

COMMISSION RESUMES ON 24 JANUARY 2012 AT 9.32 AM**JUSTICE COOPER:**

Today the Royal Commission will enquire into the collapse of buildings
5 situated at 89, 91 and 93 Cashel Street in Cashel Mall. The buildings are
situated on the northern side of the mall. As the result of the collapse of those
buildings Jillian Murphy, Shane Tomlin, Melissa Neale and Christopher
Homan lost their lives and the Royal Commission wishes to express our
deepest sympathy to their family and friends.

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MR ZARIFEH:

Commission pleases the hearing as Your Honour's indicated is into the failure,
today the failure of three buildings really but in effect concentrating on one
building that I have referred to as 91 Cashel Street but it has been referred to
15 by other numbers but there are three buildings. I've referred to them as 89,
91 and 93 Cashel. They were side by side on the north side of Cashel Mall
around the middle of Cashel Mall. 89 Cashel Street is the building that's
closest to the west also referred to as 87 to 89 and even 89A.

20 **JUSTICE COOPER:**

I've seen a reference to 89A.

MR ZARIFEH:

Yes sir. And it's depending on the shop numbers in that building but it's one
25 building. That was a two storey unreinforced masonry and timber building
with a lightweight roof and appears to have been built around 1878. Originally
the building was not listed as a heritage or protected building. Next to that to
the east of that building was 91, sometimes referred to as 91A, or both. That
was a three storey unreinforced concrete and masonry building with a
30 lightweight roof on timber trusses and that building was not listed either as a
heritage or historic building. And the building next to that 93, also known as
93 to 95 Cashel Street, was a two storey unreinforced masonry structure, it
seems built around 1885. That does not appear to have had heritage or

historic places classification either. The buildings at 89 and 93, the ones on either side of 91, were owned by Hereford Holdings Limited and the director of Hereford Holdings is giving evidence today is Antony Gough. The building in the middle at 91 was owned by Westmall Properties Limited. Tracy Gough is the director who's the brother of Antony Gough and he's giving evidence on behalf of the owner of that building.

It appears that 89 Cashel Street had little if any structural strengthening work carried out in the past. Correspondence on the council's file between the owners and the council in the 1980's indicates that the intention was to demolish the building and redevelop it. That building was occupied on the ground floor by two retail premises – DEVal The Fashion Shop and 3 Wise Men, a men's clothing shop. 91 Cashel Street, the building in the middle, also appears to have had no structural strengthening prior to the September 2010 earthquake. The building was occupied on the ground floor by a retail shop 123 Mart. The building to the east of 91, 93 Cashel Street appears to have had reasonably extensive structural strengthening carried out by Powell Fenwick consultants in 2007/2009. The Trocadero Bakery occupied tenancies on the ground and first floor. The bake house was on the first floor and the retail shop on the ground floor. T S Retail Store was also on the ground floor and I think I've missed out a tenancy but we'll come to that in a moment when the owners give evidence. There was a photographer's studio. Following the September 2010 earthquake it was noted in a level one rapid assessment by the council that 91 Cashel Street had a fallen chimney and accordingly the building was yellow placarded because of that. Then on the 1st of October a further earthquake damage inspection noted significant cracks in the parapet to the rear of the building requiring further investigation. A level two rapid assessment on 12 October noted that the chimney had been removed. It also noted a vertical crack to the full height of the external wall on the, on a staircase which needed to be checked by a CPEng engineer. This was categorised by the assessor as low risk and the building was green placarded. There was a level two rapid assessment of 91 Cashel Street on the 14th of October noting vertical cracks in the east and west walls. The inspection also noted other cracks in the street frontage at the joint between

the walls and horizontal members. A CPEng engineer's report was requested to understand the significance of these further. That inspection on the 14th was carried out by Mr Crundwell from Opus who is giving evidence. After the Boxing Day aftershock a level one rapid assessment of 91 Cashel Street

5 noted loose bricks either end, horizontal cracking. The building was red placarded. The council as a result served a Building Act notice on the owners of 91 Cashel Street recording those details and requiring work, make safe works to be carried out by 31 January 2011. That same building notice appears to have affected the properties on either side because of the danger

10 of they being in the fall zone of parapets. Opus engineers, in particular Andrew Brown, designed make safe work for 91 Cashel Street which was carried out by contractors, supervised by Opus and the work being certified in a CPEng certificate completed by Alistair Boyce of Opus. That was received by the council on the 31st of December and the Building Act notice and the

15 cordons that were in front of the building because of that red placard and Building Act notice were subsequently removed and that was the position as at 22 February.

In the February earthquake there was a complete loss of the third storey walls of 91 Cashel Street to the west, south and east, those walls falling both

20 inwards and, importantly, outwards from the building. As a result the west wall fell onto 89 Cashel Street and the east wall fell onto 93 Cashel Street and severe structural damage was caused to all buildings as a result.

Shane Tomlin was working at the Trocadero Bakery at 93 Cashel Street on the first floor. A work colleague, Dominee Sherrity was standing near Mr

25 Tomlin when the earthquake hit. After the earthquake stopped she saw a hole in the floor where Mr Tomlin had been standing. Mr Tomlin was located conscious but badly injured on the ground floor under the Trocadero premises under the first floor in the TS Retail store. He was taken to Christchurch Hospital but subsequently died as a result of the injuries he sustained.

30 Jillian Murphy was shopping with two friends in DEVaL, 89 Cashel Street or 89A was the actual address within that building. It is unclear whether she and her friends were inside the shop when the earthquake hit although this

appears to be the case. The group appears to have exited the shop but Mrs Murphy was seen by one of her friends heading back into the shop. At the time the building collapsed, trapping Mrs Murphy under rubble. Her body was recovered under collapsed building material.

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Christopher Homan and his wife Christine Homan were in Cashel Street standing in the vicinity of 93 Cashel Street when the frontage of the buildings – 89, 91 and 93 Cashel Street – fell away, pinning Mr Homan's legs under rubble. CPR was performed on him but he died at the scene.

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Melissa Neale was walking in Cashel Street with her mother Margaret Neale intending to go to the Trocadero Bakery for lunch. They were a short distance from the building when the earthquake hit. Ms Neale's body was located under collapsed building material in the vicinity of the three buildings.

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The likely issues that the Commission will have to consider in this case are, in common with other unreinforced masonry building hearings, the application to Council's Earthquake Prone Policy to the building. Secondly, the assessment of the building following the September earthquake and the Boxing Day aftershock and, thirdly, an assessment of the efficacy of the make-safe work carried out following the Boxing Day aftershock.

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JUSTICE COOPER:

Q. Mr Zarifeh this photograph that's now displayed shows, I assume,
25 91 and 93 does it?

A. Yes sir.

Q. And 91's presumably lost the brick walls which would have covered the building at each end. Is that right?

A. Yes Sir that's my understanding and also in the front façade at the top
30 there's what appears to be red brick and white stone. That was underneath the concrete façade that can still be seen to cover the lower storey and that has come off in the front. That was put on some years ago.

Q. And the Trocadero to the right, it's difficult to see the ground floor there but the rest of the façade of that building seems to be reasonably –

A. – That's the one that had strengthening.

Q. I was just wondering whether that...

5 A. But that photo is slightly misleading because there's obviously been a clean-up of the debris.

Q. I understand that, yes.

A. So one can't see the extent of the damage to the material that fell away.

Q. Yes except that above ground level anyway it's reasonably intact isn't it.

10 There don't appear to be ... I've seen the photos of number 91 pre the earthquake. Trocadero, where's the best photograph of that? I was thinking prior to the earthquake...

A. Sir there's a photo. It doesn't show the full Trocadero but WITCRU0001.9.

15 Q. Yes that's number –

A. 91. And perhaps a better one is BUICAS91.0015.39.

Q. I was hoping we had something which showed the full face of the Trocadero prior to the earthquake but it may be somewhere in here. In fact there is one on the face of Mr Smith's report I'm reminded which is
20 BUICAS91.0022.1. Could that be enlarged. And what about a pre earthquake or pre February earthquake view of number 89. There's another photo on the front of Mr Smith's separate report for that but it's not a very good image.

A. I am just trying to find a complete one. Perhaps that one.

25 Q. Right so that shows the two levels. What was happening upstairs in that building?

A. It's unclear.

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30 **MR ZARIFEH:**

Sir, as to witnesses, the order that I propose to call them is in effect the reverse order of what appears on the hearing's programme. There are two people that are referred to as eyewitnesses, Beverley Broomhall and a

- Jan Smith. I just intend to call Beverley Broomhall. She will give some brief evidence of her observations, then leaving Anna Hodgson to one side for the moment. She is the property manager for Hereford Holdings Limited and may not be necessary to have her give vive voce evidence but then to call Antony
- 5 Gough, owner of 89 and 93 then Tracy Gough, the owner of 91, and then Martin Crundwell from Opus who inspected the building on 14 October as I indicated, then Andrew Brown who oversaw the make safe works, Alistair Boyce who signed them off and Mr McCarthy from the council and Mr Smith who has completed a report on the building.

MR ZARIFEH CALLS**BEVERLEY FRANCES BROOMHALL (SWORN)****JUSTICE COOPER:**

- 5 Mrs Broomhall, good morning. It is probably useless but I want to tell you just to try to be relaxed. This, from your point of view, should not be at all a threatening experience although you will probably find it difficult, I appreciate that. I am the chairman, I am Justice Cooper and on my left is Mr Richard Fenwick so we are here very interested in what you have to tell us.

10 EXAMINATION: MR ZARIFEH

Q. Your full name is Beverley Frances Broomhall?

A. It is.

Q. And you live here in Christchurch?

A. Mhm.

- 15 Q. You have got a statement in front of you dated the 19th of January you've signed?

A. I do.

Q. Can I ask you to read that, start at paragraph 2 because I have dealt with paragraph 1. Just read that in your own time to the Commission please?

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A. At the time of the 22nd February 2011 earthquake I was at work in the Trocadero Bakery in Cashel Mall where I worked as a cake decorator. I had worked for the Trocadero Bakery for three years prior to that. I worked the day shift on the top floor which is a bakehouse and a preparation room. I worked with Shane Tomlin and Jay. I do not know of his surname.

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4. September 10 earthquake. After the first earthquake on the 4th of September I rang Christine the office lady to find out how the Trocadero Bakery building had come through the earthquake. To my surprise she said, "There was no damage to the building." She also told me that Antony Gough, the landlord, had had the building earthquake-strengthened the previous year. I had no memory of this. I had just

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forgotten. I was told the building next to the TS shop, the 123 Shop was somehow leaning on to our building. I remember being told that in September. At that time we were off work for a week after the September earthquake. I don't have a clear memory of it but the 123 shop must have been green or yellow stickered after the first quake because the shop was open for business after the September earthquake.

Boxing Day 2010 – after the aftershocks on Boxing Day I was very wary of the 123 Shop building next door. I remember Jan Smith commenting about the cracks in the west wall adjoining our building. She thought it looked, that wall looked dangerous. She could see that each day she walked to work from the Bridge of Remembrance end of Cashel Mall. I was concerned about the parapet and the east wall adjoining our building. I used to walk into Cashel Mall from the other end, from the bus exchange so that was the end of the building I saw each morning. From time to time I used to sit out in the mall with my colleagues and say to each other, how did that building get a green sticker? Meaning the 123 shop.

22nd February 2011 – when the earthquake hit on 22nd of February 2011 I was in the prep room and had just finished making lamingtons. Shane Tomlin was in the bakehouse with Jay. I remember I yelled out to them “I'm coming in now” and then the shaking started. I thought oh, not another one and then realised it was a big one. I was in the entrance of the bakery which adjoins the prep room into the bakehouse. I remember looking up and saw all this horrible dust and muck coming at me from the bakehouse. It was difficult to breathe. Jay was yelling “Shane, where are you? Where are you?” at the top of his voice, then there was this almighty crash. I looked up and I could see the sky. Jay was yelling out to me asking me where I was. I had thought of jumping out the window which was next to the changing room because I was so scared. Jay found me in the prep room and insisted that we go down the stairwell and into the shop to get out. I had thought the stairwell could have been destroyed but it was still there so we went down the stairs in the dark to

the shop. I remember helping the lady who worked in the TS shop next door as she couldn't walk. I had a small cut on my left shin but no other injuries. I left Cashel Mall by heading in the direction of the Bridge of Remembrance. The last time I saw Shane Tomlin would have been five minutes before the earthquake struck.

Q. Thank you.

JUSTICE COOPER:

Thank you very much.

10 EXAMINATION CONTINUES: MR ZARIFEH

Q. Can I just ask you about the cracks that you saw. In paragraph 10 you talked about you were concerned about the parapet and the east wall adjoining your building?

A. Yeah.

15 Q. And you said you used to walk into Cashel Mall from the other end, from the bus exchange?

A. Yeah.

Q. So that's from the Colombo Street end?

A. Yeah.

20 Q. So as you walked towards your building you would have seen the east walls of the buildings?

A. Yeah.

Q. So just so we are clear that is the east wall of the 123, and 123 is the building at 91, what I've been referring to as 91 Cashel, the one in the middle –

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A. Yeah.

Q. – between Trocadero and the DEVaL fashion building?

A. That's right.

Q. So can you be any more specific about where on the eastern wall you noticed –

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A. Right at the top.

Q. Right.

A. Mhm.

Q. And can you describe what you saw?

A. Oh just such a muddle, I remember sitting with Jan and we used to say how the hell did it get green-stickered 'cos of all the cracks up there, but
5 I can't, I just can't remember.

Q. That's all right. So when you say cracks can you describe them, the length of them?

A. Big cracks, big long cracks.

Q. And how many do you think you saw?

10 A. I can't remember. There was a few up there but I just –

Q. Okay.

A. – it's just a jumble now.

Q. That's all right, and when you say parapet what are you referring to?

A. That thing, oh god, I don't, the thing at the top.

15 Q. So the thing on top of the wall?

A. Mmm.

Q. And is that where the cracks were?

A. Yeah.

Q. So not in the wall itself or both? Which one?

20 A. I honestly can't remember now.

Q. But anyway you were concerned enough to talk to others or mention it to others?

A. Yeah, well we used to sit out and there and just say, even Peter, the owner, we'd say how did that get green-stickered? You know, it looked a
25 bit dangerous leaning onto our building.

Q. And just tell us about the lean? And I appreciate you are not an engineer and you didn't measure it –

A. Oh god.

Q. – but is that the impression you had?

30 A. Yeah.

Q. So you can see a photo there on the screen –

A. Oh I see.

Q. – of the building, can we see there where you are talking about?

A. Up on this area here. That part there.

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Q. You've got a mouse there.

A. Okay, how do you work it?

5 Q. And use that to point.

A. Up here.

Q. So on the east wall.

A. Yeah.

10 Q. At the top there and is that piece going along the top what you're calling the parapet?

A. Yeah.

Q. And what about the lean though, which way did you think it was leaning, the building?

A. This way.

15 Q. Towards the Trocadero?

A. Yeah.

Q. Right. Much of a lean?

A. I can't remember, no, I don't know. I can't remember that.

CROSS-EXAMINATION: ALL COUNSEL – NIL

20 **QUESTIONS FROM THE COMMISSION – NIL**

WITNESS EXCUSED

MR ZARIFEH CALLS**JAN MARIE SMITH (SWORN)**

Q. Is your full name Jan Marie Smith?

A. It is.

5 Q. Do you live here in Christchurch?

A. Yes.

Q. And you too have got a statement, yours is dated 20th of January this year. Can I ask you to read that please to the Commission commencing on paragraph 2?

10 **WITNESS READS STATEMENT**

A. "At the time of the 22nd of February 2011 earthquake I was at work in the Trocadero Bakery at 93 Cashel Mall, Christchurch. I had worked at the Trocadero Bakery since June 2010. The building that the bakery was situated in is quite hard to describe. I think it was originally two-

15 storey with high ceilings and a mezzanine floor was added sometime later. My office was located on the mezzanine floor alongside the storeroom area. Above the mezzanine was the top storey where the bakehouse area was. If you were to look at the building from Cashel Mall the Trocadero Bakery shop was at ground level with two

20 shops alongside. The shop AS the shirt shop and TS were actually part of our building but had dividing walls and separate frontages onto the mall. After 4 September 2010 there was not any significant damage to our building after the September earthquake and my memory is that all the buildings around us re-opened.

25 Boxing Day 2010. After Boxing Day the bakery was delayed in re-opening for two weeks which I understood was due to the condition of the 123 shop building. The cracks in that building became much more noticeable after Boxing Day. I did notice cracks on both sides of that building. I thought that the cracks looked pretty bad. On the western

30 side you could see them as soon as you entered Cashel Mall from the Bridge of Remembrance end. You could see the cracks on the eastern wall from about halfway down Cashel Mall. I remember I spoke to Peter Kuipers the owner of the Trocadero Bakery about it. He stopped me

one morning and said to me about the cracks in our building. I told him I was more concerned about the 123 shop next door but he said it had been cleared. The Trocadero Bakery building had some minor cracks in it but they looked superficial compared to the 123 shop building.

5 22nd of February 2011. On the 22nd of February 2011 at the time of the earthquake I was working in the office. My daughter had just arrived and we going to have a coffee and something to eat in my office. There were two women working in the retail shop on the ground floor. Upstairs there were three people in the bakehouse: Shane Tomlin, Beverley Broomhall and Jamie-Lee (I do not know his surname). I had seen Shane Tomlin earlier that morning as usual. I remember that he said that morning that there had been earthquakes in Argentina overnight and that some whales had been beached somewhere. He said it would be our turn to get some quakes later that day. When the earthquake hit

10 I was sitting in my chair at my desk, my daughter was sitting at the end of another desk in a chair. Lots of shelves and computers in boxes fell down in my office. During the shaking there was a very loud bang and a crashing noise like something heavy had fallen onto the building but I could not see what. When the shaking stopped my daughter and I

15 cleared the fallen items out of our way and went downstairs to the ground floor. The two staff that were in the shop were still there with two customers. The drinks fridge had fallen across the doorway and was partially blocking the door. The fridge was too heavy to push back so in the end we all managed to crawl under the gap at the bottom and

20 scramble over the bottles out onto Cashel Mall. Once I got outside I saw Beverley and Jamie-Lee from the bakehouse but I did not see Shane. Once outside I could see that the veranda of the TS shop had come down and the rubble was lying everywhere. The veranda in front of my office was still there so I don't know if it was separate or joined to

25 the TS one. I then left Cashel Mall heading towards the Bridge of Remembrance."

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EXAMINATION CONTINUES: MR ZARIFEH

- Q. Thank you. Can I just ask you about paragraphs 10 and 11 of your statement about the cracks that you saw –
- A. Yes.
- 5 Q. – in the, the 91 Cashel Street which I think you've referred to as the 123 building.
- A. Yep.
- Q. You can see a photo on the screen in front of you of the eastern or western wall sorry of that building.
- 10 A. Yep.
- Q. Can you, perhaps using the mouse in front of you to point, can you just describe where you saw any cracks?
- A. Along that wall.
- Q. Right and –
- 15 A. Along there.
- Q. – and particular part of the wall.
- A. Just along that top part. Just there.
- Q. Okay so the piece that looks like a horizontal piece on the top of the wall?
- 20 A. Yes, yeah.
- Q. All right and how would you describe the cracks that you saw?
- A. They looked quite jagged and sort of deep, not sort of superficial like a thing that sort of looked because they didn't look, they sort of didn't look aligned. The cracks were sort of ...
- 25 Q. Were they horizontal or vertical.
- A. Verti – vertical.
- Q. Vertical. And how many do you think you saw?
- A. I really can't be sure. I knew there was a, a few on that, start of that wall, yeah.
- 30 Q. You said that they looked worse after Boxing Day?
- A. More noticeable. That's when I, more notice, really noticed them after then.
- Q. And on the east wall, or the other wall, did you see anything?

A. Yes.

Q. And how would you describe what you saw there?

A. The same as what was on the other side.

Q. The same position at the top?

5 A. Yeah.

Q. And similar cracks?

A. Similar cracks, yeah.

Q. Again horizontal?

A. Yeah.

10 Q. Sorry vertical.

A. Yeah.

CROSS-EXAMINATION: ALL COUNSEL – NIL

QUESTIONS FROM THE COMMISSION – NIL

WITNESS EXCUSED

MR VAN SCHREVEN CALLS**ANTONY GOUGH (SWORN)**

Q. Your full name is Antony Thomas Gough?

A. Correct.

5 Q. You're a director of Hereford Holdings Limited and that company is the registered proprietor of the properties at 89 and 93 Cashel Street as described. Is that correct?

A. That's correct. I'm managing director.

10 Q. And the actual description of those properties. Do you know them as 87 to 89A Cashel Street and 93 to 95 Cashel Street?

A. Correct, yes I do.

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Q. You have before you a brief of evidence. Would you read that brief please from paragraph 2.

15 A. Certainly. 87 to 89A Cashel Street was purchased approximately 40 years ago from Gough, Gough and Hamer. 93 to 95 Cashel Street was purchased approximately in 2005 by Hereford Holdings. I'm a director of Hereford Holdings and authorised by it to give evidence on its behalf.

20 The premises at 87 to 89A Cashel Street. This was a two storey building, ie., a ground and first floor. On the ground floor there were two tenants: 3 Wise Men and DEVaL. On the first floor there was suite six of Cashel Apartments which comprised a two bedroom apartment. The western wall of the property at 89 Cashel Street comprised a party wall with the adjacent property at 91 Cashel Street owned by West
25 Mall Properties Limited. The eastern wall of 91 Cashel Street and the western wall of 93 to 95 Cashel Street also comprised a party wall. When the former tenants of the building at 87 to 89A Cashel Street left in about 2003 Hereford Holdings undertook some significant
30 redevelopment work. It removed an internal wall and redeveloped the frontage to the building. This work was the subject of a building consent obtained from the Christchurch City Council and Hereford Holdings is looking to produce plans and copies of any materials on file held in

relation to that. It included strengthening work to the front of that building. This was by the installation of a steel frame which covered the front of the shop occupied by 3 Wise Men as tenants.

5 As a building owner Hereford Holdings and I as a director were aware of the requirement that ultimately the buildings would have to meet one third of what I understood was the current building code at that time and operative in terms of the Christchurch City Council policy in 2003, so the framing was part and parcel of that work that Hereford Holdings was aware would have to be undertaken over time to meet that standard.

10 Hereford Holdings undertook this work voluntarily and not as a result of any requirements imposed by the Christchurch City Council or our architects employed for that project. Hereford Holdings has always had a building programme pursuant to which upgrades in relation to buildings owned by it would be undertaken over time and usually

15 coincided with redevelopment work done for tenant fit outs or refits. 87 to 89A Cashel Street was not classified as a heritage building. Essentially it was a timber infill building with a mansard corrugated roof. The building had no structural walls in itself. It basically sat within the confines of the two buildings adjacent to it and was supported by the

20 walls of those buildings. I was not aware and have no record of any council initiated inspection for the building in terms of the council's earthquake prone policy. Any earthquake issue arose only in terms of building consent matters that came to the fore in terms of any refit or improvement to the building from time to time. Hereford Holdings was

25 regularly doing that to its entire building portfolio.

The earthquake on the 4th of September, 2010 did not affect 87 to 89A Cashel Street at all. However as a result of that earthquake the property at 91 Cashel Street owned by West Mall Properties Limited had two collapsed chimneys, one of which fell onto its own roof at 91 Cashel

30 Street and one of which fell on to the property at 93 and 95 Cashel Street. Both chimneys fell in an easterly direction. There was no effect to 87 to 89A Cashel Street and that property continued to operate on a fully tenanted basis from the 4th of September, 2010 without interruption.

There was no need to obtain any engineering report in respect to that building following the 4th of September, 2010. That is the 87 to 89A Cashel building. Indeed within the six month period leading up to the September earthquake Hereford Holdings had removed a brick wall at the rear of the property at 89 Cashel Street and replaced it with a timber and hardiflex material. At the same time a toilet was installed at the rear of the shop. All that work was subject to building consents obtained from the Christchurch City Council.

The earthquake on the 26th of December, 2010. I was overseas and issues arising from the earthquake were dealt with by Anna Hodgson, the property manager for Hereford Holdings Limited. Hereford Holdings was not aware of any other council inspections or requirements for upgrades following the 26th of December, 2010 earthquake other than those dealt with by Anna Hodgson.

As a result of the earthquake on the 22nd of February the property at 87 to 89A Cashel Street was required to be demolished following the obtaining of an engineer's report from Opus Engineering who recommended demolition. Prior to its demolition and in conjunction with those engineers I was able to organise for the tenant, 3 Wise Men, to be able to access the premises to remove their stock and they were successful in doing this. The building has since been demolished and the site is now clear.

93 to 95 Cashel Street, that's the Trocadero Bakery building. This is also a two storey building. It was purchased by the company in approximately 2005. I was not aware of any earthquake issues arising in respect to the building when it was purchased by Hereford Holdings Limited. There were three tenants – Trocadero Bakery, a company called TS 14 and a third shop AS Colour who all occupied parts of the ground floor. The whole of the second floor was occupied by the Trocadero Bakery. The ground floor being its shop and the second floor the bakery itself.

Approximately four years ago the company explored options to alter the buildings at 93 to 95 Cashel Street. There had initially been three

buildings back to back moving north to south away from Cashel Street. Hereford Holdings demolished the back two buildings leaving just the front building on Cashel Street and undertook earthquake strengthening to that remaining building. The party wall between 91 and 93 and 95 Cashel Street was strengthened on the 93, 95 Cashel Street or Hereford Holdings side with a steel frame which extended from the floor to ceiling of the ground floor. The strengthening work undertaken resulted in a concrete slab being installed in the basement void. This acted as an anchor to the steel frame which in effect enveloped the ground floor shop and was bolted to the floor joists and I believe the side walls. The strengthening work did not compromise the building's integrity which was already strengthened by significant timber beams extending north-south within the building. The steel framing was actually installed around the existing timber beams so as to not compromise their integrity. Steel beams were also installed to give integrity to the stairwell area leading up to the second floor bakery and a steel frame was installed within the frontage of the building. Hereford Holdings did not add any extra weight to existing steel framing within the building and all additional strengthening was undertaken at points below the existing structure. All strengthening was undertaken in respect to the ground floor area only. The higher level was timber frame with masonry exterior, heavy timber roof beams and a corrugated iron roof. I was aware this building was classified as a Christchurch City Council group four, Christchurch City Council plan listing and had a category two building classification under the New Zealand Historic Places Trust. There are two heritage buildings.

JUSTICE COOPER:

Yes.

