you?

15 **MR MCLELLAN:**

Yes Your Honour.

**JUSTICE COOPER:**

You can go to paragraph 2.

20 **EXAMINATION CONTINUES: MR MCLELLAN**

A. Okay. From the 27<sup>th</sup> of December 2010 till the 22<sup>nd</sup> of February 2011 I was seconded to Christchurch City Council to carry out inspections under the directions of its building recovery office. The council warranted me for this purpose and I held a warrant card confirming this.

25 The inspections I carried out for the council and which are the subject of this enquiry were all re-inspections of buildings that had previously been inspected by other engineers or building inspectors. The inspections I carried out were limited in scope and generally involved only exterior observations. They were not detailed structural engineering evaluations,  
30 nor did they involve calculations of structural capacity or strength assessment. I was not provided with building plans or drawings. I did not have information from GNS or any other sources about likely future

earthquake or aftershock events other than what was publicly available. I assumed the aftershocks would continue according to a normal aftershock sequence, namely a sequence involving decaying or diminishing aftershocks. I did not anticipate that the CBD of Christchurch would be subject to a greater shaking and intensity event than it received in September 2010.

The council provided me with a copy of the form entitled 'Engineers Re-inspection of damaged buildings completed by the council as to the address of properties to be inspected'. I was aware of the council's earthquake-prone building policy however my re-inspections were not designed to quantify building strength according to that policy. Re-inspections were intended to identify any obvious change in building status such as remedial works or demolition. Confirmed damage caused by the September event or aftershocks to make an assessment of the existing placard of the building and to change to a more serious status if that was appropriate. To check existing cordoning and if appropriate recommend changes or additions to cordons. Some inspections were specific to a particular issue, for example to check whether works which a building owner had been instructed to carry out had been completed. I generally spent most of my time whilst seconded to the council in the city inspecting buildings. I met with other inspectors and council staff most mornings to be briefed on any current issues and to receive the documents relevant to the buildings which I was required to inspect. The council staff specified which buildings I had to inspect. After inspections were carried out my completed re-inspection forms were handed back to council staff to process recommendations and to make decisions on enforcement action such as Building Act notices.

Counsel assisting the Commission has asked me a number of questions about my re-inspection of the building at 116 Lichfield Street. I cannot recall why I was directed by the council to inspect this building. Based on my re-inspection form I think I was responding to a request to confirm the status of the rear of the building and dangers from a neighbouring property.

Q. Can I just stop you there Mr Campbell and I will just ask you to read aloud the words that you have written on this form under the heading 'General comments'?

5 A. Okay. Looks like 'Honey Pot parapet fall hazard fixed', thank you, and then there is a hyphen '- requires CPENZ signoff' and then on the next line down, 'Not sure which number of building rear damage applies to!' and then the third line, 'Fences can be moved once Honey Pot sign off, it looks like works done, case manager to chase'.

Q. Thank you. From paragraph 10?

10 A. 10?

Q. 10.

15 A. Okay. I believe that I was directed by council staff to see whether remedial and securing works had been carried out. My report notes that it 'looks like Honey Pot parapet fall hazard fixed' which is a reference to the neighbouring building at 114 Lichfield Street. This indicates that my inspection was for the purpose of checking whether building works had been carried out as required by the council. I also observed the cordons on the Lichfield Street frontage. I was not involved in the original decision about the cordons for this building. My notes on my re-  
20 inspection form say that the fences could be moved once Honey Pot, the neighbouring building had sign off, meaning that a chartered professional engineer had certified that the remedial works had been carried out correctly. It looked to me as if the works had been done but I noted, 'case manager to chase'. I had no further involvement with the  
25 building or cordons until after the 22<sup>nd</sup> February earthquake.

Q. Just a couple of additional questions Mr Campbell. You've been present during today's hearing I think, is that right?

A. Yes, I have.

30 Q. And you've heard evidence about damage that was observed by Mr McConnell and Mr Gardiner on the Manchester Street –

A. Yes I have.

Q. – frontage of the building. Did you observe that damage yourself?

A. Not that I can recall.



Q. When you referred in your report to 'not sure which number building rear damage applies to', can you just explain what part of the building that is a reference to?

5 A. Yes, I entered the light or stairwell that has been talked about this morning off a little access or alleyway off Manchester Street. When I went in there it was evident that there was a void between the two buildings but because there was no numbering or anything like that on the inside I wasn't sure which walls applied to which building.

10 Q. I wonder if you could just have a look at WIT.GAR.0001.21. That's a photograph that Mr Gardiner has produced. Is that the area that you're talking about?

A. Yes it is.

15 Q. Your inspection report is undated. Now by reference to the contents of your report and the further action that you recommended, before fences can be moved, have you been able to assess when you think that inspection took place? Your inspection?

A. Based on the evidence I've heard this morning it would appear those cordons went some time around the 3<sup>rd</sup> or the 4<sup>th</sup> so using my re-inspection sheet I assume that I inspected before that date.

20 Q. Thank you, just wait there and answer any questions.

**JUSTICE COOPER:**

Q. That is before the 3<sup>rd</sup> of –

A. February.

Q. – February?

25 A. Yes.

**CROSS-EXAMINATION: MR ZARIFEH**

Q. Mr Campbell, Mr Gardiner in his evidence said at paragraph 29, "I recall someone from the council being present on site that day," that's referring to the, I think the 2<sup>nd</sup> of February?

30 A. Mhm.

Q. Who appeared satisfied with our assessment tabled in the report dated 2 February but I cannot now recall who that person was”.

A. Yes.

Q. Would that have been you?

5 A. I have no recollection of that meeting.

Q. Okay. And he says ‘who appeared with our assessment tabled in the report’. Do you recall seeing that?

A. Not that I recall seeing that.

Q. You probably seen it on the screen today?

10 A. Yes.

Q. Had you seen that before?

A. Not that I can recall.

Q. So looking at your reinspection form.

A. Yes.

15 Q. Helps you remember as to the reason you were there?

A. Correct.

Q. Which it sounds like given the timing, I know you’re not clear of the exact date, but given the timing was to check on these securing works that the cordon was there because of?

20 A. Correct.

Q. Okay. And what information do you have or did you have before going to the address apart from the form with the address on it?

A. We would have a, typically we would have a property file. Now it would always contain one of those reinspection forms. Sometimes there would be email correspondence. Sometimes there would be a map in it. It varied. Sometimes we would actually have some stuff from structural engineers. You know some notes to go and have a look at something. For this particular property I’m sorry I can’t recall what was in the file.

25

Q. And who would determine what degree of detail you were provided with? Not you from the sound of it.

30

A. No the building recovery office which I was part of they were in the process while we were undertaking these inspections of developing individual files for the properties so we would just get handed a bunch of

files in the morning. Could you please try and get through these inspections today.

Q. Right. So is it fair to say the inspections were pretty rapid?

A. Very rapid yes.

5 Q. And not to any degree of detail?

A. Depending on the level of detail you're talking. They were external only typically and they were something akin to the level one inspection although in some cases they weren't even that detailed. They were just can you just whip out and please have a look to see whether this has  
10 been done.

Q. So did they need an actual engineer to do them given that lack of detail?

A. That's debatable. You'll have to ask the council why they sent the engineers I'm sorry.

Q. You referred to not being sure which number the, number of the building  
15 rear damage applied to.

A. Yes.

Q. Do you know why you knew there was rear damage?

A. I can't recall but if you ask me to guess, I've heard this morning that there was some USAR reports et cetera that were talking about rear  
20 damage so that could have been a document in the file. I'm unsure sorry.

