

HEARING RESUMES ON MONDAY 6 AUGUST 2012 AT 10.00 AM**MR ZARIFEH ADDRESSES THE COMMISSION**

5 Your Honour, the witnesses to be called this morning are finishing off the design phase and there are four more witnesses in that category – three draughtsmen that were employed by Alan Reay Consultants at the relevant time – Terry Horn, Wayne Strachan and Shane Fairmaid. Shane Fairmaid is a new witness who has been added just at the end of last week. There have
10 been some developments in terms of brought on really by the time sheets that were produced last week or the week before and Mr Strachan looking at those and modifying his original brief. So that's necessitated a new witness. Mr Fairmaid is not in Christchurch today or tomorrow and it's hoped that his evidence can be taken as read. That's the course we intend to take unless
15 there's any serious objection to that.

MR RENNIE ADDRESSES THE COMMISSION

Can I indicate that we have also interviewed Mr Fairmaid and identified additional material which he can provide and we will have a written brief
20 available this morning and we will be proposing that the matter of his giving his evidence be dealt with later this week Sir. I think the brief is of the order of three, maybe four, pages Sir. It is short but relevant Sir.

MR ZARIFEH CALLS**25 TERRY HORN (SWORN)**

Q. Mr Horn, is your full name Terrence John Horn?

A. It is.

Q. And do you live here in Christchurch?

A. No I live in Raglan.

30 Q. You I think are currently employed as an estimator?

A. That's correct.

Q. At Kingston Building?

A. Correct.

Q. And I think your current workload is for the Stream Group?

A. Yes.

Q. Inspecting and estimating Tower Insurance claimants' residential properties in Christchurch?

A. Yeah.

5 Q. You have signed two statements -

A. Correct.

Q. – in this matter. Have you got those in front of you?

A. I do.

10 Q. I want to please ask you to read those and we'll start with the first one which I think is dated 28 May 2012.

A. I'll just check the date, yes.

Q. Can you start and commence reading that please from paragraph 2 under "Purpose of Evidence".

WITNESS READS FROM STATEMENT OF EVIDENCE

15 A. "From 1985 to 1995 I was employed by Alan Reay Consultants Ltd (ARCL) as a structural draughtsman. During this time I may have done some structural draughting on the CTV building and I have been asked to give evidence about this.

Working at ARCL: 1985–1995

20 I went to ARCL in 1985 from Holmes Wood Poole & Johnstone (referred to as Holmes Wood often) where I worked as a structural draughtsman for seven years. During my time at Holmes Wood I worked with a number of engineers, including John Henry and I was involved in draughting a number of multi-level shear core buildings.

25 John Henry had left Holmes Wood and had gone to ARCL and after he had gone he told me that there was an opportunity at ARCL as well. While the majority of the projects at ARCL at that time were tilt-slab buildings, there were also some multi-level shear core buildings in the pipeline.

30 When I arrived at ARCL I found that the two draughtspeople that were there, Wayne Strachan and Shane Fairmaid, were very experienced in draughting tilt-slab buildings but the firm as a whole did not have experience in multi-level shear core buildings. It was John Henry who had this experience [*sic*] and I worked closely with him on the design of

Landsborough House. I also did the draughting work of Mair Astley Building and parts of the Aged Persons Welfare Building.

Regarding Landsborough House and Mair Astley Building:

5 John Henry was the design engineer for Lansborough House. John and I worked together well in a room separated from the rest of the staff in the open plan office. I have been asked by Counsel Assisting what Alan Reay's role was in designing of this building. My recollection is that Alan was very involved with the client side of things. He would be the point of contact for the client, the architect, Council and Williamsons, the
10 construction contractor. Alan must have gone to the initial site meetings of Landsborough House but I clearly remember doing a lot of the reinforcing checks before concrete pours as the project was under way. However, in terms of the design itself I do not recall Alan being closely involved in the design at all.

15 I draughted Mair Astley, which was a direct copy of Landsborough House structure. The main difference between the two buildings was Mair Astley had a larger pre-cast concrete façade. I am sure that John Henry designed this façade but otherwise there was no new design required. On Mair Astley I clearly remember doing many of the site
20 inspections with the Fletcher Construction foreman John Morrison right from the foundation formation upward.