30 EXAMINATION CONTINUES:

A. Following completion of the strengthening work to the TS14 shop Hereford Holdings then moved its attention to 95 Cashel Street which

was subsequently occupied by AS Colour. They were a new tenant and the opportunity was taken to upgrade and strengthen that shop as well. Similar steel work structures were put in place in that shop for earthquake strengthening and existing timber framing had been removed. Again the floor was dropped to footpath level with new timber framing and posts down towards the basement floor. The floor was chipboarded. The height difference between the as built floor in the basement was about 1.2 metres. That's the new lowered floor level. Again in respect to the building at 93-95 Hereford Holdings, that's Cashel Street, Hereford Holdings undertaking strengthening work to meet the one-third requirement of the then current Christchurch City Council Building Code. I believe all the work undertaken would have meant that the building met that one-third Code requirement. All engineering work in respect of 93-95 Cashel Street was undertaken under direction of Powell Fenwick, Engineers, and because of that they were the engineers Hereford Holdings consulted following the 4th of September 2010 earthquake. Immediately following the 4th of September 2010 earthquake the buildings at 93-95 Cashel Street remained open having been green stickered. My understanding in respect to the green sticker was that the building was safe to occupy and trade from. Although no structural damage was caused to 93-95 Cashel Street by the earthquake itself, that's the September one, as a result of the chimney from 91 Cashel Street falling onto the rear back wall of 93 Cashel Street and because of some cracking as a result of that over a window I took the view that Hereford Holdings should obtain an engineer's report notwithstanding the green sticker and engaged Powell Fenwick to undertake that inspection and complete a report. They did so and that report is produced. It confirmed the need for removal of the brick debris caused by the chimney collapse from 91 Cashel Street but did not recommend that anything else needed to be undertaken. It was, however, indicated that in due course Hereford Holdings would need to complete the grouting and re-painting of a slight crack above one window. What the engineer did however reveal was

that he considered the damage from the chimney falling onto the property at 91 Cashel Street was something that should be looked at. 91 Cashel Street is owned by a company, West Mall Properties Limited, in which my brother Tracy Gough owns. I contacted him to indicate that he had loose bricks on the roof which he needed to do something about. I offered, and he accepted, for me to instruct Powell Fenwick as engineers to undertake the inspection for him. I accompanied the engineers on that inspection. They completed a report. Because I was the only entity that had an account with them they sent that account through to Hereford Holdings which it duly paid. Hereford Holdings re-invoiced West Mall Properties Limited for that. However, the report was obtained solely for the benefit of West Mall Properties Limited and I had no further involvement with it. Other than removing the falling bricks, no other work was undertaken to the premises at 93–95 Cashel Street following the September earthquake.

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The next event was the earthquake on the 26th of December 2010 and I again refer to Anna Hodgson's evidence in that regard. I did not have any dealings with the Christchurch City Council in respect to the building following either the September or December earthquakes other than of course the dealings Anna had with the Council. When I returned from overseas in about January 2011 I was looking at the eastern wall of the property at 95 Cashel Street and noticed a slight lean of a parapet on the top eastern side of the building. This is further away from 91. What had happened was the previous work undertaken and prior to the time Hereford Holdings owned the building and which involved the installation of internal guttering and flashing had cut into the parapet area so that the flashing could be installed and then silicone sealed. However that cut was deeper into the parapet than was required for flashing itself and as a result of the earthquake that area had been compromised and appeared to have leaned further towards the east. There were no buildings affected by the lean as the immediate area to the east was a right-of-way which allowed access through to

Cashel Street. I got my builder to have a look at it and sought his recommendation. He advised the parapet should be removed and I authorised and instructed him to undertake that work. This work was completed in early February 2010. See photographs showing before and after construction. This type of random inspection was typical for me and I had undertaken similar inspections in respect of all the property portfolio owned by Hereford Holdings Limited. As a result I had authorised the undertaking of additional work which was not either recommended or instructed by engineers but was part and parcel what I saw as required work to ensure continuing safety of the buildings to in particular my tenants and the public.

Following the 22nd of February 2011 earthquake Opus Engineering was again instructed in relation to the preparation of a report and its recommendation was demolition of the property. Because of the continuing danger from the building at 91 Cashel Street engineers were unable to access our property at 93-95 Cashel Street but from an external inspection assessment said the building was irreparable and recommended demolition. It has since been demolished and the site is vacant.

In relation to the process of stickering buildings my general understanding was that there were three categories of sticker – a green, yellow and red sticker. A green sticker meant, as I have previously said, that I believed the building was safe to enter, occupy and trade from. I understood a yellow sticker meant that as a building owner I would require specific engineering advice and would only be able to access the building in consultation with engineers and/or the Council. I understood a red sticker meant that the building was unsafe, could not be entered and that again access would be restricted and require the involvement of an engineer who would have to determine whether or not the building could be safely entered or accessed at all. I also understood that there were levels of assessments undertaken in respect

to determination as to what sticker would be applied to a building. Level 1 assessment was, as I understood it, a walk around visual inspection of the exterior building only. This was a quick process. Level 2 I understood to involve the owner's engineers undertaking a more extensive inspection of the building but without removal of any internal linings or invasive-type inspection. A level 3 inspection would be a full engineer's inspection and a report including invasive testing, x-raying of internal structures and preparing a full and comprehensive report on the entire integrity of the building's structure. A full review of ground levels, site conditions and so on would also be undertaken at a level 3 assessment.

It is clear from the report obtained from Opus that demolition of the properties at 87–89 and 93–95 Cashel Street occurred because of the danger posed to those buildings by the collapse of the exterior walls of the building at 91 Cashel Street. Only level 1 and level 2 assessments were ever undertaken in respect to the buildings owned by Hereford Holdings and at which point demolition of both was recommended and eventually accepted by the company's insurers.

20 EXAMINATION CONTINUES: MR VAN SCHREVEN

Q. Mr Gough, you've made some attempts to locate other material which might assist this enquiry but some of that was located in a building which was inaccessible. Is that correct?

A. Correct and was subsequently demolished.

25 Q. Can you just describe what happened with that. It was subsequently demolished?

A. Yes it was demolished by Civil Defence. It was on Hereford Street.

WITNESS REFERRED TO PHOTOGRAPH 19.119

30 Q. That photograph does that show the eastern side or eastern wall of 93–95 Cashel Street?

A. Correct.

Q. And at the top of that wall that's facing the east is that the parapet that you were referring to at paragraph 35 of your evidence in relation to its removal?

5 A. Yes that's right. That's the one that I had removed and it's got a tin box over what was the parapet that was there.

Q. So that photograph shows the parapet following its removal?

A. Correct.

CROSS-EXAMINATION: MR ZARIFEH

10 Q. Mr Gough, you referred to a report from Powell Fenwick on 93–95 Cashel Street. Have you got a copy of that?

A. Not in front of me but my counsel certainly has.

Q. And you also referred to photographs of that work that was done on 93–95, before and after. Have you got those?

A. My counsel was given, I have a vast file of photographs.

15 Q. So we could get those?

A. We could get those.

Q. I just wanted to clarify a couple of things – 87 to 89A as you refer to it, you said that the upstairs was residential?

A. It was actually a hotel.

20 1032

Q. Right.

A. It was an apartment. I ran or Hereford Holdings ran an apartment hotel there and that was suite 6 of six apartments. The other five were in the adjacent building further away from 91 or closer to the Bridge of Remembrance so they were let on a nightly basis as a hotel.

25

Q. And so was it occupied at the time of say the February earthquake was it being used for that purpose?

A. It was but it was a change of tenants and only 10 minutes before we had just finished cleaning that apartment otherwise it would have had my cleaners in it and they would have been killed.

30

Q. Okay. Now you, just talking about 87–89A for a minute, you said that you had had some work done on it, fit out work?

A. Correct.

Q. Which you said included strengthening?

A. Correct.

Q. So you're talking about seismic strengthening?

5 A. Yes.

Q. And are you aware of the nature of that strengthening work? The reason I'm asking is because it didn't appear from the council records that I've seen that there was a record of strengthening work but you say that there had been some done?

10 A. Yes, significant. What was also significant even though the building on 91 Cashel Street fell on to it that steel frame actually held and saved people's lives so yes it was. There was several consents by council and it's, we don't identify necessarily saying this is earthquake strengthening, it's just part of our consents when we put them in. They have steel framing always in them.

15 Q. But presumably the steel framing is to make it stronger –

A. Yes.

Q. – for things like earthquakes or collapse?

A. Yes. Yes.

20 Q. So did you see the effect of the steel framing post the February earthquake?

A. Correct, I did. Because the building frontage got pulled off the steel framing was exposed and it's, it was sitting there, painted bright blue in again my photographic pile. I'm a, I like taking photographs and so I've got some very good photographs.

25

Q. So you've photos of that?

A. Yes, showing that steel frame in place.

Q. And when was that? You say about the tenants left in about 2003 so was that some time after then?

30 A. Yes, shortly after that. Whenever I had a change of tenancy I always did an upgrade and tried to make the premises better for the next tenant so at that time we addressed some earthquake strengthening.

Q. So is that a policy that on Hereford Holdings part that perhaps has changed in more recent years?

A. No, we've always done lots of earthquake strengthening.

5 Q. Well the reason I'm asking that is there is some correspondence, I don't know if you've seen it, on the Commission's file for this building and it's come from the council, and some of it's quite old now but it's correspondence with Hereford Holdings Limited and I think yourself for Hereford Holdings Limited about some of the buildings you own and in particular 87–89A and –

10 A. Are you sure, are you sure that wasn't with Gough, Gough and Hamer and not Hereford Holdings?

Q. Well I'll get it brought up so you can have a look.

A. Because I'm not Gough, Gough and Hamer although I'm a shareholder.

Q. Okay, we'll look at letter BUICAS0910019.4.

15 A. That's Hereford Holdings, yes.

Q. Yes, and the next page I think has got your name at the bottom of the letter. Okay?

A. Yes.

Q. So it's talking about a number of properties that you owned?

20 A. Correct.

Q. Correct? And on that second page that's up on the screen you refer to 87–89 in that first paragraph which you say, "Which we consider are the worst buildings, that one and another one in Hereford in these titles. We do however wish to rent or lease these premises out for the short term. Keen not to expend any major capital because of their relatively short expected life." So was it always intended to redevelop?

25 A. Yes it was but that doesn't stop us from doing earthquake upgrades.

Q. No, no I understand that but I'm –

A. Yes.

30 Q. – it just seems slightly at odds with what you were saying about the development programme.

A. What, we actually always aim to achieve one third of code. It would be better to achieve 100% of code but that is three times the strength so we were always wanting to achieve one third of current code.

Q. So you were aware of that requirement –

5 A. Yes.

Q. – and the earthquake prone requirement of one third?

A. Correct. When you look at that sentence I'd have to say it says these are our worst buildings because we have a lot of buildings and it's better to identify for council what we consider our best buildings and our worst buildings.

10

Q. Okay, so –

A. It's not saying that the building's about to fall over and it didn't actually fall over. It just wasn't designed to have a building crash into, through the roof over the top.

15 Q. No I understand that, yes. Just show you one other letter then 0019.8. Again a subsequent letter and under stage IV on the second page, so .9, refers to the Cashel Street buildings and talks about demolishing them in 1986. Was that the plan back then?

A. Yes that was certainly was back then.

20 Q. Right.

A. It changed obviously.

Q. Did that change?

A. Yes it did.

Q. To what retaining them and developing them?

25 A. Well retaining them and making them more useful. We actually did a huge amount of work on the adjacent building to the east, to the west of that 91–95 Cashel Street, that didn't include removing the entire frontage of that particular building so that's not unusual for us to move with the times and decide we might do things differently and spend a bit more money improving them.

30

Q. Okay, and 93–95 we know from what you've told us and I think there is a structural report on it that had had considerable structural strengthening carried out?

A. Correct, we spent about three quarters of a million on that building structurally strengthening it.

Q. So of the two that one was, had obviously had more money spent on (inaudible 10:39:28).

5 A. Correct. It was a, it was a masonry building whereas 87–89 somebody referred to, I think you did, that its brick walls at the front fell off. It didn't have any brick walls in it.

Q. Right.

A. It was just timber and corrugated iron and glass and a timber floor.

10 Q. And what, according to your brief, sitting on the walls on either side from –

A. Yes it just propped into its neighbours.

Q. – on the east of 91?

A. Yes.

15 Q. Well after the September earthquake you said that there was no effect to that building, 87–89A?

A. Correct.

Q. How do you know that? I presume you mean no structural damage?

A. Yes because there were no cracks in the building. The chimney didn't
20 fall onto that building, it fell away from it and we actually had, there was nothing looked different and the building had a green placard.

Q. So you were aware of it being green-placarded at some stage after September?

A. Yes.

25 Q. And you said that in terms of your understanding of the placarding that a green sticker meant that the building was safe to occupy and to trade from?

A. Correct.

Q. Did you understand that the green sticker also recommended that an
30 owner get an engineering inspection?

A. Not at that stage. Subsequently reading the paper I've realised that.

Q. Okay but at the time when you –

A. No.

Q. – saw the sticker or...?

A. I thought it was green to go.

Q. Right. And so as you say you didn't get any engineering inspection done. You just relied on the fact that it was green-stickered and that you couldn't see any damage? Is that fair?

5

A. Correct, that's, that's on 87–89 Cashel Street –

Q. Yes.

A. – from the September quake.

Q. Yes.

10 A. Different from Boxing Day when we did get an engineer's report on it.

Q. So in Boxing Day I thought you got an engineer's report on 93–95?

A. The engineer, Anna Hodgson's our property manager, organised the engineering reports on all our buildings around there.

Q. From Boxing Day?

15 A. Yes.

Q. And you weren't there for Boxing Day?

A. No I was overseas.

Q. You didn't come back till later in January?

A. Early January.

20 Q. So you weren't aware of exactly what was done in relation to the properties? You left it to her? Is that fair?

A. Yes she fully briefed me about what had done and kept me informed overseas.

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25 Q. And did you get a report on 87 to 89A following the Boxing Day because you told us you got one for the 93?

A. I would have to look at the file but I, I know the engineers looked at our buildings because it had a red placard on it so they had to have looked at it.

30 Q. The red placard we're going to hear was because of the danger from 91.

A. Correct.

Q. Was that your understanding too?

A. Yes. But, but even if you had that you still had to look at your building with a red placard.

Q. Right.

A. So it had to be signed off by an engineer before it could be re-opened.

5 Q. So was that your understanding?

A. Yes.

Q. That you had to get 87 to 89A and 93 to 95 signed off? And what level assessment? You said you were aware of these level 1, 2 and 3. Do you know or what was your understanding of what level had to be required to get it signed off?

10

A. No I don't but, no I don't know what level. A level 1 is done in 5 minutes, a level 2 generally takes half a day. But you'll get a chance to ask my engineers who are here.

Q. Okay but again Anna Hodgson dealt with that?

15 A. Yes. It would be fair to say that we relied on our professionals in the form of engineers. I'm not an engineer.

Q. I understand that.

A. And that's why we engaged them and take direction from them. It doesn't stop us going beyond what they've asked us to do and that's what I pointed out, that in a number of our cases after the Boxing Day in late January I went around all my buildings and said, "Oh, there's a few cracks here and there," and we did some extra work just to add a bit more protection.

20

Q. Okay. I think that Anna Hodgson's statement, she says that she spoke to Andrew Brown of Opus and asked him to look at your two buildings to see if they needed a full structural assessment.

25

A. Right.

Q. Was that your understanding or you were sort of –

A. I wasn't there but she would have done the correct thing and that would be right thing to do. Ask them, "Do they need a full structural". If they do they would have done it.

30

Q. And you've heard the two women, Ms Broomhall and Smith give evidence at the start of the hearing?

A. Yes.

Q. About cracks that they saw on 91. Can you make any comment about any observations you may have made about that building?

5 A. Well first of all it's a party wall so party walls are shared so they can give the appearance that they seem to be leaning or part of your own building. In fact they were. So that would have been, that would have been the reason why they might have felt that it was sort of leaning on the next building because it was. It was part of the next building.

Q. Okay but did you notice any lean?

10 A. No, no. Not at all.

Q. What about the cracking in the top, what you might call the parapet on the east and west walls of 91. Did you notice any cracking in that building?

15 A. No, nothing particularly different from what we'd seen before. There's, you have superficial cracks but I do know at Boxing Day that there was, detailed engineering work was looked at and that was organised by Anna Hodgson's.

Q. Okay.

20 A. You'll realise we used two different engineers. Boxing Day was Opus and before that we'd use Powell Fenwick and the reason was that Powell Fenwick had done our engineering work earlier and we have nothing against Powell Fenwick, they're very good, but it's just Opus happened to be the man on the spot that Anna ran into.

Q. Right Powell Fenwick you used for 93 to 95?

25 A. Yes we had done the original earthquake strengthening with them.

Q. Okay so you say apart from superficial cracks you didn't notice anything wrong?

A. No.

30 Q. Were you aware of the council inspections of 93 to 95 and the stickering?

A. Yes.

Q. Right and were you aware that it was, there was a yellow sticker and then a green, I think yellow maybe because of the chimney. Were you aware of that?

A. Yes that's why I called my engineers in.

5 Q. Were you aware of, I suppose you might not have been because you were away but on Boxing Day there was an assessment of 95, 93 to 95, it just says 95 on the form, 26 December and the comment, it's green stickered but it says, comments, "Cracking in front façade to be reviewed by structural engineer." Were you aware of that?

10 A. No, but if it was there then it would have been assessed by our engineers. The front façade is actually two layers. That building is, the façade that you see in the photographs, that's an architectural feature on the outside, has a totally independent, much stronger brick wall on the inside that the façade is tied to so any cracks you see on the outside
15 is to do with an architectural feature that was put on that building 80 years ago or whenever it was built.

Q. Okay and we can in fact see where the top half of that has come off in one of those photos that was shown this morning can't we and the old brick was underneath.

20 A. That's at 91, not 93/95.

Q. Sorry you're right, yeah.

A. 93/95 nothing came off.

Q. Okay well what about this cracking then in 93/95. You weren't aware of that?

25 A. Not particularly no. It was not part of the building we were, that was our building, then it didn't appear to be anything that was going to worry us.

Q. Okay sorry I've confused you. Go back to 93 to 95.

A. Yep.

Q. You weren't aware of an assessment on Boxing Day?

30 A. No.

Q. But Anna Hodgson would have dealt with that –

A. Correct.

Q. – if, if anything was required?

A. And it would be covered under her evidence.

CROSS-EXAMINATION: MR ELLIOTT

5 Q. Mr Gough you've given evidence in paragraph 37 of your statement of your philosophy I suppose that you saw as "required work to ensure continuing safety of the building to in particular my tenants and the public."

A. Correct.

Q. And you said to Mr Zarifeh that you were always wanting to achieve one third of code which I take it is a reflection of that philosophy?

10 A. Correct.

Q. When was the upgrading done to numbers 87 to 89?

A. I think my evidence shows that the most significant upgrade was about 2003.

Q. The most significant upgrade or the first upgrade?

15 A. No we've done several upgrades in that building. Every time I change a tenant I always do an upgrade. So it's a continuing programme and – but we put the steel framing in at the frontage that actually stiffened the whole building and that went in in 2003.

Q. When do you say the first upgrade to this building was done?

20 A. There were lots. We've owned it for more than 40 years so we probably would have done several, every 10 years I usually, it's, on average tenants seem to change every 10 years or have a need for a re-assessment of their premises so we would always do upgrades at that time.

25 Q. Are you able to answer my question about when you say the first upgrade was done or can't you say without reference to documents?

A. No I can't say I'm sorry. It's a bit too far away for me to realise exactly when but, but there are always, just like the council suggest that we did no upgrades, I would have to say it's been consented, even in the year
30 of 2011 was it, no 2010 we actually, the September time, just before that we'd actually done a big upgrade at the back of 87 to 89 Cashel Street. That was putting a new toilet block in, fully consented and we removed

the back walls and restructured them as part of that. It wasn't totally required but it's, the back wall was removed.

Q. Do you say there are documents which can be produced to the Royal Commission –

5 A. Yes.

Q. – from council?

A. Yes we will have them.

Q. And/or the council –

A. Yes, will have them.

10 Q. – which will demonstrate upgrades pre-2003?

A. Should be. Just remember that my files that are more than 10 years old, this is 2012, were all destroyed at our dead file store at 84 Hereford Street and we were unable to retrieve anything from there but certainly the 2003 and the 2010 upgrades were of significance at 87 to 89 Cashel
15 Street and that building stood up. If it hadn't had the neighbouring building fall on it, it would have been perfectly all right. It actually didn't fail.

Q. I'm not saying that it did. I'm just asking about the –

A. Upgrades?

20 Q. – state of the building.

A. Yes. The state, the state of the building was very good, it was good.

Q. And Mr Zarifeh has referred you to a letter dated 16 June 1981.

A. Yes.

Q. Signed by you in which you say that you expect to demolish the Cashel Street building by 1986 so were there any upgrades done before
25 1986?

A. There were some but the building as I had commented before I think 81 to 85 Cashel Street we did huge upgrades. That's the other party wall to the 87, 89 Cashel Street which we owned on the Bridge of Remembrance side and that building it actually had a huge amount of
30 work done on it and is still standing there at the moment so it was when we redid that building we looked at 87 to 89 and did some upgrades and then further upgrades in 2003 and further upgrades in 2010.

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Q. All right well it seems that there is further documentation that can be produced to the Commission that will give concrete evidence about upgrades.

5 A. Yes.

Q. Just refer you to document BUICAS091.0019.10. You may have seen this document leading up to the Royal Commission. Have you seen this document recently?

A. No I haven't no.

10 Q. All right. Well this is a seismic risk survey which the Christchurch City Council appears to have carried out on 87 to 89 Cashel Street. I'm just going to highlight a couple of sections for you so if we can first just highlight the top third of the document. You see there December 1990 for 87 to 89?

15 A. Yes.

Q. And owner Hereford Holdings Limited. Date of construction is listed as 1878 for this building. Can you confirm that that's the case or don't you know?

A. I don't know the date but it certainly was very old. It was very old.

20 Q. And if we can highlight the bottom left of the document where it says "structural". The comment "Building is very run down and in state of disrepair externally". Is that an accurate description of the state of the building as at December 1990?

A. I think it's an opinion. I wouldn't have called it that but, the building was, the external appearance may have appeared like that but if in fact if you looked at the photograph that came up at the beginning of the Commission you'll see it was actually a very nice looking frontage and if you look, we have photographs showing the complete rebuild of the back as well that actually, from 1990 we were upgrading all the time.

25 30 Q. What about, I accept that you're not an engineer and you can't necessarily say but can you comment at all upon the box that's been ticked there about the structure being poor?

A. No I couldn't, I'm not an engineer other than it did stand up in the earthquake therefore it can't have been that poor.

Q. Given the upgrading programme that you've mentioned I take it that you had involved engineers on the building throughout your period of ownership?

A. Correct.

Q. And so based upon that involvement and your discussions with engineers during that time including at 1990 can you not give any information about whether the building in their view as advised to you was structurally poor?

A. They certainly never said to me it was in their view a poor building or required demolition. They were, they never suggested that and we've used a variety of engineers on our buildings.

Q. If we turn to the next page 0019.11. Highlight the middle section "Effectiveness of internal frames", see at the top there Effectiveness of internal frames and "non-existent" is ticked again I take it you can't give any evidence about the accuracy of that as you're not an engineer would that be right?

A. Correct remember it was 2000, it was 1990 and I said we put a big steel frame through in 2003 so I daresay it did change.

Q. Did any engineer as at 1990 give you any advice about the effectiveness of internal frames?

A. No, not at 1990. We weren't needing to at that stage.

25

JUSTICE COOPER TO MR ELLIOTT:

Q. Mr Elliott, bearing in mind the works that were done on this building in 2003 which I take it you would accept I'm not sure what the Commission would gain from going into too much detail about the state of the building in the 1990's. I suppose it will be relevant for us to consider what the state of these buildings was before and after September last, September 2010 but I am not sure where you are going with this.

MR ELLIOTT:

I accept that Your Honour I was going no further.

JUSTICE COOPER TO MR ELLIOTT:

5 Right.

MR ELLIOTT:

One further question on this point but it is I accept this building is not the one
10 which collapsed.

JUSTICE COOPER TO MR ELLIOTT:

Yes.

15 **MR ELLIOTT:**

It is one which the Commission is enquiring into.

JUSTICE COOPER TO MR ELLIOTT:

Yes.

20

MR ELLIOTT:

The families of those who died are interested to know the history of each
building being enquired into and one of the Commission's terms of reference
is to look into the state of compliance as originally designed and maintained of
25 the building that's looked into and that is really all I was asking about.

JUSTICE COOPER TO MR ELLIOTT:

Well there is no suggestion that this building was the cause of fatality is there?

30 **MR ELLIOTT:**

No there's not Your Honour. The building that collapsed was the middle one.

JUSTICE COOPER TO MR ELLIOTT:

Yes that's what I understood yes.

CROSS-EXAMINATION CONTINUES: MR ELLIOTT

Q. Just one further question on this document Mr Gough. Did the council come to you at all in 1990 or thereafter and say we've looked at this building and we'd like some work done?

A. No they certainly didn't and we had a good relationship with council so I'm surprised if they felt concerns they would have told me. They had on other buildings and we did the repair work that we needed.

Q. The adjoining building which His Honour has mentioned collapsed, 91, appears not to have been strengthened at all.

A. I couldn't comment because I don't own the building. You'll have to ask the owner and his engineers.

Q. That is your brother?

A. Yes.

Q. Well did you express any, make any comment to him about the state of the strength of the building?

A. Not –

Q. Given that it had never been strengthened.

A. What you mean post the earthquakes?

Q. Pre.

A. Pre earthquakes. No he and I work together very well and it was for instance when the chimneys fell over and I said to him "Look we need to do something about the chimney bases. It looks to be loose bricks where the chimneys fell off" and so he said "Well can you organise an engineer for me? I don't have any that I've recently used". So that in itself shows that we worked together and he instructed me to get an engineer into his building so no I'm not aware of any particular failing on his part. He hasn't, he didn't own that building for an enormous amount of time like us but he'll be able to tell you how long he's owned it for.

CROSS-EXAMINATION: MR LAING

Q. Morning Mr Gough, could I ask you to look at paragraph 25 of your statement of evidence please? You say there that your company was undertaking the work to 93 and 95 Cashel Street to meet one third of the requirement for a new building which is one third of the code?

5 A. Correct.

Q. Was that an instruction to your engineers?

A. Yes.

Q. And so when you say "I believed all work undertaken would have met the building, would have met one third of code" is that view derived from your instructions to your engineers?

10 A. Yes we said, our aim was to get the building up to one third of code. We were progressively working through it and at the end of because you'll see my evidence talks about doing it in two parts so during that upgrade it wouldn't have been at one third in the part that we weren't working in but by the time we had finished and before September's earthquake we had renovated the entire ground floor and strengthened it and Powell Fenwick were our engineers and they will be able to tell you whether it met one third of code but I know council wouldn't have signed it off if we hadn't got there.

20 Q. No but from your perspective that work you were satisfied that it met one third of code?

A. Yes I actually thought they'd overdone it. It was a ridiculous amount of steel went into it but I put in what they asked me to put in.

QUESTIONS FROM THE COMMISSION – NIL

25 **WITNESS EXCUSED**

COMMISSION ADJOURNS: 11.02 AM

COMMISSION RESUMES: 11.20 AM

MR EVANS CALLS

TRACY OWEN GOUGH (SWORN)

5 Q. Your full name is Tracy Owen Gough, Mr Gough?

A. That is correct.

Q. And you are a company director and you live here in Christchurch? And are you a director of West Mall Properties Limited?

A. Yes, that is correct.

10

JUSTICE COOPER:

In our programme for today there is reference to a company called Tracy Gough Properties Limited. Is that an error on this sheet?

15 **MR EVANS:**

Yes Sir, it is, because the company that owns 91 and 91A Cashel Street is West Mall Properties.

JUSTICE COOPER:

20 Yes that is what I thought so we will just put a line through that.

EXAMINATION CONTINUES: MR EVANS

Q. I am going to ask you to read your brief in a minute Mr Gough but I just want you to confirm please for the Commission that your company West Mall Properties owns 91 and 91A Cashel Street?

25 A. They're the same building, yes.

Q. Yes, thank you. Now you have a brief of evidence before you. It is dated the 17th of January 2011. Can you commence reading that please from paragraph 2?