Q. There's a rapid one, level one rapid assessment on the 27<sup>th</sup> of  
25 December. It's a council one. Under the comment says "Rear parapet wall damage to 110" that's 110 Lichfield. You might have had a copy of that.

A. I might have had a copy of that in the file.

Q. Right. So what was the point then of you, were you supposed to inspect that rear damage or what?

A. Some of the reasons we were going out where there were section 124  
30 Building Act notices they had an expiry date so where those expiry dates were getting close the council needed to figure out whether the remedial work had been done or not to know whether to reissue notices and I think there was a –

Q. 31 January I think.

A. I'm not sure on the date I'm sorry but with my reinspection form you'll see that there was a second form on the back of that and I think from memory I ticked that it was to remain red. You see if you see down the bottom of the form .47.

5

Q. And was that because it hadn't been signed off at that stage?

A. There were two reasons there. One the fire escape down the back still had four hazards. Now they were removed from the public so with that building being red stickered they posed an acceptably low risk to the public because you actually had to go down a laneway to get to the back of them and then my comments about the removal of the barrier. They were pertaining to the next door neighbouring property which the Honey-pot or 114.

10

Q. Right. But it wasn't part of your job on that day to actually inspect the securing works? You didn't get up on the roof –

15

A. No I didn't get up on the roof.

Q. – to check that they were appropriate.

A. No.

Q. So the council then ultimately would simply rely on the CPEng certificate?

20

A. Correct.

Q. So it was really just a visit to see what if anything's been done?

A. That's what I'm assuming from the notes I've taken.

Q. And when the CPEng certificate came in was it the next day?

25

A. Yes.

Q. You wouldn't have had any role in that as an engineer looking at it and checking on it?

A. I don't recall. I mean I have receipted these things on behalf of the council and we would check to make sure that the documentation was filled by a CPENZ engineer and the documentation was complete. If we had any queries about it we would go to the engineer issuing.

30

Q. So on this day that you went you apart from looking in the, at the rear parapets in that stairwell area you didn't inspect the building at all?

A. I can't recollect the level that I inspected the building other than using my notes.

**JUSTICE COOPER:**

5 The building being?

**MR ZARIFEH:**

116.

**CROSS-EXAMINATION CONTINUES: MR ZARIFEH**

10 Q. 116 Lichfield.

A. Correct. So other than going off that reinspection form I just can't remember the day sorry.

**JUSTICE COOPER:**

15 Q. Well in fact you say you inspected 116 Lichfield Street at all or did you inspect the next door building?

A. Well I've written some notes about the Honeypot which is 114 and I've also written some notes about the lightwell round the back and if –

20 Q. In which you say you're not sure which building the rear damage applies to, so you were in that area?

A. Correct.

Q. So what is the evidence that you inspected 116 Lichfield Street apart from that?

A. There is no other evidence that I'm aware of.

25 **CROSS-EXAMINATION CONTINUES: MR ZARIFEH**

Q. So that was what I was getting at. Apart from that inner stairwell area that you looked at you may not have looked at any part of 116 at all?

A. I may not have, no.

**CROSS-EXAMINATION: MR ELLIOTT**

30 Q. Mr Campbell, I'm just going to have a document shown to you ENG.CCC.0002F.148. This is entitled "Guidance to Monitoring and

Viewing Barricades”. Did you ever see this document during your time with the council?

A. Not to my recollection. I remember downloading this in the report once it was on the Royal Commission website and I note that this is still draft version four –

5

Q. Yes. Your Honour it's dated draft four dated 15, 16 September 2010 down the bottom left hand corner. So you don't recall seeing this during the period that you were with the council at all?

A. Not that particular piece of paper no.

10 Q. Did the council give you any guidance or training or instructions about how to monitor and review barricades at all?

A. It was certainly a topic discussed. I've said in my evidence that we had meetings in the morning. You'll have to appreciate after the events we were learning about systems as we were going because there was no sort of rule book about what to do immediately after an earthquake. It was certainly talked about in the content of what is, I'm just quickly scanning this. The content of that is not inconsistent with some of the conversations we had.

15

1619

20 Q. With?

A. It was part of the team that I was, sort of building recovery office.

Q. If the second bullet point could be highlighted please. I'm not sure if you can read that Mr Campbell?

A. “Factors determining the necessary clearance.” That bullet point?

25 Q. Yes, so there was some evidence earlier on about the location of that cordon on -

A. Yep.

30 Q. - Lichfield Street and I just wonder if, there's an indication there that where the parapet only is identified as the risk that, that results in a cordon of two metres outside the veranda fascia or three metres from the building.

A. Correct.

Q. So would the location of the cordon in the photographs we saw this morning be consistent with the parapet having been identified as a risk and distance being two or three metres?

A. Yes.

5 Q. I see. During the discussions you had in your team meetings at the council was there discussion about the tension if you like between usage of public roads and distance of cordons from buildings and how they may conflict?

10 A. Yes, discussion's probably the wrong word but we're certainly aware there was a conflict between different drivers of different user groups, yes.

Q. And what guidance or instructions were given to you about how to resolve those types of conflicts?

A. There was always an underlying philosophy of safety first.

15 Q. And what gave you that impression?

A. Well personally that's just part of the code of ethics that I've undertaken and part of my moral code. So if, if we thought there was a safety issue, that had top priority in my mind. Just a general feeling I got.

20 **JUSTICE COOPER:**

Mr Elliott I don't want to stop you but I do want to be satisfied that it's relevant to this hearing. We only had a cordon in Lichfield Street here. We had a building collapse, the frontage of it, to Manchester Street and that's really the subject of our enquiry. These other issues are perhaps matters for another  
25 day?

**MR ELLIOTT:**

Yes I agree Your Honour. Thank you. I'm conscious that we have a hearing on that and I just wanted to get the evidence with that in mind but I won't take  
30 that any further given the time.

**JUSTICE COOPER:**

Well Mr Campbell may well be back for that hearing.

**CROSS-EXAMINATION: MR LAING AND MS SMITH – NIL****RE-EXAMINATION: MR McLELLAN – NIL****COMMISSIONER FENWICK:**

- 5 Q. Mr Campbell you've clearly had quite a lot of experience in the assessment of buildings?
- A. Uh huh.
- Q. I wonder if we can have the WITJAR.0001.24 which shows the crack in the south-east corner of 116 which there's no way you could see.
- 10 A. Yes.
- Q. In fact we've heard evidence that it was very hard to see from the outside and you wouldn't have seen it even if you'd looked from the outside. The question I want to ask is, if you had seen that crack, knew that that crack extended down through the floor below, was a width of about half the width and the width of the crack had been put at
- 15 somewhere between 10 and 15 millimetres by eye and about half that width of the floor, what would your reaction have been?
- A. My first thoughts are it's obviously signs of movement and I would suspect it would be the façade moving towards Manchester Street
- 20 rather than the wall in plane going the other way. Having, not having seen evidence on it going right through the, the brick and I'm assuming it could be two or three skin, I just don't know the details, I'd certainly want to do a little bit more poking around in that building before I dismissed it.
- 25 Q. We did establish that the crack went up through the roof –
- A. Yes.
- Q. – and down to the, right through the floor, right through the storey below
- 
- A. Mmm.
- 30 Q. – and that there was a crack about half the width of that along between the wall and the floor.



A. I would be looking very carefully at where there were any other return walls in the building and I would be looking very carefully at what I considered to be the load paths remaining for that façade.

