

# COMMISSION RESUMES TUESDAY 26 JUNE 2012 AT 09.33 AM

## MR MILLS CALLS

### MARGARET JANE AYDON (SWORN)

- 5 Q. Your full name is Margaret Jane Aydon.
- A. Yes.
- Q. You reside in Kaiapoi, Christchurch.
- A. Yes.
- Q. You prepared a written brief of evidence which you signed.
- 10 A. Yes.
- Q. And you have that in front of you now.
- A. I do yes.
- Q. Could I just ask you then to pick it up and start reading it through beginning with that second sentence in the first paragraph.
- 15 A. I was on the third floor –
- Q. No sorry, I am currently employed.
- A. Oh sorry. I am currently employed with the Anglican Centre, Christchurch, as Bishop Victoria's personal assistant. I was on the 3<sup>rd</sup> floor (Level 4) of the CTV Building (the Building) when the building
- 20 collapsed. At the time I was working for King's Education, which occupied the whole of the 3<sup>rd</sup> floor of the Building. I joined King's Education as their Operational Manager in early October 2010. My role involved working with the Managing Director, Brian Taylor, producing facts and figures for courses which we were running and future courses.
- 25 I was also the main point of contact for students with student related problems. I dealt directly with new students organising their enrolment and visas. I helped organise timetabling and staff issues. I had a team of admin assistants, and worked along side our Accounts Manager, Deb, Deborah Roberts. Kings Education occupied the whole of the 3<sup>rd</sup>
- 30 floor of the Building.

**Post 4 September** - The 4 September earthquake was prior to my commencement at Kings Education. However, I did notice visible damage to the building, both inside and out, when I joined in early

October. The damage was noticeable right from the beginning and I immediately asked Brian (Taylor) if it had ever been assessed and what had come about as a result. He told me an assessment had been carried out and the building had been given safe to occupy. Attached is a floor plan of the building I have prepared (marked "A"). The positions of the rooms and internal walls have not been drawn to scale and their placement is approximate only. The cracks and other issues of concern that I refer to in my evidence are marked on this plan.

Q. I'll just get you to pause a moment. Were you here yesterday?

A. Yes I was.

Q. You heard the question I asked other witnesses about the drawing of the plan.

A. Yeah.

Q. I take it the same is true for you.

A. Absolutely yeah.

Q. Now the other thing I'm just going to ask you to do if you wouldn't mind, I want to put up the plan that Mr Godkin did of the same floor and there are immediately noticeable some differences between them and I just want you to confirm, having looked at Mr Godkin's plan, that that doesn't change your own view of the plan that you've done.

A. No not at all. In fact I would say my plan is probably far more accurate in as much as I was up against that edge and the back, my back to that window.

Q. Yes all right as to which one is accurate the main thing I wanted to confirm was that it didn't alter your view at all about what you –

A. No not at all.

Q. – what you recall.

A. No.

Q. All right, thank you, if you could just then read on.

A. There was a crack in the video room, which ran down the wall attached to the pillar. I have marked this as "1" on the plan. I was particularly concerned with this crack because it was very noticeable. The room was painted in a dark paint and you could clearly see the plasterboard underneath. The crack was approximately 1 cm in width. It ran

vertically down the pillar and was approximately half the length of the pillar. This damage prompted my initial query to Brian regarding whether a building assessment had been done. Sandra Hii, our receptionist, could not put a pen down on her desk without it slowly rolling. We used to comment that we wondered what had been done when they had inspected the building. It was clear to us that the floor was not level. The pen would roll in a south-east direction. The problem seemed to be isolated to the reception desk, although we didn't have anything else around there with which to compare. I have marked this area as "2" on the plan. This again was brought to the attention of Brian and brought up in staff meetings.

There was also damage to a glass partition in the canteen area. I have marked this as "3" on the plan. The glass had been taped with blue masking tape. I think this was to stop it from further cracking. The tape was shaped like a cross and I understood that this was to hold the panes of glass together. The other panes, that didn't have cracking, were also taped. I think they were taped as a precaution. There were many other areas of damage in the building, but these seemed superficial. For example, there were ceiling tiles that had moved and had been left. There were obvious cracks down the corners in rooms next to the lift, but these things were common in buildings at that time so were less of a concern to me. These areas of damage were included when the other issues of damage were discussed.

Ron Godkin, who was a tutor at Kings Education, had noticed some bulging or possible cracking of the glass along the south wall. I couldn't pick this up with the naked eye but I could see it when he pointed it out to me. The Building Manager arranged for someone to check it and the glass was subsequently replaced. I didn't query who the Building Manager was at the time. I have marked where I think the areas of damage to the glass were as "4" on the plan.

The damage in the building was discussed by staff on a number of times both informally and formally. Sometimes I would simply drop by Brian's office and other times it was discussed during a staff meeting or via an email. The damage to the building was always mentioned in the meetings, that's the staff meetings by the way, it was also not of any more importance than anything else on the agenda. Brian's response was always the same, which was that he had been told by the Building Manager that the building had been safe to occupy.

**Boxing Day** - Staff members were reluctant to come back into the building following the Boxing Day earthquake because shelving had still not been secured to the walls after the September earthquake, as promised. This had been organised with the Building Manager. I had worked with Heidi and Cristiano, who were both full time teachers, during the holiday to clear the main storage room and the shelves along the walls of the staff room over the Christmas break to alleviate some of this concern. The aim had been to clear as much excess material as possible to clear the tops of the shelving units so things would not fall, let alone dislodge in an aftershock. We had taken several car loads to a lock up on Antigua Street.

The crack in the video conference room had increased. It was the full length of the pillar running ceiling to floor. At the top of the pillar, close to the ceiling, it was approximately 5cm in width. You could now put your hand right through the wall. It was also clear to me that whatever was causing the reception desk to slope had increased. I covered reception a lot for the two weeks after Christmas so I had first hand experience of how bad it had really got and it definitely seemed to get worse following Boxing Day. We had to use Blu-Tack or rubber-bands on my pencils and pens to stop them rolling off the desk.

0943

Through a series of emails to Brian the staff asked if the building had been inspected again following the Boxing Day earthquake. The email that came back from him attached an email from the building manager,

who I am sure was John Drew, telling us that the building had been inspected following the Boxing Day earthquake and that the building, again, was safe to occupy. I had only taken the statutory days off over the Christmas period and hadn't seen anyone come through so I queried when the inspection had been done. I never received an answer. However, I am sure that Brian would have queried this with the building manager because he was very much a man of his word.

Water leaks. On two occasions we had water running down the wall outside of the toilets causing flooding on the floor. I have marked this as "5" on the plan. The first occasion was probably around the middle of October, but I can't be sure of the exact date. This was repaired but the flooding occurred again and this time the flooding was much worse. I think the second occasion was some time after Boxing Day. Again John Drew got it fixed. We were never given an explanation of what was causing the flooding, only that the water was coming from the floor above.

Demolition of the adjoining site. The demolition of the building next door to the CTV building started about the same time as I started, which was in early October. I am not sure what previously was in the neighbouring building but it was approximately three floors high. The wall of the CTV building and the wall of the neighbouring building were only about three inches apart. The wall of the CTV building was a block work and the wall of the neighbouring building brick. I had a view of the gap between the walls when I pulled my car into my carpark and it looked to me as if they were joined together by what looked like metal ties. It is difficult to say how many there were but they seemed to be in rows. When they removed the adjoining wall you could see that there were holes in the wall of the CTV building. It was especially visible when you were in the underground carpark because the carpark was dark and you could see light coming through the holes. I came to the conclusion that when the ties were removed they had left holes in the wall of the CTV building. The CTV building moved a lot after the removal of the wall. I didn't

notice any difference in the movement in the building from foot traffic, but there was an increased movement when dump trucks drove past and from aftershocks. There was a big change in the way the building felt. We would bounce constantly when the digger work was being carried out at the demolition site. Some days the movement of the building was so bad I felt seasick. I used to joke with Brian and other staff about it because sometimes we wouldn't know whether it was an aftershock or the diggers. The whole feeling of the building was somehow different. It was very difficult to put into words. It was just a constant sense of bobbing around. Some days were much worse than others. We soon realised that the movement we felt was approximate to the size of the diggers working on the demolition site. The bigger the digger the more the building bounced. When I was sat at my desk or stood in the accounts room the feeling was like being on a trampoline, just gently but constantly bobbing up and down. Yet for the most part an aftershock would send you from side to side. This was how we used to distinguish between an aftershock and the diggers. The demolition was completed about a week before the earthquake on 22 February. On the Monday the same guys who were carrying out the demolition drilled holes into the wall of the CTV building. We were told that this was to get the wall ready for some wooden bracing. I assumed that this was part of the demolition process. The bracing was supposed to be put in place the following day which would have been the 22nd. It never made sense to me that you would drill holes without putting the bracing up immediately afterwards.

The 22<sup>nd</sup> of February Earthquake. At the time of the 22nd earthquake I was in my office on the 3<sup>rd</sup> floor. It was lunchtime and a student, Rosendo, had come into my office to see me. Rosendo is a Filipino and spoke very little English. I had just got up from my desk and was extending a hand of greeting when the earthquake began. I have marked my position as "6a" on the plan and marked Rosendo's position as "6b". The initial feeling was a jolt and I was thrown against the east wall. It felt like being on an ice rink in flat shoes. Then I was thrown

back again, westwards, and struck the edge of my desk. I just remember screaming, "Get under your desks, get under your desks," at the top of my voice hoping that everybody on the floor could hear me. It was extremely noisy and violent. As I was getting under my desk I felt a sensation of falling. I was moving downwards to get under my desk, anyways I knew that I had gone further than just ducking under my desk. This all happened in a matter of seconds. I can't be sure how long the shaking went on for. Everything seemed to be in slow motion. I was still shaking but I remember that I couldn't see anything and I couldn't breathe. The feeling of not being able to breathe was the most traumatic. When the moving stopped my senses slowly came back to me and the next thing I noticed was the dust and I was now able to breathe. This was such a relief, but it was still extremely difficult. I was in a sitting position. Instinctively I put my hands up all over my head, down my arms and either of my legs to check for injuries. My left leg was extremely painful but I was able to move it. I tried to move my whole body but couldn't and realised that my skirt and jacket were caught so I removed them. I was in auto-pilot. At this point I tried to get up and realised that the strip light from the ceiling was on top of my desk. I put my hand out to see whether there was room to stand up and realised the ceiling was resting on the top of my desk and I was jammed in. I then remembered the student who had come to see me so I called out his name asking if he was all right. He didn't answer straight away but eventually he said, "Yes, yes," and I was able to touch fingers through the crack in the surface of my desk. It was such a relief. I asked Rosendo if he could move or see a door so that we could get out. I hadn't realised the whole building had collapsed at this point. He then got out his mobile phone and used the light as a torch. I could see the light through the crack in the desk. With the little bit of light from the phone I tried again to get my bearings. I was positioned with my back in line with the north wall, perhaps a metre or so from it and I didn't feel that I was level. It was a weird sensation like I was definitely on a slope southwards, perhaps even slightly west. I could see that the cupboard which had been against the window wall was now next to my desk and

the drawers were on the other side so I was completely blocked in. Then my phone rang, I could see it had fallen on the floor, which was intact. It was my husband. I answered it but he couldn't hear me. Then the line just went dead. Approximately 10 or 15 minutes after the first earthquake, but I really can't be sure, we had another strong aftershock and again I felt we dropped. I cannot be sure whether I felt the same intensity of downward movement with the initial earthquake because I was trying to get under my desk and was already moving. However, there was a definite feeling of falling with this one. There were other aftershocks but nothing as severe as this one. I could no longer sit up and was on my elbow, almost lying. The slope I was on got worse after this earthquake, it somehow felt steeper. I began to smell smoke. I think possibly I had smelt smoke earlier but because of the dust and dryness it was difficult to tell. This time you definitely could and it seemed to spur us on. I asked Rosendo to turn off his phone off to see whether we could see any natural daylight.

0953

I couldn't see the light I couldn't see the light, but he told me he could so at that point the adrenalin really kicked in, to a feeling of wanting to live more than anything. The light was behind me, to the north, so we knew that he had to come over to my side of the desk. I began kicking the desk from my side and he began kicking it from his side, so I was kicking the lower half of the back and he the top. He managed to crawl then over the top of the bottom piece of the desk and I was underneath that while he got to my side of the desk. Everything appeared to still be moving, but I can't be sure whether this was the shifting material or the aftershocks. Rosendo and I started to move rubble which we managed to get past us, far enough for him to be able to move forward towards the light. I managed to push myself using my heels so that I moved behind Rosendo. I couldn't see where I was headed. I seemed to be moving for a long time. I then heard Rosendo shout for help so knew that he was out. A policeman and another man came to help. The policeman asked me, "Are you all right, love?" and asked if I had anything stuck. I replied no and I was immediately pulled free. I was



then dropped to somebody below, but I am not clear on the details. I do not know how high I was before I was dropped. I was in Latimer Square by the time of the next big earthquake. I saw helicopters dropping water on the building and then I really knew how bad things were.

**5 CROSS-EXAMINATION: MESSRS LAING, RENNIE AND SHAMY – NIL**

**QUESTIONS FROM COMMISSIONER FENWICK:**

Q. Yes, you've got position five, the line 5 marked. Can you –

A. That was the water, where the water was.

Q. Water was, right.

10 A. Yes.

Q. And the crack which you said I think was one centimetre and it went to five centimetres.

A. Yeah. That was in the video room I think that's marked '1' on the plan.

Q. Okay, and that'd be about the right position would it on there or –

15 A. I think so yeah, it was on the plan that we saw yesterday that was showing those verticals, it was where the one column was.

Q. Would have been on one of those beam lines?

A. Yeah, yeah.

**QUESTIONS FROM COMMISSIONER CARTER:**

20 Q. Yes please, just one question, you said the building felt more lively. I noticed that you joined in October so your comparison of the building was that before and after the Boxing Day event?

A. Yes, yeah.

**QUESTIONS FROM JUSTICE COOPER - NIL**

25 **WITNESS EXCUSED**

**BRIEF OF EVIDENCE OF MARYANNE JACKSON READ BY CONSENT**

My full name is Maryanne Jackson. I live in Christchurch. I have lived in Christchurch all my life. I am a receptionist at CTV and have worked in this  
5 position since 1991, with a four year break around 1997. Until 22 February 2011, CTV was located on Levels 1 and 2 of the CTV building at 249 Madras Street. The entrance to CTV was situated on the southeast corner of the ground floor, level 1, and was separate to the rest of the building. The reception area was about six metres from the CTV entrance door on the  
10 ground floor, level 1, against the south wall and looking east out onto Madras Street.

After the September 2010 earthquake I never felt safe in the building. I only liked to be on level 1. I felt uncomfortable when I was on level 2. The CTV  
15 internal staircase to level 2 was on my immediate right when sitting at reception. In an aftershock it would shake badly, moving in and out. The windows would move in and out also. I ran out of the building each time there was a big aftershock. I just did not feel safe. A lot of other CTV staff did not feel safe in the building and would get out after a big aftershock. Jo Giles,  
20 after the September 2010 earthquake, left the door to the fire escape in her office open, even on a cold day. The sales girls who worked on level 2 did not feel safe and they regularly complained about the building. People had also mentioned that, when the building was checked after September 2010, their offices had not been checked.

25 The building always shook when trucks went past. However, this was a lot more noticeable after the September and Boxing Day earthquakes in 2010, especially on level 2. You could feel the floor moving when people walked down the corridor on level 2. After the September/Boxing Day 2010  
30 earthquakes there was cracking on the studio walls and in the Sales Office. There were also cracks on the west wall in the Sales Office, about 5mm in size and you could see daylight through them. I also understood there was similar cracking in the Archives Room.

There were three big windows broken in the building after Boxing Day 2010. They were in Sheri Ward and Shawn Lucas's offices along the east side of the building and in Donna Manning's office on the south wall. As far as I am aware, no CTV staff were aware of any inspection after Boxing Day. CTV was

5 closed over this time and no-one was seen when we returned in the New Year. About one week before the 22 February 2011 earthquake, John Drew, the Property Manager for the building, was waiting in the CTV reception area to see Murray Wood. I asked John how safe the building was and said that some of the staff did not feel safe. John replied, using hand movements to

10 point, "We've got to drill in and put some concrete in here and a bit there". He was very blasé and said nothing specific. I got the impression it was to do with the western wall of the building.

The demolition work being carried out by Frews Contracting on the

15 neighbouring site made the building shake. A wrecking ball was used and the building shook badly when the ball was dropped. When they were throwing the pieces of broken concrete into trucks the building would shake also. Even though the studio was sound-proofed, you could still hear the noise in there. Other staff were worried about the demolition and thought it was

20 making the building unstable. On Monday 21 February 2011, Nick Smith, the chairperson of CTV, went outside to tell people drilling into the west wall of the building to stop because of the way it was shaking the building. Footage had been taken of this for our news programme that night.

25 On 22 February 2011 I was standing beside the reception desk when the earthquake struck. I was the only person on level 1. Everyone else at CTV was on the next storey, level 2. I tried to hold on to the top of the hutch over the reception desk. The windows were moving in and out and the CTV internal stairway up to level 2 was moving in and out. The sound was horrific, like a

30 jet plane landing on the roof. I sensed the building was breaking up. After about seven to eight seconds of shaking, I knew I had to get out of there and I ran to the front door. Before I ran I looked at my handbag but knew I had no time to get that. All the windows started coming in as I was running and I

thought the building was going to come down on top of me as I ran out. I hit my head on the side of the door or something hit me as I went through.

I ran straight across Madras Street. About three-quarters of the way across the road I looked over my shoulder slightly. I could see the building collapsing behind me. It felt like the building was chasing me as I ran. I stopped running when I reached the other side of Madras Street outside Blackwell's Motors. I would have been across the road in seconds. When I turned around, the building was completely down. It had pancaked, with all six levels down to just rubble.

1003

While I was standing over at Blackwell's Motors there was a big aftershock and the wall of St Paul's Trinity Pacific Presbyterian Church on the southeast corner of Madras and Cashel Streets collapsed onto Madras Street. After this I saw Tom Hawker and Penelope Spencer standing in the building car park. I ran across to them. Tom and Penelope were looking at cars to try and work out who from CTV was in the building. Jo Giles's car, Tom Hawker's car and my car were parked against the south wall of the building. There was little damage to them, just some glass and rubble on them. Jo Didham's car was under rubble and we could not see it. I am the only person from CTV who was inside the building at the time of the earthquake who survived. I knew the other staff members who were upstairs on level 2 did not have a chance. I had hoped all staff would be rescued from the rubble later but it did not happen.

**MR MILLS:**

Sir, that concludes the evidence from people on the various levels of CTV Building on the day. The next section of the evidence will be eye witness and Mr Elliott will deal with that.

**MR ELLIOTT CALLS****THOMAS RICHARD HAWKER (SWORN)**

Q. Your full name is Thomas Richard Hawker and you're known as Tom?

A. That's correct.

5 Q. And you live in Auckland and you're a presentation director?

A. Um, well I'm a media controller but overall I'm a presentation director, that's correct.

Q. You've signed a brief of evidence and you have that in front of you?

A. I do.

10 Q. Just before you start reading I'm going to ask for a plan to be produced so that you can have that in front of you, it's WIT.HAWKER.0001.6.

**WITNESS REFERRED TO DOCUMENT – PLAN WIT.HAWKER.0001.6**

Q. Did you hear the evidence yesterday of those witnesses who talked about how those plans were prepared?

15 A. Yes I did.

Q. And is that the same as what happened in the case of this plan?

A. That's correct.

Q. If you start reading please from paragraph 2?

20 A. Sure, before moving to Auckland in January 2012, I had lived in Christchurch all my life. I worked for CTV for four years, the last two years as a presentation director.

25 The CTV building. Until 22<sup>nd</sup> of February 2011 CTV was situated on levels 1 and 2 of the CTV building (the building) at 249 Madras Street, Christchurch. My desk was in the presentation room on level 2 of the building. Level 2 was accessed by internal stairs which went up from the entrance/reception area on level 1. I have made a floor plan (plan 1) of levels 1 and 2. This plan is annexed hereto and marked with the reference for level 1 and for level 2. I also worked in the master control room on level 1.

30

Before 22<sup>nd</sup> of February 2011. After the September 2010 earthquake I noticed internal cracking in the master control room situated on level 1. This jagged crack went up on a diagonal and was about one metre long.

I have marked this area with the number 1 on plan 1. I recall either two or three people inspecting this crack and taking photos of it after the September 2010 earthquake. I do not know where they were from. Part of my job was to be on call if CTV went off air. After the September 2010 earthquake a number of aftershocks caused CTV to go off air. I don't know whether this was due to loss of power or something else. It became a bit of a joke really. After the Boxing Day 2010 earthquake CTV lost power again and I had to return to the building. I was in the building with my partner, Penelope Spencer who also worked at CTV and Valeri Volnov the IT person. After Penelope and I had left the building there was another aftershock and the power was lost again. I rang Valeri because I knew he was still in the building. Valeri said he felt scared and did not want to be in the building at all. When we arrived back I checked the equipment and Valeri left. There was another aftershock and Penelope and I left the building too. I phoned Murray Wood, the managing director of CTV, and I told him that I did not feel safe, did not feel that the building was safe. Murray told me he understood if I did not want to go in and that he would go in himself. However, I did go back in and sort the power again after that aftershock. I occasionally worked in the archives in the north-west corner of level 2. After the Boxing Day earthquake there were cracks in the corners of the walls in that area. You could see little holes, about pin size, with daylight coming through them. I have marked this area with the number 2 on plan 1.

Q. Just pause there please, so you're referring to the plan on the right-hand side there?

A. Mhm.

Q. And the top right-hand corner of that where we can see number 2?

A. Mmm, that's correct.

**JUSTICE COOPER:**

Just note for the record that has got suffix 007.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. Just to clarify, that section has western wall and the northern wall?

A. Mhm.

5 Q. Are you referring to daylight coming through the western wall or the northern wall?

A. Ah, the western wall. Um, there was also daylight coming through the northern wall 'cos there was a window as such in the corner but the light was definitely coming through the western wall.

Q. And how close was that daylight to the column in the corner?

10 A. Um, as far as I can remember it was in the corner, so I'm not too sure. As far as I can remember it was right in the corner.

Q. Thank you, just continue reading from, "I remember..."

A. I remember there were also cracks in the internal plaster walls and gaps in the brick further along the west wall where daylight shone through,  
15 but I am unsure of the exact locations of these. I have marked the approximate location on the west wall with the number 3 on plan 1.

Q. Just pause there again, just in relation to those I appreciate you say it was "approximate"?

A. Mhm.

20 Q. Can you say whether it was near the column?

A. It, ah, not that I can remember. Um, where the archives was, right at the end where you see, um, where number 2 is marked where I pointed to the corner where the light was coming through, I'm pretty sure that there was, um, more light coming through not just in the corner but  
25 actually to the left of that. Not near the pillar right in the corner but just to the left of that as well.

Q. And can you say what part of the wall, whether it was high up or low down or somewhere in between?

A. Ah, it was high up, it was high up.

30 Q. Paragraph 11 please?

A. Sure, after Boxing Day I definitely noticed the floor felt less stable. If a truck drove past the building would shake. I could feel it moving slowly, but could distinguish it from an aftershock.

Q. Just pause there again, how could you distinguish between the two?

A. Um, well if you, a truck drove past it wasn't as sort of violent as an aftershock. An aftershock would sort of shake a lot more than a truck driving past. This was more noticeable on level 2. In some areas you could feel the floor moving when people walked past, especially on level

5 2. There was much discussion amongst staff as to whether the building was safe. A lot of people did not like being in the building at all and the general consensus was that it did not feel safe. Sam Gibbs had stood in about the same place I was on 22<sup>nd</sup> of February, which I discuss below, during a large aftershock. Sam told me he thought the building was

10 going to collapse then the way it was rocking back and forth. There was some concern amongst the CTV staff about the fact that we were on the bottom two levels of the building. People were concerned that if the building did come down, there were a lot of floors above us. After one particularly nasty aftershock, Jo Giles got really upset as she thought at

15 that time the building was going to collapse.

Building Demolition. The demolition on the west side of the building was really noisy and felt like constant aftershocks. This was quite unnerving and it was really, and it was hard to concentrate. I remember on

20 Monday 21<sup>st</sup> of February 2011 there was a wrecking ball being used on the demolition site next door. This shook the building. About a week before the 22<sup>nd</sup> of February 2011 earthquake, workmen started drilling holes into the outside of the west wall of the CTV Building. I believe they were fixing five to six metre long wooden battens to the wall but I

25 did not see them doing it.

1013

I think they were just working on the first two levels of the building. Staff were concerned and film footage was taken of this. On Monday 21 February 2011 CTV also filmed the work on the western side of the

30 building for its news programme.

Q. Just pause there again please. Your Honour I think we're in a position to play that at this point.

**FILM FOOTAGE PLAYED TO COMMISSION – NO SOUND AVAILABLE**

Q. What are we looking at there Mr Hawker?



A. Um, just some work being done on the building site near the western wall. I can definitely remember the wrecking ball, the movement that was making it was just sort of like a big massive thud thud thud, yeah it was awful.

5 Q. And what's that?

A. Just workmen banging into the side of the western wall.

Q. In which direction are we looking at there?

A. That's away from the western wall but to the right-hand side of us is the western wall. The western wall's on our right-hand side still.

10 Q. What's that?

That's the church across the road from CTV, diagonally across.

**22 February 2011.** On 22 February 2011, Penelope and I went to buy lunch at around 12.30 pm. We were intending to eat it in the staff cafeteria at CTV. On our way back to the building we went into the dairy opposite Les Mills on the south side of Cashel Street to get a drink. After that we walked out of the dairy and started to cross Cashel Street. We were standing in the middle of Cashel Street in line with the building's car park entrance when the earthquake struck. The building was directly in front of me. I have drawn another plan (Plan 2) of the outside of the building.

15 Q. Just pause there and that will come up in front of you. No need to read that next sentence with the reference.

20 A. I have marked with an "X" to indicate where I was standing on Cashel Street. I could see the entire south side and the south west corner of the building.

#### **WITNESS REFERRED TO PHOTOGRAPH BUI.MAD2490082.13**

Q. Does that photograph show the section of the building that you were looking at although not in quite the same position?

30 A. Yep that's correct, we were more to the left of that but that does show what we saw that day. You see there are some trees along the boundary. Do those trees continue along to the left outside of the picture?