The CTV Building:

I have no memory of the CTV building project. I have looked at the drawings that were submitted to the Council and I do not recognise
25 them. However I have been advised by Counsel Assisting that Wayne Strachan who was the senior draughtsman at ARCL at this time has said he recognises that he did the majority of the draughting but thinks I did or supervised some parts of the drawings, for example, the foundation reinforcing. It is possible that I could have drawn the
30 foundation reinforcing after the engineer had marked up the carcass drawings. This could be an isolated element done later in the project after the building mass was known. It was also not unusual to split up the draughting between a number of draughtspeople, particularly if the

project was on a tight time-frame to go into the Council for a building permit.

I do not recall working with David Harding as closely as I did with John Henry on many building projects while I was at ARCL.

5 I have been informed that David Harding has stated in correspondence with the Royal Commission that the ARCL draughtsmen were all under constant supervision by Alan Reay and that he would “visit each draughtsman at least once each day to look over their work they were preparing, to comment on their work and to ask them what information
10 had been provided to them by the engineer”.

After John Henry left ARCL I worked primarily on my own with some direction from Alan Reay. However I am not in a position to say what the practice was in terms of the supervision of the junior draughtspeople.

15 In terms of the projects where I worked closely with Alan, my experience was that he did not regularly oversee my work other than to check on my progress and time-frame. He would be involved at the start of a project where discussions about building use, layout and maximum leasable areas were made. After initial training in the ARCL concrete tilt
20 up slab design system using ARCL office standard practices – panel lifting, panel connections, post hole footings and roof steelwork systems. I was left to complete projects with minimal supervision from Alan Reay until he reviewed the permit application.

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25 Q. Now turn to your second statement please?

A. Yes.

WITNESS REFERRED TO SECOND STATEMENT

Q. Have you got that in front of you?

A. I have.

30 Q. And what's the date on that?

A. Today's.

Q. And can I ask you please to read that from paragraph 2?

A. Regarding time sheets?

JUSTICE COOPER:

Just put it up Mr Zarifeh please?

EXAMINATION CONTINUES: MR ZARIFEH

- 5 A. Time sheets. I have been shown the monthly time sheets for Alan Reay's firm for 1986. I understand that it shows that I have recorded 141 hours in total for the CTV building project between July and September 1986. That information does not change my recollection as recorded in my first statement of evidence and I have no memory of the CTV building project, but that it was possible that I had detailed the
- 10 foundation reinforcing. At the time I made the statement I understood that Wayne Strachan believed that he had done the majority of the drafting. I have now been advised by counsel assisting that Wayne now believes that Shane Fairmaid who he trained did the drafting that Wayne recognised as his style. I have no memory of working on this project.
- 15 Both Wayne and Shane typically worked on tilt slab or all steel type buildings, while I worked on Landsborough House with John Henry and then moved onto Mair Astley House. Having reviewed the drawings of the CTV project my belief is that some aspects are not detailed the way I would have done them based on my previous experience. In particular
- 20 I am referring to the sheet that shows the columns elevated as a number, sorry, and detailed as individual items. I would have shown the in situ concrete columns in a frame elevation to illustrate their relationship to beams and any walls on the same grid line. I believe I would also question the engineer –
- 25 Q. Also have questioned.
A. Sorry?
Q. "Also have questioned."
A. Sorry, yes, I believe I would have also questioned the engineer on aspects of the design. For example I think I would've asked why the
- 30 spacing of the spiral reinforcing in the columns did not close up at each floor level. When I went to Alan Reay's firm I had over seven years – I would like to take the word "over" out of there and just leave it at "seven years" drafting experience at Holmes Wood Poole and Johnson and I

had become used to seeing this type of detailing. That is what makes me believe that I would have noticed the uniform spacing of the spiral reinforcing in these columns. It would have – I would have remembered any reasoning given by the engineer for that to be different for this building.

5

Q. And just to clarify, those two examples you've given –

A. Yes.

Q. – were just the way your particular style of drafting and?

A. Over the years of working at Holmes Wood and then working with John at Alan Reay's, that's how we detail buildings.

10

Q. General matters?

A. General matters. I have been asked further questions by counsel and –

Q. Counsel assisting.

A. – assisting the Commission about matters which have been raised in evidence of David Harding and Alan Reay about the way Alan Reay Consulting Engineer operated as a firm in 1986. I have seen evidence given by David Harding to the effect that the office was generally very quiet and that Alan Reay's view of things was that when you were given

15

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20 Q. When you were?