**5 JUSTICE COOPER:**

Q. My question is why?

A. Sorry?

Q. My question is why would you be doing what you've just told Commissioner Fenwick you would be doing?

10 A. I'd want to understand what was going on a, a little bit better than just looking at that photo so –

Q. Why?

A. Sorry?

Q. Why would you want to understand better what was going on?

15 A. Well the, there is evidence, in my opinion there's evidence that that wall has moved out towards Manchester Street and –

Q. And that's the evidence we're looking at is it?

A. Correct.

**20 COMMISSIONER FENWICK:**

Q. Would you consider it possible with a floor which had joists coming into the wall, would you consider that that could still be effectively connected to the floor when it had that movement of the order of at least five millimetres?

25 A. It would depend –

Q. Without detailed examination?

A. Yeah it, it would depend on the connection that there was. If it was a fixed-only connection and it sort of moved back to its almost original place I would be saying it's potentially got the same capacity as what it  
30 always had but I'd, I'd want to understand it a little bit better and I'd, I'd probably try and, on the spot there I'd probably try and lift a floor tile or something like that just to get a better flavour for what's going on.

Q. But you'd want to, certainly that, you'd want to do a more detailed examination before you, you dismissed it?

A. Yes I would.

**QUESTIONS ARISING: ALL COUNSEL – NIL**

**5 WITNESS EXCUSED**

**MR ZARIFEH CALLS****PETER C SMITH (SWORN)**

Q. Mr Smith you –

**5 JUSTICE COOPER ADDRESSES MR ZARIFEH**

Now Mr Zarifeh I think the message may have got through to you that we will sit after 5 to finish today so you should just proceed as you would if there were no, well within reason, as if there were no time constraints. I don't want anything to be truncated simply because it's half past four.

**10 EXAMINATION CONTINUES: MR ZARIFEH**

Q. Mr Smith you have prepared a report for the Royal Commission on the failure of this building at, that was at 116 Lichfield Street?

A. I have

Q. And we have that report. I want to get you to speak to it but I really want you to summarise the relevant portions rather than refer you directly to the report and get you to read it and I think you've been sitting and listening to the evidence so you are aware of some of the issues that have come up and I think some of them touch on some of the matters that you raise. Can we start firstly with just a general description of the building and, in particular, its seismic system.

A. Certainly, certainly. The building is three storeys. It is located on a street corner and as a result has two very open façades and those façades offer very little in the way of seismic resistance. The building also has some fairly narrow walls around the stairwell at the back and the building is very prone to a torsional failure.

1629

Q. What do you mean by that?

A. That the ground floor in particular is very very open and the only mechanism, the only walls that help prevent the building swinging in a torsional twisting mode are the walls to the stairwell. There's very little else. There's one strong room on the ground floor which does help and that's again right at the back wall.

Q. A strong room made of what?

A. Concrete I understand, introduced when the bank had the premises going back 50s I think. There's another strong room on the first floor but that is sitting out, there's a plan attached to my report which...

5 Q. Is that page 17?

A. It's BUILIC 1160018.17 and that is, how do I best point it out? That area there is where the strong room was on the first floor and that was supported off the floor itself. If we can then move over to 18 which is the subsequent page. The strong room is that area back in there which is central on the building.

10

Q. So that's the first floor?

A. It's on the ground floor as I understand it. It's where that was. It was the main banking chamber for the CBA bank and the other one was sitting up in this sort of area on the first floor. If you look at that plan you'll see the façade is very open along Manchester Street, the same on Lichfield Street.

15

Q. So lots of windows?

A. Lots of windows, lots of open space. There was a wall on one of those façades which was removed, going back into the 60s.

20

#### **JUSTICE COOPER:**

Q. Which wall, which façade was it?

A. I need to check, Sir. It was on both. There was a brick panel in both the Manchester and Lichfield so I assume that one of those panels on Manchester and presumably that one on Lichfield was solid at some stage in the past. So what is left in the walls around this area and together with some strength from that wall had to resist the torsional loads on the building.

25

#### **EXAMINATION CONTINUES: MR ZARIFEH**

30 Q. So that would weaken it is what you're saying?

A. It's naturally relatively weak in seismic resistance.

**JUSTICE COOPER:**

Yes but what is the answer to Mr Zarifeh's question.

**EXAMINATION CONTINUES: MR ZARIFEH**

- 5 Q. Would it weaken it by opening it?
- A. By removing the panels on the street frontages, yes, yes.
- Q. And would that be obvious without looking at the plans?
- A. No, you'd need to go to the plans I think to determine that.
- Q. Well if you walk around the building though on each floor would you not  
10 see that it's been opened up?
- A. I think it would be very difficult to tell by just inspection. By the time they fix windows they conceal the removal pretty well.
- Q. In the strong rooms, am I right that you say that the ground floor one might have helped slightly and the first floor one might not have?
- 15 A. The first floor one sat on the floor and therefore added to the lateral load that the diaphragm was required –
- Q. – so the weight of it?
- A. Mmm.
- Q. So was it your typical unreinforced masonry building or not?
- 20 A. Is there such a thing? It's not untypical of a corner building which has very weak frame action or weak resistance on the street frontages and has all its strength in two longitudinal walls – one on the internal boundaries.
- Q. And being a corner building then, and unreinforced masonry, does that  
25 make it weaker than, say, the building next to it?
- A. It's likely to be. The building had timber floors and had a truss roof. All the external walls were unreinforced masonry.
- Q. That deals with the description of it. I want to turn now to the structural failure in the February earthquake which is page 9 of your report. I just  
30 want you to explain to us what happened in the failure of the building.
- A. It's evident from the photos of the damage following the earthquake and some of the photos that are in the report and elsewhere were taken after

some demolition was done by USAR and it's important to try and separate the two. Essentially the Manchester Street façade fell outward onto Manchester Street, possibly with a slight directional action towards Lichfield and it took with it part of the Lichfield Street façade so that there was a sort of triangular portion of Lichfield Street left in position.

5

Q. Is there a photograph that best shows that? There was one that was up on the screen before. Did you see that? Is that one that would help?

A. I think it would, yes. That was fairly much undisturbed because it had the rubble.

10 Q. BUILIC 1160014.53.

A. If you're looking at that photograph that's the wall or what is left of the wall off Lichfield Street. Remember we are looking at this from the other side of Manchester Street but, as I interpret the photo, that portion of floor is the portion that sort of coincides I think with the stairway although you'd expect the stairway to be evident there and it may be a little difficult to be precise. Certainly when the façade collapsed the floors that were supported off the façade collapsed as you can see from those elements. I believe those two beams there were introduced to support the strong room.

15

20 **JUSTICE COOPER:**

Q. Just looking at this photo you said before that with some of these photos it's important to try to separate out the effects of the search and recovery operation?

25 A. I believe this is reasonably realistic of what happened.

Q. I was just going to ask you that. This photograph shows the result of the earthquake?

A. Yes, yes I believe so Sir and, as I was mentioning, those two beams – one there and one there – I believe were the beams that were introduced to hold the safe on the first floor.

30

Q. So just for the record you're indicating two beams that can be seen to the left of the traffic lights?

A. Traffic lights yes, and that rather suggests that the floor over the full length of those beams collapsed as did the roof and other floors.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. And obviously the façade, Manchester Street façade –

5 A. Yes total collapse.

Q. – has come out onto the road, a total collapse of all levels?

A. Yes.

Q. Now I think you said in your report that the details .....

1639

10 Q. Now I think you said in your report that the details of the floor and roof connections to the Manchester Street façade are unknown.