30 A. My full name is Tracy Owen Gough, I'm a company director and I reside in Christchurch. I am a retired property investor. I'm 67 years old and my property investments are managed by Thompson Wentworth on my

behalf with the exception of one small flat. I am a director of a number of companies and one of the companies I am a director of is West Mall Properties Limited (West Mall). West Mall was incorporated on the 20th of June 1985. The other director of this company is Graham Norman Davey. Mr Davey is my accountant and he is a director of Walker Davey Limited Accountants based at Christchurch.

Access to records – my office was at 90 Hereford Street, Gough House, and I have only had limited access to this building and in that time I've been able to collect my computer and that is about it. The majority of my paper records that I have been able to produce with this statement are photocopies of documents that I fortuitously had at home. All of the original documents are in my office at 90 Hereford Street. Thompson Wentworth also have a lot of my records and I understand that they have great difficulty in accessing their files too.

History of the building – I believe that 91 Cashel Street was originally built approximately in the 1880s. It was built from brick and Oamaru stone and concrete. I understand that the building may have been a Methodist church at one stage and was probably one of the earlier churches in the city. It had a placard to that effect that had been placed there by the Historic Places Trust. A façade added in the 1970s had covered up virtually all the original Oamaru stone and the brickwork on the street frontage. This obscured the original features of the building. The building was not listed as a heritage building.

I originally purchased 90 Hereford Street in 1983, I then subsequently purchased the car park that was behind 90 Hereford Street. I was eager to purchase 91 Cashel Street because it gave me ownership of that entire strip of the block from Hereford Street to Cashel Street. My thinking was that I could build some sort of arcade in the future. The bars on the Oxford Terrace strip as it is known are owned by my brother Antony Gough and my sister Averil McKinnon through their company Hereford Holdings Limited. The buildings owned by Hereford Holdings include 87, 80A, 89A Cashel Street, 93, 95 Cashel Street which are located either side of the property owned at 91 Cashel Street.

91 Cashel Street – West Mall owns the building at 91 Cashel Street and it has owned that building since the incorporation of the company in 1985. I have a colour photograph of the building that was taken after the February earthquake in 2011. The building was three storeys high. The first storey ends at the light blue painted part of a sealed column, below a sealed column. The second storey ended at the top of the brick parapet which is shown in the picture. The third storey has pancaked down and that was masonry similar to the second storey. I believe each floor of the building was approximately 350 square metres in size.

Property manager – West Mall employed a property manager Thompson Wentworth. The person I dealt with at Thompson Wentworth was Mr Andre Thompson, a commercial property manager. Thompson Wentworth had management contract with West Mall. This management contract was terminated on the 31st of August 2011 at my request. The reason for that was because the building was untenable and had been substantially destroyed by the earthquakes.

The tenants that were in the building were as follows: Ground floor was 123 Mart Limited and the Westpac Bank cash money machine, Westpac New Zealand Investments Limited. The first and second floor was occupied by Kurt Langer of CANC. He was a freelance photographer. Thompson Wentworth will have details of the length of these tenancies. Reporting by Andre Thompson – attached to this statement is a letter dated the 5th of October 2011 from Thomson Wentworth. This is a typical statement from them showing the details of the tenancies' financial information. If there were any maintenance issues involved with the building then I had those attended to by Thompson Wentworth. As the property managers they would draw any maintenance issues for my attention and I would authorise the repairs if required.

Knowledge of the current earthquake prone dangerous and insanitary buildings policy 2010 – I was unaware of this policy. If the council had ordered that West Mall undertake remedial work then I would have arranged for it to have been completed.

September earthquake 2010 – I think I made a physical inspection of the building outside after the September earthquake. The tenants remained in the building after the September earthquake and they remained there until Boxing Day. While my brother Antony Gough I engaged the engineers Powell Fenwick. I recall speaking to Ian Garrett of Powell Fenwick in relation to the earthquake damage after the earthquake on the 4th of September. Mr Garrett wrote to me by letter dated 15th of September. A copy of that letter is attached. Mr Garrett indicated that the building was not in immediate danger of structural collapse. He noted that the chimneys above the upper floors should be removed. My brother Antony who owns the buildings on either side, 89 and 90A Cashel Street had a building crew who removed fallen debris from his properties. The removal of the chimneys and repairs on 91 Cashel Street were carried out as recorded by the 1st of October 2010 report from Powell Fenwick. I also received another report from Harrison Grierson Consultants Limited from Andrew Thompson who was a team member in structural engineering. Their view was that the ground floor was structurally sound and safe to occupy and I confirmed that the status of the building was green.

In relation to the two upper levels they were confirmed as a yellow status with limited access until the debris was removed. This was subsequently attended to.

Boxing Day earthquake and repair work – I recall that initially I rang Thompson Wentworth to see if they could arrange for an inspection and any professional advice that I needed to receive after the Boxing Day earthquake. I spoke to Andre Thompson and he was out of Christchurch and he was not able to help me at that time. I therefore telephoned Anna Hodgson who is my brother Antony's property manager and with her assistance I contacted Opus and arranged for an inspection by Andrew Brown. As Anna was working over the Christmas period she was on site and helped facilitate the repair work. I understand she recommended the builders South Board Limited that my brother's company used and that they could undertake the repairs on the

property. The repairs were undertaken in accordance with the engineering advice received. I was also out of Christchurch at the time and I recall I spent some time on the phone making a number of telephone calls to assist with the securing of the premises and the various other related matters.

On December the 31st I received an email from Andrew Brown of Opus. Mr Brown who is a senior civil structural engineer at Opus confirmed that the corners of the parapet were loose at the rear of the building and there was unsecured brick. However, half a metre of the parapet had been removed in each direction and the corners of the building were made safe. At the front of the building he referred to a concrete lintel beam that had been displaced slightly. He also referred to this being a falling hazard and that the council had therefore classified all three buildings, by this I took to mean my brother's buildings on either side as well, as being red zoned or red placarded as Mr Brown termed it. Mr Brown confirmed to me that he had designed a temporary securing system to restrain the front parapet by tying it to the side parapets with a reinforcing bar.

Significantly he confirmed that the temporary securing had been installed on the 31st of December 2010 and that as a result of that on the certification provided by Opus the council had removed the red categorisation of the building. He also confirmed that the securing, while a short-term measure, would be adequate for almost six months. After the Boxing Day earthquakes and the repairs had been completed I was confident the building was safe on the basis of the engineering advice that I had received. The tenants were allowed back into the premises after repairs were finished.

The earthquake of the 22nd of February. The February earthquake caused massive damage to the building at 91 Cashel Street. Opus took some photographs and they show the extent of the devastation. At the time Opus advised me that the building should not be entered and was unsafe. The report from Opus dated 24th of March attached to the

statement confirmed that the building had sustained severe damage, the roof had collapsed and the walls on the third floor had also been entirely lost. The third storey walls had fallen both inwards and outwards from the building. The conclusion was that the remaining structure was unstable and unsafe to approach for any internal inspection without significant removal of part of the building. They concluded that the building was unstable, unsafe to approach or enter, presents a public safety risk and is not economic to repair. They recommended that the building should be demolished. The building has now been demolished.

At all times I relied upon and acted upon the professional and engineering advice that I received.”

CROSS-EXAMINATION: MR ZARIFEH

Q. Mr Gough what were your plans with the building prior to the September earthquake? Were you maintaining it as a property that you would let out long term or were you intending to redevelop it?

A. The intention when I bought it was to redevelop it and that was the intention for the entire ownership phase of the building. I knew the building was old when I bought it and the intention was always to eventually re-develop it. The holding of the thing in the short term was what I undertook and so that's how I proceeded.

Q. Okay. I just want to show you a document. It's BUICAS091.0019.21. It'll come up on the screen in a moment. Now that's a letter from the council to West Mall Properties to your attention back in 1995. Correct?

A. I'm reading it at the moment. Okay, yes I can confirm that, yes.

Q. So the council is raising an issue in paragraph 2. They say that inspection revealed the upper floors are being used for residential purposes and there's no change of use from commercial to residential. So they were raising that issue with you in that letter?

A. Yes they are. I take exception to this fact that the upper floors were being used for residential purpose. I specifically said to the tenant that he was not able to stay there. It was quite specific. He did, however,

operate there at very peculiar hours. He, he was a photographer and he's a very artistic sort of gentleman.

Q. If you look at the next page which is .22 and 23 you'll see a reply to that letter. If you look at the next page, just to see who's signed it because it's not yourself.

A. Okay can I have a look at the earlier page?

Q. Yes. So you, in the first paragraph you're referring to discussions. You recall having discussions with the council following that letter you received from them?

10 A. No I don't recall that but I'm sure I would have had discussions with them.

Q. Or this person who's signed the letter might have, the administration manager?

A. Yes that was quite, quite highly probable I would say.

15 Q. All right. Did you have anything to do with the issue then itself that was being raised?

A. Which issue was this?

Q. Well the issue the council letter raised in the reply.

A. With regard to?

20 Q. Well it goes on to talk about work being done and applying for a warrant of fitness for the building in the second to last paragraph on the first page.

A. Yes I would say that that would be the sort of thing that I would have done, yes. They would have applied for a warrant of fitness for the building, yes.

25 Q. And what was that, what did that mean the warrant of fitness?

A. I'm not sure. It's whatever was required.

Q. You see in the bottom paragraph of that first page it says, it confirms that the intended life of the building is less than two years?

30 A. Yes I would say that that, that would have been the intention at that stage.

Q. Is that because the intention was to redevelop?

- A. The intention was at some stage that we would develop through there and put in new, put a arcade system or something through there. It always was that. We just didn't have a time line on it.

5

JUSTICE COOPER:

- Q. Well you must have in August 1995 had a time line even if you later
10 abandoned it otherwise you couldn't say that the intended life of the building was less than two years, could you?
- A. Yes I would agree with that. It tended to be a moveable feast really. We were looking at development. I mean the bottom line of the thing was that the building itself had walls either side that were joint walls with
15 the buildings either side. Any development would have needed to have been done with the buildings either side. It was all pretty hard work so we were looking at a dream and that was the dream.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

- Q. Okay but because the intention was always to redevelop –
- 20 A. Yes.
- Q. – in the future, whatever the timeframe, there was no structural work or strengthening carried out on the building. Is that fair?
- A. That's a fair enough comment. I understand that there was none required. If there'd been some required I would have done it.
- 25 Q. Right so if the council had said, you've got to do this then you would have considered that and certainly done it.
- A. Yes, that's correct, yes.
- Q. But there was never anything requirement in the time you owned it to do that?
- 30 A. Not, not that I remember, anything like that.

1140

Q. And you didn't want to spend money you didn't have to which is fair enough because you were going to redevelop so it was in relatively original condition?

5 A. Yes. When I purchased it I noticed that on the walls on the outside there were discs. Now commonly with other buildings I've noticed that I did a redevelopment of a building in 76 Lichfield Street and that required strengthening to be done to the building. It was a very old building and you tie the brickwork on the outside with a disc on the outside of the building and it ties through to the structure in the inside. Now I noticed
10 that in 91 Cashel Street it had a very solid looking structure on the inside of the building and I noticed there were discs on the outside so I had assumed that there had been work that had been done with the building to do strengthening of the building.

Q. Can we see those in photographs...

15 A. I'm sure we probably can.

Q. Okay well we'll get some brought up in a minute. So you presumed from that that some form of structural strengthening may have been done in the past. Is that what you're saying?

A. Yes, yes that's right.

20 Q. But you're not aware of what that was –

A. No.

Q. – or when?

A. No I don't.

Q. And did you own it since the incorporation of the company?

25 A. Yes that is correct, yes.

Q. So 1985 you owned it?

A. Yes that is correct.

JUSTICE COOPER:

30 Q. Can you remember who you bought it from? Who owned it previously?

A. I forget the name of the chap but it originally had appeared on the market to be auctioned and I attended the auction. I couldn't afford to buy it at that stage and I didn't and I was one of a number of people that

5 were looking at the option. Subsequent to that it was bought by a chap and his name was Currie I think and he set up a business in the thing and because I tend not to be a developer, I tend to be a property investor, it suited me because he placed this building on the market he himself was operating a clothing, sorry a, I forget what it was, he was operating a retail outlet out of it and I think it was furniture and that and he offered the building with a ten percent return and put it on the market and I bought it from him as a building with a tenant at a ten percent return and that's how I ended up with the building.

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

Q. So coming forward to the 4th of September the building is in relatively original condition with no structural strengthening at least since 1985, correct?

A. To my knowledge yes I think that's right, yes.

15 Q. Well you would be aware of any structural strengthening carried out post 1985 wouldn't you?

A. I would say so, yes, but the way I operate with my buildings is I tend to have people do it for me. I tend to have professionals do it for me so I go on their advice and I don't recall anything.

20 Q. You would have seen a bill for structural strengthening if it had been carried out?

A. Well I probably would have, yes.

Q. Right so September earthquake happens. What was your knowledge of any Council inspection post the September earthquake?

25 A. This is via Thompson Wentworth who operated the building. I understand that there had been a collapse of chimneys down on the building and subsequent to that we needed to do something. I talked with my brother Antony about it and he said, "Well I've got this team South Build, I can get them to do it. I've also got engineers. I can get them to have a look at it for you" and I said, "Well that sounds like a really good idea. Let's go with that".

30

Q. And he said that this morning that he had a relationship with Powell Fenwick from 93–95 Cashel -

A. Yes.

Q. – so he put you on to them?

5 A. I think that's correct, yes.

Q. Okay and so prior to that you hadn't arranged an engineering inspection of your own of the building?

A. Not that I remember, no.

10 Q. No, okay, and so Powell Fenwick went in after the September earthquake and you've attached letters from them and we've got some of them already. There's a letter dated 15th of September referring to an inspection on the 10th of September, correct?

15 A. Could be. I'm not able to see it there but there were actually two inspections I understand that were done. Thompson Wentworth also organised someone to come and have a look I understand and so there were two inspections done.

Q. Okay well let's look at this document. It's WITGOU0002.13. This is attached to your brief so you see that on the screen?

A. Yes.

20 Q. You might have a copy there too.

A. Yes I do.

Q. That's reporting on an inspection, on a walk-through inspection, 10 September, correct?

A. Yes that's correct.

25 Q. And it says, "Preliminary indications are that the building is not in immediate danger of structural collapse, second paragraph?

A. Yes.

Q. And it refers to the chimneys should be removed? Next paragraph.

A. Yes.

30 Q. But no other damage?

A. Yes.

Q. And in the last paragraph it says it's important to note that it's based on a visual walk-through inspection only and there may be unobserved

damage that may require remedial work to ensure the ongoing integrity of the building and they recommend a more detailed structural inspection, correct?

A. Yes.

5 Q. And then there's also I think an inspection report of that 10 September that you've attached as well?

A. Yes.

10 Q. Right, but you referred to another report and you haven't got it attached to your letter but I think we've got it on the file and I'll just get it brought up. It's BUICAS091.0019.28. This is the one I think your brother referred to as he said that he had arranged it. It was addressed to him. Can you see that it's addressed to him but it's re 91?

A. Yes.

Q. So do you confirm that?

15 A. Yes.

Q. So is that the next one that you refer to because they talk –

A. – No it's not, no. There was another organisation but I...

Q. Okay well we'll come to that in a moment but you see they refer to a walk through on the 10th of September which we just dealt with?

20 A. Yes.

Q. And then in the third paragraph a second walk through 29 September. See that reference in the third paragraph?

A. Yes.

25 Q. In the fourth paragraph it said the inspection covered the visually available aspects of the building internally and externally, no coverings were removed, no drawings reviewed or any detailed engineering conducted?

A. Yes.

30 Q. And at the end of that paragraph we note that this report is specifically for the purpose of assessing earthquake damage to date. A further inspection may be required in the event of significant aftershocks or other events that could affect the structural integrity of the building, correct?

A. Yes.

Q. The next page .29 you'll see the top there they say, "The following specific items have been noted as requiring attention in the near future but are not considered to affect the short-term structure or integrity of the building. Significant cracks are evident in the parapet to the rear of the building adjacent to overflows and rainwater heads. Cracks to be further investigated from roof level to determine the extent of damage." See that?

A. Yes.

10 Q. If you turn over to the fourth page in that document which is .31 there's a heading under "Recommendations", a heading "Remedial". Right at the end it says, "Further inspection of parapets required where significant cracks were observed inside the roof space to view the mortar joints and condition of the roof framing members." See that?

15 A. Yes.

Q. Now do you recall receiving this, this report?

A. I'm not sure.

Q. Okay but it's certainly a report in relation to your building?

A. Yes it is.

20 Q. And what I wanted to ask you is, this report where it said further inspection of parapets was required, did you arrange for that or did you have anyone arrange that?

A. I'm not sure. I'm not sure whether we did or not. When someone sends me a letter and I take steps accordingly but I think this letter was sent to Antony not myself but I think that it's a, if I knew that there was further inspections needed then we would have done it if the engineers had said to me, look we need to do more inspections and contacted me I would have said, yes, let's do it.

1150

30 Q. Okay. Are you aware then of any other report from Powell Fenwick in relation to 91?

A. On that day?

Q. No any other report, any subsequent report to 1 October?

A. Yes Powell Fenwick no I'm not sure.

Q. Okay.

A. I'm not sure. Have you got one there?

Q. No I haven't. I'm suggesting that there isn't one.

5 A. There probably isn't.

Q. Okay. But you did refer to another report and you've referred to it in your brief and I'll just get the page brought up. It's probably in that bundle you've got there but it's WITGOU0002.16. There it is on your left. You've got it in front of you but it's coming up on the screen it's from Harrison Grierson?

10 A. That sounds right yes.

Q. There it is.

A. Yes.

Q. So that's the other one that you're referring to?

15 A. I think that's the other one yes that's the one that I –

Q. And just tell us about that how did that come about?

A. I think that came about because I think Thompson Wentworth separately to my discussions with Antony. Antony looked visually at the thing and said basically the chimneys look as though they have come apart on the top of the building, let's have a look at it. And Thompson Wentworth in their operation as a building operator took their steps and they just happened to be in separate directions.

20

Q. All right so Harrison Grierson was a result of Thompson Wentworth?

A. I think yes.

25 Q. Powell Fenwick the two reports that we've looked at were as a result of your brother putting you on to them?

A. Yes.

Q. So the Harrison Grierson one says in the first bullet point in the second paragraph "Inspections could only be undertaken on the building exterior and the interior of the 123 Dollar Mart", that's the ground floor correct?

30

A. Yes.

Q. They couldn't get to the upper floor presumably because of debris, that's the chimney falling?

A. Yes.

Q. And that's referred in the third bullet point?

5 A. Yes.

Q. All right. And it says that the last paragraph "We note that our assessment is based on a visual inspection of essential areas only. No liability is accepted for damage or injury incurred after our inspection". So that's all you received from Harrison Grierson?

10 A. I think so yes.

JUSTICE COOPER TO MR ZARIFEH:

Mr Zarifeh, is there a date on that?

CROSS-EXAMINATION CONTINUES: MR ZARIFEH:

15 Q. There's not a date on it but it refers to inspections on 8 and subsequently 10 and 13 September. See that Mr Gough on the first paragraph?

A. Yes.

Q. So presumably you would have received this via Thompson Wentworth at some stage after the inspections in September?

20

A. I think so yes and I think looking at that I seem to remember that that tied in with the other report that I had and it said that no risk was there once the loose bricks were removed from the chimney but the building itself had not been the subject to change.

25 Q. Okay. So that's post September. Then Boxing Day occurred.

A. Yes.

Q. And I think you said that following Boxing Day you rang Thompson Wentworth to see if they could arrange for an inspection?

A. Yes.

30 Q. And you spoke to Andrew Thompson. He's from, he's the one who completed the Harrison Grierson report but he wasn't available?

A. He was on holiday.

Q. Right then you spoke to Anna Hodgson who was the property manager for Hereford Holdings?

A. Yes and you need to understand that this is, I'm on holiday in Picton with a rather funny phone line and I'm trying to do things by phone to different people and I don't know the full facts.

Q. Okay. I'm just trying to establish what reports were done okay.

A. Yes.

Q. So you left it with Anna Hodgson to arrange for Opus correct that's what you said in page –

10 A. Yes that's correct.

Q. So was, and Anna Hodgson may be the one to ask of this but was your understanding that this was being done independent of any council assessment in red stickering or was it –

A. No this was in response to the fact that there had been stickering placed on the building so in response to that and the fact that it was an unsafe building steps needed to be taken and she was there on the spot and set about taking the steps getting hold of the experts.

Q. All right. But your call to Thompson and Wentworth. Was that because of the, your understanding of the council's inspection?

20 A. No I think my call to Thompson Wentworth was to find out what the situation was because I'd heard there'd been an earthquake in Christchurch. There was no earthquake in Picton where I was.

Q. Right. What I'm trying to establish is, were you aware that the council had red stickered the building or did you become aware of that?

25 A. I'm not sure. I'm not sure. I was probably told that by Anna Hodgson I think.

Q. Okay. So whatever inspections were arranged through Opus and the work done that was attended to via Anna, Anna Hodgson?

A. Correct.

30 Q. Right. And you didn't arrange for any other inspection independent of Opus?

A. No.

Q. All right.

A. No. No I relied on them. I found them to be very good.

Q. No I'm not suggesting otherwise but I'm just asking again just trying to establish what inspections were made. So you said in paragraph 37 that after the Boxing Day earthquake and repairs had been completed, that's the Opus repairs?

A. Yes.

Q. I was confident that the building was safe on the basis of the engineering advice that I had received.

A. That's correct.

10 Q. So I just want to establish what engineering advice was that? Was that a combination of what we've talked about now?

A. Yes it is.

Q. Okay.

A. I mean we're talking about the 26th of December earthquake?

15 Q. Well you said that you were confident on the basis of the engineering advice that you had received.

A. Yes.

Q. What was that advice?

A. Was I understand that the building needed to be fixed and –

20 Q. So that was from Andrew Brown?

A. Andrew Brown yes.

Q. And you've produced and referred to an email from him of 31 December to you, to Anna Hodgson in fact but...

25 A. Well I'd say to Anna Hodgson I'm not capable of getting emails in Picton but –

Q. Okay. But you've produced it and referred to it in your evidence?

A. Yes.

Q. So you became aware of that. That's the advice we're talking about correct? The Opus?

30 A. Yes the Opus advice yes.

Q. So the Powell Fenwick concerns back in on the 1st of October, that report we looked at.

A. Yes.

Q. They were never followed up?

A. I did what was needed to be done as I understand it and I didn't need, I mean from memory that didn't say that it needed anymore other than the bricks to be removed and the building was safe as I understand it.

5 Q. But it was suggesting a further more detailed inspection.

A. Yes it was and then subsequent to the 26th of December one we did have that further inspection but I didn't do an inspection separate to that.

Q. No so whatever the extent of that inspection was and remedial works in December was to the extent of any follow up, is that fair?

10 A. Yes that's true. I mean I'd have to say that the amount of work that we were, it ran us into five figures for remedial work on the building and as I understood it that was sufficient to make the building safe so it was safe for the public.

Q. To get the Building Act notice removed wasn't it?

15 A. To make it safe. Yes the building notice was removed but the thing was it was a make safe in line with the recommendations of the engineers.

Q. So the view, what was your understanding in terms of that inspection and the make safe works in December and the removal of the Building Act notice, did you understand that the whole of the building would have been inspected?

20

A. Yes I would have expected that.

Q. You're talking about Opus, by Opus?

A. Yes.

Q. Well you say you would have expected it. Were you made aware of that or not?

25

A. I'm not sure. I mean bear in mind my operation is a building owner. I don't operate the building. It's run by Thompson Wentworth. I'm not in Christchurch I'm in Picton at that stage and everything is by remote control.

30 Q. All right. But whatever that report or inspection was that was the follow up?

A. Yes.

Q. Now –

A. I mean essentially I relied upon the council's inspection of the thing if the notice was removed and it was green placarded I understand that the building was then suitable for habitation, suitable for people roundabout and wouldn't create problems so

5 1200

Q. So you relied on that?

A. – were two things for me. I mean the first thing was the Opus report with its recommendation. The second thing is the city council rendered the building as being safe as I understand it and, and had green stickered it together with the two buildings either side. Because the principal problem as I understand it, what really got Anna on the go I think was because the buildings that she operated for Antony either side were affected. They might have had joint party walls. As a matter of fact they were all owned, separate, separate owners, buildings either side owning a wall, very complex.

10

Q. Yes, no I understand that. Now you would not have been aware that on the 12th of October 2010 there was an inspection by the council of, it says 91A Cashel Street, 123 Mart, so 91 building and the inspector had noted a vertical crack the full height of the external wall in the staircase. Now were you, I'm not suggesting that you would have been aware of that –

20

A. I'm not sure.

Q. No.

A. But I think, I mean the building had cracks, hairline cracks through it, all the way through. I'd assumed that those were hairline cracks that had been there for many years because they were very dusty and they were sort of black coloured so that there were these hairline cracks and by hairline I mean less than one millimetre in width. They would be half a millimetre.

25

30 Q. And was this before the September earthquake?

A. This was, yes, the building had cracks in it but the cracks were in the plasterwork on the inside as you can see but I mean –

Q. Right, on internal walls?

A. They were on internal walls, yes, on the outside –

Q. This is an external, the inside of an external wall?

A. Correct that's, yes.

Q. Right so you weren't made aware of that is what I'm saying.

5 A. I'm not sure. Certainly I wasn't made aware of a major crack that was creating problems with the building. As I understand it the building number 1 had been inspected and the problems that had been associated with it had been fixed. Number 2 the council had quite separately involved themselves with the building and they had deemed
10 it to be safe. So with those two things and I'm up there in Picton and I mean –

Q. No I understand that.

A. You must understand it.

Q. So you weren't made aware then of an inspection on the 14th of
15 October, a further inspection by an engineer and concerns that he raised about cracks on the east and west wall?

A. I'm not sure. Who did the report.

Q. Well did you receive any – someone called Crundwell from Opus did the report but on behalf of the council.

20 A. Okay so this is a report for the council?

Q. For the council, yes. I'm not suggesting that you were made aware of it. I'm just asking were you made aware of it from the council?

A. I don't think so but I mean – I don't recall ever receiving the letter or anything like that. I'm not sure.

25 Q. And to be told of that, does that surprise you?

A. It would surprise me if it was a problem with the building yes because as I understand it the building was green stickered and was okay.

Q. So what Mr Crundwell had said was that he requested that the, I'll just get his words, paragraph 26, he recommended the application of a, an
30 advisory it's called, a form, as a further means to ensure that the building owner would consider their responsibilities and employ their own structural resources to study the problem in detail. So that was the

problem he saw on the 14th of October. Now what I'm suggesting is that you were never advised of that?

A. I don't recall being advised of that, no.

Q. If you had been, what would you have done?

5 A. I would have taken steps. I mean whenever I hear of something that needs to be done I take the necessary steps. But bear in mind first of all it would probably have to go to Thompson Wentworth the operators of the building and then I'd rely on their advice to me because their job is property managers.

10 Q. But as the owner you're not aware of receiving anything like that from the council?

A. I don't recall anything like that, no.

Q. And you also don't recall any follow-up to the 1st of October Powell Fenwick report?

15 A. No I don't think so.

MR ELLIOTT:

Q. Mr Gough, Mr Steven McCarthy from the Christchurch City Council is giving evidence later today and in his statement to the Commission he
20 said that the council's records note that the building was earthquake prone in terms of the definition of section, in section 66 of the Building Act 1991 and it appears this status continued to apply when the 2004 Building Act was introduced. Is that something that you were aware of at any point during your ownership of the building?