A. – oh, sorry, when you were on his time you were doing his work so there was no extraneous chat going on. Alan Reay had tight control of the office and had his finger on the pulse of what was going on. Alan made us very aware of the project deadlines and he would check that we were going to get the work done in time. Rather than the detail of the project. Working longer hours at the end of the day or parts of weekends was normal.

25

Q. If I just ask you to clarify, when you say, "Rather than the details of the project," are you referring to Alan Reay being aware of project deadlines as opposed to, necessary details of the project?

30

A. Yes he wouldn't check what I was most likely putting down on documentation as much as making sure that the documentation was going to be complete by the deadline.

Q. All right.

A. Does that make sense?

Q. Yes it does and you said in your earlier statement in terms of supervision that you couldn't speak for what happened with people more junior than you, draftsmen, is that – does the same apply to that?

5 A. Well I tended to work very isolated. I was given some level of responsibility and just given a project and expected to get it done.

Q. All right, thank you, paragraph 11.

WITNESS CONTINUES READING STATEMENT FROM PARAGRAPH 11

10 A. David Harding also went on to say if Alan was having a noisy conversation on the phone everybody in the office could hear it. Alan Reay had his own office as shown on the office plan attached in the statement of evidence of Paul Smith although I remember the seating plan of the staff was different in 1986 to that shown on the document.

15 Q. Is that the – we'll just get it brought up. WIT.SMITH.0004.4.

A. Yeah that is the document.

Q. So you remember the seating plan as different?

A. Yep.

Q. In terms of where people were sitting you mean?

20 A. Yep, and there is actually a wall missing as well.

Q. Where is the wall that is missing?

A. On that diagram it is the top of the page, it runs from, between where David Harding and Wayne Strachan are sitting on that diagram, running from the window down to, maybe a little bit longer than Alan Reay's office wall, but not as long as the print room wall to its right.

25 Q. And so – you have got a mouse there in front of you –

A. Oh, yes.

Q. If you use that –

A. Yep, just got to find where it's, oh, I can't get the thing to move. Sorry it doesn't want to talk to me.

30 Q. I might just get it turned on.

A. Sorry I haven't used that one before, that works much better. Yes okay so from this top wall outside window here, running between those desks there, down through and most likely longer than Alan's wall here so

coming down but not as long as the print room wall over there so it came down through there.

Q. And beyond the wall is shown a desk there –

A. In early days that wasn't there.

5 Q. It wasn't there –

A. No it was open, you could walk straight from where Paul Smith is written, straight up to where Wayne Strachan is written.

Q. So essentially it was a dividing wall between where David Harding and Wayne Strachan is shown to be seated?

10 A. That is correct and I actually believe that those two seating positions are reversed. David Harding sat in the smaller cubicle and Shane and Wayne sat on the left-hand side of the – not shown wall, between Alan and David.

Q. So Shane and Wayne were where David Harding has indicated and
15 David Harding –

A. That is correct.

Q. – is where Wayne –

A. Yep.

Q. Can I take you back to your statement please paragraph 13.

20 **WITNESS CONTINUES READING STATEMENT FROM PARAGRAPH 13**

A. Thirteen, yes. If the door to Alan Reay's office was closed he needed privacy. You could not hear him on the phone. Although if he was having a disagreement, his voice raised, he could be heard within the open office. You certainly could hear him having a conversation with
25 another draughtsman because of the open plan nature of where the draughtsmen were seated. I have also been referred to the evidence given by David Harding that "the practice within the office during the time that he was there was to build no greater than necessary in terms of strength of the buildings" and that "Alan Reay made his reputation by making buildings no stronger or no more expensive than necessary".
30

I agree in principle with those statements because of my experience with Alan Reay. We were required to set out buildings to achieve as much efficiency as possible through using steel products near their design limits and repeating these elements as many times within the

project. The pre-cast concrete tilt up panel elements were repeated or mirrored as many times as possible too of a standard pre-cast concrete tilt up panel fixing systems were used throughout the project or a project.

5 I have also been asked about the use of Fletcher Brownbuilt products on design projects that were in the office at the time. I know that Alan Reay had a close relationship with Fletcher Brownbuilt. Alan Reay designed Fletcher Brownbuilt product such as cold roll steel section profiles, for example a BP 200/15 for roofing purlins and in all steel
10 buildings and also prepared design tables for the products use. I am not sure if that included the Fletcher Brownbuilt Hibond flooring system.