Q. Mhm.

A. Did those trees obscure your view in any way of any of the south side of the building at that time?

Q. I do believe that there was a tree there at that time and I can't quite remember whether it was obscuring anything but there was definitely a

5 tree to the right of us as we were watching it collapse.

**JUSTICE COOPER:**

Q. Do you know what sort of trees they are?

A. No I don't know.

10 Q. The leaves are not very thick by the appearance of that photograph. We don't know when this photograph was taken I suppose.

**MR ELLIOTT**

October 2010, Your Honour, by Mr Coatsworth. There is another photograph  
15 taken –

**JUSTICE COOPER:**

Q. Well I'll just ask Mr Hawker. Can you remember whether the trees were in full leaf?

20 A. I don't think they were. I wouldn't be 100 percent but I don't think they were.

**MR ELLIOTT**

I can show Your Honour another photograph taken closer to the time of the  
25 February earthquake which is WIT.GREN.GRENFELL0001.8. Mr Grenfell's giving evidence shortly and will produce this Your Honour. The evidence will be that was taken from Blackwell's on the opposite side of Madras Street apparently looking towards the IRD building.

30 **EXAMINATION CONTINUES: MR ELLIOTT**

Q. So Mr Hawker can confirm this but the trees we can see there would be the trees along that boundary that you're referring to, is that right.

A. Yeah that's correct, the one right on the end there, the green one, on our right.

**JUSTICE COOPER:**

5 So where's this photo taken from?

**MR ELLIOTT:**

It's taken from the opposite side of Madras Street, that is the eastern side of  
10 the building, looking south-west towards the IRD building.

**JUSTICE COOPER:**

Did you say south-west towards the IRD building?

15 **MR ELLIOTT:**

Yes Your Honour.

**JUSTICE COOPER:**

Q. So that view of the trees was from the other side essentially to the view  
20 that you had, back to the CTV building?

A. That's correct.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. So just to confirm, when you say that you could see the entire south  
side and the south-west corner of the building. Was any of that view  
25 obscured by any of those trees at the time you saw the building  
collapse?

A. Not that I'm aware of but I did know that there was a tree there so....

Q. We're now going to call the model up so that we can just demonstrate.  
What the model shows is the view you would have had. Does that  
30 accurately portray your view of the building at that point?

A. That's correct.

Q. And if we pan up in the model 'cos it's a better view of the whole south  
side.

A. Mhm.

Q. So would you start reading again from paragraph 19 please.

A. Sure. I watched the building shake violently for about five seconds. I saw cracking appear on Level 5 and then this level collapsed first and sort of pancaked down, which in turn pancaked the rest of the floors below. Level 6 fell as a whole, it stayed intact as it fell and did not collapse until it hit the rubble at the bottom. The sound was horrific. The building came down very quickly. It would have collapsed completely within about 12 seconds. I noticed smoke coming from the rubble about 10 minutes after the building had collapsed. I had thought because of the way the building was swaying it might fall towards us but it fell straight down. I know this because my car was parked right beside the south wall of the building and I have marked its location with the letter "Y" on Plan 2.

15 Q. There's a car situated in the model as well, see that there?

A. Mhm.

Q. Is that the approximately location of your car?

A. That's correct. Only my bonnet, bumper and windscreen were damaged. A photograph of my car showing the damage was taken after it had been removed from the building site.

20

A. Now that photograph's going to come up there for you to look at. Is that the photograph you're referring to?

A. That's correct.

**REFERS PHOTOGRAPH WIT.HAWKER.0001.9.**

25 Q. Thank you, paragraph 22.

A. The photograph annexed hereto and referenced, I won't read the number, is taken in the building car park near the south-east corner of the Madras and Cashel Streets intersection.

1023

30 Q. Can you see that in front of you?

A. Yeah. I am at the front of the photo hugging Penelope and another girl, Sasha Stevens who also worked at CTV and had been at Les Mills when the earthquake struck. This photo was taken by a Press photographer. I remember it was taken very soon after the earthquake,

even before the fire started. Actually just going back to that it was actually a staff photographer sorry. Penelope and I stayed at the building site until about 9.00pm that evening. We assisted the police with who may be in the building and also drew diagrams for the police of the CTV level 1 and level 2 layout. I took the photograph annexed hereto and referenced - somewhere between 4.00pm and 6.00pm that evening. I am standing on the east side of Madras Street outside Blackwell's Motors facing what was the east side of the building.

5

Q. Thank you Mr Hawker, just one point of clarification about your observations of the collapse in paragraph 19, you say that you saw cracking appear on level 5.

10

A. Mhm.

Q. Can you say where you saw that cracking appearing?

A. I believe it was on the outside of the pillar.

15

Q. The outside –

A. Outside of the pillar –

Q. On which pillar?

A. - the second to top level so level 5 I believe.

Q. Can you say which of those pillars on level 5 you mean?

20

A. Um –

Q. You can use your mouse I think to –

A. It's just, if you look where the CTV logo is up there to the right-hand corner, the first pillar on the right underneath that, yes that's correct, that's the pillar I saw crack, so just this here.

25

Q. So the pillar to the right on level 5?

A. That's correct. It sort of just shattered outwards.

Q. Did you see any other pillars shattering outwards in that way?

A. Not that I can remember. The first thing I do remember is on – the first thing I remember from this location seeing is on level 2, on level 2 round here, this glass broke first and shattered down here.

30

Q. So just pause there, you're referring to level 2?

A. Mhm.

**MR ELLIOTT ADDRESSES JUSTICE COOPER**

Your Honour, I think in terms of the column plan that would be between columns C2 and C3.

**JUSTICE COOPER**

5 Yes.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. On level 2.

A. So the window shattered here first and then what I noticed was that all the glass round here shattered and then this pillar here shattered and  
10 broke off.

Q. All the glass around here?

A. Yeah, that's correct.

Q. Where do you mean, level 2?

A. Yeah. So –

15 Q. The right-hand – just take it slowly.

A. Sorry.

Q. So level 2, the glass on the right-hand section of the building?

A. Mhm.

Q. And where else?

20 A. All I noticed was the glass shattering there in that pillar up there shattered outwards.

Q. And that pillar up there again is the pillar on the right-hand side of level 5?

A. That's correct.

25 **CROSS-EXAMINATION: MR LAING**

Q. Mr Hawker, the wall, it's called a shear wall where the steps are, do you recall the sequence of that coming down?

A. Ah, no I don't quite recall that I'm afraid.

Q. You didn't see it?

30 A. No. I did, when the building – when the earthquake started happening I do you recall looking up above us at the IRD building because I thought the glass was going to pop out and get us, but I remember seeing the

glass sort of go like that at the IRD building and then I glanced back at the CTV building.

**JUSTICE COOPER:**

5 Q. So you're indicating a kind of warping movement?

A. Yeah.

**CROSS-EXAMINATION: MR RENNIE**

10 Q. Mr Hawker, if we could have plan 6, the first of these plans. It's 006, you'll have it in a moment. In the plan drawn from your information 006 you've marked a crack on the side of the master control room. Do you see that?

A. Yeah, that's correct.

Q. Can you recall what the wall at that point consisted of?

15 A. It was an internal wall and as far as I can remember – I can't remember what exactly it was but it was very light, I think it might have been some sort of gib board or something like that but it was very light.

Q. And in terms of the crack was it a surface crack, a crack that one could see through, how would you describe it?

20 A. I'd describe it as a surface crack.

Q. Now the master control room itself, what to your knowledge did that contain?

A. In what, what do you mean?

Q. Did it contain equipment, did it contain desks, I mean –

25 A. Sure, it contained our play-out equipment for channel so we had computers, we had desks going right around, we had three computers in there to be exact, a number of television monitors, yeah quite a bit of equipment and the room next door to it to the left-hand side where the stairs are, was another equipment room just behind where the reception  
30 area was, full of transmitting equipment (overtalking 10:29:41).

Q. Yes, so just starting with the master control room, was that equipment stacked on racks inside that room?

A. No.

Q. And then going to the room as you say between the master control room and the external wall I think is the area you're pointing to, is that right?

A. Sorry –

Q. The south wall between the master control room and the south wall –

5 A. Yes.

Q. – is the second room you're talking about?

A. That's – sorry I'll just point to it here, so the room with all the equipment's just in here.

Q. Right.

10

**JUSTICE COOPER :**

Q. So it's a room immediately to the east of the master control room?

A. Yes. That's correct.

**MR RENNIE:**

15 Q. And that room contained the transmission equipment in the nature of broadcasting transmitters and so forth?

A. That's correct.

Q. Now you've drawn the staircase to the left of that. That started at level 1 with the reception desk I think and then I suggest one walked up that  
20 staircase and then turned to the right to reach level 2?

A. It was sort of a corridor that broke off into two, two ways so once you reached the top of the stairs, straight ahead leads you right round the side of the building and to the left is another corridor which leads down.

Q. Right, so you had a choice at the top point of the stairs?

25 A. That's correct.

Q. If we go to 007, the next plan. Is the hatched area on the bottom left corner your depiction of a staircase at the next level?

A. Yeah, that would be correct, sorry I'm just trying to think back, yes that would be correct.

30 Q. And this was through, this was taken through the slab between level 1 and level 2 as the main access for CTV. Is that correct?

A. Yes. That's correct.

Q. Can we go to BUI.MAD2490151B2? This is a City Council records plan. Now Mr Hawker, it's going to take a moment just to get familiar with this



document and if you need more time at any stage please let me know. If you have a look at this on the left you'll see a diagram which has got a long rectangle with a cross through the middle of it, do you see that?

A. Sorry, where am I looking please?

5 Q. You're looking on the left-hand half of this diagram, half way up you'll see quite a wide rectangle with a cross through it?

A. Mhm.

Q. And below that you'll see what is more in the nature of a square with a cross through it, do you see those?

10 A. Yes I do.

Q. Now this is the plan from the City Council records of the intended hole to be cut in the slab when this internal staircase was put through. Just looking at that, that's a little different to what has been drawn on your plan. That's not a criticism at all. I'd just like you to think about it bearing in mind that what we have drawn here may not even be what was built. So I'm just asking for your memory of it.

1033

A. Yeah, sure. Yeah I, I would go with my diagram still.

Q. You'd still go with your diagram?

20 A. Yeah.

Q. Yep. Now you will have heard Ms Jackson's evidence read this morning.

A. Mmm.

25 Q. And one of the matters that she commented on in that evidence was that after the September earthquake the internal stairwell would rattle around in aftershocks. Do you remember hearing that?

A. Yes I do.

Q. Was that something that you noticed yourself?

A. Not that I was aware of, no.

30 Q. Talking of the staircase as you remember it, what was it built out of?

A. As far as I'm concerned it was just wood I thought.

Q. Mmm.

A. I, I -

Q. I don't know I -

A. Sorry, I didn't really pay much attention but ...

Q. Yes.

A. Yeah.

5 Q. Now also in your evidence today you talked about staff reactions to aftershocks after the September earthquake.

A. Mmm.

Q. Can you remember whether that was something you particularly recall from between the period September and Boxing Day or do you see it as a more continuous pattern of events?

10 A. I think it was a more continuous pattern of events because certainly after Boxing Day there was a lot more discussion about it I believe. It was never something that would sort of die-down as such.

Q. And in terms of your memory of the effects that you felt in the building when those aftershocks occurred, what sticks in your mind?

15 A. When I was in the building during aftershocks at that time, you know, I felt as if the building was going to come down, just the way the motion of the building was, was happening and it was sort of going, a back and forth motion.

Q. Yes.

20 A. Yeah.

Q. In terms of each experience that you had were they much the same experience each time, the motion of the building?

A. Yeah I believe so.

25 Q. And if you had to state a sort of line of direction, north-south, east-west or whatever you like as to the direction in which you felt the building moving what direction would you choose?

A. I would go east to west.

Q. And was that something which you had ever experienced in any other building before?

30 A. No.

Q. No. Now if we could have the photograph of the building and I'm sorry I don't have the reference, the one he was looking at before.

**JUSTICE COOPER:**

So that's the one, suffix 82.13

**MR RENNIE:**

That's it, thank you. I apologise Sir. I should have noted the reference down.

**5 CROSS-EXAMINATION CONTINUES: MR RENNIE**

Q. The entrance to CTV was through the triangular-topped doorway towards the right of the photograph behind the traffic light wasn't it?

A. That's correct.

10 Q. Yes and am I right in thinking that that was the entrance to CTV but not to the floors above?

A. That's correct because on the first level, where you see the first door there, I'll show you here.

Q. Yes.

15 A. That was inside another room. So that whole section there was a room to itself.

Q. Yes and –

**JUSTICE COOPER:**

So, can we just, we need to capture that for the record.

20

**MR RENNIE:**

Thank you Sir. I'm sorry.

**JUSTICE COOPER:**

25 I think that Mr Elliott may help here. That would be a reference to level 2, between lines C7 and C6. Is that right?

**MR RENNIE:**

30 Yes I think it's immediately to the east of the point where the shear wall stops Sir.

**JUSTICE COOPER:**

Yes. All right. Just, can I just interrupt here. I had Commission staff prepare a plan which shows typical floor layout. It's got north marked on it. It's got Madras Street and Cashel Street marked on it and it's got the gridlines A to F and point 5 marked on it and if this could be made available to Mr Rennie and  
5 other counsel it may help us as we go through this –

**MR RENNIE:**

Indeed Sir, it would be very helpful.

10 **JUSTICE COOPER**

- to have common lexicon in referring to the building. So we'll, that was the point of my interruption now Mr Rennie.

**MR RENNIE:**

15 Thank you Sir.

**JUSTICE COOPER:**

Is there a spare copy available? And witnesses should have it too I suspect or they could helpfully, perhaps.

20

**MR ELLIOTT:**

Yes Your Honour. We'll arrange that now.

**JUSTICE COOPER:**

25 So just let's pause while this happens.

**PLAN PHOTOCOPIED**

**JUSTICE COOPER:**

30 Q. Just while that's happening can we just clear something up for the Commission. If you have a look at the photograph that's now displayed Mr Hawker there's a, is it a sort of triangular, or there's a canopy with a triangular shape on the, what appears to be the south-east corner of the building. I can see through some trees the red letter "C."

A. Mmm.

Q. Is that the start of CTV?

A. Yeah, that's the entrance to the CTV.

Q. And that's where one would go into the building.

5 A. That's right.

Q. To enter level 1.

A. Yes, that's correct.

Q. So that would be the entrance from which Ms Robinson exited the building when she was running on the day?

10 A. That's correct.

Q. And just if you would just remove that – now to the left of that there's a grey-shaded panel. I saw it on CTV. Do you see those words?

A. I don't think they were there –

Q. On the day?

15 A. On the day, I don't believe so.

Q. All right but just for the purposes of these questions below that there's another grey-shaped panel which again has a triangular shape. What, what's that part of the building?

A. Triangular shape?

20 Q. It looks like there could be stairs up there.

A. Yeah, so the stairs, basically once you enter the door where CTV is there –

Q. Yes.

A. – to your left there's a set of stairs going up.

25 Q. Yes.

A. And then they curve to the right and go up to the rest of the floor and then on the right-hand side down the bottom. So the stairs, when you come in the stairs are up this way and then the rest of CTV's kind of on a, like an angle like this. So it's sort of like an angle when you walk into the building.

30

Q. Right.

A. The stairs are on your left and the studios are to your right.

Q. Are you talking about the internal staircase at the moment?

A. The internal staircase is to your left.

Q. Yes.

A. When you go in the door.

Q. Right.

5 A. That's what you see, just up here, leading up here is the internal staircase. So you go up here and then you go straight ahead up here.

Q. Yes. That was the area I was describing –

A. Yep.

Q. – as having a sort of triangular shape.

A. Yeah. That's correct.

10 Q. Was that a balustrade? Or it's just to conceal the side of the stair that was going up?

A. Yeah and Maryanne had her cupboards underneath sort of the stairs.

Q. I see, yeah.

**COMMISSIONER CARTER:**

15 Q. Could you just look for a moment at the column that's right on the very corner of the south-east. Was the entrance canopy covering both sides of that or was the column standing in the middle of the entrance or was the entrance to the left of the column?

A. I, I believe it was in the middle as far as I can remember I think it was in  
20 the middle.

1043

Q. But that column was there?

A. Yes, yes.

**CROSS-EXAMINATION CONTINUES: MR RENNIE**

25 Q. We were just trying to identify a reference point for the point which the witness pointed to on level 2, as I understood him, except we need the picture back. Mr Hawker you may recall quite some time back answering a question identifying a point on level 2 which is the second of the CTV floors, you remember pointing that out to me?

30 A. Mhm.

Q. Could you just point it out again. The only reason for that is we're now going to read a reference into the record of the evidence to match this plan that we've now got.

A. So what, sorry, I'll just clarify that, what would you like me to point out again?

5 Q. I asked you in relation to the stairwell about points of entry and points of emergence and you identified, as I understood it but I'm being very careful not to tell you what you said, a point on level 2 which you pointed to with the arrow. Do you recall doing that?

A. So you just want to know where people enter and exit?

Q. Just where did you show us where they exited on the first floor.

10 A. So on the first floor they exited down here, that was the main entranceway, because we did have lifts at the back of the building but we didn't use them.

Q. So the witness is showing a point, I would say, immediately to the east of the south shear wall. It doesn't readily have a C reference but it would be immediately to the east of the south shear wall on the second level  
15 between –

#### **JUSTICE COOPER:**

Well it's on, it's in the vicinity of line 1 isn't it?

#### **20 MR RENNIE:**

Yes it's in the vicinity of line 1 and a little to the west of line E, sir.

#### **CROSS-EXAMINATION CONTINUES: MR RENNIE**

25 Q. Thank you for that Mr Hawker now coming back to the 22<sup>nd</sup> of February and you were telling us about the view that you had of the building and the face that we're looking at now and your recollection of the first sign of external damage I think you said was level 5 on the west side and that was apparent cracking at that level on the outside of the building.

A. Yes that is correct.

30 Q. Could you just show us again with the mouse the area of that cracking.

A. Sure I noticed that cracking appear on here and the shatter outwards.

Q. I didn't catch that. It may be my eyesight. Here and here was?

A. So cracking appeared all sort of down here. I'm not sure of exactly where the cracking did appear but it was cracking here and it shattered outwards.

5 Q. Right so that's in the area of C1 I would say, sir, at line F. You also recall a glass explosion in the CTV area in level 2 and that was in the same area but further down the building to the broken pillar that you've described.

A. Yes, that's correct, I'll grab the mouse here and show you. This was the first glass I noticed to come out of the building that shattered outwards.

10

**CROSS-EXAMINATION: MR SHAMY – NIL**

**RE-EXAMINATION: MR ELLIOTT – NIL**

**QUESTIONS FROM THE COMMISSIONERS – NIL**

**QUESTIONS FROM JUSTICE COOPER - NIL**

15

**WITNESS EXCUSED**



**MR ELLIOTT CALLS****PENELOPE ANN SPENCER (SWORN)**

Q. Your full name is Penelope Ann Spencer.

A. That's correct.

5 Q. And you live in Auckland and you're a communications consultant.

A. Yes that's correct.

Q. You've signed a brief of evidence and that brief is in front of you, is that right?

A. Mhm.

10 Q. And as part of that process you've prepared a plan and that's going to come up in front of you in a moment and did you hear the other evidence about how the other plans were prepared?

A. Yes, same way.

15 Q. This was the same way, thank you. Start reading your brief please from paragraph 2.

Until 5<sup>th</sup> of March 2012 I had lived in Christchurch all my life. I was a Production Assistant for CTV where I had worked for two years.

20 **The CTV Building** - Until 22 February 2011 CTV was situated on Levels 1 and 2 of the CTV building at 249 Madras Street, Christchurch. I have done a Floor Plan of Levels 1 and 2.

Q. Just pause there while that comes up. That's the floor plan you're referring to, you see in front of you.

A. Yes that's correct.

25

30 **Before September 2011** - After September 2010 the building had been issued with a Green Sticker and I am sure it had been checked out by someone else independently, although I never saw anyone around. After the September 2010 earthquake the building also had several noticeable cracks. On Level 1 there were cracks in the plasterboard on the south wall of the master control room. One crack went diagonally up the wall and was about 50 centimetres long. After Boxing Day this crack went almost the whole length of the wall, about 2 to 2.5 metres in length, that's an approximation.

Q. Just pause there. So you've talked about the crack on two separate occasions, once before Boxing Day.

A. Yep.

Q. And then after Boxing Day.

5 A. Mhm.

Q. Firstly, considering before Boxing Day, you've said how long it was but can you say how wide the crack was?

A. It was just like a superficial crack, there was no real width to it, it was just a noticeable crack you could say.

10 Q. And what about after Boxing Day how wide was it then?

A. I still don't think there was any width to it, maybe a millimetre, but there was really no width to it. It was just a crack that ran along the wall, um, and after Boxing Day earthquake the crack had several other cracks leading off it.

15 1053

Q. And were those other cracks the same width?

A. Yeah, they were just, they just looked superficial to me but it was quite large in length.

Q. Thank you so just keep reading from, "This crack..."

20 A. This crack also had other cracks leading off it after the Boxing Day earthquake. I have marked the location of this crack with the number 1 on the plan. There was a significant crack around the internal pillar between the cafeteria and the staff computers on level 2. I would probably say it was actually a gap. I never actually saw a crack there.

25 Q. Just pause there, you're talking now about the plan on the right-hand side, is that right?

A. Yep.

Q. And perhaps we can have that area enlarged? 0001.6. And you're referring to number 2 on that plan?

30 A. Yes, that's correct.

Q. Just read from, "Here the carpet along..." If you read that paragraph then I'll ask one or two more questions about that crack?

A. Okay.

Q. And you'll explain some more.

A. The whole paragraph?

Q. Yes please.

5 A. There was a significant crack around the internal pillar between the cafeteria and the staff computers on level 2. Here the carpet along the edge of the internal wall had separated from the pillar by about one centimetre. This had previously been attached before the September 2010 earthquake. I have marked the location of this pillar with the number 2 on the plan.

10 Q. When you refer to “a significant crack”, firstly what part of the pillar are you referring to?

A. Um, it was the bottom of the pillar where the pillar connected to the floor and I’d sort of like to revise that as a gap more than a crack ‘cos I never actually saw a crack.

Q. So are you meaning a gap between the pillar and the carpet?

15 A. Yeah.

Q. Or a crack in the pillar itself?

A. No crack in the pillar. It was a gap between the carpet and the pillar which had not existed prior to the earthquake.

Q. And how wide was that gap?

20 A. It was about one centimetre.

Q. Paragraph 8?

25 A. There were cracks in the internal walls on level 2. Cracks along walls, um, along the corridor by the editing room went straight up the wall and were 10 to 20 centimetres long. I am sure these cracks also grew bigger after the Boxing Day 2010 earthquake. I have marked the location of these cracks with the number 3 on the plan. I am sure there were also other cracks around windows and door frames but I do not recall where they were. I think the windows may have been broken along the east wall of level 2 as well.

30 Q. So the cracks marked number 3 –

A. Yes.

Q. – on the plan, again can you say how wide those cracks were?

A. Ah, they were more superficial, um, they weren’t wide at all, they were just superficial.

Q. Paragraph 9?

A. I never saw any cracking on the outside of the building. I do not think anyone at CTV felt safe in the building. Sometimes we would joke around and jump into the cafeteria on level 2 which would make the floor shake. The floor also shook every time someone walked down the corridor on level 2. This did not happen prior to the September 2011 earthquake. February 22<sup>nd</sup> 2011 –

Q. What about building demolition?

A. Sorry?

**JUSTICE COOPER:**

You need to read paragraph 11 as you have jumped over it.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. Paragraph?

A. Oh sorry. Building demolition. During the demolition of the building next door in January 2011 the building constantly shook. It felt like we were having aftershocks all day but it was just the building shaking.

22<sup>nd</sup> of February 2011. On the 22<sup>nd</sup> of February 2011 I was walking back to the building on my lunch break with my boyfriend, Tom Hawker. We had just been to the dairy on the south side of Cashel Street opposite Les Mills. We were walking across the road, almost in line with the building carpark entrance to the south of the building and in line with the west wall when the earthquake struck. I could see the whole south side and the southern end of the west side of the building. Where I was standing on Cashel Street is marked with the number 4 on the plan.

Q. Are you referring there to 0001.5 the plan on the left? Can you see that, it might be too small to see but the number 4 in the top left-hand corner –

A. That's correct.

Q. – of the left-hand plan?

A. Yep.

Q. And we're just going to produce the model again now.

**WITNESS REFERRED TO DOCUMENT - MODEL**

Q. Just while that model is being brought up in front of you, you're about to describe, in fact you have already said that you could see the whole south side?

5 A. Yep.

Q. Did anything obscure your view?

A. I'm not sure. I really can't remember if there was anything there. There were trees along the south side of the carpark, um, but I can't remember if anything was obstructing my view of the building at the time. I think my focus was more on top, on the top of the building, um, but I'm not sure.

10

Q. If that could pan up please, does that accurately show your view –

A. Yes.

Q. – of the building at that time?

15 A. Mhm, yes.

**MR ELLIOTT:**

Your Honour I just note for the record I suppose that these positions of the witnesses are fixed in the model, so there is an internal reference so when the witness refers to confirmation of their position that is recorded in the model itself for later reference. If that makes sense?

20

**JUSTICE COOPER:**

Not really.

25

**MR ELLIOTT:**

Well the model is set up so that each witness' location has been identified within the model –

30

**JUSTICE COOPER:**

I gathered that, yes.

**MR ELLIOTT:**

And that we can, in referring the witness to that location we can reference it back to that position in the model for the purpose of records later on.

**JUSTICE COOPER:**

5 So the model is a living model in a sense. It is recording the confirmation?

**MR ELLIOTT:**

Well the positions that we're referring witnesses to are fixed within the model, Your Honour.

10

**JUSTICE COOPER:**

Yes, well that is a very simple concept which even I can follow.

**MR ELLIOTT:**

15 Well I perhaps was finding it hard to follow.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. All right, so paragraph 13 please?

A. The building was swaying back and forth, in a north and south direction. After about ten seconds it started to collapse. All the glass on every  
20 floor on the south side shattered. The concrete pillars then exploded on the fourth floor which is level 5. The pillars I could see on the south side collapsed at the same time. I was focused on the south side of the building so I did not see what happened on the west side of the building.