25 A. What does that earthquake proneness mean? If it means that it's somewhat less than the one-third seismic loading I wouldn't be surprised at that, yes. I think that the building was somewhat less than the seismic load of, of .3 requirement but if I'd done works then I would have brought it up to, to that level but as I understand it it wasn't unsafe
30 so I was in a muddy area where I was unsure of the situation because as I understood it the building was safe because if it wasn't safe the council would have advised me.

Q. Yes and in fairness we should make it clear if it's not already clear that even in an earthquake prone building an owner's not obliged to upgrade unless, in Christchurch at least, unless certain things took place, for example, an application for a consent for a change of use or if the earthquake prone policy had required.

A. Yes.

Q. However, that does lead to a question just about the change of use point that Mr Zarifeh touched upon earlier which was that in a letter he referred you to of August 1995 it appears that the council have said to you that an inspection revealed the upper floors were being used for residential purposes and no change of use from commercial to residential has been authorised.

A. Yes.

Q. And then you made a comment about someone occupying the building.

A. I, I let, yes – and I need to make it quite clear.

Q. Yes please.

A. That I did not want to involve myself in change of use of the building so therefore there is no time that I allowed the building to be let for residential purposes. I did, however, allow the guy to be there and he was a character, he was an artist, he was there at all sorts of odd times and that as I understand it. I gave him a letter and I said, "It is not to be used for residential purposes," and I think this was because of knowledge from the council that in fact a change of use would trigger this upgrading of the building to the one-third seismic coding.

Q. So are you saying that this person as far as you're aware was occupying in a residential capacity –

A. No I –

Q. – but that you had told him not to or?

A. – saying, that's not correct. I'm saying that the person occupied and he was there at weird times. I gave him a letter to tell him he was not to be there as a residential purpose and I expected him to, to fulfil those requirements. But he's a, he's a character. I let him just run the place

and that and he came and go in his own time and whatever else and he was, he was a photographer, he's an artist.

Q. So are we talking here about a letter or some actions that you took in around 1995 having received this letter from the council?

5 A. I would say that having received the letter from the council it's highly probable that I would have sent a letter to him saying that it's not to be used for residential purposes and that is my decree as a building owner.

Q. Is this Mr Kurt Langer?

A. That is correct.

10 Q. Was he not the same person occupying the building in September 2010?

A. Yes it is, yes.

Q. So he was there between 1995 and 2010?

A. Yes he was, yes right through.

15 Q. I'm sorry?

A. Right through yes, yes, that's correct.

Q. In a commercial –

A. In a commercial –

Q. – or residential or ?

20 A. In a commercial. I was quite specific with him. Let me say it again. I gave him a letter. I gave him several letters I understand. I mean I can't get them because they're in my files and that, they're in 90 Hereford Street and I can't get at them but I was quite specific that it was not to be used for residential purposes but you can be there and
25 occupy it as a – and he did, he used the upper floors as well. There were two floors of the building that he occupied. It was a very strange sort of use because it wasn't using the building in a good way. It was just that he occupied it and he was doing his photography and that there. That was his job. He was a photographer and that was his job
30 and I specifically said that he was not to live there but did I sit outside with a flash light and the camera and try and check whether he was and see whether he was? I did none of that but I gave him specific

instructions and I remember that because it was so important to me that I specifically instructed him that he is not to live there.

1210

Q. You have said that many times now.

5 A. I want to get it through.

Q. No, Mr Gough, you interrupt Mr Elliott when he is asking questions and now you are interrupting me when I am trying to mildly remonstrate with you. You answered Mr Elliott's question. You are repeating yourself and it is now time for another question which I will ask Mr Elliott to ask.

10 A. Okay.

CROSS-EXAMINATION CONTINUES: MR ELLIOTT

Q. Only really one more question on that topic which is did you exercise a landlord's right to inspect the property to see whether for example there was a bed or evidence of residential use after you sent your letter?

15 A. Yes I have inspected the premises after. I wouldn't call it bedding but there was sort of, there was strange couches and things there. There were couches and things that I remember and there was lots of photography gear and I don't know what sort of photographs he did and that.

20 Q. Document BUICAS091.0019.25 please? Mr Gough, you've given evidence to this Royal Commission that, "At all times I relied upon and acted upon the professional engineering advice that I received." This is a letter from Powell Fenwick to you dated 15 September 2010. Did you receive that letter?

25 A. Yes I think I did, yes.

Q. And in fairness to you on this issue of safety let's highlight the second paragraph which says, "Preliminary indications are that this building is not in immediate danger of structural collapse."

A. Yes.

30 Q. That would have given you some sense of comfort?

A. Yes.

Q. Can we then highlight the paragraph further down where it says, "It is important to note that information is based on a visual walk through inspection only. It is possible that there is unobserved damage that may require remedial work to ensure the ongoing integrity of the structure.

5 We recommend that a more detailed structural inspection and evaluation is conducted in due course to confirm the ongoing structural suitability of the building."

A. Yes.

10 Q. You're aware post-September that this building was built in the 1880s. Is that right?

A. I understand it was. Yes.

Q. And you would have been aware that it had had no earthquake strengthening during your period of ownership?

15 A. That's correct, during my period of ownership but I had noted these fixtures on the outside of the wall so I knew that it had had some sort of strengthening and I relied upon the council that if I needed to have strengthening done then the council would have advised me. I understand they advised and they talked with Antony with regard to the next door property but I don't recall ever getting something from the council with regard to this building.

20 Q. I'm really asking you about your decisions, your actions as owner especially in light of your evidence to the Commission about acting on advice at all times. I'm right in saying, am I not, that you never instructed any engineer to carry out a detailed structural inspection so as to reveal for example how strong that building was and how much force it could be expected to sustain before it could fail in some way?

A. No. No, I didn't.

Q. Don't you agree that you should have done that?

30 A. No I disagree. I looked at this and my feeling was that other damage that was noted in the building consists of dot: none. I mean I rely on the people that that give me advice and I understood that the structure was okay. I mean they recommended a more detailed structural inspection and that and eventually I mean I, it would have been done at some

stage but I hadn't done it from between that September through till the earthquake on the 26th.

Q. Well that is my point really, the recommendation was to conduct one. I accept in due course but surely as the aftershocks continued you would agree that you should have initiated that instruction to an engineer?

A. I hear what you say but I didn't do it and I, yes, I didn't do it.

Q. Just going to invite you to answer this. You don't have to answer this particular question but you or your company, the owner of buildings, I accept you're retired but New Zealand we have an issue here now around the country now where there are unreinforced masonry buildings many of which may be less than 33% of code. Are you willing to send a message to other property owners to say that property owners should voluntarily upgrade unreinforced masonry buildings to at least 67% of code or higher if possible given what we've seen here in Christchurch?

A. No I'm not an expert. I'm not an expert but I agree with you that certainly, I mean from September life's changed totally, just absolutely totally and unfortunately this, I mean these four people have unfortunately died because of this building and I mean there are hundreds that are dead in Christchurch because of this. If someone had said to me in August of that year there's going to be an earthquake and I would have said I'll bet you \$1000 that there won't be an earthquake. It's just ridiculous so life has changed hugely. My decisions that I will make now are very different than the decisions I already made back then. We had one shock in September, that was it and I thought that was it. I had no idea that we'd have other stuff like this and I would taken different steps if I thought that.

Q. I appreciate you answering that Mr Gough, thank you.

CROSS-EXAMINATION: MR LAING

Q. Mr Gough, you referred to the events of 1995 where there was a suggestion that your tenant was occupying the land, building for residential purposes?

A. Yes.

Q. Why were you concerned about that issue?

A. Because if he was living there and I allowed it to happen then I would be pushed into triggering an upgrading of the building. Now what I was wanting to do was to maintain the building in its current state. That was my aim as a property owner, as a property investor to contain the building as it was and so therefore I didn't want to trigger anything. Likewise with regard to the change of use, it was not a good use of the building only one store downstairs. It would have been better to have been cut up and put into two and so I didn't do that. I wanted to maintain the building as it was and just maintain it.

Q. When you refer to upgrading are you referring to seismic upgrading?

A. Yes, seismic upgrading. If I did alterations to the building and changed its use then it would require upgrading. I knew that and so I was keen to keep the building as it was to maintain it as it was when I purchased it and to maintain the building because the aim of the thing was to keep the building and then at some stage knock the building over and redevelop on the site. I never got around to that but that was my aim.

Q. I understand. Now just going to what happened after Boxing Day. The sequence of events was such that you ultimately received a report from Opus that said the strengthening work had been done and I think at paragraph 36 you refer to that as a short-term measure. Can you look at that please?

A. Yes. I would agree with that.

Q. So did you do anything further, after you received that report from Opus in terms of any long term measures?

A. No I had not taken any steps at that stage. I'd just come back from my holiday. I was piecing myself together on getting myself aware of things and then suddenly this earthquake happened. Given me my normal way of operating I would have within the next month stepped forward and said right where do we go from here to the advisors and say what do we do.

Q. So as at the 22nd of February though you hadn't –

A. No I hadn't no.

Q. – taken those steps.

A. I was specifically, I looked, saw that it was adequate for six months. As I said right at some stage I have to take steps but I don't have to take it this week or tomorrow but I have to take steps.

5 QUESTIONS FROM THE COMMISSION – NIL

WITNESS EXCUSED

MR MCLELLAN CALLS**MARTIN CRUNDWELL (AFFIRMED)**

Q. Your name is Martin Lawrence Crundwell?

A. Yes.

5 Q. And you are a civil and structural engineer (inaudible 12:22:30)?

A. That's correct.

Q. Do you have your brief of evidence in front of you?

A. I do.

Q. Can you read your brief from paragraph one please Mr Crundwell?

10 A. I hold a Bachelor of Engineering Civil that I received in 1977. I am a chartered professional engineer and a member of the Institute of Professional Engineers of New Zealand. I have been employed as a civil and structural engineer by Opus International Consultants and its predecessor since 1978. Between 1978 and 79 I practised as a

15 graduate civil engineer. Between 1980 and 1990 I practised as a structural and civil engineer. Since 1990 I have predominantly practised as a civil engineer but have also done some work as a structural engineer. I am based in Opus's Nelson office.

20 Between 27th of September and 15th of October 2010 I was on secondment to the Christchurch City Council for the purpose of the council's response to the 4th of September earthquake. I was initially involved in cordons and then building inspections. In October 2010 I was directed by council staff to inspect the staircase at 91A Cashel Street. I attempted to complete this inspection on the 14th of October. A

25 council enforcement team notice coversheet provided to me set out my instructions for the inspection.

Q. Just pause there if we can have that document please and if you can just confirm, it will come up on your screen in a moment.

30 **JUSTICE COOPER:**

It is WITCRU0001.7.

EXAMINATION CONTINUES: MR MCLELLAN

Q. That's the council enforcement cover sheet filled out by the building inspector Paul Guile who had done the previous inspection of this building, is that right?

5 A. That's right.

Q. Carry on with your brief please.

A. I do not recall what other information I was given before my inspection but it is likely that I had a copy of the most recent level two rapid assessment form by Paul Guile on 12th of October based on his inspection carried out two days before my inspection.

10 Q. If we could please have BUICAS91.0007. That's the report that you believe that you had?

A. I saw flashed on the screen a photograph. I don't –

Q. No I just want you to look at this document first. We were taken in error to another document to start with. I just want you to confirm that this is a report that you believe you had at the time of your inspection?

15 A. Yes.

Q. And if we can go to the next page please?

A. Yes.

20 Q. And the reference, well carry on reading your brief at page 5. We'll come to those photographs next.

A. The cover sheet of Paul Guile's report refers to photographs having been taken which appear to show the crack in the stairwell. I do not recall seeing the photos.

25 Q. Just pause there please. Pages 21 of the same document. So the report from Paul Guile referred to the vertical crack in the stairwell?

A. Yes.

Q. But you don't believe that you had these photographs?

A. I think the third, it would have been the third page of Paul Guile's report that showed the crack position, which didn't show on the screen.

30 Q. Can we go to page .3 please? So that's the third page of Mr Guile's report that's what you're referring to and there's a diagram there of showing the position of the vertical crack?

A. That's correct.

Q. Carry on reading your brief from paragraph 6 please?

A. When I arrived at the site I determined that 91A Cashel Street must have been the address of occupants of the first and/or second storey of the building as the ground floor was occupied by 123 Mart. I had a building inspector assistant with me who had made arrangements for access. I do not recall who he was but he was assigned by the council. I had understood that building access was to be provided by a building representative but this representative did not arrive. I recall my assistant making at least one phone call to resolve the access issue to no avail. I was therefore not able to access the stairwell or the upper interior/exterior of the building. However we remained on site and tried to discover what we could from the ground outside of the building and from the balcony of a building opposite 91 Cashel. I took a series of photographs on site. These indicate that I carried out a visual inspection of the exterior.

Q. Could we have WITCRU0001.9 please? Carry on Mr Crundwell, paragraph 9.

A. The photo sequence begins with a Cashel Street frontage where the building presented as concrete. I observed an inset glazing façade that masked the structural form of the building. The apparent span of beams behind the façade at second floor level and capping the building at roof level implied the existence of units such as concrete beams perhaps similar to the one supporting the shop front canopy. The first two site photographs cover the eastern and western sides of the building.

Q. Can I just stop you there? Can we go to the next page please .10? Carry on.

A. Where I discovered an old vertical crack in the western side wall. This did not present as a crack resulting from horizontal earthquake displacement. I believe I then returned to studying the front of the building. I found an exposure of brick work on the front face of the building –

1230

Q. Next page please, .11.

A. And so determined that the building was at least partially unreinforced masonry with a plaster finish.

5 Q. So just to be clear this is on the, if you're standing in Cashel Mall looking up at the building, that's on the top left-hand corner of the building?

A. That's correct.

Q. The south-western corner?

A. That's correct.

10 Q. Carry on.

A. Given the presence of unreinforced masonry I gave further consideration to the vertical crack in the eastern wall. I surmised that the vertical cracking pattern could be what was now showing up as a vertical crack in the eastern stairwell. If the crack had translated through the wall to the outside then I might observe it from the outside but I
15 knew that the wall was obscured from view from the street by the neighbouring building. I then decided to try to find out more about the eastern face of the building. I had two options. I inspected the building at the ground floor, being the 123 Mart at 91 Cashel Street. I then
20 observed 91 Cashel Street from the first or second floor balcony of a building on the opposite side of the street. Although the 123 Mart was closed we managed to locate a 123 Mart employee and asked if we could observe the side walls from inside of the building on the ground floor. However, the shop walls were lined obscuring my view. From the
25 building on the opposite side of the street we were able to gain a better view of the eastern wall. Here I discovered exposed brick work on the edge of a parapet toward the rear of the building.

Q. Could we have .12 please? So this photograph in front of you is the eastern with the parapet wall would you describe it as on the eastern
30 side of the building?

A. Yes there is a series of photographs on the eastern side but this would be probably the first one.

Q. Can we go to the next page please? 13. That's a longer view of the same damage that you saw in the first photograph?

A. Yes, correct. I believe they're all taken from similar vantage points.

Q. Where did you take these ones from? This is from inside a building on the other side of Cashel Mall is it?

A. Yes.

Q. From an elevated position?

A. Yes.

Q. Can we have the next shot? And finally 15 please?

10 A. Sorry? From 15?

Q. So they're all photographs of the same?

A. Yes.

Q. Part of that eastern wall. Can you carry on reading from "here I discovered..."?

15 A. Here I discovered exposed brickwork on the edge of the parapet toward the rear of the building but even with the camera on full zoom I could still see no crack in the side wall.

Q. So just to be clear, this is the side wall that you were looking for cracking in because of Paul Guile's indication of where he had seen cracks inside the building?

20

A. Yes.

JUSTICE COOPER:

Q. What is the focal length on full zoom of the camera you were using?

25 A. The length was a 14 times zoom, not sure what the focal length was.

EXAMINATION CONTINUES: MR MCLELLAN

Q. Carry on from paragraph 16 please?

A. In order to check the same wall from the rear of the building the 123 Mart employee showed us through the store to the rear of the building and from the car park I observed the north and eastern walls.

30

Q. Can you stop there and can we have .16 the next page in the sequence? So that's, you took that photograph from the northern side of the building?

A. Correct.

5 Q. And the next page .17? Similar view we can go to the next page. And that is a view of the north-eastern corner of the building?

A. That's correct.

Q. And when, just carry on reading your, the next sentence, "the exposed brickwork".

10 A. The exposed brickwork appeared to be adjacent to the base of a removed chimney which I noted in my report saying 'parapet crushed by falling chimney?'

Q. And in that photograph we can see the exposed brickwork on the top of the parapet. That's what you're referring to?

15 A. Yes on the middle left of the photo.

Q. Yes, can we just have the last two photographs in the sequence, 19 and 20, same view and 20 please? And again slightly clearer view of the same thing. Can you carry on?

20 A. After my inspection I completed a rapid assessment form level 2. My usual practice was to complete these forms on site.

Q. If we can have that please which is CAS91.0007.7? Carry on at paragraph 18 please?

A. In my report I noted the type of construction as unreinforced masonry.

25 Q. Then can we focus on the second section of highlighted (inaudible 12:36:55) vertical? Just read what you wrote there please Mr Crundwell?

30 A. I recorded overall hazards, oh sorry, under the heading, Overall hazards/damage – I recorded cracks (vertical) in east and west walls, other minor crazing/cracking (could be old), chimney removed (earlier hazard).

Q. And can we have the next page which is .8? if you could read from paragraph 20?

A. I noted under structural hazards/damage that the parapet had been damaged by the falling chimney, maybe plural, and vertical cracks in the wall diaphragm as moderate risk. I noted minor failures in parapets as a moderate risk. Under general comment I noted the failure to gain access to complete my assignment. Shall I continue?

Q. Yes, carry on reading.

A. Right. I noted, sorry, I'll start again. Under general comment I noted the failure to gain access to complete my assignment. I noted the similarity of the –

10 Q. I'll stop you there and I'll get you to read into evidence what is written on the report so if you can turn your attention to general comment and just read your handwriting?

A. The whole hand-

Q. Yes.

15 A. – the whole section?

Q. Yes.

A. Request was to inspect vertical crack in stairwell east side wall but not accessible (previous level 2). Noted vertical crack in west wall similar location to inferred east wall. Other cracks in street frontage at joint between walls and horizontal members. Brickwork exposed beneath plaster (a lot of work to find these exposures so examine photos carefully). How building works structurally not clearly understood and requires further study.

Q. And if you can carry on from the second sentence in paragraph 21?

25 A. I noted the similarity of position of the vertical cracks in the eastern and western walls. I noted other cracks in the street frontage at the joint between the walls and horizontal members and brick work exposed beneath plaster. I noted that I had to do a lot of work to find these exposures and recommended a careful examination of the photographs that I took. I stated how building works, structurally not clearly understood and requires further study.

1240

Q. And just something I think that isn't in your brief. Can we just focus on the second highlighted passage under remarks? Can you just read that please Mr Crundwell?

5 A. I entered a comment under, against, "Usability category, G2, occupiable repairs required" with remarks added, "Engineering report to advise how to repair."

Q. And what did you intend by that remark?

10 A. I think the remark was further to the need for further study that even the repairs that were required would need an engineering, would need engineering input.

Q. Now if we can go to the next page of the report which is .9 and if you could carry on from paragraph 22 please.

WITNESS CONTINUES READING BRIEF OF EVIDENCE FROM PARAGRAPH 22

15 A. "I included a sketch of a suspected external hairline crack in the eastern wall inferred by the author of the earlier 12th of October level 2 report. I showed the location of the vertical crack, full height, a visible portion."

20 Q. Now you've got, with your mouse can you just use the cursor on the screen to point to which part of your diagram that's a reference to – and that there you have written I think, "Visible, vertical crack (old?) full height". Is that correct?

A. Correct.

Q. Can you carry on from where you were in your brief?

25 A. "I noted full height on the western wall. I noted that it may be old."

JUSTICE COOPER:

30 Q. Now can I just understand the sense of this because it wasn't the best time to interrupt him. He says, "I included a sketch of a suspected external hairline crack in the eastern wall inferred by the author of the earlier 12 October level 2 report." So that's the one that is –

MR MCLELLAN:

Mr Guile's.

JUSTICE COOPER CONTINUES TO MR CRUNDWELL:

Q. – demonstrated in this document now displayed with the suffix 7.9. Is that right?

5 A. Yes that's my estimate of location inferred from the earlier report which showed a cross on the wall, on the plan view?

Q. Yes. Now in your next sentence, "I showed the location of the vertical crack, full height of visible proportion, in the western wall. You're going on to talk about a crack in the other wall, the opposite wall. Is that right?

10 A. Correct, yes.

Q. And noted that it may be old.

A. Correct.

Q. The words there used on the sketch seem to be, "Suspected hairline crack identified in the level 2 report of 12 October 2010." Is that right?

15 A. Yes that's what I wrote in the, in the report, yep.

Q. But that's, that's the crack in the western wall.

A. The, Paul Guile's report identified a crack in the stairwell, on the inside of the stairwell, so I was, there may, so I was suspecting or wondering did that crack transfer through the wall to the outside and I, so I say
20 suspected because that portion was covered by another building.

MR McLELLAN ADDRESSES JUSTICE COOPER**EXAMINATION CONTINUES: MR McLELLAN**

25 Q. Mr Crundwell this is a three dimensional depiction of the frame of the building. Correct?

A. Correct.

Q. And on the, where you have a, where you have drawn an arrow from the words "suspected hairline crack" on the right-hand side, that I think is the eastern wall of the building?

30 A. That's the eastern wall.

Q. And the zigzag line that you've written on towards, more towards the left of the drawing and the words "visible vertical crack" that's the western wall?

A. That's the western wall.

5

JUSTICE COOPER:

Q. So which one was the one that was in Mr Guile's report?

A. The eastern wall, the one on the right.

10 **JUSTICE COOPER:**

Right thank you. Well is it because the 'old' comment, "I noted that it might be old," is said in relation to the eastern wall is it?

MR McLELLAN:

15 No the western wall was his evidence I think.

JUSTICE COOPER:

The western wall.

20 **MR McLELLAN:**

Yes.

JUSTICE COOPER TO MR CRUNDWELL:

Q. Is that right?

25 A. That's right. The one on the left.

Q. Well if we take north as being in the direction indicated on the sketch the western wall is the one on the right as we look at it isn't it?

A. No I believe it's the, if we look at the arrow with the north, the north arrow -

30 Q. Yes.

A. – I would take the west to be the left side and the east to be the right side.

MR MCLELLAN:

Your Honour if you're in Cashel Mall looking at this building, you can see he's written Cashel Street in the, at the front of the diagram.

5 **JUSTICE COOPER:**

Yes.

MR MCLELLAN:

So that's looking north. So the western side is to the left of the building, the
10 Bridge of Remembrance side.

JUSTICE COOPER:

Right. All right.

EXAMINATION CONTINUES: MR McLELLAN

15 Q. So Paragraph 22. Perhaps if you could read from, "In the recommendation."

WITNESS CONTINUES READING BRIEF OF EVIDENCE FROM PARAGRAPH 22

A. "In the recommendations on that page I noted that the suspected
20 mechanism of the crack on the western and eastern wall was the same. I indicated cracks and exposed brick work on the façade face. Further potential cracks in the façade were sketched as part of my attempt to understand how hidden beams might be working. This sketch was based on my hypothesis not actual observations. I did not rate the
25 observed vertical crack in the western wall as a significant seismic risk as it appeared to be old. The stairwell crack indicated only hairline movement and had not necessarily translated through the wall. I therefore went to the front sheet and ticked the box calling for a detailed engineering evaluation by a structural engineer in order to develop the
30 investigation further. I understood this would draw further study from council procured engineers in the short term."

Q. I'll take you to that page in a moment but before we do that can you just read aloud please the, could we have that page back on the screen please, it's gone to sleep, your comments starting with, "Called to inspect."

5 A. "Called," this is at page 3 of my report. "Called to inspect hairline crack in stairwell but could not gain access. Phone contact for access given as Tracy Gough," with a phone number, "Phone 3559566. Suspect mechanism for this crack same as crack observed on opposing side of building. Request CPEng engineer's report to requirements of BETT advisory of 12th of October 2010 as attached."

10 Q. We'll come back to the BETT advisory in a moment but now if we could have page .7 and the, if we could focus on the lower box under the, under the words "inspected green," and then there's a heading "Further action recommended" and in your brief when you refer to ticking the box
15 calling for a detailed engineering evaluation these are the two boxes that you referred to, is it?

A. That's correct.

1250

Q. And if you can carry on reading from paragraph 24 please.

20 A. Based on my limited inspection I concluded that the building fell into the light damage low risk category G2 meaning occupyable but repairs were required. I noted the engineering report to advise how to repair was required as a follow up to the requirement for further study. I noted that the existing placard designation was green, meaning inspected, and
25 affirmed the status based on my inspection. I did not rate my additional findings as a significant risk in terms of immediate safety. The previous full inspection was based on internal and external access which carried some weight. I had found no justification to upgrade the classification to yellow so continued the green G2 designation pending further study.
30 Under the recommendations for repair and construction or demolition section of my report I briefly set out the difficulties I had in inspecting the property and recommended the application of the BETT advisory as a further means to ensure that the building owner would consider their

responsibility and employ their own structural resources to study the problem in detail in the medium term. I noted “request CPEng engineer’s report to requirement of BETT advisory of 12th of October, 10 as attached”. When I returned to the council’s office I submitted my level two report attaching the BETT advisory and downloaded the photographs to council administration staff for transfer to the server.

5

Q. Could we have WIPCRU.0001.21 please? That’s your handwriting at the top, “BETT advisory 12 October 2010”?

A. It is.

10

Q. Can you just describe what this document is and how you came to have it please?

A. This document was in, had been approved by the BETT team or someone over the BETT team for use to encourage the owners of buildings to look at certain aspects and safety for the buildings.

15

Q. So it’s a document that’s directed at the building owners?

A. Yes.

Q. And how were building owners to receive this document? What was your understanding about that?

A. I believe that there was another department apart from the BETT team that would follow up and contact the owners about the dangers discovered if you like through the rapid assessment process.

20

Q. Carry on in your brief from “I completed...”

A. I completed an enforcement team notices cover sheet where I noted further actions for the BETT administration team and outlined the site dangers for passing on to operation staff.

25

Q. And if we could have BUCAS910007.10? Could we focus on the bottom highlighted section please? No I’m sorry in the middle section that says “Request CPEng”. Can you read out that section of handwriting please?

30

A. Yes “Request CPEng’s engineer’s report to requirements of BETT advisory of 12th of October, 10 as attached to level two report of 14th of October, 2010”.

Q. And can I just ask you about this. What was your intention by submitting your report with a copy of the BETT advisory attached to it, submitting it to the council I mean? What was your intention in doing that?

5 A. I guess I wanted the, this was in addition to the council operation of rapid assessments so I was recommending that the council make contact with the owner.

Q. And if we could also have WITCRU.0001.22 please? And that I think is a photograph that you took of the cover sheet that had been completed
10 by the earlier inspector Mr Guile?

A. That's correct.

Q. And the post it note that's shown on that is in your handwriting?

A. That's correct.

Q. Just read that out please?

15 A. Requires level two. Note: could not access stairwell where crack is.

Q. If you could read the final sentence of paragraph 27?

JUSTICE COOPER:

He has covered that.

20 EXAMINATION CONTINUES: MR MCLELLAN

Q. Carry on from paragraph 28 please?

A. I returned to Nelson the day after my inspection and had no further involvement with Canterbury earthquakes, earthquake issues until after the 22nd of February, that's 2011. I continued to liaise with council
25 BETT staff from Nelson by telephone but I do not recall any further communication specifically about 91 Cashel Street.