Q. If I just – ask you to pause there. Just going back to paragraph 16 you talked about pre-cast elements?

A. Yes.

15 Q. Can you make any comment about the use of pre-cast beams in beam and column concrete multi-storey buildings?

A. Yes it was a good way of deleting form work really, so yes Alan encouraged that, so you'd basically make form work out of a pre-cast beam and then fill the middle of it with the in situ concrete that came
20 with the topping slab.

Q. So the pre-cast beam would be pre-cast off the site obviously?

A. That is correct, I mean – and that is why when I said that I would draw the columns as part of the frame, you draw the in situ columns and showing the pre-cast element running between the two and how they
25 connected. So the contractor got a good visualisation of how everything went together.

Q. Thank you, now other matters, paragraph 18?

WITNESS CONTINUES READING STATEMENT FROM PARAGRAPH 18

A. Eighteen. I have been asked about the receipt of mail to the office in
30 1986. My recollection is that all mail went through Alan Reay first.

I have also been asked if I observed any interaction between Alan Reay and any Christchurch City Council employees. I was aware of a number of issues between Alan Reay and Graeme Tapper around this time although I can no longer be specific about – sorry as to the details.

Alan Reay's attitude towards Graeme Tapper was as a result of his frustration was shown in the nickname used for him, calling him Colonel Tapper.

Q. And when was that used, was it in the office or –

5 A. Yeah generally conversations in the office or maybe in the tearoom, if you had an interesting conversation with him – or it was just and he did mention it to other people outside our office staff as well.

Q. How do you know that?

10 A. Ah, a client of Alan's did actually go to the Council and requested to see Colonel Tapper not realising he wasn't Colonel Tapper.

Q. Did anyone else refer to Mr Tapper as Colonel Tapper apart from Alan Reay?

A. Not as much as Alan if you know what I mean, yeah.

Q. But others did as well?

15 A. I s'pose office practice, yeah, yeah.

Q. Paragraph 20?

WITNESS CONTINUES READING STATEMENT FROM PARAGRAPH 20

20 A. I am aware of Alan Reay's practice of resolving issues with Graeme Tapper was to effectively go over his head to the city engineer Bryan Bluck.

Q. And how are you aware of that?

A. 'Cos Alan would arrange meetings and go and see Bryan Bluck to discuss issues that he's been frustrated with Graeme Tapper.

Q. And can you remember on which projects now or not?

25 A. No it was just a general – it happened more than once and it was just general. Graeme Tapper would be asking for further detail about something and Alan would take exception to it and just go and see Bryan Bluck or ring Bryan Bluck or go and see him.

Q. Paragraph 21.

30 **WITNESS CONTINUES READING STATEMENT FROM PARAGRAPH 21**

A. Alan Reay was referred to some clients and colleagues –

Q. Referred to by?

A. Oh, sorry referred to by some clients and colleagues as The Doctor. In my view this was a reference to the perception of the importance he seemed to attached to his doctorate.

Q. And is that a perception that you had at the time?

5 A. He came across as very well educated and superior if you know what I mean. He did sort of know better and you were left in no doubt that he did know more than you.

CROSS-EXAMINATION: MR LAING - NIL

1025

10 **CROSS-EXAMINATION: MR RENNIE**

Q. Mr Horn, dealing with the first of your briefs to begin with, you indicated you had less contact with Mr Harding than you had with Dr Reay. Did that reflect the working style of the two of them or your working style or how do you think that came about?

15 A. Mainly through my working style possibly. I was given a project and just left alone.

Q. And in relation to Mr Harding at the time was he one of two engineers in the business?

A. Back then it was Alan and David Harding. Those were the only two.

20 Q. Mr Harding coming in after Mr Henry had left?

A. That's correct, yes.

Q. And to your recollection did each have their own projects or did they work jointly on projects?

A. Ah, no. Alan would give a project to someone to work on.

25 Q. Yes, and that applies as much to an engineer as it did to a draughtsman I take it?

A. To my recollection, yes.

Q. You've indicated that you don't recall the CTV building at this distance in time?

30 A. Correct.

Q. Does that in any sense suggest that you don't remember it as a distinctive or significant building compared to such buildings as Landsborough House and Mair Astley?

5 A. Not at all. I remember many of the projects I worked on. Alan Reay's is just one I don't know at all. I had no idea at all we'd done it.

Q. And that notwithstanding the time records you've seen which shows significant periods of your time allocated to working on the project?