Q. Can I ask you to clarify your evidence there? Firstly you said, "The  
25 concrete pillars then exploded on the 4<sup>th</sup> floor," are you referring there to the south side or somewhere else?

A. Yes on the south side.

Q. And in your next sentence you say, "The pillars I could see on the south  
30 side collapsed at the same time." So which pillars are you referring to in that sentence?

A. Um, the four pillars, um, along the front, oh, along the south side of the building, um, all collapsed at the same time.

Q. You said the four pillars?

A. I think it was four pillars.

Q. Along the south side, which level?

A. On the fourth level which is level 5, fourth floor, level 5.

Q. I see so your references in those two sentences are to all of the pillars  
5 along level 5 on that south side?

A. That's correct.

**JUSTICE COOPER:**

Q. Now this evidence may be clearer if it were given in relation to the  
10 photograph may it not? Because it is rather dark, the images are in the  
model. This is, the suffix is very small but is it 0082. –

A. One three.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. Do you see that photograph in front of you?

15 **WITNESS REFERRED TO PHOTOGRAPH**

Q. And you've just described the four pillars along level 5 on that south  
side. Having seen that photograph is that still your position?

A. I don't know, 'cos I remember there were four pillars but maybe there  
weren't. Um –

20 1103

Q. Can you indicate which of the pillars you saw collapsing?

A. Yeah, so this one here.

Q. That's C1.

A. This one here.

25 Q. C2.

A. And this one here.

Q. C3.

A. I thought there –

Q. On the other side.

30 A. - was another one here but ...

Q. And you're indicating the left-hand or western side of the south shear  
wall?

A. Yes, but maybe there wasn't one there.

Q. Thank you, and when you say that they exploded and when you say collapsed, can you be more specific about what that means, what did you see?

5 A. Okay, the concrete pillars sort of shattered but they kind of exploded outwards like the concrete sort of exploded and that's when they began to collapse down, yeah.

Q. Did you see any other pillars collapsing in that way on any other part of the south side?

A. No.

10 Q. Thank you, so paragraph 14 please starting at level 5?

A. Level 5 then collapsed down and hit the next floor down. It stopped for about half a second and then it dropped again onto the next floor down. The building then pancaked all the way down to the ground. The top floor (level 6) dropped as a unit, staying intact until it hit the rubble at the bottom. After the collapse, water pipes from the top levels had sheared off at the north core and were leaking out a significant amount of water onto the rubble below. A fire started at the northern end of the building almost immediately after the collapse. The building had come down so straight that Tom's car, which was parked in the second car parking space closest to Madras Street and along the south wall of the building, really only had the bumper knocked off it and the windscreen smashed. I have marked the location of Tom's car with the number "5" on the plan.

15

20

Q. And that plan will come back up 0001.5, so you've marked there number 5 on the bottom left-hand side. Thank you, and finally you've produced I think another photograph since signing your brief of evidence, it's WIT.SPENCER0001.7. It'll come up in front of you. Who took this photograph?

25

A. It would have been either me or Tom, I'm not too sure.

Q. And where has that been taken from?

30 A. That's been taken from the Blackwell's Holden corner on the east side of Madras Street looking in to sort of west.

Q. When was it taken?

A. It was several hours after the earthquake, probably getting towards dinnertime I would imagine, I'm not too sure though.



**CROSS-EXAMINATION: MR LAING**

- Q. Morning, could I ask you some questions about the stairwell and could I ask you to look at your ground floor plan 0001.5?
- A. Yes.
- 5 Q. On that plan you show the stairs starting near the area which you label as reception?
- A. Yes.
- Q. Did the stairs go straight up to the first floor level 2 or did they have a turn in them?
- 10 A. They had a turn in them over where the servers are, they turned there and went up to the next level, so you ended up facing the boardroom on the second floor.
- Q. Right, so if we go to your plan 0001.6 and there's a small area between office and technical, you see that area there?
- 15 A. That's the stairs.
- Q. That's the stairs, and they turn –
- A. I've also forgotten to mark that bit.
- Q. – that's fine, not being critical but they turn a right angle and come out opposite the boardroom?
- 20 A. Yes they did.

**CROSS-EXAMINATION: MESSRS RENNIE AND SHAMY – NIL****QUESTIONS FROM COMMISSIONER FENWICK:**

- Q. Yes, you mentioned the crack between the carpet and the pillar.
- A. Yes.
- 25 Q. It was about one centimetre wide, I think was this after the Boxing Day earthquake. Now did that crack progress or was there a gap in the carpet elsewhere that indicating it was running north south or east west, or what?
- A. No.
- 30 Q. Was it just round the pillar, just pulled out had it?
- A. It had pulled away from the pillar. It was most noticeable on the side near edit 3 on the plan 2.

Q. But you couldn't see, it didn't tear the carpet anywhere –

A. No.

Q. And the carpet just stretched did it to –

A. It looked like it had just pulled away from the pillar.

5 Q. Okay, but nowhere else?

A. No.

Q. One more thing, you've talked about the columns exploding, the three columns exploding on level 4. What about the wall behind the stairway, the external stairs. Did you observe that at all?

10 A. I don't recall what happened to that.

**QUESTIONS FROM COMMISSIONER CARTER:**

Q. Yes, I just have one question that concerns the paragraph 13 and the first line that you observed the building sway back and forth in a north/south direction, now that's towards you and away from you north south, so just confirm it was not east/west, to your left and to your right?

15

A. It did not appear to be at the time. It looked to me like it was coming towards me and away from me.

**QUESTIONS FROM JUSTICE COOPER – NIL**

**WITNESS EXCUSED**

**MR ELLIOTT CALLS****MICHAEL TREVOR WILLIAMS (SWORN)**

Q. Good morning.

A. Good morning.

5 Q. So your full name is Michael Trevor Williams?

A. Yes.

Q. And you live in Christchurch?

A. Yes.

10 Q. And you're currently employed as a manager for Immigration New Zealand. Is that right?

A. That's right.

Q. And you have a brief in front of you which you've signed?

A. Yes.

15 Q. And in the course of preparing that brief did you prepare a plan in the same way as described by previous witnesses?

A. I wasn't present yesterday sir.

Q. I see, well did you in the course of preparing your evidence prepare a plan yourself?

A. Mhm.

20 Q. Which you then gave to Royal Commission staff who came back with a mocked up version.

A. That's right.

Q. Which you see in front of you and which you've confirmed as being accurate – an accurate depiction of what you've drawn?

25 A. That's correct.

Q. Could you start reading please from paragraph 2?

30 A. Sure. I was employed by the Inland Revenue Department at the time of the 22<sup>nd</sup> February earthquake. I was a team leader and my role involved managing a child support debt team. The IRD office took up seven floors of the building at 224 Cashel Street. The main entrance to IRD was in line with the southern wall of the CTV building. I was standing on the fourth floor of the IRD building facing the CTV building when I saw it collapse on the 22<sup>nd</sup> of February.

After the 4<sup>th</sup> of September 2010. I did not see anything construction work on the CTV building, I did see some paintwork that was being carried out on the fifth floor but that was all. I noticed that they were bringing down the building next to the CTV building. I assumed this was because it had been damaged in the 4<sup>th</sup> of September earthquake. There was a lot of heavy drilling and a lot of work being done.

1113

There were wrecking balls, things smashing into the building and things cutting into the building. We soon realised the tremors we could feel in the IRD building were just the construction work going on across the road. I can only imagine what it must have felt like in the CTV building and other surrounding buildings. It felt like the ground was shaking with the work that was going on. I'm not sure what was planned for the land. I'd heard rumours that they were going to turn it into a carpark and I guessed that this was why they were making it so flat.

22<sup>nd</sup> of February. I prepared a plan of the corner of Madras and Cashel Street. This is attached and marked "A." The IRD building and CTV carpark have not been drawn to scale. I was sitting at my desk on the 4<sup>th</sup> floor which is level 5 of the IRD building when the earthquake hit. My desk was against the window, against the, above the entrance to the IRD building on Cashel Street. I have marked my position as "1" on the attached plan. I had been in the IRD building plenty of times during aftershocks and had never felt the need to get under my desk. This time it was different and I got under my desk immediately. It wasn't just a shake. It got more and more violent. It just kept on increasing in intensity and I was being bounced out of my desk and back under it again. It was very violent. I'm not sure how long it went on for but suddenly it stopped. I stood up and started to call my team together. It was at this point that I heard a rumbling sound which made me look outside. This was when I saw the CTV building collapse. I had an unobstructed view of the building from my position and was able to see the south wall of the building top to bottom and side to side.

Q. Just pause and we'll have –

**MR ELLIOTT**

Your Honour is the photograph of more assistance than the model in looking  
5 at that south side?

**JUSTICE COOPER:**

Well I'm in your hands. It's just that when you start you start to question  
witnesses about columns and things, or pillars that have collapsed we need to  
10 be able to see them and the model is dark so, but it's useful to show the angle  
view and that sort of thing.

**MR ELLIOTT:**

Well perhaps I'll show that first Your Honour and then the photographs.  
15

**JUSTICE COOPER:**

Well just, you do what you want to do Mr Elliott bearing what I've said in mind.

**MR ELLIOTT:**

20 Thank you Your Honour.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. We'll produce the model so we can just confirm –

A. Sure.

Q. – what your view was of the building. Does that accurately show your  
25 view of the building?

A. Yes.

Q. The position you've described?

A. Yes.

Q. So just continue reading please.

30 A. The earthquake had stopped shaking when I saw the building came  
down. It didn't come down immediately. It was after the earthquake  
had stopped. It looked like it was sinking into a hole. It was intact as it  
fell. Remembering back there were a few moments where it felt like our

building was actually going upwards. It was exactly like seeing the collapse of the World Trade Centre buildings. The top floated down and was engulfed by dusk.

Q. I'll just ask you something about, about that.

5 A. Sure.

Q. We may need to call a photograph up here to, to refer to this a bit more but did you see any of the pillars during that collapse?

A. No.

10 Q. Did you see anything more specific about the collapse than what you've already described?

A. No.

Q. Thank you and then paragraph 14 please.

15 A. A minute or so later once the dust had settled I could see that the building was gone. The lift well was the only thing I could see that remained standing. The next thing I knew I was out of the IRD building and at the CTV site. I'm not sure of the details and I think I may have lost some moments of time. I had an expectation that the building would be all over the show, so I was very surprised to see that it had fallen into a complete square. I didn't think that was normal for a building to fall  
20 like that. It looked like it had come straight down. I could see cars parked up against the front of the building that were relatively undamaged. I helped a number of people out of the building who had been on the fifth floor, which was level 6. Some had no idea the building had collapsed and were surprised when they realised what had happened. The next thing I remember is being on the western side of  
25 the building fighting a fire. There was a pile of debris between us and where it looked like the fire was coming from. Everything was very compact and it appeared to be coming up from underneath the rubble. I have marked this as "2" on the plan.

30 Q. Just wait there while we bring the plan back up again, 0001.5. You refer to number 2 which appears in the top, right-hand corner of the plan.

A. Yes.

Q. The north-west –

A. Mmm.

Q. – corner of the building.

A. That's correct.

Q. Go ahead please.

5 A. Thank you. I've marked this as 2 on the plan. It appeared too dangerous to attempt to climb over it so we got as close as we could and emptied the contents of the extinguishers that we had into that area. The aftershocks were actually scarier than the initial earthquake. There were a lot of them just as we were climbing up into the rubble. Each aftershock made me fall over in between the rubble. I was fearful for the  
10 police and a colleague who had climbed a lot higher than I had. The lift well was still standing and if it were to fall these brave people would certainly not be able to get away in time. After the first hour or so I stopped noticing the aftershocks. I was too busy to notice them. There was just so much to do. I've sent five photographs to the  
15 Royal Commission, these are attached and marked. The photographs marked 1 to 4 were taken by me on my phone. Photograph 5 was taken by The Press and shows me at the scene. Each photograph notes what it shows and the approximate time it was taken in relation to the collapse.

20 Q. We'll just bring those photographs up so you can confirm them. So 0001.6. What does that describe?

A. So that is the USAR people unpacking their gear. So that is on the road just by the footpath on the corner of Cashel and Madras.

Q. And 1 is looking in which direction?

25 A. Looking towards Latimer Square.

Q. And that was taken within 90 minutes –

A. Yes.

Q. – of the collapse. 0001.7.

A. The building, sorry.

30 Q. Which direction are you looking in that photograph.

A. So this is again on the same corner as the previous photograph. You can see the street signs above and it's facing towards the carpark. The building has landed directly in front of the cars parked in the CTV carpark and that also was taken around 90 minutes of the collapse.

Q. 0001.8. That's a photograph of part of the rescue effort you say.

A. Yes.

Q. Taken about three or four hours after the collapse.

A. That's correct.

5 Q. 0001.9.

**MR ELLIOTT:**

Your Honour it appears there may be some different numbering, my colleagues have different numbers than what I have.

10

**JUSTICE COOPER:**

Yes.

**MR ELLIOTT:**

15 But in any event the witness has –

**JUSTICE COOPER:**

This one that's displayed is 1.9.

20 **MR ELLIOTT:**

Yes.

**JUSTICE COOPER:**

In my version and it's 1.10 in Commissioner Carter's version and  
25 Commissioner Fenwick's version. So, but let's just go back to the first which  
is unpacking their gear after USAR arrived. Your number is 1.7 and mine's  
1.6. You're 1.7.

**JUSTICE COOPER:**

30 Q. So Mr Williams do you have your brief of evidence in front of you?

A. Yes I do Sir.

Q. And are the photos attached to it?

A. Yes Sir.



Q. And so you're the one giving evidence. So you get to win this argument. Is your first photo the one that's unpacking their gear after USAR arrived, is that marked in the red with the end letters 1.6??

1123

5 A. Yes Sir.

Q. So and the next one which has number 2 at the bottom, "The building has landed directly in front of the cars parked in the CTV carpark," is that 1.7 in your version?

A. Yes Sir.

10 Q. The next one is labelled 3, "The rescue," is that 1.8?

A. Yes.

Q. The next one is 4, "The lift well," and is that 1.9?

A. Yes Sir.

Q. And is the next one the one showing you in the blue shirt I think near the bottom of the photograph, standing behind a police officer, is that 1.10?

15

A. Yes Sir.

# **EXAMINATION CONTINUES: MR ELLIOTT**

Q. I was just going to confirm what those last two photographs show?

A. Sure.

20 Q. So 1.9 which you've numbered on the bottom you've said, "The lift well."?

A. Yes.

Q. So which direction are you looking in that photograph?

A. Um, that is again on the corner of Cashel/Madras standing by Blackwell Motors looking, um, across the road to the CTV Building.

25

Q. And that was taken within 60 minutes of the collapse?

A. It says here, "Taken from 60 minutes," um, just thinking back now I'm just not too sure, the car, the car placed on top of the other car was done, um, to be able to gain access into where the entrance to CTV would have been. So it could've been slightly later than 60 minutes, I'm not, I'm not sure that happened in the first hour.

30

**JUSTICE COOPER:**

Q. So that car ended up in that position as part of the search and rescue effort did it?

A. That's correct, Sir.

**5 EXAMINATION CONTINUES: MR ELLIOTT**

Q. And 0001.10, you're in that photograph so you obviously didn't take it. What part of the collapsed building does that show?

A. So, um, that would be taken from Cashel Street and it's the, um, I'm not sure what wall it is, it's the wall that was closest to the empty lot.

10 Q. And you say that would've been taken within 30 minutes of the collapse?

A. Yep absolutely.

**CROSS-EXAMINATION: MESSRS LAING, RENNIE AND SHAMY – NIL**

**QUESTIONS FROM THE COMMISSIONERS - NIL**

**15 QUESTIONS FROM JUSTICE COOPER - NIL**

**WITNESS EXCUSED**

**MR ELLIOTT CALLS****STEPHEN ADRIAN GRENFELL (SWORN)**

Q. You full name is Stephen Adrian Grenfell?

A. Correct.

5 Q. And you live here in Christchurch. You are a general manager for Blackwell Motors?

A. Correct.

Q. Is that right? And you've been employed by Blackwell's since 1984?

A. That's right.

10 Q. And you have a brief of evidence in front of you which you've signed?

A. Indeed.

Q. And as part of that brief of evidence there is a plan?

A. Correct.

15 Q. Have you heard the other evidence about how other's plans were prepared?

A. Yes I have.

Q. And is that what happened with your plan?

A. Yes it has.

Q. If you start reading from paragraph 2 please?

20 A. Certainly. Blackwell's was previously located at 220 Madras Street, Christchurch. The HSV Showroom entrance was in line with the east side of the CTV Building. I was sitting in my car outside this entrance of Blackwell's when I saw the CTV Building (the building) collapse on February 22<sup>nd</sup>.

25

22<sup>nd</sup> of February. I have prepared a plan of the corner of Madras and Cashel Streets (the plan). This is attached and marked A. Blackwell's –

Q. Just wait there while that comes up in front of you so we can all see it, this is Grenfell 0001.5, that's the plan you're referring to?

30 **WITNESS REFERRED TO PLAN**

A. It is.

Q. Go ahead?

A. Blackwell's, IRD Building and the CTV car park have not been drawn to scale and their placement is approximate only. The issues that I refer to

in my evidence are marked on this plan. I was parked directly opposite the CTV Building outside Blackwell's on Madras Street. I have marked my location as 1 on the plan.

- Q. Just wait there please, now we'll bring the model up and see if we can  
5 confirm what your view would have been?

**WITNESS REFERRED TO MODEL**

- Q. Firstly, does that accurately show the side of the building that you were looking at?

A. Yes it does.

- 10 Q. I'll ask you some more specific questions shortly about how much of the building you could see but just to orientate ourselves at this point, Blackwell's would've been behind you. Is that right?

A. That's correct.

- Q. Go ahead please from, "I had just got in..."

- 15 A. I had just got in my car because I was off to an appointment. I was parked on the east side of Madras Street and my car was facing north. I remember the car suddenly lurched forward and I felt the car jump up from the ground. I thought that I had been hit from behind by another car. There was no impact noise so I quickly realised that it was an  
20 earthquake. About five seconds into the earthquake the Blackwells' parapet along Madras Street fell down beside my car. This prompted me to open the door and get out of the car to get away. As I was shutting the car door I turned so I was looking at the CTV Building. The building was twisting towards the east in a slightly north direction. It was  
25 rocking back and forth and appeared to be trembling. I could tell it was going to collapse. I immediately jumped back into the car and shut the door as I thought the car may give me some protection. I was sitting in the drivers' seat and had a view of the building out the passenger seat and the left rear windows. I could clearly see the bottom two levels. It  
30 was at this point that the building started to come down. The building twisted towards the east before I saw the southeast corner of the building collapse. It looked like it collapsed on levels 1 or 2. After this corner went the rest of the building seemed to wrap around as the whole building collapsed. It looked like it had come down on itself. The

northeast end of the building appeared more intact as the building came down. I think this may have been why it appeared to twist as it collapsed. I saw concrete coming down squashing cars on the side of road. It was very noisy and there was a lot of dust. The building collapsed about 10 seconds after the earthquake began. I am not sure if the earthquake had ended at this point.

Q. Just pause there please. If we can just pan up on the model, see at least in the model one has to look upwards to see the whole building?

A. Mhm.

10 Q. And you've described things both before you were in your car and then after you jumped into your car. Was your view restricted in any way once you were inside the car?

A. Yes it was, um, I could only see the bottom two levels, um –

Q. So if we pan down?

15 A. So keep coming down, keep coming down, a little more, around about there.

Q. So from the levels of the spandrels at the top of level 2 downward?

A. Yes.

20 Q. And just in terms of the paragraphs in your evidence which relate to when that was your view, that would be from paragraph 8 would it? The descriptions after that point?

A. Yes it would be.

1133

25 Q. And does that apply right through for the remainder of your descriptions or was there a point where you could again see more?

A. It was only after I'd got back out of the car that I saw the extent -

Q. And that's not until paragraph 14.

A. Earlier on, yep.

30 Q. Thank you. So just while we're on that topic. In paragraph 7 you refer to twisting towards the east in a slightly north direction and rocking backwards and forwards. So at that point you could see the whole eastern side of the building?

A. That's correct.

Q. Thank you. Right continue reading please. I think you're up to paragraph 13.

5 A. Okay. The dust cleared and I could see that the north core remained standing. A piece of concrete appeared to be hanging from it on a 40 degree angle. It ran parallel with Madras Street approximately  $\frac{1}{2}$  -  $\frac{2}{3}$  the length of the building. I left my car at this point and ran around to attend to my staff at Blackwell's.

10 I sent six photographs to the Royal Commission. These are attached and marked "B". The photographs were taken by me on my phone. The first photograph shows where the car was parked on the day.

Q. Just pause there while that comes up for us.

A. I have outlined its approximate position in red.

15 **JUSTICE COOPER:**

We've got another numbering problem here I think.

**MR ELLIOTT:**

This should be 0001.6 Your Honour.

20

**JUSTICE COOPER:**

Yes, the problem in this case is one can't see the number.

**MR ELLIOTT:**

25 No, in this case it's been placed within the model itself which produces another complication.

**JUSTICE COOPER:**

Thank you, yes, but it is, it is 1.6?

30

**MR ELLIOTT:**

Yes Your Honour.

**JUSTICE COOPER:**

Thank you.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. And Mr Grenfell you've put in this red rectangle?

A. Yes, to give you the position of my car.

5 Q. Yes.

A. And that was taken 15 to 20 minutes after the earthquake. The other photographs were taken early the next morning from Blackwell's.

Q. Right. So we'll just identify those, 0001.7.

A. Yes.

10 Q. So that was taken the next morning?

A. Yes it was.

Q. And that's looking towards what was the eastern side of the building?

A. Yes that was, well you can see the, what we now know is the elevator tower. So that was, and there is the silver line you can see next to the  
15 Frews digger is actually the road marking or the road sign. So that gives you a good point of reference. So that's directly opposite.

Q. 0001.8.

A. So this is now looking, heading to the left. So I'm now looking towards the IRD building so I'm looking to the south-west from  
20 Blackwell's showroom.

Q. 0001.9.

A. This is, I've moved into, to the south end of the showroom. So that's looking again almost directly across the road but in a slight north-westerly direction.

25 Q. 0001.10.

A. And again just panning more to the north-west from the same spot.

Q. Yes and 0001.11.

A. That was, the Blackwell's showroom was a two height showroom and that was just looking down into the, what we termed as our HSB  
30 showroom and that was looking north-west.

Q. Sorry, looking towards the north-west?

A. The north-west from where I was standing. So to the hard left would be where the CTV elevator tower would be.

**CROSS-EXAMINATION: MR LAING – NIL****CROSS-EXAMINATION: MR RENNIE**

Q. In paragraph 9 of your evidence you refer to the south-east corner being the first point to go. Do you recall that?

5 A. Yes.

Q. Are you able to say what was it that happened when it went. Did you see something fall or break or?

A. I, I've instantly felt that the building was twisting so I felt that my, my initial reaction was that, it was that pillar that collapsed and it dropped everything else.

10 Q. Followed on from that?

A. Yes.

Q. Yes. When you say twisted, is that a sense that to your right it was coming closer towards to and to your left it was going further away? Is that what you mean by twisting?

15 A. Yes.

Q. Yes. Is there anything you'd like to add to the words I've put to you as to how it happened?

A. No I'm, that's how I saw it.

20 Q. You're comfortable with that.

A. Yep.

**CROSS-EXAMINATION: MR SHAMY – NIL****QUESTIONS FROM THE COMMISSIONERS – NIL****QUESTIONS FROM JUSTICE COOPER – NIL**

25 **WITNESS EXCUSED**

**COMMISSION ADJOURNS: 11.40 AM**



**COURT RESUMES: 11.56 AM**

**MR ELLIOTT CALLS**

**EUAN DAVID GUTTERIDGE (SWORN)**

- 5 Q. Your full name is Euan David Gutteridge and you live in Christchurch.  
A. Correct.  
Q. And you're currently employed by Beca, Beca Carter Hollings & Ferner Ltd as a Senior Project Manager.  
A. Correct.
- 10 Q. You've signed a brief of evidence and that's in front of you.  
A. Correct.  
Q. And in the course of preparing the evidence did you prepare a plan?  
A. Yes.  
Q. And did you hear the other evidence from witnesses about how that plan  
15 was prepared?  
A. Ah yes.  
Q. And was your plan prepared in the same way?  
A. Yes.

**WITNESS REFERRED TO PLAN 0001.4**

- 20 Q. That's the plan there is that right?  
A. That's correct.  
Q. Would you start reading your brief please from paragraph 2.  
A. Okay. I was employed as a Senior Process Engineer with Sinclair Knight Merz Ltd (SKM) whose offices were at 321 Manchester Street. I  
25 was standing on Madras Street when I saw the CTV Building (the Building) collapse on 22 February 2011. I have prepared a plan of the intersection of Madras and Cashel Streets (the Plan). This is attached and marked "A". Blackwell Motors, the Church, Coffee Supreme and the IRD building have not been drawn to scale and their placement is  
30 approximate only. My approximate location is marked as "1" on this plan.
- Q. Thank you, we're going to now bring up the model of the building just to see if we can get a sense of what your view would have been. Just wait

there while that happens please. So does that view accurately show what your view of the building was at that time?

A. Yes.

Q. Thank you go on please from paragraph 4.

5 A. 22 February - I had just left Coffee Supreme and was heading northwards on the east side of Madras Street. I was walking about half way along the Samoan Church, approaching the intersection of Cashel and Madras Streets, when the earthquake struck. I could hear the scaffolding on the church collapsing. I immediately realised the severity  
10 of the earthquake and tried to reach a nearby pole to hold on to. I was facing north and had an unobstructed view of the CTV Building. I could see the building shaking and twisting considerably back and forth in both an east-west and north-south direction. It was as if the building was twisting around the north-west corner of the building. It was probably  
15 around 10 seconds from the onset of the earthquake that the building collapsed. Almost in unison the entire glass exterior shattered, all the external cladding fell off and the entire building disintegrated into a pile of rubble. There was nothing left that resembled a building. From what I recall, the collapse appeared to begin on the southeast corner, and  
20 about two or three floors up, and rapidly worked its way back from there. I recall seeing some pillars, from within the south-east corner of the building and about two or three floors up, falling outwards as the entire building collapsed on itself. There was nothing to support the floors above so the entire building collapsed.

25 Q. Thank you, now in paragraph 9 you say the collapse appeared to begin in the south-east corner. Can you describe exactly what it was that you saw at that point?