COMMISSION ADJOURNS: 12.58 PM

COMMISSION RESUMES: 1:47 PM

MARTIN CRUNDWELL (ON FORMER OATH)

CROSS-EXAMINATION: MR ZARIFEH

- 5 Q. Mr Crundwell, your inspection on the 14th of October 2010 was a direct result of Mr Guile's inspection on the 12th of October, two days earlier?
- A. That's correct.
- Q. And his inspection is said to be a level 2 assessment?
- A. That's correct.
- 10 Q. And how would you class yours in those terms. Was it level 2?
- A. It didn't start out as a level 2. It started out as an extension of Mr Guile's report to look at the crack in the stairwell. So it was a specific assignment.
- Q. Mr Guile was not an engineer or did you not know?
- 15 A. No I didn't know that.
- Q. All right, but Mr Guile had seen the vertical crack in the full height in the exterior wall at the staircase and requested that a CPEng engineer examine the building, correct?
- A. I know he requested a CPEng engineer examine the crack in the building, yes.
- 20 Q. So that's the reason you were there and the reason that you took what I suggest was quite an amount of care in trying to examine the building despite not being able to get inside to look at that crack. You took some time there?
- 25 A. Yeah I took some time there. I'm not sure when Mr Gough didn't show to let us into the building. I think there was some discussions on the phone with base about what should we do, should we just leave it to another time. I don't know what those discussions were but I know that we stayed to do the best we could from the outside.
- 30 Q. Right and whatever the result of the discussions you couldn't get inside?
- A. That's correct.

Q. Now you referred us to photos that you took. Were those the extent of the photographs that you took, the ones you showed us?

A. At that site, correct yeah.

Q. And would they have been on the Council file?

5 A. Yes.

Q. Okay. There's some other photographs on the Council file that I wanted to show. I'll just show you a couple just to see if they're yours or maybe they're Mr Guile's and bring up BUICAS091.0019.44. And why I'm asking is because they're undated and the Commission has obtained them from the Council file but it's not exactly clear as to whose they were.

10

A. Who they belong to. Yes that one's mine.

Q. Now .48 that same sequence.

A. Yes correct, that one's mine.

15

Q. Now there are four photographs that are clearly internal photographs and appear to be in a stairwell that I presume are Mr Guile's but I'll show you them. Have you seen them? You haven't?

A. I don't recall seeing them but they may been attached to his report.

Q. It's in the same sequence and the first one is 52.

20

A. Yes that's one of them.

Q. And 53. It's a bit difficult to see the crack there. Let's try 54. I don't know what's happened here, the numbers, 55. Okay, one number out. That photograph I appreciate it's hard to tell what that is but was that one of yours or not?

25

A. No it's not one of mine.

Q. Okay, the next number please.

A. Yeah that one's mine.

Q. Right. I'm not sure what's happened with the numbering here but I will get this passed down. It's obviously got a wrong number. I just want to get that photograph brought up. It should be 55. There it is.

30

A. That's not mine.

Q. All right so that follows on a sequence, a set of four photos, one showing obviously a rail from a stair. So that's likely Mr Guile's?

A. It's likely to be.

Q. You wouldn't have been aware of the Powell Fenwick report that the owner had obtained, and you might have heard it if you were sitting at the hearing, 1st of October. Do you recall?

5 A. I don't recall –

Q. Was not a Council file so -

A. It was?

Q. Was not, so you wouldn't have had access to it?

A. I don't recall.

10 Q. You might recall that mentioned damage to parapets that needed further investigation?

A. Mhm, mhm.

Q. Did you see cracking consistent with the engineer from Powell Fenwick's observations?

15 A. No. That was the rear parapet I believe.

Q. Yes, did you not look at that?

A. No I didn't see that.

Q. You didn't look at that area or you did?

A. I took some photographs from the back corner from the carpark and I was, I guess that was, I'm not sure which corner the Powell Fenwick report referred to. Was it the east or the west? I was taking photographs on the east wall.

Q. Okay and you did see some cracks down towards the rear on that parapet didn't you?

25 A. No. I saw, I was particularly interested in the east wall trying to get more evidence of the vertical crack in the east wall and I did see some damage to parapets but it wasn't cracks. It was a chimney falling and well I believe striking the parapet.

Q. So is it fair to say that you were concentrating on these cracks to the walls, to the side walls?

30 A. Yes that's correct.

Q. And you said in paragraph 20 that you noted in your form under Structural Hazards the parapet being damaged by the chimney and

vertical cracks in the wall diaphragm as moderate risk. So that's the side wall cracks that you've been referring us to?

A. Yes, correct.

Q. You noted minor failures in parapets as a moderate risk?

5 A. Yes.

Q. Okay so you come along, you see that crack in the western wall, the exterior, vertical crack, you question mark whether it's an old one?

A. Ah, in the western wall I believed it was an old one because it had some kind of filler in it. It was a different colouring.

10 Q. Right, I'm just wondering why you put a question mark on your diagram I think and you said that it may have been old?

A. Well I guess there was a chance that somebody could have come along between the 4th of September and the 14th of October and tried to seal it.

15 Q. All right but you can't get inside to see the crack on the inside of the eastern wall?

A. Correct.

Q. But you accepted what was said what seems to be in that photograph in terms of what was observed on the 12th?

20 A. Yeah, the words were I think hairline crack in stairwell so I took from that that there was a crack on the inside at least of the wall.

1357

Q. "Vertical crack, the full height of external wall in staircase" is what it said.

25 A. That's what Mr Guile's report says.

Q. Yes. Is that what you're referring to?

A. Yes.

Q. Right. So you couldn't get in to look at that?

A. Mhm.

30 Q. You couldn't see the outside of it to see if it extended through to the exterior because of the building adjacent?

A. Mhm.

Q. And you told us about your attempts to try with going across the road and with your camera, but you were sufficiently concerned about it to take the steps that you did in terms of documentation that you placed on the Council file? Correct?

5 A. Yes, the objective was to understand that crack and I had failed to understand it because –

Q. Right.

A. – I couldn't get in.

10 Q. I understand that so, but you were sufficiently concerned that you thought that it needed to, to be understood, whether it transpired to be serious or not you didn't know at that stage? Is that fair?

A. That's, that's fair. I thought more, another attempt was needed to have, to get inside.

Q. You still green placarded the building, or G2?

15 A. Mhm.

Q. Requiring repairs. What were you thinking would happen once you played your role and you put this, these documents in?

20 A. I was thinking that there would be a follow up as I, just the same as I'd been sent out there would be a follow up within a few days, ah, because my follow up had been two days after Mr Guile's report.

Q. So were you thinking –

A. I thought the same again.

Q. – something similar?

A. Something similar would happen.

25 Q. All right and was that, did that play any part in your thinking in terms of ticking G2 and asking for follow up rather than yellow?

A. No, um, I was transferring the, the understanding of the previous person but I added to that my understanding of the cracks, that I didn't think they were any more than low risk.

30 Q. Okay, so just as he had ticked G2 and requested you come along you were basically adding to it and requesting the same thing because you hadn't been able to complete it?

A. Yeah what I was trying to do was create a single document that could be a basis for further study and so I was transferring the knowledge as I saw it of the combined effort.

Q. Okay. And if I can just get document BUICAS091.0019.41 brought up.

5 WITNESS REFERRED TO DOCUMENT BUICAS091.0019.41

Q. Now that is, I don't know what the form's called the notice is cover sheet looks like for Council form completed by yourself?

A. Yes that's correct.

Q. Yes, on that day of your inspection, 14th of October?

10 A. Ah, yes on the same day.

Q. Right and looking at the notes you've made at the bottom you've referred to the vertical cracks. You've also referred to the cracks in the joints, side walls and horizontal members on the frontage?

A. Mhm.

15 Q. Did they concern you? Those horizontal cracks we saw just a moment ago?

A. They concerned me enough to bring them to the attention for further study.

Q. Right. And concerned you why?

20 A. Um, they were new, um, they indicated some movement had occurred.

Q. Right, right and what the possibility that that frontage or that part of the frontage could come away from the building in a significant aftershock?

A. Ah, well it's low risk so when you talk about risk there's always a possibility that something can happen.

25 Q. Okay. You apart from seeing it presumably from ground level and photographing it you didn't climb up and check on the, how significant the crack was or whether it was loose?

A. No.

30 Q. Did you think that this further inspection would involve something like that?

A. Yes, it's my expectation that if, if you get access to the inside of a building and you are concerned about the parapets, um, you would ask for further access.

Q. Okay.

A. To the roof.

Q. All right so going back to the form you then said, "Concern is that if mechanism of seismic restraint is not well understood there may be repercussions during subsequent aftershocks that are not apparent at this stage"?

A. Mhm.

Q. So now was that a reference to the crack on the west wall and the crack that had been observed two days before on the inside of the east wall, or is it a reference to all of the cracks?

A. I think it's a general reference.

Q. Okay.

A. Mhm.

Q. And was that, that concern that you were expressing there was one that you wanted a more detailed engineering examination particularly on the inside to either confirm or, or not whether it was going to be a potential problem. Is that fair?

A. Ah, this part of the form is for conveyance to the building owner so what I was trying to do was highlight the, the risks that, that I had discovered.

Q. Right but it's a Council form. It's from the Council file isn't it?

A. It's from a Council file yes.

Q. And so wouldn't the engineer who was going on behalf of the Council to follow up if that had happened, follow up your visit would have access to that wouldn't he?

A. Not necessarily. I think this, this form no I think that engineer from the Council would have access to my report.

Q. Okay.

A. Not, not to this form necessarily.

Q. All right. But –

A. Oh, possibly they would because I had access to that form in going out yeah.

Q. But leaving all that aside your concerns were well expressed in your level 2 assessment form and the two documents that you completed and put on the Council file?

A. Mhm.

5 Q. And you added a post-it sticker as well didn't you?

A. Yes.

Q. Calling for a level 2?

A. Yes.

10 Q. A further level 2. You said at paragraph 23 that you therefore went to the front sheet and ticked that box calling for a detailed engineering evaluation by a structural engineer?

A. Yes.

Q. To develop the investigation further?

A. Mhm.

15 Q. And you said, "I understood this would draw further study from the Council procured engineers in the short term". So again a CPEng or an engineer who was either working for the Council or on contract with the Council?

A. Yes.

20 Q. Like yourself?

A. That's, that's what I was meaning.

Q. And from what you said before the short term presumably meant you thought the next day, two or three at most, is that fair?

A. Yes that's fair. Yeah.

25 Q. And so you not only followed it up requesting that a Council, further Council engineer come in and do a more detailed inspection but you filled out this BETT advisory to ensure that went to the owner?

A. Yes.

30 Q. So that really what a doubling up on, to ensure that your concerns were met?

A. I think at the time there were, um, um, people were trying to get back to business and so the, the list that day was a list of buildings that were I think red and yellow and trying to establish whether any of those could

be returned to green. Now this job was a specific assignment it wasn't part of that but, um, there was, there was this, um, if you like, um, willing or desire from building owners to get back to business and I think that's what was being discussed at the time around that BETT advisory that we need to get building owners to take the responsibility rather than rely on the placard system to tell them if their building was safe and whether there was anything beyond that.

5

Q. Okay because that form that you referred to talks about and contains the definition of a dangerous building doesn't it?

10

A. Mhm.

Q. And talks about the requirement or the need to get a CPEng engineer to certify that it wasn't dangerous?

A. Mhm.

Q. So reasonably serious stuff in terms of an owner getting that. Do you agree with that?

15

A. Yeah.

Q. To an owner who got –

A. It was a standard request it wasn't aimed at green buildings or yellow buildings or red it was just a standard, um, requirement.

20

Q. Right and the reason that you sent or initiated that procedure was because of the concerns you had looking at these various cracks?

A. I think at that stage I was applying that to most of my reports.

1407

Q. What, most of your reports whether there was damage or not?

25

A. Well most of, usually there was damage, as I say at that time we were going out to yellows and reds.

Q. Well you applied it here because of the damage that you saw, didn't you?

A. Yes.

30

Q. And that's why you called for the council to investigate it further as well?

A. Yes.

Q. And you said that you then went back up to Nelson, I think, the next day?

A. Mhm.

Q. And you had nothing further to do with this building or that file?

A. That's correct, yes.

Q. And you would have gone back to Nelson presumably assuming that
5 within a day or two your concerns would have been followed up?

A. Yes.

CROSS-EXAMINATION: MR ELLIOTT

Q. Mr Crundwell, we've seen a number of inspection forms so far and
indeed spoken to a number of engineers and I hope I don't sound
10 patronising when I say that your work stands out in terms of the detail
and the record-keeping and the note taking that you've provided and
also in terms of the fact that you seem to have given some thought to
what seems, at least in hindsight, an obvious question, that is, how
would the building work structurally and I take it by that you're referring
15 to how it would behave during ongoing aftershocks?

A. Mmm.

Q. You just need to say yes or no so that the record can reflect –

A. Oh sorry, yes.

Q. Yes, was the answer. And your indication in the documentation was that
20 further study was required?

A. Yes.

Q. Were you contemplating that that type of study would raise questions,
for example, about the nature and extent of diaphragms in the top level
of the building?

25 A. I had a specific assignment to sort out the vertical crack which the
previous engineer was concerned about. I was unable to do so, so I felt
that that further study would take all of that into consideration and plus
the new evidence that I found out, brickwork, unreinforced masonry.

Q. You were on secondment with the Christchurch City Council in your
30 role. We've had evidence that the test the council was applying during
this inspection process was to focus on damage to the building to see if
the building has diminished capacity as opposed to let's assess the

capacity of this building generally. In effect your recommendation was to directed towards the latter of those two tests, would that be right?

A. Sorry the latter being?

Q. To look at the overall capacity of the building to withstand aftershocks?

- 5 A. I think it was directed at whether the cracks had made the building any different to what it was before and whether it's significantly different to what it was before the 4th of September earthquake.

CROSS-EXAMINATION: MR LAING – NIL

CROSS-EXAMINATION: MR VAN SCHREVEN – NIL

10 **CROSS-EXAMINATION: MR EVANS**

Q. You've told us Mr Crundwell that you wanted to understand the mechanism of seismic restraint in more detail in relation to this building. What did you mean specifically by that?

- 15 A. How the building performed I guess which I couldn't work out from an outside inspection.

Q. No. If I can just take you and I wonder if we can have please photograph 48 brought up again which appears to show some sort of bracing on the external part of the wall. Are you able to comment please in relation to what you understand that is?

- 20 A. I'd understand that to be ties at roof level.

Q. And the purpose of those ties is to do what?

A. To connect the wall to the upper level diaphragm.

Q. And in your opinion is that a seismic restraint?

A. It's part of the overall seismic restraint of the building.

- 25 Q. Right, so on the evidence of this photograph we can see that the building has had some seismic restraint work carried out at some stage?

A. Yes. Correct.

Q. In terms of your report of 12 October which was obviously a report given back to the council you said to us that it was clearly your view that you

would have anticipated that that report would have been made available to the building owner. Is that correct?

A. The BETT advisory, I guess, yeah, would be part of that process. Yeah.

5 Q. Which part of the council as you understood it would have been responsible for making a building owner aware of your recommendations?

A. I think it is the operations group. That's the title on that form anyway.

10 Q. It stands to reason, doesn't it, that if a building owner is to undertake further follow-up work to undertake further engineering assessment they have to be alerted by the appropriate part of the council to a report such as yours?

A. Correct.

15 Q. It is also, it seems, from what you've said to my friend Mr Zarifeh before, that you anticipated that there would be some follow-up only a matter of several days after the 12th of October 2010?

A. Yes that was judging by the speed at which I was called to the previous report.

Q. When would you have anticipated the building owner ought to have received a copy of your report?

20 A. I've got no idea how quickly that section, I had no working relationship with the operations centre.

Q. All right, well, to put it another way, ideally when would you have liked to have seen the building owner received your report? I'm talking days or weeks or months.

25 A. Ideally? I guess I would hope that it would be part of the processing of my report that would go into a list of communications that had to happen as with other buildings.

30 Q. From a time frame what, are you able to answer the question in terms of how much urgency ought there had to be given to the provision of that information?

A. I really can't judge that because there were so many buildings out there and there were so few resources.

Q. As best as the council could manage?

A. Yes.

Q. That's what you're saying really isn't it?

A. That's correct.

QUESTIONS FROM THE COMMISSION - NIL

5 WITNESS EXCUSED

MR MCLELLAN CALLS**ANDREW GEOFFREY BROWN (AFFIRMED)**

Q. Your name is Andrew Geoffrey Brown?

A. Correct.

5 Q. You are a civil structural engineer (inaudible 14:16:38) Christchurch, is that correct?

A. Yes.

Q. You have your brief of evidence in front of you?

A. I do.

10 Q. Could you read that from paragraph 1 please?

A. I hold a Bachelor Engineering (Civil) Honours degree which I received in 1997. I am a chartered professional engineer and a member of the Institute of Professional Engineers of New Zealand. I have been employed as a civil and structural engineer by Opus International Consultants since 2008. Prior to that I was employed as the capital investigations team leader of the Capital Programme Group of Christchurch City Council between 2007 and 2008. Prior to that I was the team leader, building of City Solutions Group of Christchurch City Council between 2006 and 2007. Prior to that senior structural engineer of City Solutions Group with Christchurch City Council between 2002 and 2006. In between 1996 and 2001 I was a graduate structural engineer with that same group. I am based in Opus's Christchurch Office.

I have been involved in the design of a number of buildings and civil structures in Christchurch. This has included the assessment of seismic performance of existing buildings and the design and retrofit solutions to improve the seismic performance of buildings in Christchurch. Following the September earthquake I was involved in earthquake rapid assessments of central city buildings for Civil Defence and following this assessment of numerous buildings for Opus clients. This included the design of securing and temporary works to earthquake damaged buildings. On the 27th of December, 2010 I was orally instructed by the owner of buildings at 93 and 89 Cashel Street to inspect and design

securing works for the parapets to 91 Cashel Street. The building which had been identified as hazardous by Christchurch City Council. Building Act notices had been served on 89A and 95 Cashel Street due to the danger posed from the 91 Cashel Street roof parapet over the Cashel Street elevation. The scope of my work was subsequently confirmed by the owner of 91 Cashel Street that had been out of Christchurch when he originally instructed me.

1417

Q. Can I just stop you there Mr Brown. Can you just confirm who precisely you're talking about in paragraph 3 when you referred at the beginning of that paragraph to having been originally instructed by the owner of buildings at 93 and 89 Cashel Street. Who's that a reference to?

A. That was Anna Hodgson the property manager for Hereford Holdings.

Q. And where you refer at the end of that paragraph to the owner of 91 Cashel Street who are you referring to?

A. That was Tracy Gough.

Q. Yes carry on.

A. The building was a three storied unreinforced concrete and masonry building with a lightweight roof on timber trusses. I was not provided with any information from Christchurch City Council files for the purpose of my inspection nor was I provided with a copy of the Building Act notice served on the building owner however I read the notice that was taped to the Cashel Street entrance which noted the cracks in the parapet. I was aware of the council level one rapid assessment that had been completed on 26 September 2010 in respect of the building which led to the Building Act notice being served on the owner of the property and I understood that it had noted that the roof parapet above the building was cracked and potentially loose. In inspecting the building I considered the impact of the 4 September 2010 earthquake and subsequent aftershocks on the structural integrity of the building and based on the information I had my understanding was that there was little structural damage within the building and therefore with the exception of the Cashel Street roof parapet the integrity of the building

was similar to that before the 26th December 2010 aftershock. As instructed my inspection was limited to inspecting the parapet of 91 Cashel Street due to its having been identified as a hazard together with Paul Southern of South Build, a building contractor and Anna Hodgson, the property manager for Hereford Holdings who owned the two adjacent buildings. I met with the tenant of the second level to gain access to the roof. The tenant indicated that no damage had occurred to the building on Boxing Day. I inspected the remainder of the building parapets while on the roof and identified that the north west and north east corners at the rear of the building were additional potential hazards to be addressed. A brief external visual inspection of the building was carried out to assess whether any other damage relating to the Boxing Day earthquake could be identified. None was found.

Q. Can I just stop you there we've heard reference to a crack in the exterior of the western wall. Did you see that?

A. I did see that crack both externally and internally.

Q. And what conclusion did you reach about it?

A. My conclusion was that the crack had been there for some time. When viewed externally I could see that it had been filled with a sealant and when viewed internally I could see that there was quite some dust and spider webs that had accumulated in the crack and across the crack that indicated it had been there for some time.

Q. Since before the September earthquake do you mean?

A. Since before the September earthquake.

Q. Carry on from paragraph 9?

A. And further to that there was no evidence that the crack had widened as a result of the September earthquake.

Q. Thank you, paragraph 9.

A. I did not view the building plans in inspecting the building however I did give consideration to the building form. I recall that there was an inspection notice by another engineering consultancy posted at the stair landing on the first floor covering an inspection of the building that occurred after the 4 September earthquake.

Q. Now Mr Brown do you recall whose report that was or notice rather?

A. My collection was that it was report by Powell Fenwick. I didn't recall who the author of the report was but based on the evidence that's been presented to this hearing I would assume that that was the report that was prepared for Tracy Gough by Powell Fenwick.

Q. Paragraph 10.

A. I did not review any other previous reports or assessment by any engineers in relation to the building. No information from any other party relating to building standards or the inspection of buildings following an earthquake was received. The cracked roof level parapets were considered to be potentially, a potentially dangerous feature of the building. The only damage observed to the parapets was to the Cashel Street elevation and the rear elevation. No other damage to the parapets was observed from the ground or roof level. At the rear of the building both corners of the parapets were loose and the unsecured bricks posed a falling hazard to the area below. An area of approximately half a metre in length of the parapet was removed in each direction at these two corners to remove the overhead falling hazards.

Q. I will just have a photograph brought up here to help understand the next paragraph, that's WITVRO002.19 I think. Can you read paragraph 14 and use the photograph to assist?

A. At the front of the building the concrete lintel beam above the windows was displaced quite slightly towards the street, that's Cashel Street and was no longer secured to the return walls and you can see that in the photo as we look down Cashel Street towards the Bridge of Remembrance so looking west. You can see above the rain head and guttering that the section of parapet that connected back into the return eastern to the return western wall has displaced slightly and brick around that area has become damaged. This was considered to present a falling hazard to Cashel Mall and the shops below and either side of 91 Cashel Street which had resulted in all rebuilding and red placarded by the council. I took a series of photos showing the damage to the parapets of 91 Cashel Street.

Q. Stop you there and I will take you to a few of the relevant ones starting with .8 please? So Mr Brown that's view over the south west corner of the parapet beam that we've just seen in the earlier photograph is that right?

5 A. That's correct.

Q. Can you describe what's happened there that we see in the photograph that you've taken?

A. You can see that the infill between the section of the parapets has fallen away. Some of that is located in the gutter below at my feet. That crack
10 had been there for some time. The discolouration and damage to the bricks which may show up better on one of the other photos indicated that this had existed in this condition for some period of time before my inspection.

15 **JUSTICE COOPER:**

Q. What do you mean by some period of time?

A. Since before the September earthquake.

EXAMINATION CONTINUES: MR MCLELLAN

Q. And the shifting that you have described, when do you think that
20 occurred?

A. The shifting?

Q. The shifting of that parapet beam that you described in your brief?

A. The shifting I would suspect had started as a result of the September earthquake. In the photos that we've seen previously there is evidence
25 of a horizontal crack at the underside of this beam which indicates that the parapet, that this parapet beam had started to rotate about that horizontal crack in an overturning manner and that damage that was observed, um, in September was shown in the photos to be worse after the Boxing Day earthquake.

30 1427

Q. I'm not sure if we have a photograph of the – oh yes, if you could go to .13 please.

WITNESS REFERRED TO PHOTOGRAPH .13

5 Q. Now this I think is of the other end of the Cashel Street parapet beam so the south-eastern end?

A. Correct.

Q. What do we see there?

10 A. And you can see in this photo reflection of the same cracking pattern that is occurring in the western, um, in the south-western end of the façade where at the underside of the concrete parapet beam there is a horizontal crack that runs through and that extends diagonally back up through the rain head and comes back through the parapet at the top along the line of the cursor.

15 Q. So there was a failure of that parapet beam at both sides of the building?

A. Correct.

Q. East and west. That's the front now if we can turn to the rear parapet and take you to .11 please.

WITNESS REFERRED TO PHOTOGRAPH .11

20 Q. This is I think of the north-west corner of the building at the rear looking over the carpark. Is that right?

A. Yes, that's, that's right.

Q. And can you describe the, what we see in that photograph?

25 A. So here you can see again at the rain head the parapet which is relatively low level consists of brick, has cracked through the rain head and also return, and through the return wall at the side. That damage has been like that for some time. This isn't necessarily related to the earthquake. There isn't as at the front any signs of debris or recent damage. You can see from the lichen and bird poo that's growing around, that's deposited in these cracks and growing in them that that has been like that for some time. However, we took the view that it was a hazard and should be removed back to sound brick.

30

Q. And just for completeness the next photograph at .12 is I think of the, the eastern end of the same parapet beam?

WITNESS REFERRED TO PHOTOGRAPH .12

5 A. And that's the north-east corner and again the same phenomenon. Cracking that appears to be quite old but again presents a hazard that I considered should be removed.

Q. And just briefly what did you recommend for, or what did you, yes what did you recommend for remedying that, these features on the rear parapet?

10 A. We recommended that they be removed back to sound brick.

Q. Did you see that done yourself or is that Mr Boyce's arena?

A. That's Mr Boyce's observed that.

Q. Okay, can I take you back to your brief of evidence and if you could read from paragraph 16 please.

15 **WITNESS CONTINUES READING BRIEF**

A. "I designed a temporary securing system to restrain this front parapet from falling by tying this parapet back to the side parapets with a reinforcing bar called a re-bar that was drilled and anchored through the front parapet and slightly tensioned".

20 Q. If we can have a look at your, the drawing that you've prepared for the purpose of the Commission which is BUICAS91.001 and .2. Thank you.

WITNESS REFERRED TO DRAWINGS

Q. Perhaps you could just briefly speak to that drawing?

25 A. Okay so at the bottom of the picture the concrete parapet runs along here, this is the Cashel Street frontage in this direction the western return parapet so through this area where the cursor is now is where the parapet has started to separate, the parapet beam has started to rotate away from the side wall. We secured that by drilling a reinforcing bar back through this front concrete parapet and anchored that back into the
30 brick return parapet by means of a steel parallel channel which was bolted through the brick work to a backing plate on the other side and that, those bolts once they were installed were then epoxied in place.

Q. And was there a similar detailed design for the eastern side of the building?

A. There was, the eastern side was essentially a mirror image of that.

Q. Okay can you carry on reading paragraph 16 from “this securing”.

5 WITNESS CONTINUES READING BRIEF

A. “This securing was a short term measure only designed to be in place for less than six months. As the securing works were designed to meet the requirements of NZS 11 70.0 and NZS 11 70.5 information from GNS was not sought. I considered the structural form of the parapets when designing the roof parapet securing works. I recorded my observations and the remedial measures put in place in an email to the owner of 91 Cashel Street dated 31 December 2010.”