A. Yes.

Q. Just tell us what you mean by that.

A. Well if you consider the restraint of the Manchester Street façade, you  
15 have a three-storey wall. It had virtually separated from the, at the south-east corner. It probably had very little connection at the return on the Lichfield Street corner so the restraint of that façade was very dependent on the connections between the floor at each level and the roof because that's what would prevent it from falling outwards.

20 Q. And it's unknown to you because of the damage that's been caused, correct?

A. Yes because unfortunately it hasn't been possible to inspect the connections between the roof, the floor joists and the roof trusses following the collapse so it is really unknown as to whether, what  
25 connection there was between those elements and the wall. It's also equally not certain how those steel beams supporting the first floor safe were connected to the wall.

Q. Now in an inspection prior to the 22<sup>nd</sup> of February earthquake, to establish the integrity of those connections or in fact to establish how  
30 they were connected, what would that have involved?

A. I think listening to the evidence, the brief of the inspection, it is quite relevant that there is clearly –

Q. I'm going to come to that as a separate issue. Just in terms of, you have just mentioned those connections.

5 A. I think looking at the crack that's in the south-east corner that one has to be concerned as to the extent of movement which has taken place and I think it would be prudent to open up some of the connections between the floors and the wall to ensure –

Q. And how would you do that, remove linings

10 A. It would probably mean removing the ceilings, yes. Most of these buildings have some degree of connection between the masonry and the timber with maybe every third or fourth joist might have a connector, steel connector and if they're in place and they're not stressed then one could have some comfort that the building hasn't been significantly affected.

15 Q. Well perhaps just dealing with that, I just want to come now to issues that arise and one of the issues is, one that's been touched on, you will have heard Mr Gardiner commented on one of your, the suggestions you made in your report. In his evidence he said that, perhaps not unlike a lot of engineers to be fair, he in his assessment in December and then in January he was looking at whether there had been any  
20 significant change in the structural capacity of the building before and after the earthquake or the aftershocks.

A. Correct.

Q. And so, firstly, is that your understanding of what he said?

A. That is certainly my understanding of his inspection.

25 Q. And was that in common with a lot of engineers in, in post-September inspections?

A. It is in line with the basic concept of the rapid assessments which is to identify whether there has been damage which would detrimentally affect the performance of the building in a similar event.

30 Q. Now this building, you've told us about some of the potential problems with its layout and the openings. In your report you talk about the, the layout of the building as being a potential problem. I think at the bottom of page 9 you say, "Given the historical damage from the previous



earthquakes and the poor structural layout of the building in the event of, in hindsight, it may not have been appropriate that the building should have been occupied or the public allowed access.”

A. Correct.

5 Q. What do you mean by the layout, the structural layout?

A. It's the, again referring back to the, it's neatness in torsional response that apart from the two boundary walls internally it does not have a lot of resistance to a torsional mode failure.

10 Q. And would that be obvious to an engineer inspecting it without the kind of plans that you've just referred us to?

A. I think it's, it's certainly appropriate that the structural form of the building is established in the inspections that are done.

Q. Right what I'm saying is can that be-

A. It's not part of the rapid assessment.

15 Q. No, no but an internal inspection as well, can that be established without plans is what I'm asking?

A. It's helped by plans but it should be able to be established without plans.

Q. Because these buildings are of reasonably simple construction aren't they?

20 A. Yes.

Q. And design?

A. Yes.

Q. All right.

25 A. I'll just comment, there really are two issues. One is the building as a whole; the other is looking at elements such as façades and parapets. So you need to be thinking both about the, the overall building which has a torsional problem but also the restraint of a façade or a parapet.

30 Q. Okay well Mr Gardiner gave evidence that certainly in his inspection in January and it's in his report, 26 January, that there were three areas of damage that he'd noted, one was the crack in the south-east corner that we've seen photos of -

A. Correct.

Q. - and the fact that it had increased since he'd first seen it. The second was a possible movement, he wasn't sure, in the middle of the Manchester Street façade.

A. Yes.

5 Q. Perhaps up to 10 millimetres he said, and the third was the movement in the north-west corner of 116 or where it met 114, a movement out of the façade in relation to the party wall.

A. Yes I'm not quite sure where that is occurring. It wasn't a significant movement.

10 Q. Sorry it was?

A. A significant movement.

Q. Yes now given the nature of the building, the fact that there had been the aftershocks, particularly the Boxing Day aftershock, post the September earthquake and those areas of damage plus others perhaps more minor, can you make any comment about the type of inspection looking at, whether there's been any significant change in capacity?

15 A. I think 4<sup>th</sup> of September was seen to the sort of Christchurch earthquake fairly much as to what could be expected in Christchurch. Boxing Day was seen as a sort of, the expected aftershock that could occur and I think there was a lot of confidence amongst the engineers that if a building survived those without too significant a damage then the building was likely to survive a future aftershock. Unfortunately February was an event of very different magnitude.

20 Q. Right so how, what I'm really asking you is you've made a suggestion as to the type of assessments that should be carried out post a substantial earthquake and as I understand it you're suggesting a more detailed assessment –

A. Yes.

25 Q. – rather than simply comparing of the capacity before and after should be carried out. Is that correct?

30 A. That's correct. I think, the crack in the south-east corner and the movements in both façades highlight the need to look at the interior of these buildings. If we are to provide some resilience in these old

masonry building which haven't been strengthened then I think, you know, they do justify a bit, a more detailed assessment and I think when looking at this one in detail it clearly is a building that does not have a large amount of lateral resistance.

5 Q. There was discussion about the friction –

A. Yes.

Q. – between the, I think the walls and the floors. Have you got any comment about that in terms of resistance?

10 A. I was concerned about the suggestion that that would be adequate but I think it comes back to this basic philosophy that if a building is no worse than it was that's sort of the conclusion that could come out of it but if there had been friction in it, it survived the two earthquakes and I think that's quite a serious issue that as engineers I think we've got to be satisfied there's a bit more resilience in a building than relying on friction at that connection.

15 Q. And so what kind of engineering inspection in general terms are you talking about that would have to be done if that was to be met?

20 A. I think the building is, is clearly relatively weak in its seismic resistance and there are signs of movement of façades. It does justify a much more detailed investigation as to how the façades are connected to the floors and probably some analysis work to ensure that it does have a, an adequate level of strength that could survive a reasonably foreseeable aftershock.

1649

25 Q. Okay and just talking for a moment about rapid assessments and I think you've made, you make a point in general terms about those. Some of these, the potential damage that affect a building structurally are not visible from the external examination are they?

30 A. There's clear evidence on this building that what was showing on the outside did not truly reflect what was happening on the inside and I think really the level one assessment as a means of determining building safety or conditions is unreliable.

Q. Right. And have you got any comment about this issue of cordons? You've heard the evidence about the observation of damage by Mr McConnell and Mr Gardiner's assessment of it and clearly there was the need for some sort of cordon was seen, perhaps it was a communication issue more than anything in this case, but would you have seen the need for a cordon given the damage and the comments you've made about the potential difficulties with this building?

A. I think that's a very difficult one to answer without having done the investigation and established just what the connection between the wall and the floors were. I think it does raise the issue that if the conditions which they were concerned about and they were much more limited to parapets especially up in the south wall, it's best to place a cordon and then lift it once the work's been done rather than to allow that period of grace.

Q. So is that a reference to what you say in your report that in a building such as this before occupation's allowed or even public are allowed within the fall zone there's a minimum strength assessment required?

A. That goes towards the, more the more dramatic collapse which tragically occurred and if we are to provide public safety against that in some of these buildings then those are the sort of precautions that would be necessary.

Q. And in relation to specific damage that might point to a parapet, parapets falling or even partial collapse of walls or parapets, what are you saying?