A. I disagree with them totally.

10 Q. And in relation to working with Mr Harding do you recall other projects that you worked on with Mr Harding?

A. No not really. Maybe small or something but generally Alan gave me, for instance, Christchurch Carpet Yarns and I went and just met and found their requirements and just did them. Alan would give me something like these roof members. He'd give me a size work with and just repeat
15 it a number of times and like I just did it.

Q. Do you recall the Westpark Tower project, for example?

A. Westpark Tower? Yes.

Q. Nine storey building?

A. Yes, yes, I did some work on that I'm sure.

20 Q. Do you recall whether Mr Harding was involved in that?

A. I believe he was, yeah.

Q. And beyond that do you have any specific recollection of working with Mr Harding on that project?

A. Um, I'm not quite sure. What was the question again, sorry?

25 Q. Whether you have any specific recollection of working with Mr Harding on that project?

A. Basically I would be given elements to put together. He'd give you a size or a reinforcing quantity and then I was just left to go and do it.

30 Q. And did you find him to be a competent engineer to work with on that project?

A. Um, conservative engineer. Ah, he was, he seemed to produce the right numbers. The reinforcing looked like it fitted and it was about right, you know, if that's what you call competent. In my experience what I was getting looked about right.

- Q. What I'm putting to you is if you felt that an engineer you were working with was not competent you'd be pushing back to him that you couldn't do your job because he wasn't doing his?
- A. Correct. Like I mentioned with those columns I would have questioned somebody if I hadn't seen the squashed up stirrups around the floor area.
- 5 Q. So you had no recollection of ever pushing back to Mr Harding in that sense at all?
- A. Um, not that I rem..., no.
- 10 Q. And in terms of paragraph 12 of your first brief would it be fair to say that what you're describing there is that Dr Reay placed trust in you to create competent, well expressed draughting?
- A. Yes because he'd seen what I'd done on Landsborough House I suspect with John and then just left me –
- 15 Q. From that point on?
- A. Yeah.
- Q. In fact can you ever recall Dr Reay challenging your competency or suggesting your work was not up to it?
- A. Ah, yes. Generally if I over-detailed something, did too many drawings. He liked everything quite efficient.
- 20 Q. Dr Reay has told us that he liked his drawings to have "build-ability". Do you understand that phrase?
- A. Um, I would have said that Alan Reay's documents were more like shop drawings. Every aspect of it was pulled to pieces and itemised so you could hand it to a man in gum boots to build it but what I found with Alan's documentation system was there was nowhere where you could see all the elements placed together to see the relationship between one and the other, which was the style I'd come to the office from Holmes Wood Poole & Johnstone being used to.
- 25 Q. Now in your second brief you've indicated that one of the reasons that you doubt that you had a CTV building involvement is based on your review of a document and I'm just going to ask for it to be put it. It's BUI.MAD249.0284.15. Just have a look at it and see, because you don't give the reference in your brief. Is this the individually detailed
- 30

columns in the CTV building which you feel differ from what you did on Landsborough House?

5 A. That would be correct. If you can see, there it goes, the column's just drawn as an individual column. It doesn't show you where the next column is or the beam or whatever running between them or if there's a wall between two columns. Nothing appears.

Q. Have you been systematically through all these drawings?

10 A. Not really, no. The day I looked at these drawings I was looking at things like lettering style for instance to see if it was the way I did things. For instance you'll notice on this drawing those little lines and arrows coming down to each floor level like level 2, level 3, level 4 written on them. I don't do that at all. That's not a way I would show that at all.

Q. And how long ago is it since you looked at this diagram, this plan?

A. It was May.

15 Q. So when you prepared your second brief you didn't have an opportunity to go back through all the documents?

A. No, no.

Q. And in particular you haven't gone systematically through these plans once again looking for matters that you identify with?

20 A. That's correct. In May I looked at them when speaking with CERA and once of the things I picked up is the reinforcing notes in the foundations is in a lettering style I would have used or a notation style I would have used, otherwise I don't recognise very much of that at all.

25 Q. Now in relation to the final preparation of these plans and the way that we see them they have, of course, been through an additional tracing stage?

A. That's correct.

Q. And have you taken that into account in your view that the lettering style does not look like yours?

30 A. Yes, yes, because you see for instance those little arrow heads on those level things there's a white side to the triangle and a black side to the triangle which to me is a waste of ink. I would have just drawn a small triangle and written the word "level 4" above it, none of those lines down to it or shaded the arrow.