Q. I don’t need to take you to that. We’ve already seen that during Mr Gough’s evidence.

15 WITNESS CONTINUES READING BRIEF

A. “In that email I advised the owner that the securing I had designed was a short term solution and offered to carry out a detailed engineering assessment and advise on a long term solution. No response was received from the owner until after the February earthquake when he requested that we prepare a report confirming demolition as necessary. The temporary securing was installed on 31 December 2010 and was certified by OPUS. I was not involved in the certification process. I understand that the Council consequently removed the red placards and cordon from 89, 91 and 93 Cashel Street that had been in place prior to my inspection. The securing works for the parapet performed as intended and despite the collapse of the floor below the concrete parapet on Cashel Street was prevented from falling by the securing works installed and certified on the 31st of December 2010 as can be seen in the photographs”.

Q. And if we could have a look at one those photographs which is BUISCAS91.0007.40.

WITNESS REFERRED TO PHOTOGRAPH BUISCAS91.0007.40

Q. And can you just using the mouse cursor just show us what's happened there?

A. Ah, so you can see the building has lost its, its third floor. This is the concrete lintel, concrete parapet beam that, that we were briefed to restrain fixed to that at each end is the steel work washer and reinforcing bar at each end that was fixed back into the return parapet walls.

JUSTICE COOPER:

Q. Could we just go back to, just explain the last point you were making in relation to that photograph 7.40?

A. In this photograph we can see the piece of, the element of the building that had been identified as a potential fall hazard.

Q. Yes.

A. Into Cashel Street, that's this concrete section that's hanging down the front of the building.

Q. Yes.

A. The restraint works that we installed to the building which you can see. There's a blue section at each end. They are the steel works that were installed to restrain that. They at the moment are –

Q. But when were they, when was that done?

A. That was done on the, that was certified by us as being completed on the 31st of December. That occurred between Boxing Day and New Year's.

Q. Right. As in your paragraph 21, all right thank you. Now if we could just go back to the document suffix 12.2 please.

WITNESS REFERRED TO DOCUMENT 12.2

Q. I just want to understand this. This is a reconstruction. It seems to be the wrong word to be using but you've put this together last November by the look of the date?

A. That's correct.

Q. Yes, so this is your representation of what you told the owner was necessary?

A. Correct.

Q. Or as you conveyed to the builder during the site inspection?

A. We did, we, we conveyed that to the builder on site via a sketch in either my or his diary.

5 Q. Yes.

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CROSS-EXAMINATION: MR ZARIFEH

10 Q. You see that photo that shows the aftermath, 7.40. Can you just explain that the blue part, looking at the left-hand side, the west side, the blue part is part of the steel works?

A. So where my cursor is you can see the blue square, that's the washer that sits on the face of the concrete parapet and then passing through that is a reinforcing bar, a threaded reinforcing bar. That has a nut on the end to stop the reinforcing bar pulling through and then that
15 reinforcing bar runs back up. I'm following that now with the cursor and that would have been secured back onto the side wall some distance away from the front face of the building.

Q. But isn't that on the top floor?

A. That was on the top floor.

20 Q. And didn't the top floor collapse?

A. The top floor has collapsed so despite the collapse of the top floor and what this was originally secured to, the securing works have been effective in that they've prevented the parapet from falling.

Q. In the fact that it's just hanging on to that steel bar?

25 A. Yes.

Q. But we don't know what it's hanging on to do we?

A. No.

Q. It's not hanging onto what it was originally bolted to is it?

A. Well it may be.

30 Q. But you don't know that?

A. We don't know that.

Q. Because what it was originally bolted to, the whole floor's gone hasn't it?

A. Correct.

Q. And that wall that it would have been attached to has gone hasn't it?

A. Correct.

Q. So it could be just hanging there. We don't know what it's caught on.

5 How can you say that it was effective in the sense that it's come away from whatever it was attached to and perhaps by good luck it's just clung onto something and stopped from falling completely?

10 A. Well perhaps I guess that demonstrates that the robustness of what we designed it was certainly prevented from collapsing into Cashel Street despite having been through a significant earthquake and falling at least the whole floor the restraint system has prevented that from falling onto the street itself.

Q. Right okay but the restraint system has broken away from what it was actually attached to?

15 A. That's correct. Well we don't know that because we can't see. That may still well be fixed to that section of parapet or wall that's fallen down behind.

Q. Right so we don't know how effective it in fact was, do we?

20 A. Well we can see that it hasn't fallen down so in that respect I guess it has been effective.

Q. It hasn't fallen all the way down?

A. Correct.

25 Q. Mr Brown, Ms Hodgson who was the property manager for Hereford Holdings in her brief she spoke of speaking to you and getting you to have a look at 89 and 93, that's the buildings on either side of the one that you were doing the works on?

A. That's correct.

Q. Do you recall that?

30 A. I do. She asked us to look at the buildings and advise her whether any detailed, whether a level 2 inspection was required for those buildings. They had been placarded red because of the full hazard presented by this building, 91, and so my understanding was that Hereford Holdings

wanted to be certain that there were no other latent issues in their building that needed to be addressed.

Q. Right so what did you do on that request?

5 A. We had a walk through with Anna and the tenants for each of those buildings to identify whether there had been any observable damage as a result of the Boxing Day earthquake. In both buildings there was no damage that we could observe that was attributable to that earthquake and on that basis suggested that no further engineering damage assessment reports were necessary.

10 Q. Okay, so would that equate to what we've heard referred to as a level 2, internal and external?

A. It was internal and external, yes.

Q. So would it equate to that?

A. It would be equivalent to a level 2, yes.

15 Q. But you didn't conduct that kind of exercise for 91?

A. I conducted an exercise for 91 to satisfy myself that there were no issues again in that building that had been missed. In the notice that was appended to the door of 91 it had identified only that the front parapet was a falling hazard. In my inspection of the building I identified
20 that also the back parapet, the corners, back corners, were also a falling hazard that should be addressed and we dealt to those. In my inspections through the second floor and third floor of the building I did not observe any damage that could be attributed to the Boxing Day earthquake.

25 Q. Had you been to the property before?

A. No I had not.

Q. And so you didn't know what damage existed before Boxing Day?

A. No I did not but I was, as I mentioned, there was the engineer's inspection that was, or inspection report that was attached to the wall at
30 the landing of the first floor and that identified that there was no damage as a result of the Boxing Day, as a result of September, none that was structurally significant anyway.

Q. What date was that?

A. I can't recall what date that was.

Q. We've heard that there were, you said it was a Powell Fenwick one didn't you?

A. Yes.

5 Q. We've heard there were two or perhaps three visits but two letters?

A. Yes.

Q. You don't know which one of those two it was. There was one in September and then a letter dated 1 October?

10 A. I can't recall which of the two it was but, having read both of them, they both convey the same conclusion.

Q. Do you recall the later one talking about the need for further investigation of the parapets?

A. I don't recall that.

Q. So were you relying on that report, whichever one it was?

15 A. I did rely on that report to an extent. It indicated that they had carried out an internal and external inspection and that there was no damage to the building or none that was structurally significant anyway.

Q. And what about Mr Crundwell's visit and his documentation and level 2 assessment, were you aware of that at that stage?

20 A. No, no.

Q. And the crack to the eastern wall, the interior of the eastern wall, did you see that or were you aware of that?

A. I don't recall observing any cracks on the eastern wall so if I saw that then I would have considered that it was extremely minor and have no bearing on the capacity of the building to resist further earthquakes.

25 Q. How can you say that if you can't recall it?

A. Because if I had considered it significant I would remember it.

Q. If you'd seen it?

A. If I'd seen it.

30 Q. Right, so did you inspect the ground floor?

A. No I did not inspect the ground floor. I did not have access to the 123 tenancy although I was able to inspect the party walls of 91 obviously from both the Trocadero and Deval side of the building.

Q. So how would you classify your inspection of 91 then and I'm not talking about fixing the parapet at the top and inspecting that but you talked about inspecting the rest of the building and I think what did you say that it was, how did you describe it, a quick inspection of the rest of the building, a brief external visual inspection of the building was carried out to assess whether any other damage relating to Boxing Day earthquake?

A. Mhm, mhm.

Q. And similarly internal, was it a brief internal as well?

10 A. Yes but only of the floors that we had access to.

Q. Okay so you wouldn't describe it as a detailed engineering inspection?

A. No, not at all, and we were not engaged to undertake that work.

Q. I understand that. I'm not suggesting that you were. And in terms of an inspection to assess the structural integrity of the building as a whole, was it aimed at that or not?

A. No. I essentially wanted to satisfy myself that there was no damage to the building that I could observe that had been missed or had occurred as a result of the Boxing Day earthquake that needed to be dealt with in addition to the parapets that had already been identified by counsel.

20 Q. All right, just so we're clear, when you were engaged by the owner through Anna Hodgson, the property manager, that was because there had been this notice served?

A. Yes.

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25 Q. And so she engaged you to address those, the concerns that that notice raised?

A. Yes.

Q. And so your brief visual external and partial internal inspection, that was just something you took upon yourself to do?

30 A. Yes.

Q. But in terms of what you were doing for the owner it was addressing these problems that were in the Building Act notice?

A. Yes.

Q. Did you tell her that? Anna Hodgson? As the owner or the owner's representative? Did you tell her that you were not doing any form of detailed engineering inspection of the building? You were just really concentrating on the, remedying the damage?

5 A. That was the discussion that we had had, that the obviously Hereford Holdings' properties either side were affected by this parapet and they were keen to have the issue with the parapet addressed and that was the scope of our brief was to deal with the parapet issue.

10 Q. Right, but she was in effect instructing you on behalf of the owner of 91 wasn't she?

A. Mhm.

Q. Who wasn't Hereford Holdings?

A. Correct.

15 Q. So what I'm saying is did you make it clear to her that you were not conducting any kind of detailed engineering inspection of the building?

A. I cannot recall the details of those conversations.

Q. But in any event your discussions with her centred really around the Building Act notice and the red sticker?

A. Yes.

20 Q. And you didn't have the council file did you?

A. I did not.

Q. And you saw the Building Act notice on the building?

A. I did.

Q. You didn't see the red sticker or the red placard notice did you?

25 A. I saw the red placard notice.

Q. Right.

A. There was one affixed to that building as well as the adjacent building.

Q. And that spoke of the front façade, the parapet, didn't it?

A. It spoke of the parapet. I don't know that it mentioned the façade.

30 Q. But it directed you to what you had to do and address in particular?

A. Yes, and in addition to that and I talked to the council about the Building Act notice and conveyed to me that that was the issue that needed to be addressed.

Q. And so that is what you addressed and you told us how you did that. You said that you weren't involved in the certification but Mr Boyce was, wasn't he?

A. He was.

5 Q. Can you just tell us how did it work? You, what you designed the make safe work?

A. Yes.

Q. And did you oversee it being carried out?

10 A. As much of it as I could. I was going on leave, given this was a holiday period I was supposed to be on holiday and so, and Alistair was as well but he was going to remain in Christchurch so we essentially, or I essentially handed over to him so that he could carry on and carry out those inspections on my behalf.

Q. So did you do any oversight of the make safe works or not?

15 A. I didn't. Alistair did inspect it when it was completed.

Q. So you designed it, told the contractor what to do?

A. Yes.

Q. And then left it for Mr Boyce to come along and make sure it had been done properly?

20 A. Correct.

Q. And presumably Mr Boyce had a copy of your drawing and knew what was intended?

A. Yes and we were doing similar works to other buildings in the area.

25 Q. Well this drawing that you've referred to, is that something you drew at the time?

A. The drawing that was shown?

Q. The bar and the reinforcing?

30 A. As I recall it I produced, we produced a sketch of what was required with the contractor whilst we were on site which was based on the materials that they had available, given that it was a holiday period, it was nothing other than what, materials weren't available to carry out the repair other than what they could readily procure so we had to use standard section

sizes, standard materials that they had on site so we worked through that with them on site. As I recall –

Q. When you say 'we' do you mean yourself?

A. And the builder.

5 Q. But not Mr Boyce?

A. No.

Q. You worked through that with him on site?

A. Yes, and as I recall we produced a sketch. I don't have a copy of that sketch any longer. We did do similar works on another building just around the corner on The Strip, Liquidity, which we did produce a sketch for so I had a sketch that I could show Alistair and say this is what securing works on this building look like.

10 Q. So if he didn't have a sketch in this case and he hadn't taken part in the discussions on site, how does he come along and certify that what was designed has been actually built and put in place?

A. Because we'd had that conversation. We had a handover –

Q. You told him?

A. – where I walked him through what was being done so –

Q. And is that what usually happens or not?

20 A. It can be what usually happens. It just depends on the circumstances and the nature of the works. This was securing works were pretty straightforward. They weren't complex. There wasn't really that much to convey that was...

25 Q. Did the fact that you were limited in the materials you could use, did that affect anything?

A. No.

Q. If you'd had other materials would you have done anything different?

A. No.

Q. So it didn't compromise it?

30 A. No.

Q. And you weren't involved otherwise in any of these buildings? Other than what you did on this 91 and looking through 89 and 93?

A. That's correct.

Q. There is a form, I'll just get it brought up. BUICAS0910019.113. Looks like initials AGB, that's not you?

A. Not sure.

Q. Is that signature at the bottom and initials at the top?

5 A. Yes, that would be me so that's my level 1 inspection for Trocadero.

Q. So when would that have been?

A. That would have been the Boxing Day period.

Q. It's undated, isn't it?

A. It is.

10 Q. So you weren't doing this on behalf of the council, were you?

A. I don't recall.

Q. Right.

A. The assessment forms that we completed, whether they were for council or for private clients we sent them all through to council regardless so that they had a copy for their records.

15

Q. But this is red-stickering 95 and what, because of the next door building? See under the comments. See the comment, under comments in the middle right. Says 'overhead falling hazards ticked from 123 Mart next door'?

20 A. 123 Mart next door, yes.

Q. So is this as part of your inspection on that day after the Boxing Day?

A. Yes it would be.

Q. And did you do one for 89?

A. I don't recall.

25 **CROSS-EXAMINATION: MR ELLIOTT**

Q. Mr Brown, did you say that you inspected the interior of the building at each level?

A. No, I did not of 91. I did not inspect the ground floor. I had no access to the 123 Mart tenancy.

30 Q. You inspected the upper levels did you?

A. I inspected them as I walked through them, yes.

Q. I don't suppose you saw a bed, did you?

A. I don't recall beds or couches.

Q. The families of those who died and the people who were injured as a result of the collapse of this building want to understand really how it was that a building that was red-stickered and cordoned off could have
5 been re-opened. Just from your point of view the red sticker as far as you understood it was directed to the parapet hazard, is that right?

A. Correct.

Q. And your role was to look at the parapet, which you did?

A. Yes.

10 Q. And you designed work to address that?

A. Yes, correct.

Q. And then the work was done?

A. Yes.

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15 Q. Mr Boyce signed a certificate for the council?

A. Yes.

Q. That was sent to the council, is that right?

A. I presume so yes.

Q. As far as you know as after that the red sticker was removed?

20 A. As I understand it that's the process.

Q. Following which you then simply reported to your client?

A. Yes.

Q. We have here a building that was a three storey, as you say in your brief three storey unreinforced masonry concrete, sorry unreinforced
25 masonry concrete with a lightweight roof on timber trusses. That's what the building was?

A. Yes.

Q. Mr Peter Smith has been instructed by the Royal Commission to provide expert evidence and he will give evidence that at the earthquake prone
30 level the strength of a building is that it can withstand horizontal accelerations of about 0.2G and as I understand it that this building was likely to have had a capacity lower than that, perhaps even in the vicinity of 0.1G. Is that something which you can comment on? Perhaps you

can't because you may not have considered it but I'm just giving you that opportunity.

A. I can't recall at the time whether I considered what the capacity of the building was at the time. I mean obviously now looking at it we can
5 consider that it's earthquake prone and it had been identified as such I think previously by the council anyway.

Q. Right well I appreciate as you said in paragraph 8 your instructions, you say your instructions were limited to inspecting the parapet. In
10 paragraph 7 of your evidence you say in inspecting the building I considered the impact of the 4 September quake and subsequent aftershocks on the structural integrity of the building. Your evidence has been that your focus was on the damage.

A. Yes.

Q. In making that assessment, is that right?

15 A. Yes.

Q. My question really is, your colleague Mr Crundwell has posed the question well let's think about how this building works structurally because it's not clearly understood and may require further study and I appreciate that you had some instructions but why not give
20 consideration to that wider question about the overall capacity of the building given its nature?

A. I guess that would require quite some detail to come up with a, to run calculations and come to the conclusion as to whether the building was or wasn't earthquake prone. Certainly I considered the structural form
25 of the building and how it worked and my conclusion was that the walls and vertically between the tie points at the ceiling and floor level and for that reason I didn't consider that the clear vertical crack on the west wall some distance back from the façade was a significant issue in terms of the structural capacity of the building. From my inspections I could
30 detect no damage that would reduce the structural capacity of the building in resisting further earthquakes or aftershocks so I guess I gave consideration to the building for that effect but to determine whether it was or wasn't earthquake prone or the extent of its expected structural

performance, that would require some detailed work and I think that detailed work had been recommended previously in the reports that had been undertaken by the two other consulting engineers.

5 Q. The question people may struggle to understand is why not say to your client today, let's do this work to make that assessment?

A. And I think that we did that in an email that we provided back to Tracy saying that this was a short term measure and we were available to assist with detailed assessment if that was required.

Q. But you didn't say let's do this right now?

10 A. No we didn't say that.

Q. Because people may wonder how it could be that an earthquake prone building was reopened during an aftershock sequence.

A. They may do but that was the situation for a number of buildings around the city and that was the process that was in place at the time.

15 **CROSS-EXAMINATION: MR LAING**

Q. Just following up on that Mr Brown if I could look at WITCOU0002.17? If you look at the third paragraph and the last sentence Mr Brown. That's reference you just made isn't it, securing work being short term only?

A. Yes.

20 Q. And if you look at the last paragraph there, bring that up please? In that paragraph you are inviting Mr Gough to contact you to carry out a detailed inspection of the building?

A. Correct.

Q. And provide further engineering advice correct?

25 A. Correct.

Q. Correct. I take it you never heard from Mr Gough though, did you?

A. No I did not.

Q. You didn't hear from him?

A. Not following that email.

30 Q. Yes, if you were going to carry out a sort of, look at a long term solution, what sort of level of inspection would you have gone to at that stage?

- A. Much more detailed than that which we had carried out to that point. A long term solution would involve some analysis of the capacity of the building no doubt.

CROSS-EXAMINATION: MR VAN SCHREVEN

- 5 Q. When you were first approached by Ms Hodgson, is it fair to say that her concern was in respect to the Hereford Holdings Limited buildings, those are the ones at 87 and 93 Cashel Street, is that right?
- A. Correct.
- 10 Q. And it was only because of the red placard on the building at 91 that those two buildings were themselves red placarded?
- A. Correct.
- Q. And all your subsequent investigations and reports were addressed to West Mall Properties Limited or Mr Tracy Gough, is that right?
- A. In relation to 91?
- 15 Q. In relation to 91?
- A. Yes.
- Q. And other than the document which was referred to as 19.113 which was the level two assessment form that was just referred to you, was there any other documentation you prepared for either 87 or
- 20 93 Cashel Street?
- A. Not prior to the 22nd of February earthquake.
- Q. No, following the 22nd of February earthquake you did provide some reports?
- A. We did. We provided reports recommending demolition of both of those
- 25 buildings.
- Q. And again that recommendation was as a result of the damage that had been caused to those buildings by the 91 Cashel Street collapse?
- A. Correct.

CROSS-EXAMINATION: MR EVANS

- 30 Q. Mr Brown, you explained before and I understand that the rear parapets were or partially taken down. I just want to take you back please to

photograph WIT.BRO.002.13 this is a photograph of the front parapet as I understand it. I think we can see Cashel Mall to the left of the photograph. In terms of the parapet or the part of it that was taken down you can see there's a crack next to that metal box. Was it all of that concrete above that box as well as the concrete on the right hand side of the photograph?

A. This part of the parapet was not, this was not taken down.

Q. Right.

A. This was part of the concrete parapet beam at the front that was secured back into the building. The photos at the back of the building would show the parts of the parapet that we, where we deconstructed.

1507

Q. I think if we go to please photograph 002.18. That shows the front of the building and that top south-western end of the parapet, that crack you can see up there that's, that's the part of what we saw in the earlier photograph, is that right.

WITNESS REFERRED TO PHOTOGRAPH 002.18

A. This, this crack through here?

Q. Yes that's the one?

MR MCLELLAN ADDRESSES MR EVANS

A. Yes. The previous photograph that we were looking at is the, is the other end of this parapet the one that's just out of shot to the right of this photo.

Q. Right okay, I follow so photograph 213. That's not showing the same end in 2.18?

A. Correct.

Q. And photograph 2.18 that's, that's part of this top beam that was tied back by this re-bar system?

A. Yes.

RE-EXAMINATION: MR MCLELLAN

Q. Mr Brown you were asked when Mr Zarifeh started his cross-examination some questions about the effectiveness of the, your design

for restraining the front parapet beam. I just want to ask you a couple of questions about that. Could we have BUICAS91.0007.40.

WITNESS REFERRED TO PHOTOGRAPH BUICAS91.0007.40

Q. And I think you said well it's restrained by something but we can't see
5 quite what it's restrained by, is that right?

A. Yes.

Q. Now could we go to BUI, no sorry WIT.CRU.0001.17.

WITNESS REFERRED TO PHOTOGRAPH WIT.CRU.0001.17.

Q. Now that's a photograph that Mr Crundwell took obviously before the
10 February earthquake and can you just look before I take you to another photograph to do a comparison to assess in the February earthquake how the rear was damaged, so can you just have a look at that, you see that right-hand downpipe and the parapet beam at the top?

A. Yes.

15 Q. If you just have a look at just memorise that as it were and now could we go to BUICAS91.0007.43.

WITNESS REFERRED TO PHOTOGRAPH BUICAS91.0007.43

Q. So this is post February earthquake and I think you can see that as
20 opposed to the Cashel Street façade which lost its third story can we see here that the third, the third story at least up at the top of the windows is, was still complete, was still present after the earthquake?

A. Yes.

Q. And on the right-hand side can you see the feature that I asked you to
25 look at in the previous photograph. What can you see of the side parapet beam?

A. It remains.

Q. So does that allow you to make any inference as to what your, what the
restraining method of the lintel that you designed might have been, might have still been fixed to?

30 A. Um, it may have been still fixed to that. It's just too hard to tell.

QUESTIONS FROM THE COMMISSION – NIL

WITNESS EXCUSED

MR MCLELLAN CALLS**ALISTAIR RONALD BOYCE (SWORN)**

Q. Your name is Alistair Ronald Boyce?

A. It is.

5 Q. And you're a structural engineer of Christchurch?

A. I am.

Q. Do you have your brief of evidence in front of you?

A. I do.

Q. Could you read that please from paragraph 1?

10 **WITNESS READS BRIEF OF EVIDENCE**

A. "I hold a Bachelor of Engineering Civil which I received in 1997. I am a chartered professional engineer and a member of the Institution of Professional Engineers of New Zealand. I have been employed as a structural engineer by Opus International Consultants Limited from 2003
15 to 2005 and again from 2008 to the present day. I am based in Opus's Christchurch office. I have been involved in the design of a number of buildings and civil structures in Christchurch and have also undertaken seismic assessments of existing buildings. After the 4th of September 2010 earthquake I undertook rapid assessments of central city buildings
20 for Civil Defence and also completed detailed assessments on other buildings for other Opus clients.

Extent of work undertaken. On or about 29 December 2010 I met with Andrew Brown to discuss the work required at 91 Cashel Street, the building, in relation to the design of securing works for the roof parapets damaged in the 26th December 2010 earthquake. I understood that
25 Andrew following a visit to the building and in line with Opus's scope of engagement with the client had design the securing works and discussed these with the contractor South Build. He requested that I inspect the securing works once they had been installed and provide
30 certification of this to the Christchurch City Council. The securing works had been completed by South Build and consisted of removing the corners of the cracked parapets at the northern end of the roof and connecting re-bar tie rods to the loose parapet beam over Cashel Street

to tie it back to the return walls. On 31st December 2010 I visited the building and carried out an external inspection of the securing works. I had not previously inspected the building. To do this inspection I accessed the roof via a crane provided by South Build and confirmed that the securing works had been completed in accordance with Andrew's design".

Q. Can I just stop you there, I'll just ask you to elaborate on the nature of your inspection. Was there anyone else present when you carried out your inspection?

A. Yes in the, in the crane I went up in a man cage with one of the contractors and we would have been up at roof level for around 20 minutes. We were both tied into the crane man cage with strops but I hopped out of the cage so I could get on to the roof and check the securing works, um, and yeah the inspection that I did I hopped out, I, I checked the bolts to see they'd been tightened. I checked the condition of the parapet where the PFC had been bolted to, to look for any signs of distress or cracking. I also checked the ends of the tie rods to make sure they'd been securely tensioned and found that everything was, was in accordance with Andrew's design.

Q. And to the extent that you weren't able to see anything if that's the case. Was there anything you needed to verify with the contractor about the works they'd done?

A. I spoke to them about the breaking back of the parapets at the northern end of the roof. We couldn't get that far because of the crane and I didn't want to unclip myself from the man cage so I talked to them and made sure that they'd broken back the parapets to sound brick. Um, I saw them from a distance of 10 metres or so and they looked fine to me and the contractor had confirmed that they had gone back to sound brick so I was satisfied with that work.

Q. Then carry on reading your brief please from "during this inspection", paragraph 5.

WITNESS CONTINUES READING BRIEF

A. "I had not previously inspected the building. To do this inspection I accessed the roof via a crane provided by South Build and confirmed that the securing works had been completed in accordance with Andrew's design. During this inspection I also briefly looked at the condition of the remaining parapets in order to see if I could identify any other areas of damage or distress which I could not. I then provided certification to the council that the securing works had been completed. This certification consisted of signing a statement in respect of the building.

10 1517

Q. Could we have a look at BUICAS91.0007.30? That is the statement or certificate that you signed, Mr Boyce?

A. Yes it is.

Q. Carry on from paragraph 6.

15 A. I was not provided with information from the council file before conducting my site visit. I was however aware from Andrew Brown that a level 1 rapid assessment had been conducted in respect of the building after the 26 December 2010 earthquake and that this identified that the roof parapet above the building was cracked and potentially loose. Building Act notices had been served on the building owner and on the owner of the immediately adjacent buildings. I was not provided with a copy of the Building Act notices. I was aware that 91 Cashel Street had been red placarded as a result of the Boxing Day inspection. My role did not involve review of the building plans or any previous reports or assessments by other engineers. I considered the structural form of the parapets when reviewing the design of the securing works. A civil defence briefing for engineers held on 5th September 2010 had highlighted that further aftershocks, up to one magnitude less than the main earthquake event, could be expected. Based on this assumption I considered that since the building had survived the 4th of September 2010 earthquake and the 26th of December 2010 earthquake with only minor damage to the roof parapets it did not have diminished seismic capacity and its ability to withstand further aftershocks following the

expected decay sequence was not materially reduced. The works were designed to the relevant New Zealand standard NZS1170.5 and the securing works were designed to restore the structural capacity of the damaged feature to at least its condition before 26 December. Accordingly, no further information from GNS was required before I provided my certificate.

Statement by chartered professional engineer in respect of the building – the purpose of my statement dated 31 December 2010 was to confirm that I had inspected the securing works designed carried out by SouthBuild and that I could certify that the works restored to the structural integrity and performance of the roof parapets to the condition that existed prior to the earthquake on 26 December 2010. The scope of Opus' engagement with the building owner was to design securing works for the damage resulting from the 26 December 2010 earthquake.

The securing works installed mitigated this damage. I considered it appropriate to alter the date in paragraph A of the statement from 4th of September 2010 to 26 December 2010 because I was working on the assumption that the works were for the purpose of remedying damage caused by the 26 December 2010 event which resulted in a red placard.