A. Yeah it was, I guess looking at that model, you know, the building was sort of twisting round and that sort of movement and it just, it was like, I  
30 guess like a column had popped out and you can just see the floors just come down and it just worked its way back.

Q. So, firstly, you're indicating a twisting movement with your hands and you've referred to a column. I can show you a photograph if this would help but are you able to say where that column was?

A. It's hard to say but somewhere in the middle of the building (inaudible 12.01.50) –

Q. At this point we'll ask for a photograph to come up.

**PHOTOGRAPH 82.13**

5 Q. There's a mouse in front of you which you can use to indicate where you mean.

A. I'm not sure precisely which column it was but it was somewhere in the middle of the building probably around about here.

Q. So you're indicating column C1 on levels 4 and 5 of the building.

10 A. Yeah.

Q. So what is it that you say happened to those columns when the collapse began?

A. It was obvious that it couldn't support the floor above it and so as the floor came down it just kept, basically the whole building just flat  
15 pancaking. It wasn't just on that corner it just, you know, the whole building just collapsed, all units worked back. I could see some floors coming down and you could see more columns falling out, it was just a big chain reaction.

Q. And in paragraph 10 you referred to seeing some pillars from within the  
20 south-east corner of the building and about two or three floors up falling outwards so which pillars are you referring to there?

A. Um, they seemed to be from within the building as well so they may have been round about here so it was almost like it was, again it was like that kind of whole sort of falling away from that corner and you could  
25 start seeing inside the building and any columns that were within there were falling out so yeah I can just recall maybe two or three of them coming out.

Q. The area you're indicating there was above the King's sign.

A. Yeah.

30 Q. Which is level 4 between C1 on our plan and the eastern side of the south shear wall.

A. Yep.

**CROSS-EXAMINATION: MR LAING**

Q. Morning Mr Gutteridge. Did you take any notice of the shear wall which was facing you where the steps are there? Did you notice how that fell?

5 A. No I don't have any recollection of precisely how that fell. As I said before it was, I was aware of the twisting action, the columns giving away, the floors just pancaking down so yeah, just a big catastrophic failure of the building.

Q. Did you notice whether any of the internal columns collapsed first before the columns on the south-east corner of the building?

10 A. No I would say it was the external columns that gave way first and then obviously the building, then any internal columns couldn't take the forces that they'd been exposed to and they gave way.

**CROSS-EXAMINATION: MR RENNIE**

15 Q. You've spoken of columns falling and columns giving way. In terms of what you saw was it a whole column which was falling from its place or was it a fracturing that you saw?

A. From what I recall it appeared to be like a whole section of column so, if I could just get this mouse back, um, like, you know, whole sections of column between each floor.

20 Q. And that column would fall as a unit or would it fracture?

A. Pretty much as a unit, I mean it may, I think some of them broke up as they impacted as they came down but I recall seeing those kind of whole sections, it was like it probably sheared with the floor, being attached to the floor.

25 1206

Q. And you described the failure as I think moving back along the building from the point of the first failure?

A. Yes.

30 Q. And, and how did that appear to you. What was it that showed you that that was the mechanism that was happening?

A. Yes I remember seeing, yeah because of the twisting, and I noticed the, I guess the column I mentioned before was breaking and then, you know, the floor, and just that whole process just seemed to, you know,

5 Q. So it was a process that was moving away from you as you saw it from where you stood?

A. Yes, away and, yeah, out from that south-east corner.

Q. Now the first experience you had at this time was, of course, feeling the earthquake itself. In terms of the severity of the ground movements, do you have a recollection of that?

10 A. Initially I wasn't aware, the first I became aware of the earthquake was as I was walking up to the intersection I saw a man, you know, hold onto the traffic lights for dear life and I thought, what's going on here and then it was, you know, I thought, I think it was when I started to get on the scaffolding on the Samoan church, shaking, that's, that's when I  
15 thought, oh, this is get – and I could hear it, you know, things falling down. I thought this is, this is really, really serious and I felt, yeah, I've got to, I've got to try and hold onto something here so I was trying to find another pole to, to hold onto. I, I guess it, for me personally when I'm on terra firma on the ground as it were they don't seem as bad as when  
20 you're actually in a building but it was, yeah.

Q. You heard something in front of you but at a distance, you saw something in front of you but at a distance, was that an experience different to where you were standing yourself?

A. I don't quite understand your question.

25 Q. Well I take it you were walking from the coffee bar.

A. Yes.

Q. And the first impact on you that this was something significant was actually seeing someone in front of you, a distance away, and hearing something in front of you a distance away.

30 A. Yeah, the sound of the scaffolding was to the side of me, yeah.

Q. Yes and then you began to pay attention to what was happening to you.

A. About, yes, yes, yeah I did.

Q. But that was triggered by these other events rather than what you were feeling through your feet yourself?

- A. I started feeling the ground moving obviously and at the same time as the scaffolding was coming down and that's when, it was like I've got to try and, you know, I was concerned the scaffolding was going to land on me and needed to get away and hold onto something.

**5 CROSS-EXAMINATION: MR SHAMY – NIL**

**QUESTIONS FROM COMMISSIONERS – NIL**

**QUESTIONS FROM JUSTICE COOPER:**

- Q. Mr Gutteridge you're employed as a senior project manager. Do you have tertiary qualifications?
- 10 A. Yes I have an Honours Degree in Chemical Engineering.

**WITNESS EXCUSED**

**MR ELLIOTT CALLS****STEPHEN MALCOLM GILL (SWORN)**

Q. Your full name is Stephen Malcolm Gill?

A. It is.

5 Q. And you live here in Christchurch?

A. Yes.

Q. And you're currently employed with Les Mills World of Fitness as a maintenance manager. Is that right?

A. Correct.

10 Q. And you have a brief of evidence in front of you which you've signed?

A. Yes.

Q. And as part of preparing your statement did you prepare a plan?

A. Yes.

15 Q. And have you heard the other evidence given about how that document was prepared for other witnesses?

A. Yes.

Q. And was the same procedure followed in your case?

A. Yes.

Q. 0001.6. That's that there in front of you. Is that right?

20 A. Correct, yes.

Q. Would you start reading please from paragraph 2.

A. My role involves management of the maintenance of the complex of Les Mills, damage, repairs and servicing. I have worked for Les Mills since 2002. Les Mills is situated at 203 Cashel Street in Christchurch Central.

25 I was standing on the roof of the Les Mills building facing the CTV building (the building) when I saw it collapse on February the 22<sup>nd</sup>. I have prepared a plan showing the Les Mills building in relation to CTV building (the plan) at the time of the February earthquake. This is attached and marked "A." The Les Mills building, IRD building, the demolition site and the CTV carpark have not been drawn to scale and  
30 their placement is approximate only. The issues that I refer to in my evidence are marked on the plan.

Demolition. Les Mills was originally in a building right next to the CTV building. The space where this building once stood is marked on the plan. Staff in the CTV building used to complain because they could hear the music at Les Mills. Sometimes the frequency of our microphones would interfere with the microphones at CTV. That's how close they were. There was probably a gap of about six inches between the east wall of Les Mills building and the west wall of the CTV building. The Les Mills building was old and needed renovation and demolition to create space for a carpark. The demolition was not connected to the 4<sup>th</sup> of September quake. The demolition was completed in about October or November 2010. Also demolished was an administration block on the corner of Woolsack Lane and Cashel Street which had sustained damage in the Boxing Day earthquake. They finished the demolition of this building on Friday before the 22<sup>nd</sup> of February earthquake. We used to watch the demolition from the rooftop of the present-day Les Mills building. The walls of the demolished building were all very thick. They were made out of brick and were approximately two and a half feet wide. The machines they needed to use included a wrecking ball and giant claws. They had to nibble pieces at a time. There was a lot of big machines.

**JUSTICE COOPER:**

Q. Just pause there.

A. Yes Sir.

25 Q. In the second line you read building. Did you mean to make that the singular or were you referring to both buildings there?

A. We used to watch the demolition of – is that?

Q. No, the walls of the demolished building.

A. Yeah, mmm.

30 Q. Should that be plural or singular?

A. Well it just, sorry the one building, yes.

Q. And which building then?

A. The administration building on the corner of 203 Woolsack Lane and Cashel Street.



**EXAMINATION CONTINUES: MR ELLIOTT**

Q. When you say administration building, that's not been labelled on the plan. Is that right?

5 A. No it's not labelled. It's, we've got the demolition site, old Les Mills and it's just as you come down Woolsack, Cashel Street, the junction on the corner of that.

**JUSTICE COOPER:**

Q. It's the rectangle there that's marked off?

10 A. Yes. Have we got a mouse – that one Sir, just there, that's the one.

Q. Yes, thank you.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. Thank you. Go ahead.

15 A. Les Mills after the 4<sup>th</sup> of September 2010. I can't remember when the present day Les Mills building was built but it was definitely open by the 4<sup>th</sup> of September 2010 earthquake. I do a lot of work on the roof of the building which is four storeys high checking the machinery and making sure the air filters are clean et cetera and things like that. I really enjoy going up there. I have a 360 degree view of the whole city. It was open space between Les Mills and the CTV building. I couldn't see the roof of the CTV building but I did have a view of the whole western side. It was approximately in line with its fifth level. When I was on the roof there was nothing at all to restrict my view.

25 22<sup>nd</sup> of February 2011. Early in the work engineers had come to do some maintenance on the air condition units which were on the roof. I went up afterwards to check the work had been completed and noticed some rubbish had been left on the roof.

1216

30 Keeping the roof clean is important because rubbish can get sucked into air condition units causing damage. I went up on the 22<sup>nd</sup> of February 2011 to pick this up. I had noticed men working on a really big cherry picker that was right up against the wall of the CTV building. They were

working on the south-western corner. I was standing on the roof and in between the air conditioning unit when the earthquake hit. I have marked my approximate position as one on the plan.

5 Q. Just stop there please, and we'll have the model brought up so we can get a sense of what your view would have been of the building. Does that accurately depict the view you had of the CTV building at that time?

A. Yes.

Q. Thank you, so continue from paragraph 14 please.

10 A. I was bounced between the units and thrown up and down and side-wards. I saw one of the air con units get lifted and ripped off the roof. The air condition unit could be anything between three and a half and four tonnes. It is very heavy and is the size of a small medium size car. There were a number of aftershocks and I can't be sure whether it was during the initial one or substantial earthquakes that I turned round as I  
15 was steady myself in the corners at the end of the units and it was then that I saw the CTV building collapse.

Q. Just wait there please, you said substantial but in your statement it says subsequent.

A. Oh sorry.

20 Q. What do you mean there?

A. Substantial –

Q. Subsequent?

A. Subsequent sorry, yes.

Q. That's fine thank you. Paragraph 16.

25 A. It looked to me like the south-west corner lifted before it gave way. It was as if someone had kicked the corner really viciously and the whole corner just caved in. When the corner went there was nothing to support the floors. The first floors folded in and a millionth second later the second floor followed it before all the floors came down.

30 Q. Just stop there again please, firstly just taking it step by step, "it looked to me like the south-west corner lifted before it gave way". What part of the south-west corner are you talking about?

A. Just in where the scissor lift is, just on that corner there, where the man just in under there, that's where the lift was further in inside your drawing, so the lift wasn't that far out.

Q. I see, so the section where the scissor lift now appears.

5 A. Yes.

Q. That is the section, that's the part of the south-west corner you're referring to when you say it gave way?

A. That's why I say, yeah.

10 Q. And when you say "it was as if someone had kicked the corner really viciously and the whole corner just caved in", is that a reference to that area or a different area?

A. Just that area, in fairness I can't see the full frontage of the building, just the corner of that building.

15 Q. And again when you say "when the corner went there was nothing to support the floors", again are you referring to that same area or a different –

A. That's the corner.

Q. – area?

A. There's just nothing there.

20 Q. Thank you, so continue.

### **JUSTICE COOPER:**

25 Q. Can I just clarify, we're looking at the western wall of the building in this depiction in the model, but we can also see a little bit of the southern wall as this is displayed. Is the evidence you just gave a moment ago that you couldn't see any part of the southern wall from where you were standing?

A. Very little Sir, all I can see is virtually down the side of the thing, I could see the fire escape.

30 Q. Well is this – does this accurately represent your view or not?

A. Yes Sir.

Q. It does?

A. It does.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. So continue from paragraph 17 please.

A. The fire escape along the southern wall remained standing for about five seconds. I asked myself how could it physically be possible for it to  
 5 stand there on its own. It looked like it was then – was dragged down by the falling floors and it eventually toppled over too. It crumpled down and there was just one big cloud of dust, it was very bizarre. This all happened within about 30 seconds. It happened very quickly, it was very surreal and I didn't believe what I was seeing. I could see all the  
 10 floors were attached at an angle to the north core. There was something holding up the north end of the floors but I am not sure what it was, even the top floor wasn't lying flat. I knew I had to get off the roof, the building was still rolling and I had to walk across it to get back to the hatch and get back to get down. It was difficult to walk with the building  
 15 moving under my feet. I think these were aftershocks. I then made my way quickly through the building and helped usher people out. I wanted to be the last person out to make sure the building was clear. I made my way to CTV building down Cashel Street. There was liquefaction everywhere, when I arrived at the building I was surprised to see though  
 20 it was just a mountain of rubble.

Q. Just stop there again please, when you say there was liquefaction everywhere, where exactly do you mean?

A. Well when I came out of the front door of Les Mills all, I was paddling through water. When I went round to the CTV building site all the sites  
 25 were – there was a carpark, there was a big pool of liquefaction right in the middle of that, of your plan, and it sat in the middle of there. You couldn't walk across the open space, it was just water.

Q. Right, we'll just go back to the plan at this point please. So can you indicate on that plan where you're referring to?

30 A. Well the first place when I came out of the front door of Les Mills, that area round there was all water logged and water splashing up the cobbles and displaced the pavement, all that.

**JUSTICE COOPER:**

Q. So the reference is to the north-west corner of the intersection of Cashel Street with Woolstack Lane?

5 A. Yes. And then – to walk to try and get to the – where number 2 is you couldn't walk across because in the middle of that it was just one big pool of water.

Q. That's in the middle of the demolition site?

A. Of the demolition site, or Les Mills, yeah.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. Did you see any liquefaction in the immediate vicinity of the CTV -

10 A. Not round the CTV –

Q. – CTV building itself?

A. No, not round the building itself. It was clear, we did work in the carpark with cars and things and it was solid concrete, there was no movement or water or anything, it was clear and dry.

15 Q. Thank you. Paragraph 22 please?

A. I noticed there was a small amount of smoke coming from the north-west corner of the building, I have marked this position 2 on the plan. I thought it may have been paper that had caught fire. This would be about five minutes after the earthquake. It could have been an  
20 aftershock and that's all, I'm not sure, there was that much happening, there was shakes and rattles, I don't know. I could see more clearly the floors attached to the north core and I think there were about, on about a 30 degree angle. There was nothing attached to the lift shaft above about the third floor, they had just ripped away. You could see the lift  
25 shaft, the lift doors, everything. I could see the top of the tower before the smoke got worse. I was amazed to see that there was cars parked at the CTV carpark without a scratch on them. The cars would only have been about 1.5 metres in front of the south-west wall of the building. Some people say the floor came down on top of each other –  
30 but in my mind this could not have happened. If it had been the rubble would have been everywhere, the building looked like it came straight down but people were able to crawl underneath the slabs and get between concrete and rubble to get people out. The fire started to

(inaudible 12:24:15) off. I drove a cherry picker with two firemen on the end to see if we could get closer to the fire on the north eastern end. It smelt and looked like burning carpet or tyres.

### **CROSS-EXAMINATION: MR LAING**

- 5 Q. Mr Gill, when you say in paragraph 16 that the first floor folded in, are you meaning the – are you meaning the first floor as opposed to the ground floor are you?
- A. Yes sir, I'm English so to me the first floor is the next level up, not the ground level.
- 10 Q. Thank you. And did you see, did anything sort of burst out or just collapse?
- A. It just seemed to collapse, it just collapsed in front of me, I didn't see any impact or anything moving, it was just that everything lifted up under me feet and under the buildings as an upward movement and it just
- 15 seems as though it had been kicked on the corner.
- Q. And then it's your evidence that these floors above that at that same corner then –
- A. Just came down on top of them yeah.
- Q. Is pancaked the right word?
- 20 A. Yes, I would say so, there was nothing there but it didn't appear to be anything there that I could see from the distance.

### **CROSS-EXAMINATION: MR RENNIE – NIL**

### **QUESTIONS FROM COMMISSIONER FENWICK**

- Q. Just confirm your comments about the wall, the wall on the south face.
- 25 A. Mmm.
- Q. You indicated that that stayed up for a few seconds after –
- A. The fire escapes stayed up a few seconds after yes, it just – as if it had been just ripped away from its mountings and then it just toppled in.
- 1226
- 30 Q. So what the wall toppled in?

A. Well no the fire escape toppled in, the walls had already gone, the fire escape stood there a second and then just topple into the rubble.

Q. So the columns would have gone before that?

A. Yes I would assume so yes. There was nothing to support it.

**5 QUESTIONS FROM COMMISSIONER CARTER – NIL**

**QUESTIONS FROM JUSTICE COOPER – NIL**

**QUESTIONS ARISING - NIL**

**WITNESS EXCUSED**

**MR ZARIFEH CALLS****LEONARD ARTHUR FORTUNE (SWORN)**

Q. Is your full name Leonard Arthur Fortune?

A. Yes.

5 Q. You live in Burwood, Christchurch.

A. Yes.

Q. And are you currently in receipt of ACC?

A. Yes.

10 Q. You have prepared and signed a statement of your evidence. Have you got that in front of you?

A. Yes I have.

Q. And prepared a number of diagrams which we'll come to in a moment. I'm going to get you to read your brief of evidence and pause at various points to refer to the diagrams and photos.

15 A. Yes.

Q. So could you start by reading at paragraph 2 please.

20 A. I was employed by Bruce Campbell Roofing from 2005 to 2012. My role involved roofing, cladding, water proofing and fixing iron long run iron. I was helping to weather proof the western wall of the CTV Building when the building collapsed on 22 February. I have been asked to comment on the following topics: My observations of the western wall of the CTV building and the collapse of the CTV building. Attached and marked "A" is a plan of the CTV Building. I have marked on it my approximate location when the earthquake struck.

25 Q. Just pause there and we'll get the plan brought up.

**WITNESS REFERRED TO PLAN**

Q. You see that plan. Is that the plan that you, that was drawn and you marked on it your location.

A. Yes.

30 Q. And how have you marked your location?

A. With the number 1.

Q. And an X.

A. Yes.

Q. That's on the western wall in the south-western corner.



A. Yes that's correct.

**WITNESS REFERRED TO MODEL**

5 Q. Right we're just going to the western wall of the CTV building and if you can come back so we can see the scissor lift please. Oh okay we're a bit limited with view but you can see, perhaps if we go back to the view that shows the scissor lift please, the western wall, without the witness view. Now we're coming round to the north and here's the west side of the building. Now can you see a scissor lift?

A. Yes I can.

10 Q. And there's a figure shown on it.

A. Yes.

Q. Now is that scissor lift in the correct position that it was in when the earthquake struck on the 22<sup>nd</sup> of February?

A. Yes it is.

15 Q. And it's shown sticking out slightly from the south-western corner?

A. Yes that's correct.

Q. That's how you recall it?

A. Yes.

20 Q. And standing on that scissor lift, is that the view you would have had of the building?

A. Yes it was.

Q. So you could see the western wall.

A. Yes.

Q. And how much of the southern wall could you see?

25 A. Well actually at the time I was up on the edge of the machine looking to see how flashing was fixed onto the southern wall so basically was on the corner of both.

Q. So you could see down the southern wall and along the western wall.

A. Yes.

30 Q. I'll get you to go back to your brief please and continue reading from paragraph 5.

A. I have drawn a plan of the western wall of the building. This is attached and marked "B". The structural elements that I refer to in my evidence are marked on this plan.

Q. All right we'll get that brought up in a minute and you can come back to it and refer to it. I'll get you to carry on.

A. The building to the west of the CTV Building was demolished towards the end of 2010. I wasn't involved in the demolition. After they removed the building three floors of the western wall of the CTV Building were left exposed without waterproofing. Bruce Campbell Roofing Ltd was contracted to weatherproof this newly exposed section of the wall. This involved re-cladding the first three storeys of the building to meet up with the existing iron cladding on the western side (Figure 1).

10 Q. Just pause there, I'll get the number B brought up please rather than A. It's 0001.8. All right you refer to figure 1, just take us through that and explain what that shows.

A. Basically just shows the exposed brick up to the fourth floor that we were waterproofing at the time of the earthquake.

15 Q. And above that is shown iron cladding, that was existing iron cladding.

A. Yes.

Q. So you were effectively putting iron cladding to meet up with the existing iron cladding.

A. Yep that's correct. Our iron cladding would have actually lapped underneath so that the water would run down onto the undersheet and down to the ground.

Q. Carry on reading top of page 3 please.

A. The work began on Monday, 21 February and was expected to take a couple of days to complete. Working on the wall with me were Bruce Campbell, director of the company, and James Askew, a labourer. Foundations were still being cleared from the demolition site. We would sometimes watch the work on our breaks. A digger was used to flatten out the ground and a wrecking ball was used to break up big hunks of concrete. They would drop the ball from a height of about 6 metres and as it landed you could feel it through the building. It felt like there was an earthquake. The building would jump and creak and made really weird groaning noises. You could see the mortar from the wall we were working on just breaking off as the building shook. I had to go inside the building to run a lead and noticed that it made weird groaning noises

inside, even without the demolition going on next door. I am not sure what caused these noises. I had said to my workmates, Bruce and James, that I didn't think people should be working in there. It just didn't feel right.

5 Q. I'll just get you to pause there. I just want to ask you a bit more about these noises. Could you tell where in the building they were coming from?

A. Well at the time I was in the building it would have been where the lift well was, we plugged into an electrical socket just inside the door there.

10 Q. And on what floor?

A. Ground floor.

Q. And can you be any more specific about where they were coming from?

A. Um, it sounded more like it was coming from the main building, not the lift well area that I was on.

15 Q. All right so you were near the lift well.

A. I was in the lift well area.

Q. And to you it appeared these noises came from the –

A. The rest of the building itself, not the lift area.

Q. So the building you mean to the south of the lift well.

20 A. Ah yes that would be correct.

Q. And can you say where in the building in terms of floors?

A. No, I was on the ground floor, yeah.

Q. And when you heard those noises was demolition going on?

A. Um, not at that stage. I'm pretty sure the digger driver himself was actually on a break.

25 Q. And was there any aftershock occurring when you heard the noises?

A. No, no.

Q. So nothing untoward was occurring but you heard noises.

A. Yeah.

30 1236

Q. What about when the demolition was going on, you said that you heard noises, were they the same noises or different?

A. Um, slightly different than what I'd heard in the building. Um, they were more, more the sound you would associate with an earthquake that a building would make.

Q. You mean the building moving?

5 A. Yeah.

Q. Would you carry on please under structure, paragraph 9?

A. The masonry infill blocks had been laid in a brick bond formation held together by mortar on figure 3.

10 Q. Perhaps if you get that back up please, below 1.8? So you referred to figure 3?

A. Yep.

Q. Which is towards the right of the diagram, correct?

A. Ah, yep.

15 Q. And you've also got in figure 2 the brick bond formation shown, is that just to show how the bricks were laid?

A. Ah, yes it is.

Q. And just take us through the diagram at figure 3 then, what are we looking at?

20 A. The big grey area would've been the existing building before it was deconstructed, the mortar, the excess mortar on it on that little bit on the middle would've been in the gap between the western wall and the existing building and it's just, it just shows that the mortar overflowed out of the edge.

25 Q. And what kind of quantities of mortar are you talking about that were hanging out of the western wall?

A. Not massive amounts, we were able to scrape them off with a, um, a shovel.

30 Q. And are they something that could be seen if one looked down when the building, the exist – the building that was demolished was still there, if one looked through the gap?

A. Ah, yep, yep, if there was gap between you should've been able to see it yes.

Q. Carry on reading please, I think you're in the middle of paragraph 9?

A. Mortar was used to join the block work to the columns and horizontal beam. There were no gaps in the joins. The top rows of masonry blocks in each section of the block work were hollow. It may be that these masonry blocks could not be filled with concrete with the beam in the way.

5

Q. Just have a look at figure 1 referred to on the left and just take us through that?

**WITNESS REFERRED TO FIGURE 1**

A. Ah, yep, the hollow blocks would've been the white ones at the top of the block walls, you had a in between or a structural column.

10

Q. So they're the ones that you're referring to as "white" just below the beams?

A. Yes.

Q. The horizontal beams, correct?

15

A. Yes.

Q. And the columns, we can see four columns shown in that diagram?

A. Yes.

Q. The block work went up to the edge of the columns?

A. Yes that's correct.

20

Q. And you've indicated mortar joins between the block work and the columns?

A. Yes that's correct.

Q. Bottom left, could you see mortar in between the block work and the columns?

25

A. Yes.

Q. And you've talked about the top rows of masonry blocks that you've referred to as "white" being hollow. Could you see any mortar between the top of that row and the bottom of the beam?

A. Um, yes.

30

Q. And what –

A. As if they'd been filled from the inside.

Q. Why do you say that?

A. Um, because they had a, a facing brick on the inside edge.

Q. Just describe that, what's that?

A. Well it's what they, they take one of the masonry blocks and actually cut one side off it so it exposes the two hollows on the inside of the brick and then they basically just put one flat on the outside for aesthetic purposes.

5 Q. And is that one put in for aesthetic purposes, is that mortared in or not?

A. Ah, yes.

Q. And could you see that from the outside where you were working?

A. Um, no we had a, um, employee of the CTV come out and inform us that when we were drilling on the outside of the building that these facing blocks were falling along the inside into the carparking area on the first floor.

Q. So it's not something that you could see from the outside brickwork?

A. Not from the outside but, um, the employee of CTV got our attention on the scissor lifts and took me inside and showed me it.

15 Q. So can I just ask you were you drilling holes in those blocks?

A. Ah, yes.

Q. And was that for the purpose of fixing something to the wall?

A. Ah, yep, we were fixing, um, wooden battens along the horizontal of the building to fix our new cladding to.

20 Q. And were you striking concrete when you drilled the holes or not?

A. Um, that's how we found that the blocks were hollow and found that we'd have to raise our pieces of the wood up so that we could hit or lower them down so that we could hit solid concrete to attach it.