A. I think if there's localised damage as I interpret the question then the extent of the barrier obviously is less. The Christchurch recommendations seems very sensible.

#### **CROSS-EXAMINATION: MR ELLIOTT**

Q. Mr Smith, the photograph there demonstrates that the frontage has fallen out, right out from the building across the street. That phenomenon of a frontage falling not just down but out was known to

the engineering profession before the February and September earthquakes wasn't it?

A. Yes.

5 Q. The photograph there appears to have sections of the corrugated iron roof in the foreground. Are you able to explain how it was that that ended up there as well as the frontage?

A. It is difficult I think. We don't know the actual date of this photo.

Q. The date's at the bottom right hand corner I think.

10 A. It's possible that USAR have been through and shifted material and also looked for any deceased or injured people in the building. One would expect the roofing –

**JUSTICE COOPER:**

15 I thought that you agreed with me when I raised that point that this was a reflection of the position as it was after the earthquake?

**MR ELLIOTT:**

I think it's the best we have Sir.

20 **JUSTICE COOPER:**

Q. But the point of my question was to try and separate out photos and in accordance with a warning that you had given which may have been affected by the actions of the search and recovery team. Are you now saying that you're not sure that this photograph is of that nature, that is 25 to say one which reflects what the situation was after the earthquake rather than as modified by the actions of the USAR team.

A. I suspect that the roof would have been lying very much on top of the rubble after the collapse and it's possible that the roofing in particular has been disturbed by USAR operations. I think otherwise it does give 30 the best record that we have of how the building collapsed and possibly for the removal of the roofing than we would get if we saw roofing only.

Q. Have you noted the date in the bottom right hand corner?

A. Yes.

**CROSS-EXAMINATION CONTINUES: MR ELLIOTT**

Q. Mr Smith, this was just really a question from one of the families of those who died about whether the presence of the roof there gives you any information about the mechanism of failure at all?

5 A. I don't think it really adds any understanding for what we understand has happened.

Q. Thank you. You've made a comment in your report that the failure of the unrestrained wall was almost inevitable under the severity of loading that occurred on 22 February. I'm just going to ask you one or two  
10 questions about that. It won't take long. You say that the ground accelerations generated on February 22 would have been about 0.9G at ground level.

A. Yes.

Q. And 1.68 at roof level?

15 A. Correct.

Q. That is the top of building. You use the words "lateral coefficient" I think in your report and by that do you mean in lay persons' terms –

A. The way we design.

Q. – strength.

20 A. The load we put on a building during the design.

Q. And is it right to say that this building would not have had a lateral coefficient anywhere near 0.9G at ground level?

A. Absolutely not.

Q. Or 1.23G at roof level?

25 A. It would be lucky at 10%.

Q. This building was earthquake prone. Is it right to say that it would have had a lateral coefficient of no more than .2G at ground level and possibly less?

A. I think possibly considerably less.

30 Q. Are you able to say what you think it might have been?

A. I would be very surprised if it had anything under, well probably about .06G is my best guess. It's going to be very low.

Q. And if it was around .06G at ground level would its lateral coefficient at roof level have been more or less than that do you think?

5 A. The way we assess buildings is to look at the effectively what is a lateral load basis. It doesn't, it doesn't increase at roof level. We know the accelerations increase and we design around that but we would refer to it as a building that had a lateral load capacity of about .06G.

Q. And the .06G that you mentioned earlier on, is that the point at which the building would have been at risk of failure and collapse?

10 A. That is the theoretical figure. As we know the building did survive greater than that in the previous earthquake. This is where science and experience differ.

15 Q. GNS have said that the horizontal accelerations at the Botanical Gardens in the Boxing Day earthquake was 0.4G and 0.2G elsewhere in the CBD so it just seems lucky that it even got through the Boxing Day earthquake.

A. I think it was very short duration which assisted. These buildings are very complex and the flexible diaphragms and the flexibility of the walls can often help them survive those smaller earthquakes.

20 Q. Is it correct that an aftershock of far less force than that generated on 22 February could have provoked the collapse of that Manchester Street frontage given that its lateral coefficient was .06G?

A. Certainly something less than that would certainly have collapsed it.

Q. Something much less?

A. Yes possibly a third of that could easily have resulted in that.

25 Q. Theoretically anything above 0.06G?

A. Yes possibly. Well no I think sorry certainly not it would need to be probably more than around the .06G because we know it withstood the previous earthquakes.

Q. But earthquakes vary depending upon direction and so on don't they?

30 A. Exactly yes.

Q. Your recommendation about a minimum strength requirement. How does one nominate what that might be given the sort of discussion that we're having?

5 A. I guess one would hope that there is some progress made on strengthening these buildings at least one third of code. Those that have one third of strength of code don't need strengthening under the law. If we can make some progress on strengthening these buildings throughout the country then that possibly becomes a good starting point and then I think it needs a central body representing Government and local authorities and GNS science given the earthquake the level of strength that buildings should have if they are to be occupied and public allowed access.

10 1659

Q. Thank you, and finally the recommendation about the fall zone of the building being closed to the public. By fall zone can I just clarify that you are talking about an area of 1.5 times the height of the building?

A. Yes, correct.

15 Q. Thank you.

**CROSS-EXAMINATION: MR LAING**

Q. Good afternoon Mr Smith. Could I ask you to turn to page 3 of your report? About two-thirds the way down the page there you refer to work carried out in 1966, do you see that?

20 A. Yes.

Q. And you refer to removal of the parapets along both street façades, new reinforced concrete parapets were constructed where parapets were cut down?

A. Yes.

25 Q. Could I just ask you to look at a document for me, BUILIC116.0014.1? Could I ask that the bottom left-hand corner be focused on?

A. Yes.

Q. And maybe we can, can you read that or do you want it enlarged for you? That's it.

30 A. Well it's basically is showing the extent of parapet replacement that was done at that time.



Q. Yes do you see on the left-hand side of the building, 'chimney to be reduced and levelled'. Do you see those words?

A. Yes.

Q. And on the Manchester Street frontage, 'height parapet cut down.'

5 A. Correct.

Q. If I can turn to the diagram at the top of the page, have that back up please, and if we could focus in on the left-hand side of that top diagram. Can you just explain to me what that shows?

10 A. It shows the level of the parapet reduction. It shows a concrete band being placed along the top of the parapet and it shows some steel connectors between the truss and the new concrete beam.

Q. And that would to some extent have secured that parapet?

A. It was certainly an improvement over what would have pre-existed.

Q. Yes, thank you.

15 **WITNESS EXCUSED**

**MR LAING CALLS****STEVEN JAMES MCCARTHY (SWORN)**

Q. Your full name is Steven James McCarthy?

A. Yes it is.

5 Q. You have previously given evidence before this Commission?

A. Yes I have.

Q. Can we ask you to start, I believe we could start at probably paragraph  
6 Your Honour?

**JUSTICE COOPER:**

10 Yes that is perfectly convenient thank you.

**EXAMINATION CONTINUES: MR LAING**

Q. Start reading at paragraph 6 Mr McCarthy?

A. Sure. Events between 4 September 2010 earthquake and 22<sup>nd</sup> February  
2011 earthquake.

15 A level 1 rapid assessment was carried out on 7 September 2010 and  
the building received a green placard BUILIC1160016.5. On 22<sup>nd</sup> of  
December 2010 the USAR damaged building reconnaissance form was  
completed at 1.10 pm BUILIC116094.24. The council's understanding  
from the records available is that a rapid level 1 assessment of 110–116  
20 Lichfield Street, the Honey Pot, was undertaken at 4.00 pm on 27  
December 2010 and a green placard was issued BUILIC1160014.25.  
The council's records indicate that a separate level 1 rapid assessment  
of 116 Lichfield Street Ruben Blades building also took place on 27  
September 2010 BUILIC116.0016.6. A red placard was issued for 116  
25 Lichfield Street as a result of this assessment. The council has been  
unable to locate a copy of this assessment. I note that it appears that  
the address 116 Lichfield Street was sometimes included on forms  
related to the Honey Pot. The Honey Pot was located at 114 Lichfield  
Street. Ruben Blades was a separate building to the Honey Pot building.  
30 As the entrance to Ruben Blades was right next to the Honey Pot it  
appears that this street name and number was included in error with the  
Honey Pot assessments however it appears that there was a separate

assessments carried out specifically for 116 Lichfield Street, Ruben Blades. The two buildings, Ruben Blades and Honey Pot, were assessed separately. Following 27 December level 1 rapid assessment of 116 Lichfield Street Ruben Blades the council issued the proprietors