Q. I'll just stop you there and just draw the Commission's attention to the document which is on the screen. Could we have highlighted the paragraph A just under half way down the page. That is the section that you altered that you've just referred to in your brief?

A. It is.

Q. Carry on from prior to that.

A. Prior to that my understanding is that the building had a green placard. The potentially dangerous features of the building at 91 Cashel Street relevant to paragraph B of the statement –

Q. I'll just stop you there. Can we highlight paragraph B please? So that relates to potentially dangerous features. Yes can you carry on reading your brief?

A. Relevant to paragraph B of the statement with a cracked roof level parapets at the northern rear end of the roof and to the loose parapet

beam over the Cashel Street elevation. The potentially dangerous features relevant to paragraph B in the statement remedied by the securing works recommended by Andrew Brown and carried out to the standard identified in the statement. The loose parapet beam above the Cashel Street frontage was secured by tying it back to the side parapets. The cracked roof parapets on the northern side were secured by removing parts of the parapets. Following my site visit on 31 December 2010 I advised Andrew Brown that the works had been completed and I did not have any further involvement with the building.

10 Q. Thank you Mr Boyce, just wait there and answer any questions.

CROSS-EXAMINATION: MR ZARIFEH

Q. Mr Boyce, you hadn't had any involvement with the building prior to the 31st of December?

A. That's correct.

15 Q. And that was the one and only time you visited the building?

A. It was.

Q. And we've heard that you didn't have anything to do with the design of the make safe works?

A. That's correct.

20 Q. Or any site inspection with the contractor?

A. I –

Q. In terms of what was required to be done?

A. I inspected the works once it had been completed.

25 Q. Yes. So the information you had as to the design and what was required was that conveyed to you by Andrew Brown?

A. Yes it was.

Q. And you might have heard me asking him, is that something that happens quite often or not in terms of a different engineer certifying who has had nothing to do with it before then?

30 A. It's not uncommon for it to happen.

Q. Is it ideal or not?

- A. I think the fact that Andrew and I are both chartered engineers means that we both had a very good understanding of the work that was required. I would not have gone out to site if I was not fully informed of what I had to do.
- 5 Q. So if it was more complicated would you not have agreed?
- A. If it was more complicated I would have made sure that I was, had a full understanding of what I was looking at on site.
- Q. And the fact that you didn't have any sketch or plan of the works didn't, wasn't a problem?
- 10 A. Not at all.
- Q. So you didn't have the council file?
- A. No.
- Q. Or any part of it?
- A. No.
- 15 Q. You didn't have a copy of the Building Act notice?
- A. I observed the copy taped to one of the doors.
- Q. Right.
- A. Possibly at 91.
- Q. What did it say?
- 20 A. I can't recall the exact wording but it did mention I think potentially loose bricks.
- Q. Was that at the northern end?
- A. I can't recall the wording, sorry.
- Q. But essentially the information you got, was that conveyed to you by
- 25 Andrew Brown?
- A. Yes.
- Q. And then you go on the 31st up in the crane as you've said and in relation to the front façade and that securing work. How did you actually check that? Did you physically check it or not? Or just look at it?
- 30 A. I physically checked it. I made sure that all the tie-rods had been installed properly and tensioned and then with regards to the connection to the parapet when I hopped out of the crane I actually tried to give the parapets a push just to make sure that they weren't wobbly or cracked.

Q. Okay, and is that quite a standard method?

A. I don't know, it's something that I try to do wherever I can.

Q. Did you do that at the back or not?

A. No, I couldn't reach the back.

5 Q. And in terms of what you could see of the design and what was there in place you were happy with it as a means of securing those parapets?

A. Yes, to me it looked fully appropriate.

Q. And then as a result of that you complete that certificate, that standard CPEng certificate?

10 A. Yes.

Q. But you alter it to the 26th of December as the condition prior because you hadn't inspected it before or post the September earthquake, is that right?

15 A. Yeah, also because my understanding is the building had been, had a green placard immediately prior to Boxing Day. The damage to the –

Q. How did you know that?

A. I think I had been told that. It must have been by Andrew.

Q. Sorry, carry on, so...

20 A. Yeah, so the damage to the front parapet, that was a result of the Boxing Day earthquake so I felt that it was appropriate to reference that date on the statement so we were taking it back to the condition prior to that earthquake.

Q. That being as you understood it the only damage or visible damage from the Boxing Day earthquake?

25 A. That's correct.

Q. So when you were signing that and in particular referring to the paragraph A where you altered that, what were you certifying? Were you certifying that the integrity of the make safe works was something that could be relied on?

30 A. What I was signing was to say that we had restored the capacity of the building to the condition it was before the 26th of December earthquake.

1527

Q. So that's the capacity of the building as a whole?

A. Yes it is. We removed the dangerous features of the building.

Q. Right. But how were you able to certify that the capacity of the building as a whole had been restored to December if you hadn't actually conducted an inspection of the building as a whole?

5 A. Andrew had been through the building and he'd picked up the damage that we needed to fix in order to get the red placard removed and undertaking that work we remedied that damage.

Q. And how did you know that he'd been through?

A. He had told me.

10 Q. Right. And what did he tell you about it?

A. I can't recall the specific wording but I mean if there had been any other problems with the building we would have looked into those issues.

Q. When you say we do you mean yourself or who?

A. Opus.

15 Q. Right. But it's you who's putting your name to the form isn't it?

A. Yes it is.

Q. And you're the one certifying the structural integrity is back to prior to December, to Boxing Day. Can you really do that if you haven't or someone hasn't done a reasonably detailed investigation of the building as a whole?

20

A. I believe that the investigation that Andrew did was appropriate and I was relying on that information for when I signed that certificate.

Q. Right did you, were you aware that he hadn't been able to go into the ground floor? We heard that today but were you aware of it then?

25 A. I can't recall that sorry.

Q. Were you aware that it was as he termed it a brief visual external and internal inspection?

A. I can't recall that.

Q. Right. So you can't recall exactly what he told you as far as other damage or lack of it?

30

A. No, I mean I know that he talked about the damage at the roof level and that's what we were fixing.

Q. Right. So are you saying then that even though you were concentrating on the remedial works and checking those that in signing this form you were actually certifying the structure integrity of the building as a whole?

5 A. I believe that's what the form is saying but it's saying that we are returning it to the capacity it was before the 26th of December. We're not certifying what the overall capacity of the building is.

Q. No but you're certifying that the overall capacity is no worse than before?

A. That's correct.

10 Q. Right. So what I'm getting is you're not simply certifying that the remedial works have been done, carried out properly and be relied on. You're actually going a step further. That was your understanding?

A. It is correct but no other damage had been observed.

Q. From that brief visual inspection?

15 A. That's right.

Q. And did you understand that by completing this form that the council would be assuming that you had, you or Opus but you because you signed it had conducted an examination of the building as a whole?

A. That was my understanding, yes.

20 Q. Right. And so you were happy to certify that on the basis of the knowledge that you had?

A. Yes I was.

Q. And have you signed CPEng certificates like that for other buildings?

A. I believe I may have signed one or two others.

25 Q. What? In entirety you've only signed one or two others?

A. For that particular statement yes.

Q. Right. In terms of following securing work you mean?

A. Yes.

30 Q. Right. And in the same kind of circumstances where you relied on what you'd been told about someone else's inspection?

A. I think on the one that, the other one I had submitted I had designed the securing works myself.

Q. And inspected the building?

A. Yes.

Q. Or you're not sure?

A. No I did inspect the building.

5 Q. Right. So again what kind of inspection, a brief visual inspection or a more detailed one?

A. The works that we were doing for that particular building were limited in the area. We were trying to secure only part of the building. It was a relatively brief inspection and that was to give us enough information to be able to design the securing works.

10 Q. Right. And presumably you weren't aware of Mr Crundwell's inspection on the 14th of October and the concerns that he raised?

A. No I wasn't.

15 Q. You said in paragraph 8 that you considered, in the middle of the paragraph, you considered that since the building had survived the 4 September and the 26 December earthquake with only minor damage to the roof parapets, it did not have diminished seismic capacity and its ability to withstand further future aftershocks following the expected decay sequence was not materially reduced. So again that was based on what you'd been told by Andrew Brown of his visual inspection, is that right?

20

A. Yes because the building did not have any diminished seismic capacity.

Q. But again you're talking about the building as a whole as opposed to simply the parapets?

A. That's correct.

25 Q. Do you think or did you have any difficulty in saying that and signing the certificate when you didn't see any of the council files or would you not normally in the other two you've done?

A. Well the ones I've done I haven't seen the council file before.

RE-EXAMINATION: MR MCLELLAN

30 Q. Can you just have 91.0007.30 back? Can I just have paragraph A highlighted again please? Mr Boyce, your understanding was that the building was green placarded before Boxing Day. That's right isn't it?

A. That's correct.

Q. And you were inspecting this for the purpose of if appropriate giving this certificate in respect of a, of remedial works to repair or secure the hazard that resulted in it being given a red placard?

5 A. That's correct.

Q. In paragraph A the words of the statement are "Structural integrity and performance. Where the structural integrity and/or structural performance of the building (or part of the building) was materially affected". Can you just comment on the words in brackets there or part
10 of the building that are relevant to this task that you had?

A. For this particular building the only damage resulting from the Boxing Day earthquake was to the roof level parapets and the façade beam along the front. The securing works that we installed mitigated the risk of those items falling so I believe that the securing works we put in
15 restored the structural integrity and performance of those elements.

QUESTIONS FROM COMMISSIONER FENWICK – NIL

QUESTIONS FROM JUSTICE COOPER - NIL

20 **COMMISSION ADJOURNS: 3.36 PM**

COMMISSION RESUMES: 3:53 PM

**MR LAING ADDRESSES THE COMMISSION RE PROPOSAL FOR NEXT
WITNESS. MR MCCARTHY WILL READ BRIEF RELATING TO
25 91 CASHEL STREET. REMAINING BRIEFS WILL BE TAKEN AS READ
AND MAY BE QUESTIONED UPON BY COUNSEL. ALL BRIEFS
PUBLISHED ON WEBSITE. COMMISSION CONTENT FOR THAT
COURSE TO BE FOLLOWED.**

30

MR LAING CALLS**STEVEN JAMES MCCARTHY (SWORN)**

5 Q. Your full name is Steven James McCarthy. You have prepared a statement of evidence in respect of 91 Cashel Street. Do you have it with you?

A. (no audible answers 15:54:08)

10 Q. I think there's no need to deal with paragraphs 1-3 or indeed 4 and 5 which are fairly standard. Could I ask you to start reading at paragraph 6.

WITNESS READS BRIEF OF EVIDENCE COMMENCING AT PARAGRAPH 6.

15 A. Events between 4 September 2010 earthquake and 22 February 2011 earthquake.

On 6 September 2010 a level 1 rapid assessment was carried out and the building received a yellow placard. The assessment noted that there was a fallen chimney.

20 On 10 September 2010 the placard on the building was changed from yellow to green. An inspector with the initials AJJ (HG) who notes he is a private engineer completed the placard form and noted that there was no risk from the chimney debris.

25 On 12 October 2010 a level 2 rapid assessment was carried out by Paul Guile, a contract engineer working for the Council at the time and a green placard was confirmed. The assessment noted that according to the occupant, the chimney had been removed but there was a hairline crack in the external wall and a structural engineer's report would be
30 required.

On 14 October 2010 a level 2 rapid assessment was carried out by Martin Crundwell, an engineer contracted to the Council from Opus

International Consultants Limited (Opus) and a green placard was again confirmed. The assessment noted that the chimney had been removed.

5 On 26 December 2010 a level 1 rapid assessment was carried out. It appears that the “Restricted Use” yellow assessment category was initially ticked on the form. This was later changed to “Unsafe” red and the Building Act Notice was issued on 27 December 2010. A red placard was fixed to the building on 28 December 2010 as recorded in the photographs. A copy of the notice along with a cover letter dated 10 27 December 2010 was posted to the owner West Mall Properties Limited.

15 On 31 December 2010 the Council received a CPEng certification from Alistair Boyce, an engineer from Opus. The Council, relying on Mr Boyce's CPEng certificate, removed the section 124 notice for the building.

20 On 26 January 2011 a level 1 rapid assessment form was completed and the building was assessed as “Inspected” green. The assessment noted the chimney had been removed. It is unclear from the Council's record why an assessment was carried out on 26 January 2011.

25 On 7 February 2011 an engineer contracted to the Council, Alan Nixon, inspected the building and noted that as the chimney damage had been removed down to roof level the building was occupyable and no further investigation was required. It is again unclear from the Council records why re-inspection was carried out on 7 February 2011.

Cordons:

30 The Council has been advised by its sub-contractors that 50 metres of 1.8 metre high fencing was installed at this location on 29 December 2010. However, I understand that the Council cannot independently confirm the date of the installation. This may be due to the fact that

Cashel Mall was completely closed off after the Boxing Day earthquake and the sub-contractors were working directly with Council engineers at this time to erect the appropriate cordons. The Council does have a record of photos taken of the cordon on 30 December 2010. The Council also has a map of the existing cordons as at 4 February 2011 and it appears that the cordons have been removed by then.

Application of Relevant Legislation in the Council's Earthquake Prone Policy:

10

The Council's records note the building as earthquake prone in terms of the definition in section 66 of the Building Act 1991. It appears that this state has continued to apply when the Building Act 2004 was introduced. After the commencement of the Earthquake Prone Building Policy in 2006 if a building consent application for a significant alteration had been received, the application would have been dealt with in accordance with the policy. (See in particular section 1.7). However, no building consent applications were received after the introduction to the policy. It appears that no earthquake strengthening was carried out on the building.

15

20

JUSTICE COOPER:

Q. Can I ask you to pause there. When you say it appears no earthquake strengthening was carried out to the building, is that a comment you have made as a result of investigation of the Council's records?

25

A. It's a review of our property records, yes that's correct.

WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH 19

30

A. I understand that there has been no assessments of the building in terms of the policy. However in 1992 a hazardous appendages survey was carried out which noted that the building was not earthquake prone

but its chimneys were hazardous appendages. The basis for the comment that the building was not earthquake prone is unclear.

CROSS-EXAMINATION: MR ZARIFEH

5 Q. Mr McCarthy, just a couple of questions about the buildings on either side. Firstly 87-89 Cashel Street. You've heard the evidence of Antony Gough in relation to that building and he talked about various works being done on the building. I think he was referring to fit-out, various fit-outs when tenants left. He called it "up-grading" which included, he said, strengthening he believed particularly in more recent
10 years and in the brief that's gone in for yourself for 89 Cashel Street you've said there are no records or permits or consents for structural strengthening noted on the file after 1957. Is that correct?

A. That is correct. There is a number of fit-outs that occurred during that period from 1957 obviously to now but there were no permits for
15 strengthening works as such.

Q. So fit-outs or up-grades whatever you call them may well not require a consent. Is that right?

A. They required a consent and there may have been beams installed but they wouldn't have been designed to affect the overall strength of the
20 building.

Q. Right, otherwise there would be a consent?

A. There was a consent and there would be elements of beams and changes in the building but the overall strength of the building wasn't addressed.

25 Q. Right, so in terms of the Council's view of that building, in terms of its Earthquake Prone Policy how would you describe it?

A. I think it would be it's on our register as earthquake prone I believe, potentially earthquake prone.

Q. Now 93-95 Cashel Street, that's slightly different. There was
30 considerable structural work done or some strengthening work done?

A. There was some strengthening work done progressively between 2007 I believe and 2009 and 10 and that was just addressed in individual

tenancies on the ground floor. I think Mr Gough alluded to that this morning. It wasn't a comprehensive re-strengthening of the building.

Q. So again that would be potentially or possibly earthquake prone still, or would have been?

5 A. It's still considered to be potentially earthquake prone.

1603

Q. Now the only other thing I wanted to ask you about in relation to that building was a document which is BUICAS091.0019111. So that's a level 1 assessment dated 26 December, correct?

10 A. Yes.

Q. For 95 Cashel Street, so it refers to Trocadero Bakery?

A. Yes.

Q. And it's green placarded but it says under the comments, 'cracking in front façade to be reviewed by structural engineer,' correct?

15 A. Yes.

Q. And down below it repeats that 'subject to evaluation by engineer' and there is a tick under, at the bottom left, structural?

A. Yes.

Q. Correct?

20 A. Yes.

Q. Do you know from the council records what happened in relation to that level 1 assessment?

A. So the building was initially placarded green or indicated to be of green status. Obviously the building next door had a structural fault, needed repair, which would have affected the building at 95 Cashel Street. So the red status was applied to both that building and the adjacent, the other adjacency which was 87 to 89 Cashel Street.

25

Q. Right.

A. So all three buildings were red for the period whilst the repair on 91 was being effected.

30

Q. So and I think you covered this in the brief that we've taken as read. You're saying that yes there is those notes on that level 1 that we see up there?

A. Yes.

Q. But there's also a red placarding of that building –

A. Yes.

Q. – because of the danger, the parapet danger from 91 next door?

5 A. Correct.

Q. And so you're assuming or the council is assuming that once the red placard was removed from all three properties once the parapet had been attended to –

A. Yes.

10 Q. – as we've heard that that would have entailed an inspection of 93–95 and a clearing of that?

A. That's correct.

Q. And so the cracks in the front façade of 93 that were obviously of a concern to an inspector then would have been addressed?

15 A. Yes.

Q. But although there was a brief inspection of both properties on either side of 91 by Mr Brown, he wasn't directed to those comments clearly from what he said?

A. Yes.

20 Q. So I am just wondering if there is any possible breakdown in communication between engineers and council as to what was being certified or what was understood to be being certified in a situation like this? My understanding from reading your evidence in this case and I think I saw reference to another one as well is that the council in
25 receiving a CPEng certificate like this, whilst it might have been directed to securing measures, was assuming that a full inspection of the whole of the building had been carried out when the engineer was then certifying the building, is that correct?

A. That's certainly our assumption.

30 Q. And in this case you were assuming that in relation to all three buildings?

A. Yes we were.

Q. Right.

A. I suppose if I'd just clarify, you wouldn't remove the red placard from 93–95 if there was still an issue, given that that potentially could affect, the converse being it could affect 91 so we were looking at all three buildings in concert.

5 Q. Right.

A. That was our assumption.

Q. But in this case specific damage was observed in relation to 93?

A. Mhm.

10 Q. That I guess we don't know for sure but it would appear that it hadn't been, no one had been directed to that but certainly the council was assuming that all three buildings had had a full assessment?

A. Yes we were.

15 Q. What do you mean by a full assessment? I saw that thing in reference to another building that the council was assuming that a full engineering assessment had been carried out?

A. In this case it would be an external and internal assessment by a CPEng engineer.

Q. Okay so a level 2 type assessment?

A. Yes.

20 Q. And so in this case when there was no access say to the ground floor internally, there wasn't a full internal inspection was there?

A. In which case?

Q. In the case of 91?

A. (inaudible 16:09:06) oh are we onto 91 or 95 to?

25 Q. 91.

A. Okay.

Q. With all three you're talking about, aren't you?

A. Okay, yes, I accept that.

30 Q. But the council in removing the cordons and the red placard is working on the basis that there has been a full or a level 2 at least engineering assessment of the building or in this case the three buildings?

A. That's correct.

Q. In relation to 91 it seems clear that there had been no strengthening work?

A. Correct.

5 Q. And in fact I think the council's view of the building as I think Mr Elliott highlighted in cross-examination of Mr Gough was that it was in poor condition?

A. Yes.

Q. You heard Mr Crundwell's evidence?

A. Yes I did.

10 Q. And you've referred to that in your brief?

A. Yes.

Q. I'm correct aren't I that his concerns were never followed up by the council?

A. You are correct.

15 Q. And it would appear that his requests, if that is the right word, to have that notice or something similar sent out to the owner was never auctioned?

A. Yes, you're correct.

20 Q. Do you know why that was? I don't know if it's possible to know now but have you made any enquiry to find out?

A. We have and we've questioned ourselves as to why that occurred. We were in a period of transition, we were trying to go from civil defence notices and issue building consent repair notices, s 124s on yellow and red buildings in particular so that was our focus and we had many of those to address so that was our principal focus in getting all of those buildings re-assessed and then we would send out s 124 notices.

25 Q. So –

A. So the, because this was a, this was deemed to be a green building by Mr Crundwell it went into a stream and his notes were overlooked.

30 Q. So because it was green it didn't get the priority that red and yellow would have got?

A. That's correct.

Q. And perhaps the same might have happened with the level 1 that was green for 93 that cracks the façade or do you think that was superseded by the red anyway?

5 A. I think all of the whole thing got, the whole situation got over-run by the Boxing Day event and I think that basically you run out of time and there's a new scene, a new situation you have to address.

Q. And you're talking about the period between 14 October when Mr Crundwell inspected and 26 December?

A. That's correct.

10 1613

Q. And is that when things were tight? Resources and lots of buildings to assess?

A. Yes there were.

15 Q. In relation to the CPEng engineer's certificate from the council point of view then there was no problem in what occurred here and you may well have heard I presume have occurred in other cases where one engineer does the design and goes to the site with the contractor to show him what's to be done and then a separate engineer who hasn't had anything to do with that part but obviously talks to the other one certifies it?

20

A. No we don't have a problem with it. I think it's, there's a stronger relationship if those two parties are in the same firm and clearly they have arrangements, internal work arrangements, so I think that's, that would be quite a strong connection between those two engineers.

25 Q. And is that something that would be taken into account or are you just commenting on that in this case?

A. I imagine it was probably taken into account by the person who considered the certificate.

30 Q. Just finally Mr McCarthy in relation to 91 you referred to a level one on the 26th of January and to an engineer Mr Nixon on the 7th of February and reinspection and you said you were unclear as to why that occurred.

A. Yes.

Q. Now was that just an error because the building had been cleared by then by the 7th of February hadn't it?

A. Yes it had.

Q. (inaudible 16:15:17) January?

5 A. Yes.

Q. So again is that just a, something that had happened within the system with so many files and buildings?

A. It may well have. The only other vague possibility is that the repeated aftershocks meant that they were doing a survey of some reference buildings. I don't believe this was a reference building but they were perhaps just doing a, they were just, yes responding to aftershocks maybe.

10

Q. Right. You don't think it could have been albeit delayed as a response to Mr Crundwell's concerns that it finally had got through the system?

15 A. I would have liked to have thought that might be the case but certainly that's not evidenced from the written forms that those engineers submitted. I would have liked to have seen that that was the case but there's no evidence to suggest that.

A. Right. And when someone like Mr Boyce certifies securing works as in this case it seems from what he told us that they don't have access to the council file, is that right? I suppose they could go and get it –

20

A. Yes they could.

Q. But generally they wouldn't be given things like Mr Crundwell's level two –

25 A. That's correct.

Q. I was wondering whether that might be a good idea in the future.

A. Yes it would.

CROSS-EXAMINATION: MR ELLIOTT

Q. Your evidence is that the council's records noted this building as it's 91?

30 A. Yes.

Q. As earthquake prone in terms of both the 2004 Act and its predecessor?

A. Yes.

Q. And so the topic which I'm just going to address with you is how can an earthquake prone building have been reopened during a series of earthquakes? That is a question which I've raised earlier and is of concern to families.

5 A. Yes.

Q. And those who were injured. If indeed there were errors on the council's part in that process you are authorised to give evidence of that and suggest improvements and processes that may help us to learn, aren't you?

10 A. Yes I am.

Q. From the council's perspective am I right in saying that the reason why this building was red stickered and then reopened was that the council set up a process where a certificate could be provided to the council by an engineer?

15 A. Yes.

Q. And that in this case that certificate was provided?

A. Yes it was.

Q. And that is document BUICAS091.0019.61.

A. I assume so.

20 Q. That will come up for you in a moment. Is it there?

A. Yes.

Q. I can take you to individual parts of the certificate if you like but can I summarise its effect by saying that if the building looked at was in at least the condition it was in as at the 4th of September or before the earthquake then it was acceptable for it to be reoccupied?

25

A. Yes, yes provided potentially dangerous features had been addressed as is the case and I think that's been certified in paragraph B of that certificate.

Q. Yes indeed. So just well perhaps to look just a little more closely at it. In point A the requirement is to say that "interim securing measures have been taken to restore the structural integrity and performance to at least the condition that existed prior to the earthquake".

30

A. Yes.

Q. Different date inserted here but leave that for the moment. And then point B. The certificate requires certification that potentially dangerous features “have been removed or secured so their integrity and level of structural performance is consistent with that achieved in other parts of the building”, which I assume ties that in the level of structural integrity contemplated in part A?

A. Yes.

Q. Namely its integrity as at 3 September 2010?

A. Yes, the chimneys of course had fallen down so there was a, I’ll call it a benefit in that.

Q. And we’re well aware I think at this point that that procedure led to engineers focusing on damage in their assessments?

A. Yes.

Q. Just so that the lay person can understand the effect of that and I may be complicating it and making it difficult for them to understand but this concept of the structural integrity being at least the condition as at 3 September, what that means is that if the code level of strength was .66G at ground level and that if an unreinforced, I’m sorry if an earthquake prone building was potentially .2G.

A. Yes.

Q. And if a particular unreinforced masonry building had a strength of .1G the effect of this form would be that it must be at least .1G to be reopened if that was its state as at 3 September?

A. Yes that’s correct.

Q. In other words it was contemplated that the strength of a building looked at could be significantly less than 100% of current code?

A. That’s correct.

Q. Can I ask you to look at document WITCRU0001.21? This is the document which I think Mr Crundwell referred to “handwritten notes BETT advisory 12 October 2010” so is this a document produced by the council around about 12 October 2010?

A. Yes.

Q. I'm just going to ask you to explain how this document and its requirements can be reconciled with the requirements and criteria I've just talked to you about because if we look at the top couple of paragraphs this document says "Before the council will accept the building is satisfactory for occupancy it will be necessary for you to obtain certification from your certified engineer that, point 1, the building is not dangerous in terms of section 121(1) of the Act?"

A. Yes.

1623

10 Q. And then further down in the document that section is quoted and if we look at subsection (c). Was this an amendment to the Building Act made following the September earthquake which added clause, that, that clause (c) to the section?

A. Yes.

15 Q. And the section says there is a risk, sorry reading it as a whole, "A building is dangerous for the purposes of this Act if (c) there is a risk that the building could collapse or otherwise cause injury or death to any person in the building as a result of an earthquake that generates shaking that is less than a moderate earthquake"?

20 A. Yes. You're asking me to reconcile that?

Q. I will in a moment.

A. Okay.

Q. I don't quite understand it. I might be the only one but a moderate earthquake was defined in the regulations as being one third of current code is that right?

25

A. That's correct.

Q. Which would equate to about .2 g?

A. Yes.

Q. So doesn't this section mean that a building could be dangerous if it could face collapse or cause injury even in an earthquake of producing horizontal accelerations at even less than .2 g, is that right?

30

A. So I think we've heard through the course of these, these hearings that the assessment of a building in terms of its, its ultimate strength is quite

a complex thing to do and an engineer would need to assess a building and that might take a day or two of quite intense engineering assessment before you could determine that, um, the building would, ah, collapse in a moderate earthquake. Bearing in mind that these buildings, a lot of them survived the earthquake of September 4 which many engineers considered to be at a level roughly equivalent to a moderate earthquake. So there is, um, there is a situation where the Council needs to be careful and building owners would expect us to be careful in, before we, we closed a building arbitrarily without that type of engineering assessment.