Q. And I think you come to that at paragraph 11, perhaps we'll go to that?

25 A. I noticed other hollow masonry blocks too, but these seemed to exist in the block work at random. It seemed to me like the concrete hadn't filled all of the masonry blocks properly when it was poured, perhaps due to the masonry blocks not being lined up correctly.

Q. What do you mean by that, when you say, "Not lined up correctly."?

30 A. Well the block itself has two holes in it and the way that the brick bond formation works is the two holes should line up with two separate bricks and sometimes they may've had to cut a brick and it might just put it out slightly, I wouldn't act – you know I'm not a brickie I wouldn't know.

Q. Right, but then stop the concrete being –

A. Yeah.

Q. – able to go right down? Thank you, paragraph 12 please?

A. I remember the horizontal beam was one single structure. The columns were then fused to it with concrete. There were no gaps in the joins, figure 1.

Q. And you refer to figure 1, are you talking about the joins between the beams and the columns?

A. Yes.

Q. Thank you, paragraph 13?

10 A. We needed a flat surface to work on and had to scrape off a lot of excess mortar in order to smooth down the wall. When the building was built they may not have been able to access the western side of the wall because of the existing building being in the way. This may explain why the mortar had spilled through and not been smoothed away on figure 2.

15 Q. And is that shown on figure 2 or not?

A. No, that's actually figure 3.

Q. Figure 3. That's just them showing the mortar coming out on the western wall?

A. Yes.

20 Q. Thank you, 14?

A. On our first day at the building a staff member from CTV came out to speak with us. He was concerned because bricks were being knocked to the ground on the other side of where we were working, which was the ground floor level 1 carpark. I think the bricks were being knocked out accidentally when we were drilling into the top row of hollow masonry blocks. I don't think that anything I saw was a result of general wear and tear. Nothing that I saw about the wall concerned me.

25 Q. Just pause there please. I just wanted to ask you, in your last statement you said, "Nothing I saw about the wall concerned me." Did you notice any damage to the columns or beams on that western wall?

30 A. No.

Q. So any cracking, any movement or anything like that?

A. Um, nothing that seemed like it shouldn't have been there at the time.

Q. So nothing that you would've termed as, or considered to be damage?

A. No.

Q. Now there's a video, I think you might've seen it, that shows yourself on that wall, some video taken by CTV?

A. Ah, it's not actually myself but it is my work colleague yes.

5 Q. I will get you to have a look at that now?

**WITNESS REFERRED TO VIDEO FOOTAGE**

Q. So we've heard already that this is the demolition work on the site next door, and here's the block wall, just get it paused there, so who's on the scissor lift?

10 1246

A. Um, that's James Askew and a new member of the staff, I can't actually remember what his name is, he'd only been with us for a very short time at that point.

Q. All right, so they were two workers with you though, on the job?

15 A. Yes, this was on the Monday.

Q. That's Monday the 21<sup>st</sup> of February?

A. Yes it is.

Q. And what were they doing, saw them – looked like they were banging on the wall?

20 A. At that point, they're preparing the wall and scraping the mortar off, create a flat surface for us.

Q. So I think we could see the one on the right scraping?

A. Yes.

Q. That's scraping the excess mortar to get a smooth surface?

25 A. Yep.

Q. And then we're back to the demolition site. Now I think there's been a couple of stills taken of that, if I can just get you to refer to those now. If they can be brought up, there they are, thank you. And the next one, point 2, again another shot of the wall from that – the work that day and there's a third one, point 3 and there's a close-up of the two gentlemen that we just saw on the video.

30

A. Yeah. At that point he's discovered that that top row of pots was hollow.

Q. Right, so that block where there's been a hole caused in it, that's the hollow top layer that you talked about?



A. Yes correct.

Q. And it's immediately below the one of the beams, horizontal beams?

A. Yes that's correct.

5 Q. And to the right we can see, looks like a drainpipe attached to it, a column?

A. Yeah.

Q. Correct.

A. Yeah correct.

10 Q. And the fact that there was no gap between block work and beam or column, can we see that, an example of that in that area?

A. Yeah, you can sort of see the mortar that joined them all together.

Q. Where are you pointing to or referring to when you can see the mortar, you can use the mouse?

A. Just along this line there.

15 Q. Along the top, just under the beam?

A. Yeah.

Q. And what about –

A. And that edge in here.

20 Q. All right, if we go back to your brief please, “the collapse of the CTV building, paragraph 17.”

25 A. We began work at 11 o'clock because it had been raining that morning. We were working on the western side of the building preparing it for the iron sheeting. James Askew was working alongside me. Bruce Campbell had just disappeared to get us some McDonalds for lunch. James and I had taken the scissor lift up about 3 metres high on the south-western corner of the building. The location of the scissor lift is shown in figure 1 and it's marked with a “B”. We were just finishing the preparation for the iron cladding and it was as I turned to ask James for the drill that the earthquake struck. There was a strong vertical jolt and the scissor lift seemed to jump. My first thought was that it was  
30 James playing a trick on me, but I quickly determined that it was an earthquake. I remember leaving the scissor lift and then coming back down onto it. The building almost seemed to jump upwards. The masonry blocks in the wall in front of me looked like they had jumped

too. I would say the vertical movement was probably about 200 millimetres. I looked up and saw the building was pretty much above my head and I would say the top of the building had swayed a good 1.5 metres over to the west. I had assumed it was going side to side. We had fixed wall covering against the wall and you could see the masonry blocks spitting out into it. It was at this point that I knew we had to get down and get away from the building. I could see James was struggling to reach the door because of the movement in the scissor lift. I knew I had to help him out so grabbed him by his tool belt and threw him over the edge of the scissor lift to safety. This was before I realised the building was coming down. I then looked back at the building to make sure nothing was coming down. It was then that I saw a column on the southwest corner of the building, between levels 3 and 4 that had cracked in the middle. This column — and the location of the fracture is shown in figure 1 (“B”). It appeared to me like the two bits held together by the steel had fractured outwards and the whole column was buckling under the weight. This is shown in figure 4. It looked like the fractured sections were sticking out towards the west by about 300 millimetres.

20 Q. I will just get you to pause there and refer to the diagram. Firstly you've indicated in figure 1 that that would appear to show level 3.

A. Yes that's correct.

Q. And approximately in the middle of the column on the southwest corner?

25 A. Ah yeah, it would have been an approximation too, from my viewing point, being so close.

Q. Right. And then if we go to figure 4 on the right, that's a depiction of what you saw happen to that column?

A. Correct.

30 Q. With the column essentially seeming to split in two and move out towards the west?

A. Yes that's correct.

Q. So is that in a direction towards you?

A. Yes.

Q. All right, carry on please, 22.

- 5 A. As I jumped out of the scissor lift I glanced up and saw a piece of concrete falling towards me. I tried to push it out of the way but in doing so I ended up pushing myself off it. On the ground I curled up next to the wheel of the scissor lift for protection. After a few seconds I thought I should try and crawl further away from the building. A few seconds later a piece of concrete landed directly on the scissor lift bringing it to the ground. It landed with such force that it pushed the wheels about 150 millimetres into the ground. There was debris everywhere; it looked like a warzone. The masonry blocks we had been working on had completely disintegrated. There was a pile of them on the end of the scissor lift. I was surprised to see how high the pile of debris was in comparison to the height of the building. It looked like the building had fallen into a hole.
- 10
- Q. The piece of concrete that you said fell towards you, paragraph 22, did you see where that came from?
- 15 A. Ah no, not at the time, I was going over the edge of the machine.
- Q. Right, what about afterwards, could you see?
- A. Ah, no I didn't really hang around and look around.
- Q. And does the same apply to the piece that you saw land directly on the scissor lift, could you see where that came from on the building?
- 20 A. No, at that time I was facing towards the Les Mills building and running towards James, wasn't actually until I turned around and seen that the building looked like it had fallen into a hole.

### **CROSS-EXAMINATION: MR LAING**

- 25 Q. Mr Fortune, can I ask you some questions about facing blocks?
- A. Yes.
- Q. Which floors were they on in your memory?
- A. The facing block that I saw, they were on the ground floor. I would say that the next two floors above would have been covered by some sort of internal wall.
- 30 Q. Yes.
- A. It was just for the fact that it was a carpark that there was no other cladding on that wall (inaudible 12:55:13).

Q. And whereabouts in the first floor were they, were they up each row or were they ...

A. Basically at the top of the middle column, like, yeah. Middle brick wall.

5 Q. Are you referring to the middle columns, middle area between the two columns and at the top row only or other rows?

A. No it was just on the top row. There was two sitting down in front of a vehicle that was there.

Q. And they were coming out when you were drilling?

10 A. Um, yeah, we used what was called is a Dynadrill which sort of hammers at the same time as drilling so that it can blast through the concrete.

1256

Q. Did you strike any steel while you were drilling?

A. Yes, quite a bit.

15 Q. Yes, so you assume that was?

A. Steel.

Q. In the –

A. In the –

Q. – steel reinforcing?

20 A. Yes.

Q. Yes. Thank you.

### **CROSS-EXAMINATION: MR RENNIE**

Q. Mr Fortune was the 21<sup>st</sup> of February the first day you'd been to the CTV building?

25 A. Yes, that's correct.

Q. Had anyone scoped out the job before you got there?

A. I'm pretty sure whoever had referred us to the job would have already been on site and had a measure and seen what was involved.

30 Q. And, and the task was essentially to level off the wall so you could put timber battens on and then to bring down the corrugated iron three further levels and to seal the wall.

A. Yes, that's correct.

Q. So the components you were using was the timber battening and then the iron itself?

A. Yes, that's correct.

Q. There was no insulation or anything like that involved?

5 A. There's, there's a layer of paper.

Q. Yes.

A. Which is a water proofing barrier between the iron and the wood itself.

Q. Yes. Now in your diagram 1.8, or B, where you've got the four sketches, were these something that was drawn up at your request?

10 A. Yes. I'd given them a basic drawing and they'd redone it all on computer.

Q. Yep and in the figure 3 you've attempted to show the position between the blocks and what would have been the wall of the building that had been demolished.

15 A. Yes, that's correct.

Q. And you've shown the mortar protruding out into that space and it was that mortar that you and your co-workers were having to remove off the face of the blocks before you could put the battens on.

A. Yes, that's correct.

20 Q. Now each of those blocks was mortared on the inside face of the wall as well, at least on the carpark level where you saw it wasn't it?

A. Yes, that's correct.

Q. And was that joint dressed off in the usual way?

A. Yeah as far as I am aware.

25 Q. As far as you can recall?

A. Yep.

Q. So what we have here as you've described it in figure 3 is a masonry infill block to fill in the gap between the columns and the beam above isn't it?

30 A. Yes, yes.

Q. Because there's not a, you may not be in a position to say but this is not a structural wall so much as an infill wall. Is that your understanding?

A. Yes, that's correct.

Q. So that when one goes to take masonry elements, concrete blocks, to fill in this gap whether or not they match to the height of the gap that's being filled will depend on the block dimension and just how precise the mortar is won't it?

5 A. Yes, that's correct.

Q. Can you recall whether the blocks at the top of the infill were trimmed as to height as well as to being cut in the way you've described?

A. As far as I can recall the cut infill block was more towards the bottom, at the top was a whole block.

10 Q. Right. So in each of the three section, each of the three floors I'm sorry which you were dealing with there had been some height adjustment in the blocks to take account of what I've just been asking you about?

A. Yes, that's correct.

15 Q. Yes. Now in addition to the mortar between the blocks you've described that there was mortar up the side of the blocks and also along the top below the beam. That's correct?

A. Yes, that's correct.

Q. So that in that sense it would be both a wind and vermin tight infill. Is that correct?

20 A. Yes, that's correct.

Q. When you were knocking the mortar off on the outside did the mortar seem to have any particular strength to it?

A. Yeah it was quite a strong mortar. It was obviously quite old.

25 Q. Well in terms of age would it fit generally with the idea that this building was built in 1986?

A. Yeah, for sure.

Q. Now somebody from CTV came and told you that a couple of blocks had fallen into the carpark as you've said.

A. Yes, that's correct.

30 Q. And you were at that time using a percussion drill or a DynaDrill. You or your colleagues were drilling holes along the top of one of these mortared gaps. Is that correct?

A. Yes, that's correct.

Q. Did you know at the time you drilled those holes that the blocks on top had actually been split in the way that it turned out?

A. No. Apart from the hole that James Askew had uncovered when he was stripping the mortar off the outside wall.

5 Q. Yes.

A. That was the first inkling. At that time we weren't sure whether it was right throughout or whether that was just on that section.

Q. Did you have an actual pattern to drill the holes to, to put the timber battening on?

10 A. No just a, 400 spacings.

Q. And, and so the position was that you were drilling a hole with the expectation of putting what, a Dynabolt or something of that kind into it?

A. Yes, that's correct.

15 Q. And if you found a block which was either split in the way you've described or which did not have concrete in its spacing that was a problem for the Dynabolt was it?

A. Yes, that's correct.

Q. What was the solution you then adopted?

20 A. We either raised the wood upwards or downwards depending on which was the lesser of the two.

Q. And that represented also, I take it, a bit of a guess as to where there might be a block that did not have the concrete problem?

25 A. Yeah, at the bottom it was, getting towards the top we'd already realised that the top rows in all of them were going to be hollow. They had been adjusted accordingly.

Q. Leaving aside the top rows which you've indicated you found to be hollow on a general basis what was the frequency of other blocks that were hollow?

A. Very random.

30 Q. Yeah.

A. And more often than not towards the top of the block wall.

Q. Mmm. Now by the time the earthquake struck you were halfway through the second day of what you expected to be a two-day job. Is that right?

A. Yes, that's correct.

Q. And I gather from what you've said that you had put some of the iron onto some sections of the wall at that stage.

A. No.

5 Q. No?

A. No we'd decided to continue papering the rest of the wall before we started sheeting.

Q. Was this a long-run sheet was it?

A. Yes.

10 Q. Your view of these walls would be from the outside for the first three levels and from the inside on the carpark level. Is that correct?

A. Yeah, the inside of the carparking level was on the twenty-first and outside on the twenty-second.

15 Q. Did you have any reason to look at levels 4, 5 and 6 which already had the facings on?

A. No, only at the bottom to figure out where we'd have to release the screws to tuck the iron up underneath.

Q. Yeah, you had to achieve a lapping for the water seal.

A. Yes, that's correct.

20 Q. Now just going back to your diagram, can we just go back to the full – B. You've had sketched in figure 4 the column which you recall breaking. Do you see that?

A. Yes.

Q. Was it just the one column that you saw breaking?

25 A. Yep, at the time it was.

Q. Yeah but that's the one that particularly sticks in your memory?

A. Yeah, yeah.

Q. And was that the first sense that you had of actual damage to the building?

30 A. No. The first was the, the blocks spitting out into the paper.

Q. Yes.

A. It was already attached to the wood that we'd placed on the wall the previous day.



Q. That's I think what fooled me about the idea that you'd put some iron up. So when the blocks were spitting out they were simply breaking through the building paper that you had strapped across the timber.

A. The paper itself isn't actually paper. It's a fabric.

5 Q. Yes.

A. And it was actually holding the bricks inside. I'd say if it wasn't there they probably could have spit quite a distance. They just sort of pulled the paper off from the staple points that it had and just bowed it out. It's a very strong paper.

10 **RE-EXAMINATION: MR ZARIFEH – NIL**

**QUESTIONS FROM COMMISSIONER FENWICK – NIL**

**QUESTIONS FROM COMMISSIONER CARTER:**

15 Q. On your plan, the floor plan that you drew you'll note that there were, if we could just show that for a moment, 1.7. There were two columns near the corner of the building, one right on the corner where you were standing which was part of the block wall. Not far from that is there a circular column which is similar to all the other columns round the south and east faces of the building, so it was the column that you described, which of those two columns was there?

20 1306

A. The column that fractured outward?

Q. Yes.

A. That would have been the one right on the corner where I marked with "1".

25 Q. Thank you. I just wanted to make sure it wasn't the round column close by.

A. No, no, it was the square column on the corner.

**QUESTIONS FROM JUSTICE COOPER - NIL**

**WITNESS EXCUSED**

**COMMISSION ADJOURNS: 1.07 PM**

**COURT RESUMES: 2.18 PM**

**MR ZARIFEH CALLS**

**BRUCE MICHAEL CAMPBELL (SWORN)**

- 5 Q. Is your full name Bruce Michael Campbell?
- A. Yes.
- Q. You live here in Merivale, Christchurch.
- A. Yes.
- Q. And you're a director of Bruce Campbell Roofing Limited.
- 10 A. Yes.
- Q. I think you have been since 1998.
- A. That's correct.
- Q. And you do contract fixing and installation.
- A. Yes.
- 15 Q. Have you got a copy of a brief of evidence, a written statement by you, signed by you in front of you?
- A. Yes.
- Q. Can I ask you to read that please from paragraph 2.
- A. Bruce Campbell Roofing Limited was contracted by Placemakers to
- 20 undertake work on the western wall of the CTV building. I was working on the building on the 22<sup>nd</sup> of February 2010.
- Q. 2011?
- A. Oh it says 2010, yeah.
- Q. But it should be.
- 25 A. Yeah, sorry. I have been asked to comment on my observations of the western wall of the CTV Building. The western wall of the CTV Building was exposed after an adjacent building was demolished. We were contracted to weatherproof the exposed wall to meet up with existing cladding above the third floor. This involved installing battens and then
- 30 v-rib long run cladding to act as a weather barrier. The work began on Monday, 21 February. It was expected to take two and a half days to complete. I have drawn a sketch of the wall. This is attached and

marked A. The structural elements that I refer to in my evidence are marked on this sketch.

Q. Right we'll get that brought up so you can see it on the screen in a moment.

5 **WITNESS REFERRED TO PLAN**

Q. Is that the plan that you drew or had drawn?

A. Yes.

Q. Carry on please from paragraph 7.

10 A. The horizontal beams seemed to be poured as one solid structure. To me it seemed as though the beam was poured on top of the columns in situ. I noticed that the columns and horizontal beams had been poured approximately 20–40 millimetres out of line with each other. For example, one column may have been flush against the beam, whereas another sat on a slight angle with part of it jutting out, while another sat  
15 too far back. I did not have any concerns about the structural integrity of the columns. It was more a nuisance that they weren't built to a straight line to suit what I was trying to achieve. I did not see what it looked like from the inside.

20 Q. Just pause there please. In looking at the screen, figure 3, bottom right, does that show what you're talking about with the columns and beams being out of line?

A. Yes it does. I was thinking about this while we were in the break. It's more of how it was formed and poured, like bowing, instead of being more uniform like that.

25 Q. Right, so what was bowed?

A. Well if you had boxing on that western side and the concrete would have pushed out with the weight, may not have been fixed properly when they removed that or whatever, however it was done. It wasn't to a straight line.

30 Q. Right and what wasn't straight or what was bowed was it the beam or the column?

A. Both. Sometimes the column would be inside the beam and then you get to the top of it and that following column would be on the outside, the beam would be in it, ah, the beam would be in there.

Q. And you said that it didn't concern you, didn't raise any concerns in your mind as to the structural integrity of the columns or beams.

A. No because it wasn't, it wasn't like it had broken, it was more like how it was formed in that way, as no boxing would be pushed out the way that the concrete has just moved that far.

5

Q. And in terms of the columns and beams that you could see on that western wall on those two days that you were there, did you notice any damage to the columns and beams?

A. No.

10 Q. How good a look at the first three levels of that western side would you have had?

A. Very good.

Q. Why do you say that?

A. Um when Placemakers rung me to assess the job and asked me to meet up with the builder on site we discussed how we were going to achieve this and with the more, as I go on in my statement there's mortar out of the block, it wasn't a smooth surface for us to actually fix, to do what we would normally be able to achieve.

15

Q. So you had to look at the whole area.

20 A. Yes.

Q. Right carry on please paragraph 8.

A. The masonry infill blocks had been laid in a brick bond formation.

Q. And that's shown in figure 2, top right.

A. That's right.

25 A. The block work was then joined to the columns using mortar. The top row of masonry blocks had been slid in last and they appeared to sit tight under the beam. There were no gaps between the block work and the columns, or between the block work and the beam, on the western side of the wall.

30 Q. Right so just refer to figure 1 and 3 there. So the, you've indicated on your diagram mortar joints, figure 3, mortar joints between the block work and the column on the right.

A. Yeah.

Q. Correct.

A. Yes.

Q. Could you actually see mortar in that gap or not?

A. Yes as far as I can recall.

Q. And you've indicated there was no gap between the top level of blocks  
5 and the underside of the beam, correct.

A. Yes.

Q. You said that they appeared to sit right under the beam. Could you see  
any mortar along that joint?

A. At the bottom of that block there was mortar. At the top, from what I  
10 recall, it was slid in there tight. Now there may have been some effort to  
put mortar in there but not really.

Q. But there was no gap.

A. There was definitely no gap and it's not in my statement but thinking out  
here during the break there were broken blocks chipped out of the  
15 corner on that row which, to me, tells me when they forced those blocks  
in tight that they'd broken on the side opposite them, you know on the  
western side.

Q. Hold on, so you're talking about the top layer?

A. Yeah, just chipped -

20 Q. Just under the beam.

A. Yeah just like a corner off that block.

Q. Chipped off.

A. Had been chipped, chipped or sit on an angle where it had been forced  
in.

25 Q. So what did that tell you in terms of mortar?

A. That just told me that that's, you know, they've been pushing these  
blocks in to fill a hole that's broken out, supposedly it's full of concrete to  
be solid, it's fine, it's basically a boxing in itself.

Q. So paragraph 9.

30 A. I noticed that one of the horizontal rows of masonry infill blocks was not  
filled with concrete. I am not sure if this was structural but it did surprise  
me. I assumed it couldn't be filled because it was at the top of the row  
so was slotted in last and the horizontal beam would have impeded  
filling it.

1428

Q. Right, and that's the ones that are shown in the whitish colour under the beam?

A. Yes, correct.

5 Q. Right, paragraph 10.

A. The wall wasn't flat on the western side. Mortar had spilled out through the joints in the masonry infill blocks and we had to scrape this off to obtain a flat surface. I assumed that this was because the CTV building was built right up against the adjacent building and you couldn't access the western side at the time it was constructed to clear this away. I never went inside the building.

10

Q. Thank you, I just want to refer you firstly to a couple of photographs that were taken off a video that was made by CTV on the 21<sup>st</sup> of February of some of your workmen working on that wall.

15 A. Yes.

Q. I think you're familiar with it, and I'll just get those brought up, so see the first one there?

A. Yes.

Q. That depicts the lower three floors of that western wall or lower two floors in that photo that you were working on?

20

A. Yes.

Q. And if you can go to the next one please, point 2.

A. You can actually see in that picture, or even in that picture there what I'm talking about where the columns and the beams were out of line.

25 Q. Right, so you're pointing with the mouse –

A. Yes.

Q. – at the moment to the column one in from the southwest corner?

A. Yes, that's one sitting forward of that beam on the top and at the bottom it's inside.

30 Q. Right, so it's the bowing out that you're talking about?

A. Yeah, so it's not a perfectly straight wall.

Q. And the next photo please, three. So there's a closer up shot.

A. Yes.

Q. And we've already heard from Mr Fortune that the drill went through some hollow blocks, particularly in the – that top layer just under beams.

A. Yes. In this shot here we hadn't started drilling the building yet, we were just clearing the mortar off to get to work out what sort of packing we would have to do and what sort of line we would have to do line up with the existing at the top.

Q. Right.

A. Blocks like this one here that I'm pointing to with the mouse is what I explained just before that they were broken off on the corner and sticking out and the mortar actually held them solid so we had, you know they would – that corner of that block would stick out a good 50mm and we would have to break that away. Yeah.

Q. Well in the process you found it was hollow?

A. Yes.

Q. In that particular case.

A. Yes.

Q. Sorry what were you going to say?

A. I was just trying to see some other ones 'cos there was more than just, um, one of those but I can't point it out you know.

Q. Well I want to show you another photo and Your Honour this photo is a – one hot off the press so to speak, it's just been put onto – logged onto the system. It came in a couple of days ago from Loss Adjustors for the building owners. We've just got it on the system and, so this is a photo you may not have seen.

**JUSTICE COOPER:**

What's its number, I can't read that from here.

**MR ZARIFEH:**

It's 0479.1.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. Now does that depict the wall obviously before –



A. Yes, as you can see it's very, very messy if I can put it like that.

Q. Messy in the sense of what?

A. As in not a flat concrete block wall.

Q. Right, and looking at the area between the blocks and the columns, can  
5 you see any mortar. I know it's probably difficult to tell in a photo but –

A. If you go back to those other photos you can actually see mortar.

Q. Okay, we'll go back to those in a moment, but in that photo can you?

A. Um, no, it's too far away.

Q. Might be able to enlarge it. If you leave your mouse Mr Campbell, just  
10 leave it.

A. Sorry.

Q. Because it can't get enlarged without – well that might be a better shot.  
So looking at the joint if you like between the blocks and the columns, is  
that how you recall it?

15 A. Definitely, yes.

Q. And can we see any mortar in those photos?

A. Yeah, no. Well, from this distance.

Q. All right, what about, we can see the blocks, some of the blocks being  
uneven as you spoke of?

20 A. Yes.

Q. And the columns and beams?

A. Yes.

Q. That one in from the corner particularly in the second level?

A. Yep.

25 Q. Right. Just wondering if we can go any bigger. It's probably as big as it  
can go or might lose the focus. Did you want to perhaps refer back to  
the last of those other photos, the close-up, there's point 3. That one?

A. Yes.

Q. So I was asking you about the –

30 A. Mortar.

Q. – the mortar in the – between the blocks and the columns.

A. Well there was definitely a tent of mortar in there, you can see it in that  
picture. Some of them were tight, some of them –

Q. Where are you indicating, can you use the mouse?

A. In here.

Q. So you're pointing to just the underside of the beam?

A. Yes.

5 Q. What about the joint between the column on the right and the blocks, down from there?

A. Down there?

Q. Yes, in the south-western corner.

A. Um, it doesn't look like that's been mortared in on that side but from what I recall the centre columns definitely.

10 Q. And was the mortar coming out as there was in some of the other blocks or not in those joints?

A. Ah, I couldn't tell you 100%, the guys were scraping it, but basically what I was looking at was everywhere.

#### **CROSS-EXAMINATION: MR LAING – NIL**

#### **15 CROSS-EXAMINATION: MR RENNIE**

Q. So Mr Campbell you had gone to the site of the building some days before to scope the project?

A. Yes.

Q. And then on the 21<sup>st</sup> of February 2011 the work started?

20 A. That's correct.

Q. Were you there on that day?

A. Yes.

Q. And you worked on it yourself during that day?

A. That's right, yes.

25 Q. Now the masonry infill blocks which you were dealing with, do you recall the general nature of that block. Was it a standard block one you'd encountered before?