5 116 Lichfield Street with a Building Act notice on 29 December 2010. BUILIC116.0014.26228. The council's records also indicate that at 30 December 2010 a cordon had been installed on the Lichfield frontage of 116 Lichfield Street. The council does not have a record of the date of installation of this cordon. On 19 January 2011 the owner of the

10 building, Eelco Wiersma, emailed the council and sent a letter to the council saying that it was unlikely the repair work on the building would be completed by 31 January 2011, the deadline stipulated in the 29 December Building Act notice. BUILIC1160014.33 and BUILIC116.0016.7. On 2 February 2011 the council received a CPEng

15 certificate and an engineer's report from the owner's engineer, Sean Gardiner of Structex BUILIC1160016.10216. The report was attached to an email dated 2<sup>nd</sup> of February 2011 with the subject line 'cordon at 112–116 Lichfield Street' BUILIC116.0016.8. The CPEng certificate form had the heading 112–114 Lichfield Street. The CPEng certification

20 form and engineer's report certified that it was safe to remove the cordon on Lichfield Street. It appears that whilst Sean Gardiner's report stated that it was for 112–114 Lichfield Street he had intended it to be 112–116 Lichfield Street cordon as the subject line of his email to the council is 'cordon at 112–116 Lichfield Street'. Council officers recall the

25 area of potential risk in respect of the damage to 116 Lichfield Street was contained within the cordon in this area of Lichfield Street. On 2 February 2011 the building recovery office sent the building owners a letter regarding the outstanding s 124 notice and notifying the building owner that the council was going to re-assess the building to ascertain

30 whether the building still posed a danger to people or other property. The letter was a standard letter sent to all building owners who still had a s 124 notice outstanding for the building. BUILIC 116014.36–37. On 3 February 2011 the case manager, John Barry, met Sean Gardiner at

116 Lichfield Street. Mr Gardiner advised the case manager that the cordons on Lichfield Street could be removed and that there was limited access to the fire escape and upper levels of the building. Neville Higgs, an engineer contracted to the Council, advised the case manager to contact the building owner and advise that it was the building owner's responsibility to make sure that entry was restricted to the areas identified by Mr Gardiner. Mr Higgs asked the case manager to confirm with Mr Gardiner that areas could not be accessed BUILIC 116.0016.7.

1709

10 The Council relied on Mr Gardiner's advice in removing the cordon on Lichfield Street and it seems to have been removed at some time between 4 February and 18 February 2011 after the report was received from Mr Gardiner. When the cordon was removed from 112–116 Lichfield Street in response to Sean Gardiner's report it appears that the Building Act Notice for 116 Lichfield Street was not removed as further action was subsequently taken by the Council in relation to that notice. On 7 February 2011 the owner of 112–114 Lichfield Street, The Honey Pot Cafe, phoned the case manager requesting information about the building. The case manager advised him that as Sean Gardiner's update the bottom floor was occupiable and the upper floors were not. The bottom was re-inspected by Paul Campbell, a contract engineer working for the Council on a date unknown to the Council but likely to be in late January or early February. The engineers' re-inspection of damaged buildings form states: "Fences can be moved once Honey Pot sign off". On 9 February 2011 the case manager, Mr John Barry, received an email from Sean Gardiner attaching a copy of an engineer's instruction.

**JUSTICE COOPER**

30 I think you can take that as read because it's been in the evidence already. Go over to the next page, 23.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PAGE 23**

- A. The engineer's instruction form is a document. The engineer's instruction form stated: "Following advice from contractor we have revisited the property to view further damage from recent earthquakes." The instruction form went on to note that there was horizontal and diagonal cracking to the south wall, vertical cracks to the south-east wall, vertical cracks to the parapet and degraded parapet bricks on the south wall, bulging bricks and severe cracking to upper level walls and damage to the stairwell which had been previously noted, and a loose dropped corbel stone to the east wall. At the bottom of the engineer's instruction form it states: "These high level bricks and stone blocks are potential fall hazards to the areas directly adjacent and should be secured as soon as possible or the fall areas cordoned off. We suggest securing works be undertaken as per contracted to wait for insurer approval." The case manager notes has the following entry on 9 February 2011: "Email from Sean saying owner received letter reference section 124, advising it was a standard letter delivered to all with section 124 notice." He also attached the latest reports in regard to securing works added to the file. The Council does not appear to have any further file record. However, it has contacted the case manager, Mr John Barry, who was overseas. He has informed the Council that it is normal practice if he received any communication that any risk was identified with the building he would ask an engineer to go and visit the building in order to consider whether any further action was required.
- 25 Application of the Relevant Legislation for the Council's Earthquake Prone Policy:
- The building was noted as possible earthquake prone building in the Council's records. The building would have been deemed to be earthquake prone under section 66 of the Building Act 1991 and it appears that this state has continued to apply when the Building Act 2004 was introduced. After the commencement of the Earthquake Prone Policy in 2006 the building consent application for a significant alteration was received, the strength of the building structure would

5 have been assessed and dealt with in accordance with the policy. In April 1951 a building permit was granted for the removal of parapets. The top sections were removed under this permit. In June 1968 a building permit was issued for alterations to the building and the parapets were lowered further. Reinforced concrete band was added to the lowered parapets and on the east and north face reinforced concrete band was connected to the existing roof trusses by three by half inch steel bar and seven-eighths inch bolts. This work would have secured the falling hazard but not increase the overall strength of the building.

10 **EXAMINATION CONTINUES: MR ZARIFEH**

Q. Mr McCarthy in relation to this building there was a level 1 rapid assessment 7 September. We don't have a copy of that form, correct?

A. Correct.

15 Q. But we have the file note and the Council records indicating a green sticker for that building?

A. Yes.

Q. That would just be an external examination as we've heard previously?

A. Correct.

20 Q. Then on the 27<sup>th</sup> December, so following the Boxing Day aftershock, there seem to have been at least two assessments – one by USAR, a damaged building report – and a level one rapid assessment?

A. Yes.

Q. Well firstly as you've said it is not clear which buildings have been examined. The items of damage seem to relate to 110–114, correct?

25 A. That's correct.

Q. And it was really as a result of that damage that the Building Act Notice was placed on 116?

A. Yes.

30 Q. So in fact from the Council's point of view there wasn't any damage, well they weren't aware of any actual damage to 116?

A. That's correct.

Q. And if the owner had not had or the owner's insurers had not had engineers looking at it, leaving aside the make-safe works of the cordons on 110–114 the Council might have had nothing more to do with that building. Is that correct?

5 A. That is correct, yes.

Q. And that perhaps highlights or feeds into that suggestion of Mr Smith's doesn't it of post a large earthquake in the kind of assessments that need to be done?