Q. Well I suppose that's my point that it doesn't seem that there was something arbitrary going on here. It doesn't seem the Council was relying upon just an assumption that because a building got through therefore it will get through another one. It appears that under this BETT advisory process at least –

A. Yes.

Q. – it was contemplated that there would be a report from an engineer addressing whether there's a risk the building could collapse in an earthquake of even less than .2 g?

A. Yes so the, so the engineer has certified I believe that, ah, and part of that certification covers that particular issue.

Q. That's not what's been certified in this case though is it? That, that form that Mr Boyce certified isn't directed to this issue is it or do you say it is?

A. I – that's, ah, could we have that up again please.

Q. Mr Boyce's form?

A. Yes please.

WITNESS REFERRED TO FORM

Q. Would you like a copy so you can read it rather than...?

A. No I can, I can read it thank you. I guess what is contemplated here is that this building hasn't, the structural integrity of it hasn't been impaired by the, by the earthquakes and I accept the point you're, you're making but unless a detailed engineering evaluation is carried out, um, I think

it's, um, we, we, we're in a position where, ah, buildings had to be, um, allowed to be reoccupied.

Q. To put it into again layperson's terms if I can?

A. Yeah.

5 Q. The form that Mr Boyce signed seems to be directed to the question of whether damage had resulted in the building being diminished in capacity as opposed to 3 [sic] September on the one hand?

A. Yes.

10 Q. Where's on the other hand the BETT advisory seems to be directed more to the question of what is the capacity of this building and how will it fare in an earthquake of even less than moderate shaking. Two different questions agreed?

15 A. Yes they are and I think the BETT advisory is targeted more towards the, the yellow and red placards where there is significant and substantial damage to, to a building. It may be that in the, um, the context of the events that happened very quickly, ah, that, um, ah, that impression might have been created but I think the certificate is where the Council was obliged to go at that time.

20 Q. Are you willing to accept that this 91 Cashel Street may have had a lateral coefficient at ground level of about .1 g?

A. I couldn't say that. You'd have to ask I think Mr Smith might be able to give you a better indication of that.

25 Q. Yes. Well it really comes down to this issue of Mr Crundwell's notes because what Mr Crundwell was doing was invoking, seeking to invoke this BETT process whereby an engineer would come and have a closer look, isn't that right?

A. Yes.

30 Q. If that process had been followed it could only have led to a full detailed inspection of the building resulting in an assessment of the building's capacity so as to assess whether it met the test in section 121 correct?

A. I believe it was more aimed at a level 2 assessment with focus on that, ah, that crack up the stairwell. It wasn't a, um, a full engineering assessment being required.

Q. Is that right though Mr McCarthy because the question raised by Mr Crundwell is the concern is that if mechanism of seismic restraint is not well understood there may be repercussions during subsequent aftershocks that are not apparent at this stage request CPEng engineer's report to requirements of BETT advisory. He was looking for that test to be considered clearly wasn't he?

A. At a level 2 level but not a detailed engineering assessment by the Council would have been I think he made, also made the statement that those comments were more directed towards the owners, um, seeking to get the owners to undertake those detailed engineering evaluations. I think he said he put them on quite a few of his notations.

Q. In those cases where the BETT process contemplated here was followed there could only have been a detailed structural assessment in a consideration of the building against the test in section 121. That must be right mustn't it?

A. The test being?

Q. Whether there is a risk the building could collapse or otherwise cause injury or death to any person in the building as a result of an earthquake that generates shaking that is less than a moderate earthquake?

A. I don't think that was anticipated in the BETT advisory.

Q. "Before Council will accept the building as satisfactory for occupancy it will be necessary for you to obtain certification from your engineer that the building is not dangerous in terms of section 121", and you're not saying that that contemplated satisfaction of whether the test in section 121 was met?

A. The section 121 the definition of dangerous I think excludes the prospect of an earthquake event, am I correct?

Q. Well I'm looking at 121(c)?

A. Yes I know you are.

Q. Perhaps are you thinking of 121(a), "In the ordinary course of events excluding the occurrence of an earthquake"?

A. That is, that is one of the considerations we have. There was a change, an amendment but, ah, that, um, I don't think it was contemplated that a

full engineering assessment on every unreinforced masonry building in Christchurch was anticipated in that change. You know, look that's my understanding.

1633

5 Q. Right, just to give you a chance to comment, 121(c) was an amendment wasn't it?

A. Yes it was.

Q. So you're not saying the council has through some process of statutory interpretation read section (a) and sub-sections (a) and (c) together to mean that one contradicted the other in some way are you?

10 A. I'm not suggesting that though.

Q. Right.

JUSTICE COOPER:

15 I think you are, interesting as it is, it is raising questions of law, isn't it?

MR ELLIOTT:

That is Your Honour, yes. I won't go further.

20 **JUSTICE COOPER:**

And I think we have his understanding which the tenor of your questions might tend to suggest you disagree with. We have his understanding anyway.

MR ELLIOTT:

25 Yes, Your Honour, and this can be canvassed more during the later hearing.

CROSS-EXAMINATION CONTINUES: MR ELLIOTT

Q. It is of concern though, Mr McCarthy, just on this building, because as I've said to you the concern is well how was this building re-opened after it was red-stickered and I suppose the proposition that I am putting to you is that if Mr Crundwell's request, I suppose, had been followed it would have, I accept it was green-stickered, but if his request was

30

followed it would have led down the track of looking into the process contemplated by the BETT advisory note. That must be right?

A. The mechanism for that was anticipated to be a level 2 assessment, yes. You're right.

5 Q. You've given evidence that the reason why Mr Crundwell's note wasn't followed up was that it was overlooked?

A. That's correct.

Q. Can you just give a bit more explanation to people about what you mean by that?

10 A. I think I've explained that already. I don't know how I, we're in a period of transition, do you want me to repeat that explanation?

Q. No not that explanation. I suppose the point is that we have got a document which makes it pretty clear that there may be repercussions for this particular building if an issue be a consideration of a mechanism of seismic strength, that's sitting on someone's desk isn't it?

15

A. It's in a file, yes.

Q. So what do you mean, it's overlooked that –

A. It's –

Q. – someone, the council officers don't understand that they should be looking for indications of danger or wasn't green therefore it wasn't auctioned or?

20

A. It was green, it wasn't actioned, I think the triaging that we did probably meant that that there was an oversight and by the time Boxing Day came around effectively the events of or the state of the building had changed so you start again really, don't you?

25

Q. Well depending what test you apply.

A. Yeah.

Q. Mmm.

A. Mmm.

30 Q. The families of those who died and those who were injured may feel that in not acting upon Mr Crundwell's comment the council has made a horrible tragic mistake. What do you say about that?

A. I think the situation after Boxing Day was addressed fully and I, so I don't imagine they would think that at all.

Q. Perhaps having heard your evidence they may not. Thank you.

CROSS-EXAMINATION: MR MCLELLAN – NIL

5 CROSS-EXAMINATION: MR VAN SCHREVEN

Q. Mr McCarthy, am I right in accepting that from your evidence there may well have been building consents or building permits issued in respect of the fit-out or re-fit jobs that were undertaken to 87 to 89 Cashel Street?

A. Sorry the –

10 Q. Did it not –

A. There were consents.

Q. There were consents?

A. Yes there were.

15 Q. Is it possible that the effect of the work undertaken, pursuant to those consents, could in an engineering sense have actually strengthening the building notwithstanding that the work wasn't being certified for that particular purpose?

A. There is that possibility, yes.

20 Q. Can I just draw your attention again to document 19.111? This is the rapid assessment form level 1.

A. Yes.

Q. Purports to refer to 95 Cashel Street and has the notation in the middle highlighted, 'cracking in front façade to be reviewed by structural engineer'?

25 A. Yes.

Q. That information was never relayed to Hereford Holdings Limited, was it?

A. That specific information?

Q. That specific information.

30 A. No.

Q. And am I right that the document that appears at 113 which is the signed rapid assessment form level 1 signed by Mr Boyce is the only document that would have been referred to Hereford Holdings Limited in terms of the reasons why the buildings either side of 91 were red placarded? ie., the risk came from 123 Mart next door.

A. Yes.

CROSS-EXAMINATION: MR EVANS

Q. Mr McCarthy, I'm going to ask you to look please at photograph WITCRU0001.13. If that can be brought up please. You will see on the side of, and this is the eastern side of 91 Cashel Street, Mr Crundwell referred to briefly in his evidence this morning, those are brick ties or some sort of seismic ties on the side of the building?

A. Yes they are.

Q. That's right, but from the council's perspective there is no record of those ties ever having been affixed to the building, is there?

A. That's correct.

Q. So in relation to the seismic capacity of the building or the, any sort of seismic work at least in this respect, the council file is incomplete?

A. That's correct.

Q. And just finally in relation to Mr Crundwell's comments. It's common ground that they were directed to the owners and I take it from your evidence that you gave before, the council now accepts that those comments were never passed on to Mr Gough, were they?

A. They weren't.

RE-EXAMINATION: MR LAING

Q. I take you back to Mr Boyce's certificate, Mr McCarthy, BUICAS910007.30. Now if could you enlarge A please? You said in evidence that you considered that the Darfield earthquake, the 4 September earthquake was approximated to a moderate earthquake as defined in the regulations, is that correct?

A. That's correct.

Q. Could you just expand on that for me please?

A. The Darfield earthquake, the picture that came, the forces that were effective in that earthquake the engineers have indicated was roughly equivalent to a moderate earthquake. I think we've heard that repeatedly at these hearings and that is the level to which buildings are, that we assess buildings against in terms of their structural capacity so that's a very good indication for us as to the level of strength or additional strengthening that needs to be put into a building to bring it up to full code so we're looking for that, going through our earthquake prone policies. Ultimately we will, we're looking to get all buildings up to currently 67% of the code is our target.

1643

Q. If I can just ask you to look again at that paragraph A there, and am I correct that your previous evidence now your evidence is that given the Darfield earthquake was a moderate earthquake that was a benchmark?

A. Yes.

Q. And so and I think you did answer this in a question to my friend but so that was really any degradation from the pre 4 September condition was the prime concern?

A. Yes it was.

Q. Do you have any idea when that form was developed? This is the form shown up there.

A. I believe it was developed roughly around about October. There was input from the engineering fraternity, IPENZ and we liaised and that form was developed.

Q. So can you tell me what the relationship might have been between the BETT advisory that was shown to you and the development of that form, was there any connection or otherwise?

A. I think perhaps they were looked at together but the detail of it I'm a little unsure of.

Q. So if your evidence is that the certification form was developed in October, what was the state of the BETT advisory after that time?

A. Look I'm really, I can't, I don't know, I don't think that I can answer your question. It may be that it needed to be amended or altered but I, I'm unsure as to that point.

5 JUSTICE COOPER:

Q. This, I wonder if this BETT advisory could be displayed again. I'm not sure what the number is Mr Zarifeh. Somebody's handwritten on that helpfully a date of 12 October 2010.

A. Yes.

10 Q. What does that date signify to you?

A. I would imagine that's the date that it was implemented.

Q. And do you, what was the status of this advisory? Was it something adopted as council's policy or does it simple purport to be advise about the meaning and implications of section 121 of the Building Act?

15 A. I suspect it's guidance material sir. The changes to the Building Act had only just been promulgated around about that time and it was very clearly in that place so I guess where we're trying to communicate some of the changes to both the practitioners and from where applicable building owners.

20 Q. And the changes were those brought about by the Canterbury Earthquake (Building Act) Order 2010 which was part of the regulatory response of central Government to the September earthquake, is that right?

A. That's correct.

25 Q. And the result of that order was in fact to alter the definition of a dangerous building, is that right?

A. Yes it is so it appears.

30 Q. And the occurrence of earthquakes was excluded from paragraph A but under C the building was dangerous if there was a risk that it could collapse or otherwise cause injury or death to any person in the building as a result of an earthquake that generates shaking that is less than a moderate earthquake?

A. Yes and I think it is key that it says that is less than a moderate earthquake.

Q. Yes.

5 A. There's a test that needs to be applied clearly before you could institute and consider a building to be dangerous and that test is one would imagine would require very detailed engineering assessment. In the context of what we were dealing with we couldn't possibly have hoped to get detailed engineering assessments before the placard status of buildings was changed at that time.

10 Q. You see the opening words of this advisory are before council accept that the building is satisfactory for occupancy. Do you say that that wording presupposes that the building would have been, that a building to which this was to apply would have been red stickered first and this was setting out the conditions, the preconditions of re-entry?

15 A. Yes. The whether the council could actually exercise any legislative power to prevent occupancy once the building had been repaired to a state where it had survived a moderate earthquake is probably somewhat debatable and contestable one would imagine by the building owner so this wording may be rather stronger than it should have been.

20 Q. Yes. Well these are issues we are going to confront more directly in another hearing and they quickly become questions of law but just confirm my understanding that this advisory would have applied and been applied at least theoretically down to the 22nd of February, or do you say that it could only work in circumstances where on some lawful basis a building had become unoccupied?

25 A. Unoccupied and deemed to be dangerous and dangerous in a very evident way I would imagine.

30 Q. Well you're sort of, you're reaching the substance of what section 121 was all about but this is from its opening words the confronting circumstances in which the council will accept a building is satisfactory for occupancy so it seems to presuppose that on some lawful basis a building might have become unsatisfactory for occupancy.

A. Yes it would.

1653

Q. And this was setting out requirements which whilst that situation pertained would apply to the re-occupancy question?

5 A. Yes I think subsequent legislation has clarified and helped.

Q. After the 22nd of February?

A. After the 22nd of February.

Q. Yes, all right, well Mr Laing does anything arise out of any of that?

10 **MR LAING:**

No sir what I would just do, I say this is a topic that's going to have to extensively re-canvassed.

JUSTICE COOPER:

15 Yes.

MR LAING:

But I would just refer the Commission to the Council's post earthquake document.

20

JUSTICE COOPER:

Yes.

MR LAING:

25 And I'd some, I didn't have this in front of me when I was asking Mr McCarthy some questions but the reference is ENG.CCC.0002F.27 to .29.

JUSTICE COOPER:

Yes.

30

MR LAING:

And this is, this is and it's in, it's part of the Commission's record but it will be the subject obviously of further evidence but it does explain the process that was adopted in terms of developing that CPEng certification form.

5 **JUSTICE COOPER:**

Yes.

MR LAING:

And there's notably no reference there to the BETT form.

10

JUSTICE COOPER:

To the which? The BETT?

MR LAING:

15 To that BETT advisory form.

JUSTICE COOPER:

Yes.

20 **MR LAING:**

So 65.2 goes on to discuss, "After a state of emergency some building owners sought to have their status of their building changed", so the assumption is that it was yellow or red at that stage. It had been stickered yellow or red and this form the certification form was developed to deal with that situation. And
25 on the next page there's reference to paragraphs 1, 2 and 3 which more or less summarise A, B and C of that form.

JUSTICE COOPER:

Yes.

30

MR LAING:

Although with some difference in wording.

JUSTICE COOPER:

All right.

5 **MR LAING:**

So I can't really take that any further as to the BETT advisory but it's just simply not referred to in there.

JUSTICE COOPER:

10 Yes Mr Elliott is there anything you wish to say at this point.

MR ELLIOTT:

No Your Honour.

15 **JUSTICE COOPER:**

All right.

MR ELLIOTT:

(inaudible 16:56:06) further addressed.

20

JUSTICE COOPER:

All right well thank you Mr McCarthy.

MR LAING:

25 Before Mr McCarthy goes I just would like to read into the record his other two statements of ref- of evidence.

JUSTICE COOPER:

All right.

30 **FURTHER EXAMINATION: MR LAING**

Q. Mr McCarthy before you go are you still live there? You have also produced statements of evidence for 89, 89A Cashel Street?

A. Yes.

Q. And 95 Cashel Street?

A. Yes.

Q. And that they have been provided to the Commission?

5 A. They have.

Q. Thank you.

WITNESS EXCUSED

MR ZARIFEH CALLS**PETER SMITH (SWORN)**

Q. Mr Smith you have prepared a report in relation to the building failure of 91 Cashel Street?

5 A. Correct.

Q. And I think you've also prepared a report in relation to the building that was at 93 to 95 Cashel Street?

A. Correct.

Q. And I don't think you've done a report for the building 87 to 89?

10 A. Yes, that is correct because we could not find sufficient information to be able to be conclusive.

Q. All right but you've looked at that in terms of the structural failure of 91 and its effect?

A. Correct.

15 Q. And I think we've heard in evidence today to understand where these buildings were situated and the fact that they were unreinforced masonry or a mixture in relation to one. I'm just wondering if you could just summarise and tell us as a result of the 22nd of February earthquake what happened. What was the structural failure of in particular 91 but as well as it affected 89 and 93 on each side of it?

A. I've just –

Q. Perhaps refer to the photos, I think you've sought to produce as well?

A. Just commenting on obviously some stage in the past there has been alterations to the front of 91, um, that obviously there was a concrete parapet placed along the top at the same time presumably as that façade was upgraded and we didn't have any evidence of that previously but it obviously took place.

Q. And we can see some of it's come off?

A. Yes.

30 Q. Yes.

A. Our interpretation of the, of what happened was that the large sections of the east wall fell on to the property 93, 95, um, Cashel Street. Equally significant portions of the western wall façade failed on to the building at

89 Cashel Street and some, a portion of the frontage of the building fell on to Cashel Street. The building also pounded against the building at 83 to 85 Cashel Street, oh sorry 93, 95.

Q. 93.

5 A. Cashel Street.

Q. Right.

A. And caused considerable damage to the upper story of that building.

Q. All right, now we've heard some evidence that 89 Cashel Street appeared to be in relatively original condition?

10 A. It really was an infill building. It appears that the other buildings either side pre-existed the construction of that building and some entrepreneur built a timber structure between the two walls and therefore didn't have to create a wall either side. It was therefore largely dependent on the buildings either side for its lateral restraint.

15 Q. Right. And 91 in terms of any previous structural strengthening it doesn't appear that there's any records of that but you've seen the photo that's been up this afternoon of the east wall of 91 which shows some, I'm not sure what you call them, bolts or plates?

A. Correct.

20 Q. You recall that one?

A. Yes both the east and west walls show the ties which have been placed through the building at roof level.

Q. Is there any way of dating those or knowing when they were put in?

25 A. They are obviously aged from their condition, um, it was a fairly common form of improvement of unreinforced masonry buildings following the Napier earthquake and I suspect that it possibly followed on from the Napier earthquake. Whether those go right through the building or just connect to the trusses, um, we just don't know.

Q. So they, that could have been done as early as the what 30s or 40s?

30 A. Yes possibly yes.

Q. Okay and 93 to 95 appears to have had some structural strengthening?

A. Ah, yes it does. Apparently to approximately one third of code and, but not in its entirety.

Q. Right and can you make any comment about the effect of that whether or not it was effective?

A. Um, it was effective in the 4th September earthquake. I think the primary damage to 93 to 95 was a pounding issue with the adjoining building at 91.

Q. Right and did you see evidence of that in the photographs?

A. Yes, yeah. There's a –

Q. Is that one referred to in that report?

A. Yes if you go to BUICAS91.0018.15.

10 **WITNESS REFERRED TO PHOTOGRAPH BUICAS91.0018.15**

A. 1815

Q. 15, that's five I think.

A. In that photograph that is what was left of 91 after the earthquake. You can see there's cracking coming down through there, these areas, which all relate to impact between 91 and 93 and 95. The building otherwise appears to be in reasonable condition considering the level of earthquake.

1703

Q. So I don't know if you can answer this but can we say that it was the failure of 91 that's caused the problems for the buildings on either side?

A. I think that there is a real issue with pounding of these buildings but even though a building may be strengthened if it's not isolated from the adjoining building it will not necessarily perform particularly well. Clearly the tragic loss of life all arose from the failure of the upper storey of 91.

Q. Falling to the sides and to the front –

A. To either east or west, yes.

Q. And the south?

A. Yes.

Q. And in your report you refer to a number of issues and the one I want to highlight is under the heading "Occupancy of Earthquake Damaged Buildings" and you say there that you are of the opinion that the upper floor of the building, that's 91, was unlikely to have withstood the

severity of the shaking that occurred in the 22 February earthquake had the building not been subjected to the previous earthquakes?

A. Correct.

Q. Just explain what you mean by that?

5 A. Just that the severity of shaking on the 22nd of February it's almost certain that that upper storey would not have had the resilience or strength to withstand that shaking.

Q. And why do you say that?

A. The upper storey in particular is vulnerable.

10 Q. Well because there's no building on either side?

A. No, more particularly because it probably, although we don't know for certain how the roof construction was made, it's unlikely to have had an effective diaphragm spanning between the external walls and further the north and south walls were very open so that even if it could have withstood the, transferred the load from the east and west walls to the north and south walls the chances are those north and south walls would have failed. What we don't know is the extent of any internal walls within that building that may have provided some east/west strength.

15

20 Q. And is that something or a feature that an engineer doing a detailed assessment would take note of and consider in conjunction with the aftershocks that were pending?

A. I think the whole basis on which that assessment has been made is very important. An awful lot of the assessments following the initial earthquakes were to a strength level which pre-existed the earthquake but that was not to a determined level of strength or minimum level of strength so that a very weak building which may have survived the earthquake and which may in an earthquake from a different direction have very little strength could still be signed off as suitable for occupancy.

25

30

Q. So you recommend or suggest in your report that prior to occupancy of an unreinforced masonry building all public access to within the fall zone

of the building, so you're talking about quite a distance from the front façade of the building?

A. Correct.

5 Q. After a significant earthquake that the controlling authority should establish a minimum strength criteria and require an engineering assessment establishing that the building meets that and you also suggest that engineers receive professional training in the assessment of earthquake damaged buildings. Is that in conjunction with that other suggestion?

10 A. Essentially, yes. A sector of the engineering community are involved on a day-to-day basis looking at unreinforced masonry buildings and how to strengthen them. A large number of those who responded voluntarily to help out after the earthquake period had very little experience I believe with unreinforced masonry. Not a lot of experience in
15 understanding why a building cracked in particular positions and therefore the significance of the cracking that occurred and I think given that these events hopefully don't occur more than once in a person's lifetime and hopefully less than that there is a need for understanding and continuing education, for engineering understanding of these
20 buildings when we have to respond. I would hope that by the time we have another earthquake most of these buildings will have been strengthened to at least a point where there's some confidence in their ability.

25 Q. Do you agree with me that following the September earthquake in relation to 91 Cashel Street there does not appear to have ever been what you might refer to as a detailed engineering assessment or strength assessment of the building?

A. I think yes, certainly in terms of assessing the level of strength of the building that certainly didn't occur.

30 Q. And that's the kind of thing you're talking about in that suggestion isn't it?

A. That is correct.

Q. And so if that had been a requirement then presumably that would cut through issues that have arisen in this case, for example, Mr Crundwell's concerns not being followed up?

5 A. Yes it would. I also note that, and it happened in yesterday's hearing, that parties sort of approving a green subject to something gets easily lost and it's probably preferable that that was a yellow placard because then it would initiate action.

10 Q. And we saw another example of that in relation to the Boxing Day certificate for the next door property, 93, where it was green as well but again cracks and reference to an engineer, civil engineer.

A. Yes.

Q. That would also have avoided the problem in this case where there doesn't appear to have been any follow up to the second Powell Fenwick suggestion that there be further investigation?

15 A. That's right and I think really green should be that the building is virtually undamaged and suitable for occupancy. I think when there is further inspection or concern, a yellow sticker would be a much more appropriate means of ensuring that that is followed up on.

20 Q. And it would also cut through, if you like, any lack of clarity between what was being certified in those CPEng certificates in terms of whether there was in fact a full assessment being done of the building if that had already been done post the major earthquake?

25 A. Yes I think there's a real concern about the brief that the engineer is working to and the consistency of that brief and I think there does need to be greater clarity, whether it's from a territorial authority, I assume that's probably the best position to clearly set out what the inspection should achieve.

CROSS-EXAMINATION: MR ELLIOTT

30 Q. Mr Smith I'm conscious that I addressed these brief issues with you yesterday but there are people watching today and people watching online I think at the moment so those who read your report will come across this expression "code-lateral co-efficient" and just putting it in lay

person's terms, engineers can contemplate the level of horizontal accelerations that a building can be designed to bear and in talking about lateral co-efficient you're talking about what value those horizontal accelerations should be?

5 A. That's correct. The code sets out loads that should be applied to buildings. Unreinforced masonry buildings are deemed to be required to respond as elastic responding structures and that means they are designed for a much higher load than a ductile steel frame for instance so the code makes those provisions.

10 Q. You talk about a code-lateral co-efficient at roof level of 1.23g.

A. Correct.

Q. Is it correct that the code-lateral co-efficient at ground level would be .66g.

A. 0.66g in this case, yes.

15 Q. And the earthquake-prone level of one-third is about .2 –

A. – 0.22, yes.

Q. – g

A. Correct.

Q. And do you assess this building, based on the information you have, as being in the order of 0.1g?

20 A. It's very dangerous to sort of talk about a figure for a building because the building itself in this case at 91 has two fairly strong longitudinal walls and they have a reasonable level of strength. What will happen, of course, is that the façades on the north and south of the building will
25 probably fail and separate from the diaphragms much below the strength of those longitudinal walls. In the transverse direction because of shop fronts in the lower floors, windows in the upper floors, probably a lack of transverse walls within the building, the building strength will be a lot less.

30 1713

Q. So would you ascribe different figures to this building –

A. They will –

Q. – in this direction?

A. – they will be different figures for the building in the longitudinal and the transverse direction and also for component parts like the façades.

Q. And are those figures less than .2G?

A. Definitely, yes.

5 Q. Have you formed a view about what they are?

A. I'm not, we don't really have sufficient information on that building to know what transverse walls were there, what the connections were of the façade to the diaphragms, really to do an assessment you need that information but it is certainly likely to be in a transverse direction less than .1G.

10

Q. Less than .1, and the Box - GNS figures demonstrate the Boxing Day aftershock of 4.7 magnitude generated horizontal accelerations of .4G in the Botanical Gardens and –

A. Yes.

15 Q. - .2 in the CBD, so how can it be that this building which you say is less than .2 and perhaps less than .1 can have got through an earthquake with those horizontal accelerations?

A. Those are one of the difficulties engineers have in actually predicting performance of buildings. It all depends on the nature of the shaking, the duration, and in many ways the directionality of that earthquake relative to the building.

20

Q. Subject to those variations in theory at least this particular building would have been at risk of failure, certainly in an earthquake producing horizontal accelerations of greater than .2G?

25 A. Correct.

CROSS-EXAMINATION: MR MCLELLAN – NIL

CROSS-EXAMINATION: MR VAN SCHREVEN – NIL

CROSS-EXAMINATION: MR EVANS

30 Q. What seems clear from what you've told us Mr Smith is that unless a building owner was an experienced and properly qualified structural

engineer you would really need to have a detailed engineering report, you would need to undertake a range of complex calculations to work out all these loadings, wouldn't you?

A. Correct.

5 QUESTIONS FROM THE COMMISSION – NIL

WITNESS EXCUSED

JUSTICE COOPER :

Mr Laing, can you just remind me when the state of emergency was lifted after the September earthquake?

5 **MR LAING:**

16 of September Your Honour.

JUSTICE COOPER:

Also what is the width of Manchester Street Mr Laing?

10

MR LAING:

Work in progress, I hope to tell you tomorrow (inaudible 17:16:16)

JUSTICE COOPER:

15 Our money is on 20 metres, not 30 metres.

MR LAING:

I think 20 is a standard width, I am assuming it is that but I want to go and get some proper survey evidence done.

20 **COMMISSION ADJOURNS: 5.17 PM**