A. Yes, yes. (inaudible 14:37:30) block or similar.

30 Q. And you can see from the photograph the width and height of it, in terms of its depth what's the depth of the block roughly speaking?

A. Two hundred, 180.

Q. Something of that order, yes.

A. Yes.

Q. And if you could now be shown the photograph 479.1 which is the one that counsel assisting has just produced, there we are, not very clear but it's possibly okay in front of you. In each of the cases between the  
5 pillars that you've spoken of you will see two vertical lines in the block work. Do you see that?

1438

A. Yes.

Q. It would appear from the photograph that the block work is actually  
10 broken at that point by a continuous, vertical line. Is that how you recall it?

A. Yes, looking at that photo now, I mean I don't, I don't remember, you know, thinking about that detail but it's definitely there, yes.

Q. And do you recall whether that was a space which was open or filled  
15 with mortar?

A. I couldn't comment, sorry. There was so much mortar spilled out of the rest of them. We were only going to scrap the line that we needed to put our batten on but it was easier to actually scrap the whole wall to sort that out.

20 Q. What was the size of the batten you were using?

A. It was 75 by 25.

Q. Yep. So would any protrusion over about 20 or so could present a problem for you?

A. Yes we had to pack and re-line up what's relevant.

25 Q. Yes. Now from your point of view did you ever have to consider whether this wall was going to be strong enough to take the cladding that you were going to put on it?

A. No. It was a lightweight cladding. I talked to the builder on site who, who gave the job to Placemakers and PlaceMakers contracted it to us  
30 and we discussed how we would do it and that's how he wanted it done so we said, yep, we'll price that up.

Q. And as far as you could see was this essentially a case of continuing the cladding in the upper three levels down to the lower three levels now that the building next door had gone?

A. Yes, just the same lining, yes.

Q. Now we've been told that drilling into the blocks for the purpose of fixing the Dynabolts to hold the battens produced varying results. Sometimes you got a solid block, sometimes you got a hollow block, was that your experience?

A. That was our, our experience initially yes. Once we realised the top row wasn't filled we re-adjusted our spacings to suit that. It's not abnormal to find a hollow spot along the wall, especially if the concrete hasn't been vibrated into that, into that wall properly.

10 Q. Were you personally drilling Dynabolt holes?

A. I would have started at the lower levels with the guys and then left two of them on the scissor lift as they went up.

Q. Did you personally encounter any hollow blocks at any levels other than the top level?

15 A. Not, not personally. No.

Q. The broken block which you were shown in the other photograph, I don't think we need to go to it, do you remember that?

A. Yes you can actually see that black dot on that one there on the right.

Q. Yes.

20 A. It's a similar situation.

Q. Do you recall any other defects of that kind in the wall?

A. No I, I was looking for cracks or whatnot since the earthquake and no it looked fine except for the ...

Q. Meaning that you'd had a look at it for cracks in the post-September quake?

25 A. Yes.

Q. And is there any reason to think that hole arose from the quake or from any other circumstance?

A. No because it was, it was sitting ajar solidly, it was, actually had been filled with concrete behind it. So it had been cracked in placement.

30

#### **QUESTIONS FROM COMMISSIONER FENWICK:**

Q. Did you look at the wall from the inside of the building at all?

A. I didn't personally, no.

Q. When you were looking at the outside of the wall the gap the, where the blocks spot up against the column, could that have been filled with a flexible filler which looks like mortar?

5 A. There was definitely no flexible filler on our side of the wall, on our side of the 200mm.

Q. It was definitely filled with a mortar then?

A. Yes, all, all of that block was hard against that, that column.

**QUESTIONS FROM COMMISSIONER CARTER – NIL**

**QUESTIONS FROM JUSTICE COOPER – NIL**

10 **WITNESS EXCUSED**

**MR ELLIOTT ADDRESSES JUSTICE COOPER – MR GILL**

Your Honour I'd like to re-call Mr Gill if I may just to address one or two supplementary matters arising from his evidence. It relates to his observations of the south-west corner and I've identified a photograph which

5 may contradict what he had to say and I'd like him to comment upon that.

**JUSTICE COOPER:**

All right. Thank you.

**10 MR ELLIOTT RE-CALLS****STEPHEN MALCOLM GILL (RE-SWORN)**

Q. Mr Gill I'll just refer you to paragraph 16 of your evidence. I'll read it out to you.

A. Okay, thanks.

15 Q. So you said that it looked to you, "Like the south-west corner lifted before it gave way. It was as if someone had kicked the corner really viciously and the whole corner just caved in. When the corner went there was nothing to support the floors. The first floor folded in and merely seconds later the second floor followed it before all the floors

20 came down."

A. All right.

Q. And I asked you some questions about that. I asked you which part of the south-west corner gave way and you indicated the area at levels 1 and 2, or you may have referred to it as ground 1.

25 A. The ground floor yes.

Q. I'd just like to show you some photographs from Dr Hyland's report. BUI.MAD2490189.274. Perhaps if we just enlarge them one at a time starting with the top one. Can you see that clearly on your monitor?

A. Yes thank you.

30 Q. Dr Hyland refers in the notation to that being the west wall on line A at the south-west corner shortly after the collapse.

A. Mmm.

Q. And you see too what he describes as a column standing in place there at the right.

A. Mmm.

Q. And I'll show you the second photograph please. Again you can see to the right there are, there's a column up higher and then down below it and Dr Hyland describes that as the corner grid 1A column.

5 A. Mmm.

Q. Which I can tell you is the column at the south-west corner.

**JUSTICE COOPER:**

Is this red circle in the right place, that's suddenly appeared?

10

**MR ELLIOTT:**

Your Honour that's reference to something else I think. That's in the photograph in Dr Hyland's report.

15 **JUSTICE COOPER:**

Well I'm just a bit confused about why it's, the column that you're talking about now is that within that circle or is it to the right of it?

**MR ELLIOTT:**

20 It's to the right Your Honour.

**JUSTICE COOPER:**

It's the one that's standing proud as it were?

25 **MR ELLIOTT:**

Yes Your Honour and as I say Dr Hyland refers to that. He says the corner grid 1A column is still standing. That's his perception of that.

**JUSTICE COOPER:**

30 Yes.

**EXAMINATION CONTINUES: MR ELLIOTT**

Q. So Mr Gill my question just was, having seen those photographs does that cause you to revise your view about which part of the south-west corner caved in?

5 A. Not really. All I can see is, I'll say what I saw, and that corner lifted and something happened in that corner. Whether the fellows went in after the dust I do not know but that corner caved in, in my mind. Something happened in that corner whether it was a block wall coming down on the other side that I saw, but something happened on that corner.

10 Q. And when you say in that corner you're referring to the –

A. To where those pillars -

Q. – to levels, levels 1 and 2.

A. Levels 1 and 2, yes.

Q. Thank you and just briefly, secondly, did you see any wooden battens in  
15 place on the western wall?

A. Yes.

Q. As at the 22<sup>nd</sup> of February, before the collapse?

A. Yes we'd been watching them from Les Mills, the lads from the other company was working very hard. They got a good high percentage of  
20 the battens onto the walls ready for the cladding. They really worked hard and well. In fact we were taking bets in our gym whether they would get it done in one day.

1448

**CROSS-EXAMINATION: MR LAING**

25 Q. With that photograph you've just been shown, if we could have it back, you will see that there's block work lying on the ground, just wait a moment.

A. Okay, yeah, yes.

Q. It's probably easier on your own screen (inaudible 14.48.23)

30 A. Yeah I've got it.

Q. But you see where the circle is, there's block work lying in there and it's still in, more or less intact as a wall isn't it?

A. It is so yes.



Q. When you were looking at the column on the right-hand side moving or failing or whatever you saw can you recall the sequence? Did the block work fall out first or did you not see the block work come out?

5 A. I wasn't watching to be quite honest, sir, it just happened so fast. I was being thrown about as well and everything was lifting up and down.

Q. So you don't have recollection of the block work coming out?

A. Not of the block work no, no.

**CROSS-EXAMINATION: MR RENNIE – NIL**

**QUESTIONS FROM THE COMMISSIONERS – NIL**

10 **QUESTIONS FROM JUSTICE COOPER - NIL**

**WITNESS EXCUSED**

**MR PALMER CALLS****ARTHUR EDWARD TYNDALL (AFFIRMS)**

Q. Is your full name Arthur Edward Tyndall and do you reside in Christchurch where you are a structural engineer?

5 A. That is correct.

Q. Do you have with you a copy of your written evidence?

A. I do indeed.

Q. Could you please read that to the Commission starting at paragraph 2.

A. This is in so far as my evidence is it?

10 Q. Yes.

A. In so far as my evidence can be considered expert evidence in accordance with the requirements of Rule 9.43 of the High Court Rules I confirm that I have read the Code of Conduct for expert witnesses and that my evidence complies with the Code's requirements.

15 Q. If you just carry on please.

A. Okay, next paragraph 3. Matters in which I express an opinion are in my field of expertise. Paragraph 4 – I am a–

**JUSTICE COOPER:**

20 You don't need to read out paragraph numbers or headings you just need to read what is the substantive part of the evidence.

**EXAMINATION CONTINUES: MR PALMER**

A. I am a director of Tyndall Associates Limited, an engineering consultancy firm that I own. I am aged 78 and semi-retired but continue  
 25 to practice as a structural engineer in Tyndall and Associates Limited. I hold a Bachelor of Engineering 1957, University of New Zealand (Canterbury). I am registered as an International Professional Engineer and a Chartered Official Engineer in New Zealand CPENG. I am currently a fellow of the Institution of Professional Engineers (FIPENZ).  
 30 After completing my qualifications I commenced work as a structural engineer in 1957 with Spencer Hollings and Ferner, Consulting Engineers, Wellington. Around 12 years later I began business on my own account in 1969 as AE Tyndall Consulting Engineers Christchurch.

Based in Christchurch I have now practised as a structural engineer on my own account for over 43 years. I hold five awards from the Association of Consulting Engineers and IPENZ for structural excellence. Notably achievements over my career have included designing the structures used by AJ Hackett bungy operations and reporting and providing evidence to the Royal Commission enquiry into the 28<sup>th</sup> of April 1995 Cave Creek tragedy as an expert in structural engineering after being engaged by the Minister of Conservation for that purpose. More recently I have been consulting in the coal mining industry in projects on the West Coast on a 200 metre bungy jump swing and flying fox in Sochi, Russia, for AJ Hackett and a gold mining project in Bolivia for L & M Mining. Shall I continue?

Q. Yes carry on, paragraph 9.

A. I am a member of the Mountain Safety Council Snow and Avalanche Committee. I am currently working with a mechanical engineering lecturer at the University of Canterbury Schools of Engineering in developing an instrument to predict snow stability. This is at the stage of commercialisation.

Q. I'll just stop you there.

## **MR PALMER**

Sir, do you wish him to read paragraphs 10 and 11? These paragraphs were inserted just to explain –

## **JUSTICE COOPER:**

Yes.

## **EXAMINATION CONTINUES: MR PALMER**

Q. Carry on, paragraph 10 please.

A. I had happened to have a casual conversation with Dr Alan Reay during the week of the 28<sup>th</sup> of May 2012 when I discussed with him the issues that make up my evidence as set out below. When I spoke to Dr Reay I was busy preparing for a trip to Vietnam leaving on the 2<sup>nd</sup> of June. On the afternoon of Friday 1<sup>st</sup> I spoke with Mr Palmer of Buddle Findlay by

telephone and provided him with information and set out below in this statement of evidence. I was not able to view my written statement of evidence that Mr Palmer had prepared for me before leaving for Vietnam around 10.00am on Saturday 1<sup>st</sup> of June, returning 10<sup>th</sup> of June. I was not able to advance my evidence any further until I returned from Vietnam. On Monday the 11<sup>th</sup> I called Mr Palmer to discuss finalising my evidence but needed my PA to assist me. In the event my PA was only available on Tuesday the 12<sup>th</sup> of June. With her assistance I was able to complete my evidence with Mr Palmer there. For practical reasons I was not able to approve and sign this statement of evidence until the 13<sup>th</sup> of June. Shall I continue, sir?

Q. Yes.

A. In the 1990s there was an earthquake felt in Christchurch. One of these was June 1994, magnitude 6.7, Arthur's Pass earthquake. There were others. These earthquakes resulted in some commercial building owners in Christchurch checking the buildings for earthquake damage. The CTV was one such building. In my capacity as a consulting structural engineer practising on my own account, I was engaged to undertake a post-earthquake inspection to ascertain whether there had been any structural damage to the CTV building. I duly inspected the CTV building in the weeks following the earthquake event and provided a written report to the CTV building owners. Unfortunately all my records have been destroyed in the recent Canterbury earthquake and I am not able to provide the Royal Commission with a copy of my report written in respect of the CTV building inspection. Without my files being available to me due to the time since I have inspected the CTV building I also cannot be specific about which earthquake it was but I am in no doubt my inspection and report was done in the 1990s, most likely the mid 1990s. The June 1995 Arthur's Pass earthquake was the most significant event of this time in Canterbury and in all likelihood it was this event that triggered my engagement and inspection I undertook. I would commend that date in 1994 which is critical to the sequence – I'm not reading now I'm just putting in an aside if that's okay Your Honour.

Notwithstanding the absence of my files I can remember aspects of my inspection that I believe maybe relevant to the current enquiry. I set out below my recollections from the inspection and consideration of the CTV building that I took in the 1990s and in particular I note. There was cracking in the block work wall –

5

Q. Sorry.

A. Oh correction, there was cracking in the block work in the entry foyer. This indicated to me that the building had experienced some twisting in the earthquake. This led me to investigate whether the building had in fact twisted in the earthquake causing column damage. I looked for evidence of twisting or other damage that might have been caused by the earthquake but could not find any. I recall looking above into the ceiling at the underside of the concrete slab and inspecting the joints in particular where the floor slabs met the column. I would have done this on every floor in several places until I was satisfied that there was no twisting or other damage sufficient to cause a closure of the building. I recall looking at the western block wall and being impressed with the designer's efforts to reduce the stiffness in this wall which was not one of the shear walls. There had been efforts to reduce the effect of the stiffness wall on the building structure in the direction of the wall itself. Most notably in the construction joints between the wall and the building structure I noticed the detailing workmanship was of high quality.

10

15

20

#### **JUSTICE COOPER :**

25

Q. Of the western wall?

A. Of the western walls, correction, thank you Sir. I conclude that the western wall was both well designed and well built.

#### **EXAMINATION CONTINUES: MR PALMER**

30

Q. Could I just stop you there please. Could you bring up on the screen photograph 0479.1, that's the recent one that we have just seen? While we're waiting for that Mr Tyndall, do you have any sight difficulties at the moment?

A. Pardon me.

Q. Do you have any sight difficulties at the moment, eye sight difficulties?

A. Negative, negative.

Q. Could you take your hand, Mr Tyndall you must have your hand on the computer mouse, if you could just take that off. Is that the one, 0479.1, it was the one with the – the recent one that we got just after lunch, that one there that Mr Tyndall's showing. Yes that's it, and could you please blow that up as you did before. Mr Tyndall if you could just enlarge it one time please. Perhaps one more time. Mr Tyndall can you see this picture on the screen in front of you as well as on the big screen?

10 A. This on the small screen in front of me yes.

Q. The resolution may be better.

A. Yes, that's right.

Q. You've just talked about the western block wall and your observations. Are there any – is there any particular feature shown in this photograph that might be relevant to the evidence that you've just given?

15 A. Well I'll try this mouse now, now where is the pointer. No can everybody see this, I'm pointing the mouse onto a vertical joint and you can see there is one there. On each of these panels there is a vertical joint and the block work, that joint tells me that the block work does not run through that joint and stops and so that one panel just butts up against the other. In my view that was the designer, doing a detail which reduced the stiffness of the wall in this direction, you can see my pointer.

20 Q. The pointer's indicating north south across the horizontally across the wall.

25 A. Yeah, that's right. Considering the previous evidence regarding the concrete too and the movement this wall would have been constructed against the existing firewall of the Mills building so that under those circumstances it's very difficult to get a good face on the concrete and I repeat again these vertical joints are there because of the designer's belief that it would reduce the stiffness of the wall and therefore the western wall would not dominate the shear resistant centre of the building.

30

Q. Thank you Mr Tyndall is there anything else you'd like to say about that otherwise I'll get you to continue reading at paragraph 15(d).

A. Overall I concluded that despite finding some cracking in the building which I believed to have been caused by the earthquake, the building had not been damaged in such a way that materially changed its structural integrity. I concluded that the building remained safe to occupy. My report to the CTV building owners contained this conclusion. I do not recall doing any further work in relation to the CTV building after my inspection and report in the 1990s. I am now onto 17.

10 Q. Yes, it's the final paragraph.

A. I note that when I inspected the CTV building in the 1990s there was no evidence of any huge vertical accelerations –

Q. So could you just re-read that?

A. I note that when I inspected the CTV building in the 1990s there was no evidence of any of the high vertical accelerations experienced in the 22<sup>nd</sup> February 2011 earthquake. I believe the New Zealand Building Code should be revised to take into account high vertical accelerations such as that experienced in that earthquake.

#### **CROSS-EXAMINATION: MESSRS LAING AND WALLACE – NIL**

#### **20 CROSS-EXAMINATION: MR ZARIFEH**

Q. Just a couple of questions Mr Tyndall. You talked about the joints in that block work on the west wall. I just want to bring up a photo, it's WIT.MITCHELL0001.8. It'll come up on the screen.

A. Yes. This one?

25 Q. Yes, can you see that?

A. This shows the wreckage.

Q. Yes.

A. Correct.

Q. Can you see the block work or some of the block work from the western wall?

30

A. Mhm.

Q. In the middle towards the left of the screen, you can see the scissor lift underneath one of those sections?

A. I cannot see the scissor lift.

5 Q. Well you can see something with a wheel and some writing, can you see that?

A. Ah, yes, yes, yes.

Q. And there's a section of block work on top of that?

A. Mhm.

Q. Leaning on it.

10 A. Mmm.

Q. And then it appears to be another section leaning on that. Can you see that?

A. Yes.

Q. And then to the left of that looks like another section of block work.

15 A. Yes.

Q. Correct. The lines that you were talking about, the vertical lines, can you say anything about those in relation to the edge that we see on, in particular on that middle section, leaning on the, presumably on the scissor lift?

20 A. It would appear that that would be the vertical line in the block work.

Q. Which you say for you indicates that they were built in separate, to be separate sections?

1508

25 A. That is not quite correct. They were built, the blockwork did not run through that joint and that was to, so that the wall did not act as with the blockwork running through that joint, yes.

Q. So was it in effect separate sections of blockwork, separated by those joints?

A. That's correct. Now, may I make a comment Sir?

30

**JUSTICE COOPER:**

Q. Well if it is necessary to answer the question?

A. Well I won't make any comment at this point then.



**CROSS-EXAMINATION CONTINUES: MR ZARIFEH**

Q. The view you would've had of the western wall would've been from the inside?

5 A. Ah, yes, it's hard to remember just, um, you know it was 1994 I must remind you sir.

Q. Right, but presumably there would've been a building adjacent to the C -

A. Yes I presume so, yes but -

Q. But you can't recall that?

A. No I can't recall that exact.

10 Q. And in relation then to the rest of your inspection -

A. Yes.

Q. - did you get structural drawings of the building?

A. No, no I didn't, can't recall having those at the time no.

Q. Is that something that you would've asked for or not?

15 A. Um, it possibly is better to walk around a building and observe the thing and consider how the building was put together.

Q. Would you not agree though that if you can have access to structural drawings for a building such as this, that would be an advantage, or could be?

20 A. It could be, depending on if the drawings were followed.

Q. You mean followed by the contractor?

A. Builder, yeah, that's right.

Q. But in any event you can't recall whether you had that?

A. No, no.

25 Q. You said that you lifted the, or you inspected the underside of the concrete floor slab?

A. Yes, where the columns joined the floor slab.

Q. And did you do that on every floor?

A. Every, I did it on each floor that I considered it to be critical.

30 Q. The, from what you've said the damage that was inflicted on buildings generally in Christchurch from that earthquake in no way compared to the September 2010 earthquake here, correct?

A. That's correct. It was would be termed a moderate earthquake in 1994.

**QUESTIONS FROM COMMISSIONER FENWICK**

Q. The panels you pointed out, were they, those vertical lines, were they filled with a plastic, a flexible gel or were they filled with mortar?

5 A. I could not get, I did not inspect them. I, it could well have been filled with a flexible mortar and, but this is a comment, if they had been filled that would reduce the effectiveness of the breaking up the stiffness of that wall.

Q. Can you just repeat that please?

A. If it would be preferable that a flexible joint would be –

10 Q. Thank you, that's not quite what you said – I understood that.

A. I'm sorry.

**QUESTIONS FROM COMMISSIONER CARTER – NIL**

**QUESTIONS FROM JUSTICE COOPER – NIL**

**WITNESS EXCUSED**

**MR RENNIE CALLS****ALAN EDGE (AFFIRMED)**

Q. You're Alan Noel Edge?

A. That's correct.

5 Q. And you reside in Weedons in Christchurch, and you're the director and chief executive of Southern Demolition and Salvage Ltd?

A. That's correct.

Q. Mr Edge would you read from paragraph 2 of your brief please?

10 A. Southern Demolition is a demolition contracting company based in Christchurch. Following the earthquake on the 22<sup>nd</sup> of February I was appointed by CERA –

Q. I think that should be 22<sup>nd</sup> of February 2011 shouldn't it?

15 A. It should be sir. Nice to move on though. We managed the process of make safe buildings around the city that had been damaged in the earthquake. I held the role for around two months until the streets were cleared and all necessary urgent demolitions had been completed.

Q. Again in the next paragraph, "On 22 February 2011..."

20 A. I was at Southern Demolition's office in Mowbray Street when the earthquake struck. A short time later I received a telephone call from the fire service and police asking for Southern Demolition to mobilise gear to the CTV Building site because of the collapse. Around two hours after the earthquake struck I arrived at CTV building. I arrived with four operators, two high reach diggers and a 30 tonne excavator.

Q. Was that, you didn't quite read that they way it's written?

25 A. Two high reach diggers –

Q. Yes.

A. – and a 30 tonne excavator, sorry sir.

30 Exposure of the structural elements of the building to the effect of the fire. Water and mechanical disturbance varied in different parts of the building. When I first arrived at the site a fire was already smouldering and I could only see smoke at that time and it was localised to the lift shaft area. On that day as time went on flames became visible around the lift shaft area and the smoke spread more widely across the debris,

indicating that the fire was burning underneath. At its peak I estimate a third of the building footprint was either in flame or smouldering. The fire was fought with water applied by monsoon buckets and later by hose. I cannot be sure of the time but it was still daylight on the first day. I stayed at CTV Building site for about 19 hours. I went home to sleep for two to three hours and then returned to CTV site for another 18 to 19 hours. When I returned the fire was still smouldering widely across the debris, but I do not recall seeing flames. I cannot recall whether fire fighting was still taking place. When the rubble was cleared from this position charred furniture was visible underneath confirming that the fire had travelled some distance from the lift shaft under the main rubble. The fire continued to smoulder for a few days. The demolition Southern Demolition carried out was not done with the purpose of preserving materials for later investigation. The concrete, the concern was with survivors and bodies, because of this the concrete elements could have been damaged in the course of removal.

**CROSS-EXAMINATION: MR LAING**

Q. In your last paragraph you say that the concrete elements were not shifted or placed with any particular care. Was there any attempt made to preserve any structural items for future examination?

A. Definitely not, sir.

Q. Not while you were there?

A. No.

1518

**CROSS-EXAMINATION: MESSRS WALLACE AND ZARIFEH – NIL**

**QUESTIONS FROM THE COMMISSIONERS – NIL**

**QUESTIONS FROM JUSTICE COOPER – NIL**

**WITNESS EXCUSED**

**MR ZARIFEH ADDRESSES JUSTICE COOPER**

Sir we're now moving onto witnesses who talk about damage post the September earthquake and the first one in that category is David Bainbridge.

**5 MR ZARIFEH CALLS****DAVID BAINBRIDGE (SWORN)****MR ZARIFEH:**

Your Honour this witness would prefer it if I read the brief and with your leave  
10 I'll read it and he can interrupt if I get anything wrong.

**JUSTICE COOPER:**

Does anyone object to that course being followed.

15 (No objections).

**EXAMINATION: MR ZARIFEH**

Q. Mr Bainbridge I'm going to read, you've got in fact two briefs of evidence.

A. Yes.

20 Q. You filed one subsequent to clarify a couple of dates and matters in the first one.

A. Yes.

Q. So what I'm going to do is read your evidence and I'll stop when there's a reference to a photo or diagram.

25 A. Yes.

Q. And get you to comment on that and if anything is incorrect in what I'm reading you let us know.

A. Yes.

30 Q. My full name is David John Bainbridge. I am a manager and have lived in Christchurch all my life. I am an ex-builder with 14 years' experience in the building trade. I have my carpentry qualifications and have a certificate from Master Builders. The building work I undertook ranged from commercial to residential buildings. I was involved in the

construction of the University of Canterbury Commerce Building and my role at that site involved constructing the columns for this building over a two-year period. My current position involves dealing with construction companies and giving advice to help resolve issues customers may have on site. I was attending sessions at relationship services with my wife Leanne, Relationship Services was on the top floor, level 6 of the CTV building at 249 Madras Street Christchurch. My last visit to the building was 16 February 2011.

A. Yes.

10 Q. Should be?

A. Yes.

Q. I've done a floor plan showing a basic set-out of where I had been on level 6, this is annexed hereto, and if that can be brought up, 0001.5. Can you see that on the screen in front of you as well?

15 A. Yes, yes.

Q. That's the plan that was drawn. The reception and waiting area was to the right of the lifts along the north wall of the building to the west of the north core. The consulting room where I had my appointments was along the west wall, it says approximately five to seven metres from the waiting area. I did not go to any other part of level 6.

20

Building Damage. On my second visit to the building I noticed some damage to the building which with my having building experience really concerned me. I discuss my observations below.