JUSTICE COOPER:

Q. I can't follow where you're talking about. Could you just indicate with the mouse.

5 A. Yes, there, Columns C1, 2, 3, 4 and then it's every floor level there's that little note just there. I would not have underlined the word level 2 or drawn a line down to that triangle, would not have shaded one side of the triangle like that. I would have just drawn a small three-sided triangle and written the word "level 2" or just simple number 2 above it.

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

Q. I'm now going to ask you to look at BUI.DUR287.0003E.20. This is from Landsborough House?

A. Correct.

Q. Do you recognise this as your work?

15 A. I do immediately. Um, the words over on there are definitely how I would have written them.

Q. And is this not essentially a depiction of columns in the same way as the CTV building that we were just looking at?

A. In this case it is, yes. And there it goes, my little floor symbols exactly
20 as I said I would have drawn them.

1035

Q. Wouldn't it depend in a project which went through a tracing stage on whether the tracer followed house style or your own style as to how the plan came out?

25 A. No the tracer tended to actually copy what was there. That was their job. And you see for instance I actually draw the stirrups quite clearly there, which I didn't see on the other project. And I'm not, and I'm not sure this is actually a completed drawing 'cos Alan hasn't actually signed it.

30 Q. Is it in the end the position that at this distance in time you don't believe you worked on the CTV building but you don't really recall?

A. Honestly I don't recall the building full stop, and I can instantly see differences between this one's the Amuri building which was known later

as Landsborough House. Instantly I can recognise that that's mine and there's another thing, the lettering up the side describing the pitch, I've used the word "at". I always used the word "at" whereas I noticed on CTV building often there was the little ampersand rather than the word

5 "at".

Q. Now we're –

JUSTICE COOPER:

10 Q. You mean rather than an ampersand I think you mean an @ with a little circular tail?

A. Oh, with the little tail, sorry yes.

Q. Right.

A. What do they call that sorry?

Q. I don't know, they call it at.

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

Q. Now we now know that a significant part of the work on CTV building was done by Shane Fairmaid. Do you remember Shane Fairmaid?

A. I do know Shane, yes.

20 Q. If Shane recalled working with you on that building would that cause you to review your own recollection?

A. No I just don't have any recollection.

Q. Would you –

A. I actually worked very rarely with Shane.

25 Q. On the basis that he was working on it would you not have been in charge of him anyway as a senior draughtsman?

A. I would've thought we would've been given topics if, if I was working with another draughtsman we would just be working on topics. I wouldn't have thought Shane needed training in many ways because he'd worked for Alan for quite some time.

30 Q. But in terms of seniority in the office and the person to go to on draughting detail, it'd be Shane to you would it not?

A. Shane to Wayne or Shane to myself.

- Q. Now further on in your second brief you refer to the Fletcher Brownbuilt matter?
- A. Yes.
- Q. Do you recall working with HiBond when at Alan Reay consultants?
- 5 A. We have used HiBond. It's a Fletcher Brownbuilt product, yes.
- Q. Do you recall that the HiBond material was in fact an Australian licence rather than a direct Fletcher product?
- A. No I don't.
- Q. No. Do you remember an engineer called Brent Fleming?
- 10 A. I do.
- Q. And do you recall Brent developing design elements using software for the Fletcher Brownbuilt line of cold rolled steel?
- A. Yes he refined a lot of things for them, yep.
- Q. And that was later in time than the time we're talking about with
- 15 Mr Harding wasn't it?
- A. Yes he was, he was a later employee.
- Q. Yes, and so the design of such matters is purlins which you refer to would have been later in time than the design period we're talking about in 1985/'86?
- 20 A. I don't know which year Brent did that, I suppose you'd call it refinement.
- Q. But it could only have been after he arrived in the office and we've established there were only two engineers there in '85/'86?
- A. Okay.
- Q. So it would have to have been at a later time wouldn't it?
- 25 A. The refinement would've happened at a later time, yep.
- Q. Yes. Do you recall referencing Australian reference documents as to how to use HiBond?
- A. No.
- Q. No. Next in your second brief you refer to receipt of mail?
- 30 A. Yes.
- Q. Is that essentially the letters from the post office coming in the door is it?
- A. Yes they, the receptionist would open the envelopes and take them through to Alan.

Q. Now a significant number of documents entered and left the building by hand under the cover of document transfer forms didn't they?