A. Yes it does.

10 Q. You said that on the 2<sup>nd</sup> of February this letter was sent from the Building Recovery office, paragraph 16 –

A. Yes.

Q. – and it said that the Council was going to re-assess the building to ascertain whether the building still posed a danger to people or other  
15 property?

A. Yes.

Q. So who was going to re-assess the building?

A. It would have been one of our engineers – Mr Campbell or Mr Higgs or one of the other CPEng engineers that we engage.

20 Q. In relation to this building who did re-asses it?

A. Well it wasn't done because the works on 114 which affected that were considered and the cordon removed. Also the owner's engineer had notified us that work was proceeding on the job so we were aware that there was work underway.

25 Q. So that's in relation to the risk of parapets falling on Lichfield Street if the cordon was there?

A. Yes and also the fact that the –

Q. – the stairwell.

A. Well the stairwell issue and we had Mr Gardiner advising us that work  
30 was underway.

Q. Okay.

1719

**JUSTICE COOPER:**

Q. So the work what you referred to in that last part of your answer is the work that was detailed in his instruction of the 4<sup>th</sup> of February which was eventually sent to the council later that month?

5 A. That's right.

**CROSS-EXAMINATION CONTINUES: MR ZARIFEH**

Q. So as far as the council would have been concerned what was the purpose of Mr Campbell's reinspection then?

10 A. I think we were a little unsure of the exact reason for that. It may have been that he was going around with Mr Gardiner around the exterior of the property to have a look but I, I'm, we're not clear of reason for that.

Q. Okay. Well from the council's point of view what was it expecting of those reinspections by engineers? Was it expecting a reassessment of the building?

15 A. I think this was primarily focused on the Lichfield Street cordon and making sure that a removal of the cordon was going to be, was appropriate.

Q. So in this case from, I think Mr Campbell said he couldn't recall it but looking at the form itself that told him that it had a specific purpose and sometimes they did?

20 A. Yes.

Q. So again there wouldn't from the council's point of view have been any internal inspection of the building at any stage?

A. That's right.

25 Q. And in fact as Mr Campbell said the make safe or securing works were not actually inspected by him. The council were relying on the CPEng certificate that Mr Gardiner put into the council, is that fair?

30 A. In respect of the cordon I have to be careful that we don't mix up the two issues. CPEng certificate was in regard to 112 to 114 principally. There was that parapet issue so that was being certified as having been resolved. The cordon was then able to be removed.

Q. Right.



A. There was still a red building notice on the Ruben Blades building. That still hadn't been reconciled so that was still going through a process.

Q. And that was to do with the parapets in this internal, round this internal stairway?

5 A. Yes. So our expectation would be that at the completion of the works that Mr Gardiner was overseeing he would give us a certificate to say those works were completed.

Q. And the Building Act notice would be removed?

10 A. And the Building Act notice would be removed. I want to add something here if I might. Those make good works, those securing works are done under section 41 of the Building Act. Those can be done but there is a certificate of acceptance to be applied for in respect of that work. That would inevitably lead to a structural assessment or requirement for a structural assessment and would lead to because those were structural works would trigger the earthquake prone policy.

15 Q. So are you saying that when the works had actually been done.

A. Yes.

Q. There would have been a requirement to what 67% then?

A. Yes.

20 Q. Okay. But of course the February earthquake intervened didn't it?

A. Yes it did.

Q. And was that extension granted that Mr Wiersma sought to the 31<sup>st</sup> of May?

25 A. Well clearly there was communication going on. I don't think it was formally yes there was an extension but there was communication going on.

Q. Right. Just turning to this engineer's instruction, a copy of which was sent to Mr Barry by Mr Gardiner on the 4<sup>th</sup> of February.

A. Yes.

30 Q. And you've set out what it says on that engineer's instruction in paragraph 23 and 24 and you said that the council does not appear to have any further file records, para 26, but you'd spoken or had spoken to Mr Barry and he's informed that the council it is normal practice was

that if you received any communication and any risk was identified he would ask an engineer to go and visit the building in order to consider whether any further action was required. From the council records was an engineer assigned to go to the building, council engineer?

5 A. I'm a little unsure about that. It appears not but there was that interaction between Mr Higgs and Mr Campbell with Sean Gardiner.

Q. Right but isn't that in relation to –

A. Right through that period.

Q. Isn't that in relation to the cordon on Lichfield Street?

10 A. Principally yes.

Q. Right. And that was on the 3<sup>rd</sup> of February because Mr Gardiner of course didn't raise this issue of the cordon on Manchester Street until Mr McConnell had raised it with him on the 3<sup>rd</sup> of February?

A. Yes and subsequently received by us on the 9<sup>th</sup>.

15 Q. Right. So what I'm saying is after the 9<sup>th</sup> then is there any record that you have from the council, in the council's files that shows that an engineer went as a result of that advice?

A. No there's not.

20 Q. And that would probably be consistent wouldn't it with the file note is that, whose file note is that you referred to on, in paragraph 25?

A. It's Mr Barry's notes.

Q. Is that the one that we have tab 13 which is BUILIC1160014.35, coming up in a minute. That's Mr Barry's file note? The piece that you have quoted from the bottom.

25 A. Yes it is.

Q. All right. So he was the case manager?

A. Yes he was.

Q. And it would seem that right at the end it just says "Added to file". That's the material from Mr Gardiner.

30 A. Yes.

Q. And clearly you have added it to the council file but you say that it looks like nothing further was done?

A. That's correct.

Q. And if as Mr Barry told the council that if he received any communication that any risk was identified which even given the fact this was in an engineer's instructions once you look at the terms as you set out it identifies a risk doesn't it?

5 A. Yes it does but I, but the work was very much in Mr Gardiner's hands at that stage and the contractor and the owner working on site and I think that council expectation was clearly that that work was proceeding to secure any hazards or any risk on that building, interim securing works.

10 Q. So would you say that if that's a notification to the council that we need a cordon, that's not clear enough?

A. Absolutely. It's in no way clear that there's an expectation that the council will put up a cordon.

Q. And is this an isolated problem in terms of communication of a cordon issued or not from your experience or can you not –

15 A. I believe it is quite isolated.

Q. When you say quite isolated has it happened before from your experience?

A. Not to my knowledge.

#### **CROSS-EXAMINATION: MR ELLIOTT**

20 Q. Mr McCarthy, this handwritten note from the engineer said "These high level bricks and stoned blocks are potential fall hazards to the areas directly adjacent and should be secured as soon as possible or the fall areas cordoned off". You are not suggesting that that doesn't indicate a risk of danger are you?

25 A. Not at all.

Q. And Mr, the case officer's stated practice is that where any risk was identified with a building his normal practice was to ask an engineer to go and visit the building to consider whether any further action was required. So it's clear that in this case for whatever reason the case manager departed from his normal practice by failing to enlist an engineer?

30

A. Yes.

1729

Q. What should have happened was that an engineer such as Mr Campbell would have been engaged immediately to go out and do a, an inspection of 116 Lichfield Street to identify danger. Is that right?

5 A. To put it into context I think Mr Barry understood that the securing works were being undertaken or were imminent and so it appears that he didn't do that. But that would be, where there is a risk that is that would be normal council procedure. Yes.

10 Q. And as part of that procedure the engineer such as Mr Campbell would have contemplated whether or not a cordon should be put in place around the building?

A. Yes he would, yes he would.

15 Q. And the council's guidance for the placement of cordons included consideration of whether a cordon of 1.5 times the building height should be in place around the building?