25 A. Sorry to interrupt, it was actually the third visit. I've amended that on the yeah, yes.

Q. I think we clarify that when we come to the second –

A. Sorry.

Q. When walking out of the lift onto level 6 I noticed the internal column in the foyer had cracks in it. This column was along the north wall in the corner where the east side of the north core met the wall. I have marked this column with the number 1 on the plan and if we look at the plan we can see the number 1 that's been put in marking that column.

30

A. Yes, that's correct.

Q. I'll come back to that column and a photo of it in a moment. Approximately three-quarters of the column circumference was visible from the floor to the ceiling. The column had at least three large cracks around it of approximately five millimetres in thickness and other hairline cracks of about two to three millimetres in thickness. These ran all the way around the column at about 20 centimetre intervals. There were flakes of concrete three of which were about the size of a 50 cent coin at the base of the column. You could also see blow-out marks on the column. From what I observed it looked like the column had performed to its maximum capacity in the previous earthquakes but would fail in any further events. It definitely did not look like it could withstand another large earthquake. I was more concerned because this column was on the perimeter of the building. I have been shown a photograph of a column by counsel assisting the Royal Commission. This photograph is annexed hereto and marked 0001.6. I can confirm that this column is the column I am referring to in the foyer marked with the number 1 on the plan – and we'll get that brought up now. Now that's the photo I think you were shown and I'm going to show you another one of the same photo but not as cropped but does that show some of the damage that you saw?

A. Yes.

Q. Okay I'll come back to that again. Carrying on, and I'm on paragraph 11. I observed one other column while I was in the building. This was on the corner of the consultation room on the west side of the building. I have marked the location of this column with the number 2 on the plan. This column had cracks in it also however I was with our counsellor Ann Malcolm when I walked past this column so I never got the opportunity to examine it closely and we can see 2 on the room 3 along from the north side on the western wall.

A. Yes, that's correct.

Q. Water Damage. When I looked at the top of the column in the foyer I could see around the bulkhead where the column attached to the ceiling. There was water damage on the plaster board. This was a brownish discolouration on the ceiling panels that went about a metre

inwards from the column. This indicated to me that the building may have been damaged exposing it to the elements and causing water to enter the building.

5 Exterior Spandrels. As I was waiting for the lift to leave I looked out the window in the foyer on the east side of level 6. I saw one of the spandrels on the exterior of the building. This panel was between levels 5 and 6. I have marked its location on the plan with the number 3. And if we look on that plan, bottom right of the plan, we can see you've put  
10 "3" indicating the spandrel –

A. Yes.

Q. – that you saw.

A. That's correct.

Q. And which window were you looking out to see that?

15 A. It was to the adjacent, where that column was to your left there on the last picture. So basically it was in the foyer of the lift shaft.

Q. So between the column that you've marked 1 and the lift?

A. Yes, that's correct. You can look down into Madras Street right there.

Q. Right. I just want to ask you about that wall.

20 A. Yes.

Q. The window you looked out of. Did you see any cracking on that wall, above or below the window?

A. Not that I could see at the time. I could only see the spandrel had a bit of movement and damage on that.

25 Q. Right. I'll carry on reading about that. The spandrel was exposed aggregate which was a feature of the building design. I could see the interior and exterior sides of the end of the spandrel that was closest to the north core. I observed that this spandrel was uneven and not in line with the building by about 100 millimetres. It was damaged and chipped  
30 at the end. From what I observed I believe it had experienced significant movement prior and had at some stage been compressed against the north core. And can I just ask you to clarify that, that point. Is that the end that was nearest to where you were standing?

A. Yes, looking into it.



Q. And that looked like it had been compressed?

A. Yes, it looked like, it'd been chipped at the end with damage, or something had hit it.

1528

5 Q. Building safety. As what I observed really concerned me I asked Ann about what I had seen in the building. Ann told me, this is Ann Malcolm I should say, told me they had been told that the building was safe and that it had been signed off. I wanted to take some photographs of what I observed and I took my phone out to do this. However, the lift arrived  
10 so I did not take any. I also felt so uneasy about being in the building I could not wait to get out. I told Leanne of my concerns while we were in the foyer. Leanne said to me "You're quite concerned about this, aren't you?" and I told her I was and that I did not know how the building could have been signed off, and if I can just turn to your supplementary  
15 statement.

A. Yes.

Q. I provided an earlier statement of evidence dated 18 May 2012. This brief of evidence is supplementary to that and clarifies some issues I have been asked about by counsel assisting the Royal Commission,  
20 after completing my previous brief.

Visits to CTV building. I visited the CTV building three times to attend counselling sessions on level 6. My first visit was 28 January 2011, the second visit was 2 February 2011. My third and last visit was on the 16  
25 February 2011. It was only during this last visit that I noticed the damage to the building. So if I can just ask you there?

A. Yes.

Q. That's the first time you noticed any of the damage that I've just read about?

30 A. Yes, I took concern to have a look around.

Q. And on the previous visits, two visits, had you looked at all or –

A. No, no I didn't.

Q. So the damage could have been there on the previous visits and not noticed by you?

A. That's correct.

Q. Damage to the column in level 6 foyer. I am advised by counsel assisting that the photograph of the column in Level 6 foyer referenced 0001.6 in my earlier statement of evidence is a photograph from the Earthquake Damage Report for Madras Equities Limited dated 6 October 2010. The damage I observed on the column appeared worse than that shown in the photograph. There was more cracking and bits of concrete had come off the column. Some of the cracking had grown in size, especially the large cracks referred to at paragraph 8 of my earlier statement of evidence. At paragraph 8 of my earlier statement of evidence I also use the term "blowout marks". By this I mean the concrete and paint on the column directly above or below the cracking is dislodged from the column, exposing the aggregate inside the column. From my experience in columns, and from my observations of this column, I believe these blowout marks resulted from the cracks that went the entire way through the column as the column was moved or compressed in later earthquakes. The movement or compression forces the paint and concrete to dislodge. I had never seen a column with this much damage before and could only put the damage down to the earthquakes. I am unable to provide a detailed description of the damage to the other column I refer to at paragraph 11 of my earlier statement of evidence. I did not get the opportunity to have a closer look at this column.

Q. Now if I can just go back to talk about the column on level 6 in the foyer.

**JUSTICE COOPER:**

Perhaps just for the record we should confirm that the evidence that you have read is the evidence that Mr Bainbridge wishes to give.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. All right, Mr Bainbridge the evidence I've read out, is that your evidence?

A. Yes.

Q. Thank you. The column on level 6. I'll get you to have a look firstly at an uncropped photograph of the one that you have referred to a moment ago.

A. Yes.

5 Q. And it's BUI.COATSWORTH0001F.8. So that's a slightly fuller photo?

A. Yes.

Q. Now in terms of the section of column that can be seen and the damage that's shown on it, how does that fit in with your recollection of the column you saw in February?

10 A. The column I saw in February was – had worse damage on it, more damage sorry.

Q. So more cracks or wider cracks?

A. More cracks and wider cracks on three main parts of it.

Q. And what about the area below that we can't see in that photograph?

15 A. Yes there was one other major crack. There was three major cracks that I saw, it's probably about roughly about 800mm off the floor.

Q. And when you said three major cracks, can we see two of them in that?

A. Yes you can.

20 Q. So those two that we can see, your recollection is they were wider when you saw it in February?

A. That is correct.

25 Q. I just want to show you another photograph, that's a photograph taken nearer the time when you would have been looking, and it's BUI.MAD249.0454.1. Sir this is a photo taken by a Mr Higgins whose evidence will be heard next week. Now leaving aside the, I think someone's drawn on the photograph on the hard copy and we haven't got the original electronically.

A. Yes.

30 Q. Can you say anything about the damage that we can see or the cracks in the one on the left first?

A. The cracks are still the same just the other ones that were added, and which you probably can't see, were the hairline cracks that were every 200, going on vertically up the column.

Q. That we can't see any in either photograph?

A. No, or they were pretty fine so that they were there.

Q. But in terms of the cracks that we can see and that are marked on that photograph on the left, do they – are they consistent with your recollection of the cracking?

5 A. Yes, yes they are, that's what stood out when I walked through the foyer.

Q. All right, and is that photograph more consistent with what you saw?

A. Yes pretty much, yep.

10 Q. The photograph on the right, you can see the cracks at the top of the column but then if you look along the area where the column attaches to the building.

A. Yes.

Q. You can see some damage there. Did you notice anything in that area or not?

15 A. I could say now, I can see it now and I can recollect it, seeing some damage but at the time when we were doing the statement no I couldn't remember it to be honest.

20 Q. You can bring up please WIT.PAGAN.0001.45, and if we focus on the top left please. Now I've already asked you about any area where the column connected to the building and you said you didn't notice it.

A. Yes.

Q. You can see some discolouration on the ceiling tiles there.

A. Yes.

Q. And you talked about that in the evidence I read?

25 A. Yes.

Q. Is that – what can you say about what you can see in there in that photograph in terms of the discolouration that you recall?

A. To me that was a sign of water damage.

Q. Right, is that similar to what you saw or not?

30 A. No, not similar to what I saw.

Q. How can you, how was it different?

A. Mine was more coming out wider towards the foyer, it wasn't as widespread to what I saw.

Q. Okay.

A. What I can remember.

Q. And you said that it concerned you when you saw this discolouration marking?

A. Yes.

5 Q. Because it indicated water had got into the building above that area presumably?

A. That's correct and the only other concern I had that may have been, is unless it was a sprinkler system or it could have been a leak or something else, that was the only other term it could be if it wasn't  
10 related to the exposure to the elements.

**COMMISSION ADJOURNS: 3.38 PM**

**COMMISSION RESUMES: 3.54 PM****CROSS-EXAMINATION: MR LAING**

Q. Mr Bainbridge I just would like to ask you a couple of questions about the spandrel panel that you observed. Could I have up on the screen  
5 0001.5 please. Now you've identified that spandrel panel with the notation 3 is that correct?

A. Yes, that's correct.

Q. And am I also correct in observing that you have a gap between the spandrel panel and the shear wall by the lift there?

10 A. That's correct.

Q. Do you know what size that gap was?

A. I'm trying to think back now, probably about, it would have been at least 50mm to 75mm.

Q. 50 to 75mm?

15 A. Yes.

Q. Yes. Thank you very much.

**CROSS-EXAMINATION: MESSRS RENNIE AND WALLACE – NIL****QUESTIONS FROM COMMISSIONER FENWICK:**

Q. So the cracks in the column, could they have been do you think  
20 generated by the spandrel pushing against the column?

A. In my opinion probably no, I would think more it's, there was significant movement in compression over the whole column for it to, to do the result it did with the consistency of the cracks.

**QUESTIONS FROM COMMISSIONER CARTER:**

25 Q. I just wondered if there was a photograph that ended in 0454.1. Could we just have a look at that again. It was a photograph of the column relationship to the side walls. The photograph that I'm interested in is the one on the left-hand side. It appears, you can see the line of the wall moving away from the column deep, deep into the photo but there

5

A. Yeah, it's an internal corner. So that would be, what I can relate to the plan that would be what I see there and that's the other existing wall coming up towards Madras Street which you've got on your left-hand side there.

10

Q. Yes, I just think there's still a question mark in my mind as to whether that photograph is of the column that you've made a mark as column number 1. Perhaps someone might be able to shed some light on that.

15 **JUSTICE COOPER:**

You mean Commissioner Carter the one he's marked "1" on the –

**COMMISSIONER CARTER:**

Yes.

20

**JUSTICE COOPER:**

– plan attached to his statement.

**FURTHER QUESTIONS FROM COMMISSIONER CARTER:**

25 Q. Yes. I can't quite relate the wall running along the line of the spandrel number 3 to the wall running back to the lift wall. You see those two walls are at right angles and that photograph does not seem to be consistent with that geometry. However, it may not be fair to ask you, you've been shown this photograph as a photograph of that column and

30

–  
A. Yeah, I, I would agree the floor plan doesn't match existing, what is shown in the picture but as a, one of the witnesses stated earlier sometimes it wasn't built to spec or to, related to the floor plan.

- Q. Except that there has to be an opening to walk through to the lift. So there has to be, it has to be free on that near side of the photograph. But perhaps we can at least say that there is a column with a lot of cracks in it. Just where it's located may, may be provided by some other person familiar with this photograph.
- 5

**JUSTICE COOPER:**

Well just -

10 **COMMISSIONER CARTER:**

I don't think we can get any more clarity about that Your Honour.

**QUESTIONS FROM JUSTICE COOPER:**

- Q. Well Mr Bainbridge just following up on that regardless of what is shown in the photograph I take it that the evidence that you've given which was read by Mr Zarifeh does relate to a column in the position marked 1 on the plan attached to your statement.
- 15
- A. That is correct.

**WITNESS EXCUSED**



**JUSTICE COOPER:**

Mr Zarifeh is the person who took that photograph going to be called?

**MR ZARIFEH:**

5 Yes Sir.

**JUSTICE COOPER:**

Right thank you.

10 **MR ZARIFEH:**

In fact there's, there's at least two if not three people have taken photos of the same, presumably the same column so they will be giving evidence, certainly two of them will.

15 **BRIEF OF EVIDENCE OF MARIE-CLAIRE BREHAUT ADMITTED AS  
READ. BRIEF HAS BEEN DISTRIBUTED AND IS ON WEBSITE**

**MR ZARIFEH CALLS****PETER JAMES BROWN (SWORN)**

Q. Mr Brown, is your full name Peter James Brown?

A. That is correct.

5 Q. You reside in Rangiora and you worked as a technical engineer for CTV from 1998 until your retirement in December 2010?

A. That's correct.

Q. You have in front of you a brief of evidence that's signed by you?

A. That's right.

10 Q. Can I ask you please to read that and pause when we come to refer to photographs or, or plans, starting at paragraph 2 please.

A. Although I am retired I occasionally return to work on a temporary basis as technical advisor to CTV. This role involves establishing CTV transmission at the new Wairakei Road premises. I have also liaised with families of CTV staff members who lost their lives in the 15 22 February earthquake as well as CTV staff who survived the collapse. In the weeks following the earthquake I kept in contact with as many as possible of these and made sure there was support in place for them. I still meet with families who continue to need my support.

20

CTV moved into CTV building at 249 Madras Street in 2002. CTV occupied levels 1 and 2 of the building. I spent most of my time on level 2 but also frequented level 1 whenever there were faults with the equipment, maintenance issues and whenever equipment needed to be 25 installed.

25

In or around 2008 a fitness centre occupied level 5 of the building. You could feel the building shake whenever people were using the fitness equipment. The movement that we felt was the only concern I'd had in the building before the December the 4<sup>th</sup> earthquake. After 30 December 4<sup>th</sup> earthquake cracks had appeared on levels 1 and 2. I have prepared a floor plan of level 1 and level 2.

30

Q. And that will be brought up on the screen in a moment. There they are.

A. Yep.

Q. So A is level 1 and B is level 2?

A. That's correct.

Q. Carry on reading – the positions of the rooms.

A. The positions of the rooms and the general walls have not been drawn  
 5 to scale and their placement is approximate only. The issues of concern  
 that I refer to in my evidence are marked on this plan. I took a number  
 of photographs of the damage for insurance purposes. These are  
 attached and marked C. The following is a description of each  
 photograph and where on the plan the damage is marked.  
 10 Photograph 1, do you want me to wait or?

1604

Q. Just carry on it'll come up in a moment.

A. Okay. Photograph 1 shows a crack running alongside the pillar on the  
 western wall of level 2. This crack is marked as 1 on the plan of Level 2  
 15 B.

Q. Right we'll look at the photograph first. So the crack that you're referring  
 to can we see that to the left of the column?

A. Yes.

Q. And it's following the, in the joint between the column and the wall.

20 A. That's correct.

Q. So it's in the plaster.

A. Yes and there was another one in the plaster going across.

Q. Perhaps use your mouse and just indicate where.

A. Oh sorry. There's one coming down through there and there's one  
 25 straight down that pillar right....

Q. And that you've marked on the plan, if we can just go back to that, on  
 plan B it's marked 1. It's in the top middle looking at plan B.

A. That's right the middle of the western wall.

Q. Right.

30 A. I understand from colleagues that I have since spoken to that this crack  
 slowly increased in size with each large aftershock. Photographs 2 and  
 3 show a horizontal crack that appeared along the ceiling in the north-  
 eastern end of the building. It was approximately two metres in length  
 and four millimetres in width. This crack is marked as 2 and 3 on the

Plan B. It appeared to me as though the ceiling had been forced down because you could see the plaster board had compressed by about four millimetres. I understood this was a result of the movement of the building during the earthquake forcing the ceiling up and down.

5 Q. I'll just get you to refer to the plan firstly, 2 and 3.

A. 2 and 3 and the crack right along the centre of the plasterboard.

Q. So you're indicating the crack along the, at the top of the ceiling?

A. Yes, being forced down.

Q. Correct? And we'll just get 3 brought up too.

10 A. That's 3.

### **JUSTICE COOPER:**

That was 3. So what we missed out was photo 2. No that's photo 4. What we want is photo 2 which will have the suffix 1.10.

### **15 EXAMINATION CONTINUES: MR ZARIFEH**

Q. Can you mark on that with the mouse where that crack is shown on that photograph please.

A. On the picture?

Q. Yes. So again along the top of the wall where it meets the ceiling.

20 A. There's two photos of basically the same thing.

Q. All right paragraph 12.

A. Photographs 4-6 show two vertical cracks that appeared in an internal wall in the north-eastern end of the building. I have marked them as 4-6 on the Plan B.

25 Q. Just indicate 4-6 on Plan B please.

A. Over there.

Q. So it's an internal wall?

A. Internal wall.

30 Q. And perhaps we can look at photograph, which one's the best, 4. Can we see it there?

A. Do you want me to move it?

Q. Yes please.

A. Down there just above the door, both sides.

Q. So the vertical cracks at the outer edges of the doorway.

A. Yes.

Q. Thank you paragraph 13.

5 A. Photographs 7-11 show the mess on Level 2 resulting from the earthquake. The area where each photograph was taken has been marked accordingly on the Plan B.

Q. All right and so we can see you've just taken us through 7, 8, just on the plan, just deal with the plan first.

A. Oh sorry, do you want me to do that?

10 Q. 7-11, 7, 8.

A. 7, 8 and then 9-11.

Q. And we'll run through those photographs quickly if we can. Right well they're 8 and 9 actually. Do they show the disarray after the –

A. That's the disarray.

15 Q. And the next ones, 10 and 11. Paragraph 14 please.

A. Photograph 12 shows two cracks in the north wall near the stair well on Level 2. One ran horizontally up the gib board under the ceiling about 600 millimetres in length. The other ran vertically from the ceiling about a metre in length and joined the horizontal crack at the ceiling. I have  
20 marked this crack as 12 on the Plan B.

Q. Okay we'll get 12 brought up. Perhaps indicate on the plan first.

A. Over here.

Q. So that's an internal wall.

A. Yes in the kitchen.

25 Q. And on the photograph.

A. Running right along the top and down, down here, mmm. Go on?

Q. Paragraph 15.

A. Photograph 13 shows two cracks in the southwest corner of the building on Level 2. No measurements were taken but with every aftershock  
30 more and more daylight could be seen coming through the crack nearest to the pillar. I have marked these cracks as 13 on the Plan B.

Q. All right so looking at the plan on this south-western corner.

A. Yep that one there.

Q. And on the photograph.

A. Here (inaudible 16.13.06) That opened up over a period of time (inaudible 16.13.11).

Q. And the other crack that we can see?

A. That was a plaster crack through the side there.

5 Q. Did that change, the second one?

A. Um, I'm not sure about that one.

Q. Paragraph 16.

A. Areas of cracked glass developed along the eastern wall. These are marked 14 on the Plan B.

10 Q. On the eastern wall.

A. Eastern wall. The cracks got worse with each large aftershock so we put gaffa tape across them to help keep the window together in case it shattered. Each of these windows was replaced as soon as a glazier became available. I took photographs of the replacement of one of the  
15 windows. These photographs are attached and marked D. The replaced window is marked as 14a on the Plan B.

Q. And that's nearest the south-eastern corner.

A. Yep.

1614

20 Q. And we'll run through these photos here –

A. Photos here.

Q. – in D, starting with 0001.22?

#### **WITNESS REFERRED TO PHOTOS**

Q. Is that looking north?

25 A. That's looking –

Q. North-east?

A. North yes. A lot of these show the beams going through which...

Q. Sorry the?

A. Beams going through the span – by the gaps in the, in a moment I  
30 could, next pictures.

#### **JUSTICE COOPER:**

Q. St John's the church that we can see there?

A. That's right, yeah, that's right.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. Is that just part of the spandrel panel that the, one of the workman's standing on?

A. That's right.

5 Q. And just stopping there, no the next one –

**JUSTICE COOPER:**

It is 1.34 Mr Zarifeh, is that the one you want?

**EXAMINATION CONTINUES: MR ZARIFEH**

10 Q. I was just going to point out the obvious, there's a column we can see?

A. Yes.

Q. And the spandrel panel going up to the column, or abutting the column?

A. Yes that's the edge of the building there.

Q. Yes, the workman's standing on the spandrel column?

15 A. Yes.

Q. This one?

A. You can see the beams.

Q. We'll go back to that one. Sorry you were saying?

A. Can I comment now?

20 Q. Yes?

A. Just the, just see the beams going through the columns, it may have been of interest I just thought.

Q. And can you make any comment about where the beams meet the column as shown in that one, that particular one that we can see to the right of the two workmen? What's your recollection of the gap?

25

A. It wasn't very big but I wouldn't have, wouldn't have any idea millimetre-wise.

Q. Do you recall a gap?

A. Um, there was on the far end with the previous photo but I wasn't too sure about these ones in the middle.

30

**JUSTICE COOPER:**

Just record that that exchange was about photograph 1.36.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. There is one, two more photographs we haven't looked at. There's 1.38, 37/38. Carrying on please from paragraph 17?

5 A. There were other areas of damage that were not photographed. A crack had appeared between one of the pillars and the wall at the north-west end of level 2. I have marked this as 15 on the plan B. The crack ran from floor to ceiling and daylight could be seen through it. It would have been at least 25 millimetres wide after the September earthquake and seemed to increase slightly with each large aftershock.

10 Q. I will just get plan B brought up again.

**WITNESS REFERRED TO PLAN B**

Q. So 15 in the north-west corner?

A. Fifteen at north-west corner and, yeah.

Q. So just on that crack you said it ran from floor to ceiling?

15 A. Yes.

Q. And how much of that crack could you see daylight through?

A. We could see daylight through it all.

Q. Through the whole crack?

20 A. Yeah, yeah. It was only about 25 millimetres you could've almost put your hand in it, that's how I kind of judged. I didn't actually measure it as such.

Q. And is that how it was, you say 25 millimetres wide after the 4 September earthquake?

A. Yeah.

25 Q. And you said it seemed to increase slightly?

A. Yes others had told me later, that's all, that it increased. I noticed between the time, for a time I left it had increased slightly with the other aftershocks.

Q. So that's between 4 September and?

30 A. December.

Q. December when you left?

A. Mmm.

Q. Thank you, 19?



A. A crack appeared along the south wall of level 1. I have marked its approximate position as 1 on the plan for level 1 A. This crack ran vertically from the ceiling nearly to the floor and was about two metres in length.

5 Q. Just pause there and we'll get A brought up again.

**WITNESS REFERRED TO A**

Q. So 1 is?

A. Is the mouse there, that's number 1.

Q. So on the south side?

10 A. Yes.

Q. And can you be any more specific about where it was?

A. It was on the, um, in the room they call the master control room. It was on the, um, in the plaster on the what do you call that wall the?

Q. Southern wall?

15 A. Yeah southern, yeah the wall that took the strength, you know the?

Q. Shear wall?

A. The shear wall by the fire escape yeah.

Q. So it was a crack in that wall or in the plaster that covered that wall?

A. Ah, it was in the plaster but, no, it was also on the outside and I think I  
20 mentioned further on, do you want to wait till then or do you want me to say now?

Q. No I just wanted you to describe what you saw in relation to this paragraph, so you were looking at the inside?

A. Yes.

25 Q. And it was a crack in the plaster that the lining of the southern wall?

A. Yes, B, what you couldn't tell is how deep it actually was.

Q. Carry on please, paragraph 20?

A. Sometime after the 4 September earthquake cracks appeared along the northern wall in the carpark on level 1. These were along the join where  
30 the concrete blocks met the ceiling. They were approximately two metres in length. I am not sure what caused the cracks but they may have been a result of aftershocks. I have marked their approximate position as 2 on plan A. The cracks appeared to get worse over time.

Q. Again on A you've got two marked up north near the north-west corner?

A. Yep.

Q. That's the block wall –

A. Yeah.

Q. – that formed that north wall.

5 A. North wall yes.

Q. Thank you, 21?

A. I did not notice any other damage. An inspection of the building was carried out after the 4 September earthquake. Reference to this is made in an email sent out to all staff on the 9<sup>th</sup> of September from  
10 Murray Wood, the managing director. This is attached and marked E.

1624

Q. We'll get that brought up and I'll get you to read it. Get the body of it highlighted.

A. Okay. The email included the following message, "We've just had an  
15 internal inspection of the building from three engineers and they have found that this building is in good condition and is deemed habitable." That was on the 7<sup>th</sup> of September.

Q. And it went on to say the only damage they could find was surface damage and has no effect on the stability of the structure. Correct?

20 A. Yes.

#### **JUSTICE COOPER:**

Q. He took that on as no, is that the way you received it, he's written on effect.

25 A. Yeah.

Q. But you took that as no effect did you?

A. Yes.

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

Q. "And there is advice in the media that there will be more aftershocks so  
30 we need to be mindful that the situation may change at any time but on the recommendations of the experts from the agencies involved, business as usual at CTV." Correct.

A. That's correct.

Q. So as you said that was from the manager, Murray Wood, on the 9<sup>th</sup> of September?

A. Ah –

Q. Were you aware of that inspection that he was referring to?

5 A. I never saw the people themselves, no. But I was involved with a lot of other things at that time so.

Q. We're going to hear evidence from three building inspectors or similar positions from the Council who inspected the CTV building on the 7<sup>th</sup> of September.

10 A. Yeah.

Q. Were you aware of that inspection at the time?

A. No.

Q. Thank you, paragraph 23.

A. Sometime after this initial inspection the building was inspected again. I  
15 cannot remember exactly when this inspection took place but it was  
sometime late in September. I think it was an inspection arranged by  
the building manager because an insurance man turned up later in the  
day to take measurements and notes. I walked around with the  
engineer, David Coatsworth, and showed him the cracks we had found.  
20 He was especially interested in the crack along the south wall of level 1,  
marked "1" on the plan A.

Q. That was the one on the south wall, to the exterior of the south wall?

A. Yes, yeah. He came in the following day to inspect inside the ceiling  
cavity to see how far the crack ran. He told me that it did not run as far  
25 as the internal beams. I took this to mean that it was not structural. I  
remember that he took a number of photographs as he went around.

Q. Right, and just in relation to that crack you said you were going to add something to that.

A. Oh, just that he had a concern about the crack and his concern was  
30 whether we would have to take the plaster off to see how far it had  
gone.

Q. Right, and he discussed that with you?

A. That was one of the options and he seemed a bit happier when he'd got  
up in the roof and seen it hadn't gone any further (inaudible 16:27:46).

Q. Right, so you mentioned him coming back the following day to do that.

A. I think, I'm sure he is, the following day it was, he came back the second time anyway.

Q. And were you present with him the second time?

5 A. Yes, mmm.

Q. And that's when he told you about it not going as far as the internal beam?

A. Yes, mmm.

10 Q. You mentioned that that same crack, that there was a corresponding crack on the outside?

A. Yes, yeah.

Q. Just tell us about that, what did you see?

15 A. There was a crack in the plaster again on the outside wall and again the same issue is that you could see in that how far it went without taking the plaster off, it was an unknown quantity.

Q. And when you say plaster, was there a coating on top of the concrete?

A. Yeah.

Q. So it was the plaster type coating on top of the exterior concrete?

A. Yeah.

20 Q. How far up could you see this crack extending?

A. Inside?

Q. Outside.

A. Oh, I don't know really, probably round about the same as the inside really, it was – be a metre or a couple of metres probably.

25 Q. Just I want to ask you a bit more about that inspection that day. How long do you think you were involved with Mr Coatsworth?

30 A. Probably an hour or so. He was there longer than that but I was called away to do other things at various times and I went and – and more just to make sure he was seeing all the things that we'd seen, that was the main – yeah.

Q. And had staff, we're going to hear that this visit was the 29<sup>th</sup> of September. Does that –

A. Yes, be roundabout that time, yes.

Q. Had staff spoken to you between the 4<sup>th</sup> of September and the 29<sup>th</sup> about concerns they had about observed damage?

A. Everyone was concerned, yeah. I think we all were in the sense that we'd never been through an earthquake like that before, so.

5 Q. Right, had you had any concerns expressed to you by staff about movement of the building in aftershocks?

A. A lot of the staff were, I wouldn't say terrified but some of the women were quite, yeah, were terrified's probably too strong a word but reaching that point where they would run when there was say around a  
10 four and a half, five aftershock, you know.

Q. And did any of them express any concerns to you about the building moving more after the September earthquake?

A. Ah, yes with vehicles going past, I mention that a bit further on but yes.

15 Q. Did you pass any of those concerns on to Mr Coatsworth when he – when you went with him in that inspection?

A. I can't remember that part of it.

Q. Well you were showing him the damage that had been observed by yourself and others.

A. Yes.

20 Q. You can't recall if you spoke to him any further about concerns?

A. No I can only remember walking around and – we met him actually in the lift well at one point, where there was a lot of cracking on the walls there too, but looked at surface stuff as well in there and the stairwell you know by the lift.

25 Q. And you didn't accompany him on the other floors, say the third or fourth floors or top floors?

A. No, only the floors that concerned us.

Q. Can I get you to carry on please. I think you were on 24?

30 A. We all, but mainly senior staff, talked about the damage we saw, especially when we were in areas where the damage was clearly visible. The room in the southwest corner of level 2 was one of these areas; the cracks marked as one and 13 were common topics of conversation in B. We were all quite concerned about being able to see outside through the gaps in the wall.

Q. This is the west wall?

A. Yes. That's right. I did not notice movement from people walking around the floor. However, I thought that the building moved more easily whenever trucks went past. It is hard to compare this movement with what it was like before September the 4<sup>th</sup>, because we had a lot more trucks going past as a result of demolitions that were going round about, going round the place. They began to demolish the building next to the CTV building in about October 2010. The building had been used as a car park. It was approximately eight metres in height. I do not know why they were demolishing it. They used excavators, large trucks and jack hammers. I think sometime early in the demolition a ball and chain swinging from a crane was used to knock the walls down. The CTV building was quite sensitive and would shudder and shake a lot as a result of the digging and falling masonry next door. This caused a lot of anxiety among the staff. I was told that the building was designed to move between the lift shaft and the opposite part on the south wall. I think I was told this by David Coatsworth, during his inspection of the building after the 4 September earthquake. I repeated this message to CTV staff. We all assumed that this was why the building moved with the demolition next door.

Q. Do you recall discussing the demolition with Mr Coatsworth or not?

A. Not so much the demolition but we did discuss why, how the building reacted in the earthquake and that – he was saying that's why the shear wall and the lift, how it was designed.

Q. Right, and obviously in that conversation you're talking about the building moving and the earthquakes or aftershocks.

1634

A. Yes, mmm.

Q. You don't recall telling him of your observations?

A. Not really. I can't remember that. The only other thing I gave him was the floor plans. We had floor plans of our level 1 and level 2.

Q. And they were architectural plans weren't they, not structural?

A. Yeah, they were only architectural layout plans of the, yep.

Q. And when did you give him those?

A. Would have been on that day he was there, yeah, or the day after, mmm.

Q. What I was going to say to you is, had there been any arrangement prior to that day for you to look for those plans or new plans?

5 A. No.

Q. So you didn't know he was coming till the day?

A. No we just, I think I might have volunteered the plans because they didn't have anything that they were actually looking at, you know.

10 Q. Right well I was going to ask you how did the subject of the plans come up?

A. I can't remember if it was him or the insurance bloke that asked me about them, someone did, it triggered it off and then everybody wanted a copy so.

15 Q. Right so you can't recall if it was Mr Coatsworth or, there was it Leonard Pagan, a quantity surveyor?

**JUSTICE COOPER:**

What name?

20 **MR ZARIFEH:**

Pagan. P-A-G-A-N. Pagan.

**EXAMINATION CONTINUES: MR ZARIFEH**

Q. You can't recall the names other than Mr Coatsworth?

A. Did he come, David Coatsworth, there's two there at one point, yeah.

25 Q. All right but you can't recall who raised it?

A. No, no.

Q. And was there any discussion about structural plans?

A. Not, not when I was there, no.

Q. John Drew was the building manager at that time.

30 A. That's right, yes.

Q. Was he present?

A. Not sure he was present in the first part but I know when we were in the stairwell discussion he was present then.

Q. You were in the stairwell discussing what?

A. Well the cracks. There was a crack on this wall here that I pointed out there but in the stairwell there was cracks showing around the well itself and one of the things, and the crack that I was pointing out there continued through but they seemed to think it was the way the floor was poured that caused that rather than being any actual damage itself.

5

Q. Who seemed to think that?

A. I think it was David Coatsworth at the time.

Q. When you were discussing the plans was Mr Drew there?

10 A. I think he may have been, yes.

Q. Now where were we, paragraph 29.

A. I was able to distinguish between the movement felt in the building by the demolition and from aftershock. Aftershocks tended to have a wave rolling motion whereas the demolition was a shuddering vibrating motion. However, I would not be surprised if some smaller aftershocks were masked by the movement already felt in the building during the demolition. I retired at the end of December, in December 2010. I did not visit the building again.

15

Q. Thank you. I just wanted to ask you, you mentioned Mr Drew was the building manager. When did he become the building manager?

20

A. I think probably early 2010/2009, somewhere round about there, mmm.

Q. And after he became the building manager did you have any reason to go up to the upper floors that weren't CTV?

A. No, before that I did at times, yes.

25 Q. I was wondering if you can help us out. You were probably sitting in Court when there was discussion about the photograph of the pillar on level 6.

A. Right.

Q. Did you ever go into that area?

30 A. Yes about, about a couple of years before I suppose. There was, for nearly a year there was a severe leak in the roof up around the lift well and before John Drew was manager, because we had naming rights to the building everyone seemed to come to us to get things fixed and we used to have to relay this down to Mr Russell Robertson in Alexandra



and try and get some decision to get things fixed but the water was a big problem up there and there was one severe storm which actually caused a lot of water on the floor and through all the ceiling and everything around there, yeah.

5 Q. When was that?

A. I'm trying to remember now.

Q. Roughly what year?

A. Must have been around 2007/2008, roundabout there. Then they had the whole roof redone and all the ceiling around the lift well and that  
10 seemed to fix it but it took a, it took probably nearly a year to get some really good action on it.

Q. Do you recall the photograph of that area on the 6<sup>th</sup> floor which appears to show some staining on the tiles?

A. Yes.

15 Q. Do you know if that was there before the September 2010 earthquake?

A. Well unless they'd fixed it from the time of the rain, there was stain on all the tiles up there, there had been, mmm.

Q. Had you been up there, well did you go up there after the September earthquake to that level?

20 A. Yeah I did go up there but I can't remember if I looked at them.

Q. All right.

A. Sorry.

Q. But certainly before September –

A. Yes.

25 Q. – there was staining on some of the tiles on that level.

A. Mmm, yes.

#### **CROSS-EXAMINATION: MR LAING – NIL**

#### **CROSS-EXAMINATION: MR RENNIE**

Q. Mr Brown you have the two plans in front of you.

30 A. Yes, yep.

- Q. Talking first about level 1, we've learned that there was a stairwell which rose from close to the south-eastern corner and went up to level 2. Do you recall that?
- A. Correct, yes.
- 5 Q. That's not shown on your plan. Would it fall in the area just above the entrance point that you've shown?
- A. Yes. It began just at the corner of that diagonal.
- Q. Yes.
- A. On level 1 and it would have had an equal rise, I suppose you can say
- 10 half way between the floor is equal rise up and then an equal rise to the, the right.
- Q. Turn to the right and came out on level 2.
- A. 2, that's right.
- Q. We've been told that somewhere in the area of level 2 was the master
- 15 control room.
- A. Level 1.
- Q. Well we get into difficulties.
- A. I see.
- Q. The one above the ground, what I'm calling level 2, had the master
- 20 control room on it.
- A. No level 1 had the master control room. That was the ground floor.
- Q. On the ground floor.
- A. Yes.
- Q. So at the top of the stairs at the second level.
- 25 A. Yes.
- Q. Which is your second plan.
- A. Yes.
- Q. Is that – the stairs come out in the open area to the left of the fire escape area that you've drawn.
- 30 A. Yes I've, looking at that diagram I've probably missed a room off but only, I only say that because the person in that room had the door, fire escape door in there.
- Q. I'm not greatly concerned about –
- A. Sorry.

Q. – whether you've got the floors separations entirely accurate.

A. Yeah.

Q. Was there any heavy equipment in the vicinity of the top of the stairs?

A. No, no there was spare equipment in the room in the, it would be  
5 southeast corner but nothing of any major, nothing you'd call, you  
couldn't carry, put it like that.

Q. Do you recall giving any attention to floor loadings on level 2 in the time  
that you were with CTV?

A. No.

10 Q. Now you are described as a technical engineer. I take it your  
qualifications are in broadcasting communications.

A. Yeah, telecommunications, NZCE.

### **CROSS-EXAMINATION: MR WALLACE**

15 Q. Mr Brown just dealing firstly with the email that you refer to at your  
paragraph 22.

A. Yes.

Q. We saw it up on screen before and it seemed to have the date of the  
7<sup>th</sup> of September on it, 2010.

A. That's correct, yeah.

20 Q. Did you receive that at a private email address at home or was that a  
work email address that you received it that?

A. That particular one, when the building went down we lost everything.  
One of our staff used to work three days, three and a half days a week I  
think it was altogether and her emails were sent home from the CTV  
25 address and I was able, they were given to me when we got CTV going  
again and that was the email that all staff received on September  
the 7<sup>th</sup>. I was able to re-collect that from the, from the system.

1644

30 Q. Yes, all right, so did you personally receive that email as well on the 7<sup>th</sup>  
of September?

A. That's of, no I was not at CTV then, oh sorry yes I was, yes I did sorry,  
yeah, I'm with you.

Q. And so did you receive it at work at the CTV building or at your private email.

A. Yeah, would have been at work.

5 Q. So on the 7<sup>th</sup> of September when you received that email CTV staff were already working in the building.

A. Um, yes some of us were yes. Not everybody was, if I can put it like that, yeah.

10 Q. Now you've shown us and produced to the Commission various photographs that you've taken. If I can just ask, firstly, about the photographs that you refer to at paragraph 16 which illustrated the work being done by the glaziers of cracked glass.

A. Yes.

Q. Can you recall the date, even if it's a day or two approximate, when the glaziers did that work?

15 A. It's probably getting near October I think. It took them, would have been there or near the end of September because it took the, there were a lot of people wanting glazing done at the time that's why tape was put on the window to try and (inaudible 16.45.44).

20 Q. Yes and, in fact, your paragraph indicates that this was a developing problem with the cracks in the glass, is that right, from after the earthquake until that glazing work was done some weeks after the earthquake these cracks were getting worse all the time, is that right?

A. Yep that's correct.

25 Q. So those photographs were taken something like late September/early October.

A. Yeah.

Q. So all of the photographs that you've taken were not taken on the same day then, you've produced?

30 A. No. The glazier ones were but the rest were, the reason I hadn't taken any of the other cracks at the time when we arrived in the building we had to put all our gear back where it was and not knowing what was broken we thought the best quickest way would be to take photographs of the mess so to speak and if there was anything broken we had photographs to show what had happened. We were just fortunate that

we got the camera back out of the building. It was broken but the SD card was still with it.

Q. So when did you retrieve that camera?

5 A. Would have been after the February quake the police, a lot of belongings came out of the building and I was able to get hold of that one there.

10 Q. So if we can just turn to your paragraph 10 where you first introduced photographs and that is a photograph that we've seen and you described as showing a crack running alongside a pillar on the western wall of Level 2. Can you tell us what date you took that photograph? If you need to see the photograph to refresh your memory just tell us and the photograph can be brought up.

15 A. Yes, no I took all those photographs of the mess and the wall were taken at the same time. The only ones that were different were the glass, those there. These were all taken at the same time as the –

Q. Same time as ?

A. As all the others of the mess. The only ones that have been different in timing were the, I'm pretty sure, were the glazier ones.

20 Q. And can you give us a date that you think you took these photographs then?

A. It's probably in that following week after the September 4. Possibly even the following two or three days after.

Q. So you say, without being precise as to exactly what day, it was within a week of the September 4 earthquake.

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

30 Q. Now just at the end of that paragraph 10 you mention that you understand from colleagues that you've since spoken to that this crack that was illustrated by photograph 1 slowly increased in size with each large aftershock. Are you referring then to colleagues telling you that after you left CTV in December 2010 it continued to grow in size.

A. Grow in size.

**CROSS-EXAMINATION: MR SHAMY – NIL**

**QUESTIONS FROM COMMISSIONER FENWICK:**

Q. Yes you've got a wealth of information there which is very interesting. I'm particularly interested in this crack you've marked 1 on A, the first  
 5 floor, and possibly might need the view of the second floor as well. Now that crack, was that plaster on the actual structural wall or was it alongside the structural wall?

A. It was actually on that structural wall.

Q. The other thing I'm very keen to find out is exactly where the stairs  
 10 came up because they obviously went through a hole in the floor that must have been cut out for them. So can you tell me roughly where that will have stopped. Presumably it will have stopped somewhere on the eastmost section of the southern wall, somewhere opposite that.

A. (inaudible 16.50.53) There's one, if you look on Plan B there's one  
 15 more room to go on the end where I've got the mouse there which I've missed off and the stairwell came up in there.

Q. Came up into that room?

A. No just come up beside that room. There was one more room just in  
 20 there and then there was the stairwell come up through here just beside the room here.

**JUSTICE COOPER:**

This might help if we have a look at the plan attached to Ms Spencer's evidence which is WIT.SPENCER.0001.6 or perhaps, that's Level 2, did you  
 25 want Level 1?

**COMMISSIONER FENWICK:**

It doesn't matter, Level 2 is fine. That goes through the floor on Level 2.

**JUSTICE COOPER:**

And we were told by that witness that the floor came up to Level 2 in the narrow rectangular space under the last of the rooms marked 'office'.

A. That's right.

Q. So between that room and the room marked technical.

A. That's correct. But I have a, looking at that diagram, the fire escape exit point was at the right-hand, if we were facing south in that room, it was on the right-hand side of the room. So there was a –

5 Q. That's the office room?

A. Yes that's right. So that that drawing in a way that office probably went right past that shear wall part there if we're gonna be accurate because the exit itself was in the right-hand corner of that office if you're looking at the, looking south.

10

**QUESTIONS FROM COMMISSIONER FENWICK CONTINUE:**

Q. So that the stairs would have come up and they would have probably stopped would they round about the beginning of that structural wall, the south part of the structural wall. So presumably there was landing and  
15 you would have turned right to walk through that landing into the building?

A. Yes they came up there and you went left or right in the passageway, that's correct.

Q. Good that's very interesting thank you.

20

**QUESTIONS FROM COMMISSIONER CARTER – NIL**

1654

**QUESTIONS FROM JUSTICE COOPER:**

25 Q. Can I just ask you about the photos that you took showing the mess after the September earthquake which I think are photos 7 through to 11 and they are marked on your plan B and they are all, apart from number 7 the others are all on the northern side but at the western end and I am just wondering whether was that just the part of the building  
30 where there was shelving and office furniture likely to fall or why are there no pictures showing equivalent damage in other parts of the building?

A. Um, I think I probably have more photos that I haven't brought in from memory.

Q. I see, so it was not –

5 A. This was the larger damage to stuff, there was on the south side there were offices with, you know, files that had fallen off desks and just things, nothing of any, um, like there wasn't monitors fallen off desks or anything like that. It depended which way things were facing. It seemed to be that anything that was going east–west to a degree, that's not absolutely true but a lot of times anything that was going east–west  
10 was all right but anything that was facing north–south fell over, that was this one. It would be a general thing, I wouldn't say it was absolute.

Q. Thank you and may I say I have heard from a number of quarters just how helpful you have been to the people who worked with CTV after the earthquake and good on you for that.

15 A. Thank you for all you're doing, I appreciate it.

**WITNESS EXCUSED**



**MR ZARIFEH:**

Sir there are two further witnesses in this post-September group but they are witnesses whose evidence it's been agreed could be accepted and not have to be read, taken as read. Malcolm Harris is one of those witnesses, he was a sales manager at CTV and talks about, in the main about cracks. And also Simon Thomas who was also an account manager at CTV at the relevant time. The only point I was going to make unless Your Honour wanted them read out was that Simon Thomas produces, or refers to two photographs and a very short video clip and I thought that I could at least get the photographs brought up so that you could see those. They are WIT.THOMAS.001.7 and .8. They were taken on his cellphone and they're of the demolition of the building next door to CTV. He deals with it in paragraphs 13 and 14 of his brief.

**15 THE COMMISSION REFERRED TO PHOTOGRAPHS****MR ZARIFEH:**

That is the first photograph, and the second one, and he says he took them to show how close the demolition was next to CTV. And at paragraph 14, as I say, he refers to taking a, some video footage on his cellphone which we've got, he provided to the Royal Commission and I'll get that played now.

**THE COMMISSION REFERRED TO CELLPHONE VIDEO FOOTAGE****25 JUSTICE COOPER:**

Thank you, as with the evidence of Marie-Claire Brehaut referred to earlier in the afternoon, the statements of Malcolm Harris and Simon Thomas will be read by the Commissioners. Anyone else who wishes to read them can read them on the website or alternatively if they would like a copy they can get one from counsel assisting.

**THE COMMISSION ADDRESSES COUNSEL – WITNESS TIMETABLING****COMMISSION ADJOURNS: 5.04 PM**

## INDEX

<b>MARGARET JANE AYDON (SWORN)</b> .....	1
CROSS-EXAMINATION: MESSRS LAING, RENNIE AND SHAMY – NIL .....	9
QUESTIONS FROM COMMISSIONER FENWICK:.....	9
QUESTIONS FROM COMMISSIONER CARTER: .....	9
QUESTIONS FROM JUSTICE COOPER - NIL .....	9
<b>BRIEF OF EVIDENCE OF MARYANNE JACKSON READ BY CONSENT</b> .....	10
<b>THOMAS RICHARD HAWKER (SWORN)</b> .....	13
CROSS-EXAMINATION: MR LAING .....	22
CROSS-EXAMINATION: MR RENNIE .....	23
CROSS-EXAMINATION: MR SHAMY – NIL.....	32
RE-EXAMINATION: MR ELLIOTT – NIL.....	32
QUESTIONS FROM THE COMMISSIONERS – NIL .....	32
QUESTIONS FROM JUSTICE COOPER - NIL .....	32
<b>MR ELLIOTT CALLS</b> .....	33
<b>PENELOPE ANN SPENCER (SWORN)</b> .....	33
CROSS-EXAMINATION: MR LAING .....	41
CROSS-EXAMINATION: MESSRS RENNIE AND SHAMY – NIL .....	41
QUESTIONS FROM COMMISSIONER FENWICK:.....	41
QUESTIONS FROM COMMISSIONER CARTER: .....	42
QUESTIONS FROM JUSTICE COOPER – NIL.....	42
<b>MICHAEL TREVOR WILLIAMS (SWORN)</b> .....	43
CROSS-EXAMINATION: MESSRS LAING, RENNIE AND SHAMY – NIL .....	50
QUESTIONS FROM THE COMMISSIONERS - NIL.....	50
QUESTIONS FROM JUSTICE COOPER - NIL .....	50
<b>STEPHEN ADRIAN GRENFELL (SWORN)</b> .....	51
CROSS-EXAMINATION: MR LAING – NIL.....	56
CROSS-EXAMINATION: MR RENNIE .....	56
CROSS-EXAMINATION: MR SHAMY – NIL.....	56
QUESTIONS FROM THE COMMISSIONERS – NIL .....	56
QUESTIONS FROM JUSTICE COOPER – NIL.....	56
<b>EUAN DAVID GUTTERIDGE (SWORN)</b> .....	57
CROSS-EXAMINATION: MR LAING .....	60
CROSS-EXAMINATION: MR RENNIE .....	60
CROSS-EXAMINATION: MR SHAMY – NIL.....	62
QUESTIONS FROM COMMISSIONERS – NIL .....	62
QUESTIONS FROM JUSTICE COOPER: .....	62
<b>STEPHEN MALCOLM GILL (SWORN)</b> .....	63
CROSS-EXAMINATION: MR LAING .....	70
CROSS-EXAMINATION: MR RENNIE – NIL.....	70
QUESTIONS FROM COMMISSIONER FENWICK.....	70
QUESTIONS FROM COMMISSIONER CARTER – NIL.....	71
QUESTIONS FROM JUSTICE COOPER – NIL.....	71
QUESTIONS ARISING - NIL.....	71
<b>LEONARD ARTHUR FORTUNE (SWORN)</b> .....	72

CROSS-EXAMINATION: MR LAING .....	83
CROSS-EXAMINATION: MR RENNIE .....	84
RE-EXAMINATION: MR ZARIFEH – NIL .....	89
QUESTIONS FROM COMMISSIONER FENWICK – NIL .....	89
QUESTIONS FROM COMMISSIONER CARTER: .....	89
<b>BRUCE MICHAEL CAMPBELL (SWORN) .....</b>	<b>91</b>
CROSS-EXAMINATION: MR LAING – NIL .....	98
CROSS-EXAMINATION: MR RENNIE .....	98
QUESTIONS FROM COMMISSIONER FENWICK: .....	100
QUESTIONS FROM COMMISSIONER CARTER – NIL .....	101
QUESTIONS FROM JUSTICE COOPER – NIL .....	101
<b>STEPHEN MALCOLM GILL (RE-SWORN) .....</b>	<b>102</b>
CROSS-EXAMINATION: MR LAING .....	104
CROSS-EXAMINATION: MR RENNIE – NIL .....	105
QUESTIONS FROM THE COMMISSIONERS – NIL .....	105
QUESTIONS FROM JUSTICE COOPER - NIL .....	105
<b>ARTHUR EDWARD TYNDALL (AFFIRMS) .....</b>	<b>106</b>
CROSS-EXAMINATION: MESSRS LAING AND WALLACE – NIL .....	111
CROSS-EXAMINATION: MR ZARIFEH .....	111
QUESTIONS FROM COMMISSIONER FENWICK .....	114
QUESTIONS FROM COMMISSIONER CARTER – NIL .....	114
QUESTIONS FROM JUSTICE COOPER – NIL .....	114
<b>ALAN EDGE (AFFIRMED) .....</b>	<b>115</b>
CROSS-EXAMINATION: MR LAING .....	116
CROSS-EXAMINATION: MESSRS WALLACE AND ZARIFEH – NIL .....	116
QUESTIONS FROM THE COMMISSIONERS – NIL .....	116
QUESTIONS FROM JUSTICE COOPER – NIL .....	116
<b>DAVID BAINBRIDGE (SWORN) .....</b>	<b>117</b>
EXAMINATION: MR ZARIFEH .....	117
CROSS-EXAMINATION: MR LAING .....	126
CROSS-EXAMINATION: MESSRS RENNIE AND WALLACE – NIL .....	126
QUESTIONS FROM COMMISSIONER FENWICK: .....	126
QUESTIONS FROM COMMISSIONER CARTER: .....	126
QUESTIONS FROM JUSTICE COOPER: .....	128
<b>BRIEF OF EVIDENCE OF MARIE-CLAIRE BREHAUT ADMITTED AS READ. BRIEF HAS BEEN DISTRIBUTED AND IS ON WEBSITE .....</b>	<b>129</b>
<b>MR ZARIFEH CALLS .....</b>	<b>130</b>
<b>PETER JAMES BROWN (SWORN) .....</b>	<b>130</b>
CROSS-EXAMINATION: MR LAING – NIL .....	145
CROSS-EXAMINATION: MR RENNIE .....	145
CROSS-EXAMINATION: MR WALLACE .....	147
CROSS-EXAMINATION: MR SHAMY – NIL .....	149
QUESTIONS FROM COMMISSIONER FENWICK: .....	150
QUESTIONS FROM COMMISSIONER CARTER – NIL .....	151