20 A. Correct. That's part of the consideration, yes. There's alternatives. Clearly the, an engineering assessment could drive a different a different solution. It might not be a co-ordinate, it might be bracing, it might be agreeing with the contractor on site as would be normal when you've got a construction site that the contractor would actually secure the, the hazard as opposed to the council.

Q. The council must put the cordon in place, mustn't it? Only the council can do that or a contractor on the council's instruction?

25 A. Contractors would normally come to the council and say, we're doing some works on this building. We need to, we need to put a cordon in to protect the public and they would actually address that issue. That's normal building practice.

30 Q. One of the questions that one of the families of one of those who died has is the considerations that may have come into play, in fact the absence of a cordon on Manchester Street. So I'm just going to ask you one or two short questions about that. So I'm just going to ask you one or two short questions about that. Quoting from, we can produce it if you like but quoting from one of the council letters to the owners

following up a section 124 notice the council says, "Public safety is our priority and we are steadily working towards getting Christchurch City back to business as usual which includes reducing cordons around dangerous buildings improving traffic flow and enabling pedestrians and vehicular access to all of our cities business and public spaces." Would you agree that the objectives of public safety and that of getting the city back to business are, in a sense, incompatible?

5

A. No not at all. In the context of that letter, what that is saying is, we want to hand back responsibility for buildings and building security and safety back to the owner. So the owner takes responsibility for the building and one would expect that falling hazards were addressed so that there is no longer a reason to actually have a cordon on the, on the footpath or the road.

10

Q. An owner can't erect a cordon across a public street can they? Only the council can do that?

15

A. No often contractors do it but they do it with our permission.

Q. They can't do it without your permission can they?

A. No they can't.

Q. Can you assure the families of those who died that the absence of a cordon right across Manchester Street was not brought about by any desire to get the city back to business as usual by keeping Manchester Street open?

20

A. Yes I can give them that assurance, that's absolute.

Q. I'm going to ask you whether the Christchurch City Council agrees with the recommendation by Mr Smith which I'll read to you. He says, "Prior to occupancy of an unstrengthened URM building or public access within the fall zone," which he defined as 1.5 times the building height, "After a significant earthquake the controlling authority should establish minimum strength criteria and require an engineering assessment establishing that the building meets the minimum strengthen criteria." Does the Christchurch City Council agree with that proposition?

25

30

A. I think that's a very good recommendation of Mr Smith's and indeed, indeed post-February the CERA 1 to, section 51 notices are able to,

we're able to do that so we ask for a full detailed assessment before the buildings are reoccupied or allowed to continue to be occupied. So CERA is writing to all of the owners of every commercial business in, in the city and they are asking for those detailed engineering assessments to be done.

**JUSTICE COOPER:**

Q. Can I just clarify, you're not finished?

A. I was just going to say and then, then there is authorisation for the building owner to occupy or continue to occupy the building from CERA.

Q. Can I just clarify Mr Elliott's question to you was whether the council agreed with Mr Smith's recommendation. You said it was a good recommendation but the council presumably as the council would not have considered that recommendation. Was that the reason you gave a slight – you answered a slightly different question?

A. I think I'm just trying to put it into context. Of all of the buildings in Christchurch Sir that, we have a whole lot of unreinforced masonry buildings. Those, and the approach was to get them back to the pre-September strength at the time we're talking about and to negotiate, where structural repairs were made to negotiate with the owner to actually get full strengthening in accordance with the earthquake prone policy underway. So that's a slightly more complicated answer to your question than just agreeing with Mr Smith's recommendation.

Q. Yes but my point's a different one and it doesn't matter if you don't want to answer it but I was wondering whether there was a distinction here between what you think is a good idea and what the council has adopted as a matter of policy?

A. The council will make a, a recommendation to the Commission I believe around the minimum level strength and they will be making that recommendation over the next month I believe so –

Q. But these, in the submissions that are going to be, we're anticipating –

A. That's right.

Q. – receiving imminently.

A. Yes, yes.

Q. Yes.

A. So I'm, and that hasn't been fully resolved by the council as yet.

Q. Right.

5 A. But I'm sure that something will follow.

**CROSS-EXAMINATION CONTINUES: MR ELLIOTT**

10 Q. Mr McCarthy if that recommendation or the process recommended had been in place after the 4 September earthquake, am I right in saying this was an unreinforced masonry building which was unstrengthened and so it would have been red stickered, a cordon put in place at 1.5 times the building height until it could be assessed against minimum strength criteria?

A. It would be easy for me to say yes to your, your question but the implications –

15 Q. (inaudible 17:37:45) Mr McCarthy.

A. The implications of that are, given the number of those types of buildings in the city, would need to be seriously considered. But you're right, if that were the policy that's what would, would have ensued.

20 Q. And just for the sake of those present Your Honour I anticipate this will be a discussion that will be held before the Commission during that hearing on post-earthquake inspections during which there will be further evidence from the council, I think, Mr McCarthy is that right on a number of matters tying into the post-inspection period generally?

A. Yes.

25 Q. Just finally, am I right in saying that the Christchurch City Council initiated a seismic risk survey back in December 1991 on this building?

A. Yes we did.

Q. And that the council officer recommended that immediate action be taken to address any seismic risk?

30 A. Yes.

Q. And that the Christchurch City Council initiated no further action on the building between that time and the September 2010 earthquake?

A. Certainly that notice wasn't followed up, that's correct.

1739

Q. Can you tell us why?

A. I think I've previously addressed this in other hearings but –

5 Q. Yes there are.

A. – it's important that other people hear it, that new people hear it. The situation was there was a change in the rules at the time and the transition from the 1991 Building Act. The test by the council was to demonstrate before we could force strengthening on building owners was to prove that the building would suffer catastrophic collapse in a moderate earthquake. We weren't able to do that without a full engineering assessment of the buildings and given the number of buildings that wasn't able to be done so what happened was that that notice was put on to the property record as a notification for future owners that there were issues and that strengthening would be likely to be required at some stage in the future.

10

15

Q. And I think part of the council's further information to be provided will address this topic is that right?

A. Say that again.

20

Q. The council is providing further information to address this topic of its actions or inactions?

A. Yes we are.

Q. In that period?

A. Yes we are.

25

Q. I expect that will be a topic for discussion at that later hearing as well.

A. Yes.

**JUSTICE COOPER:**

Q. What's the width of Manchester Street?

A. 25 metres at a guess.

30

Q. At a guess?

A. Well I don't exactly know. It's from the, if you take in both footpaths I would expect it would be –



Q. These streets historically were laid out in accordance with repeating patterns weren't they? I just thought you might happen to know what the width was.

5 A. I think each lane is around about five and a half metres generally so we're probably talking four lanes plus the width of the footpaths which would be about two and a half, three metres so combined around about the maths escapes but something in the order of 25 to 28 metres.

Q. And the height of this building?

A. It would be in the order of 20 metres.

10 Q. So if there were to be a cordon one and a half metres, sorry one and a half times the height of the building it would cover the entirety of the street?

A. Completely.

15 Q. And it is not uncommon there were buildings of that height on either side of the street the cordons would significantly overlap?

A. Yes.

**RE-EXAMINATION: MR LAING**

20 Q. Can we have a look at paragraph 6 of your evidence again please, paragraph 6? I think that you said in answer to a question from my friend Mr Zarifeh that the level one form was not available. Could you have a look at BUILIC1160016.5?

A. It appears to be there. Sorry my apologies for being incorrect in that answer.

25 **WITNESS STOOD DOWN**

**COMMISSION ADJOURNS: 5.45 PM**

30