A. Documents being drawings?

Q. Yes.

5 A. Yes.

1040

Q. And potentially calculations and other information requested for example by the Council?

10 A. I don't know about calculations. I'd nothing to do with dispatching of them.

Q. But in fact both the receipt of drawings and the dispatch of drawings was often a process by hand and not by mail wasn't it?

15 A. Like if an architect was to bring drawings to the office it would arrive and the document transfer from their office would then go into the mail "In" tray to be seen with the mail the following day.

Q. And if you were dispatching documents to an architect or the Council they'd go out on the same process?

A. They would go out and the photocopy of that document transfer would be seen in the mail the following day.

20 Q. In the mail tray yes?

A. Yep.

Q. Yes. So that in that sense communications for the office were tracked in the mail system –

A. That's correct.

25 Q. – but in many cases in respect of drawings they would proceed using hand transfer and document transfer forms?

A. That's exactly right.

Q. Yes. In the paragraph 19 of your brief?

A. Yep.

30 Q. That's to say your second brief. Just give me one moment, I'll give you the quote. You use the expression "frustration" do you recall that?

A. Yes, yes.

Q. Is it that you felt that Dr Reay became frustrated with Mr Tapper's requisitions on plans?

- A. I think Alan was often frustrated in the questions that Graeme was asking, questioning or doubting the designs.
- Q. Were those questions at times referred to you?
- A. No.
- 5 Q. In terms of the details being questioned do you know what they were?
- A. No.
- Q. Do you know whether they related to multi-storey building or to slab construction or what?
- A. More, different types of projects. Anything that was in building
10 consents.
- Q. Right across the board as it were?
- A. I would've thought so.
- Q. You've indicated that Dr Reay took a close interest in respect of construction details on the slab buildings. Did I understand you
15 correctly?
- A. It's like he designed an office standard system, yes.
- Q. Yes, so was he in effect monitoring to ensure that the office standards he'd designed were being adhered to?
- A. No you basically were given an A4 piece of paper to show how these
20 systems were to be applied, and at what regular spacings we were to aim for and you know.
- Q. But is it the position that he took an interest in that area of design because it was his own, and he wanted to ensure it was followed?
- A. No, his interest was to make sure that those systems were used like it
25 would be unwise as a draughtsman to detail a different connection system. I should utilise one of the office standard ones.
- Q. Do you accept that that element of his design was not relevant to the CTV building?
- A. The, not that's tilt ups.
- 30 Q. Yes?
- A. None of those systems would work well in a multi-storey at all.
- Q. No, so in terms of the standards that he applied to multi-storey buildings, what is your recollection on that?

A. Well I worked with John Henry on Landsborough and Alan really did not have any involvement in – John had worked on Landsborough before I got there to get the initial sort of design and shape working. I arrived to detail that up for John. Alan really didn't come and see how we were detailing it, putting it together, and then Mair Astley I was left to my own devices to just repeat that, one floor shorter and with a different façade around it, and then left to totally supervise its construction.

5

Q. Yes.

A. So does that answer your question, I'm not quite sure?

10

Q. Well the answer was really your recollection of the extent to which Dr Reay –

A. Well then he had very little supervision of my work.

Q. So was it generally the position in that office that if he regarded you as skilled and competent he left you to get on with it unless you went back to him?

15

A. That would be correct in my case.

Q. And at paragraph 20 you refer to, this is of your second brief –

A. Yes.

1045

20

Q. You refer to Dr Reay's practice you say of resolving issues by going to Bryan Bluck?

A. Yes.

Q. You refer to this as a practice. Are you saying that you actually saw that happen on several occasions?

25

A. He would make like – back in that seating plan I sat reasonably opposite Alan's office –

Q. Yes –

A. So I could hear him on the phone to Bryan Bluck and it was, the frustration was about Graeme Tapper. Depending on what project, there was just constant frustrations.

30

Q. And was this in the nature of a discussion to resolve the issues that Mr Tapper had raised?

A. Yep.

- Q. And in those issues were talked through, as you understood it, on the phone between Dr Reay and Mr Bluck?
- A. And I would be quite positive to say there would be several meetings as well.
- 5 Q. I was going to come on to that so the discussions would not be merely by phone but would involve detailed discussions between the engineers?
- A. I don't know exactly how detailed but yeah there was definitely discussions by phone between Alan and Mr Bluck and then Alan would
- 10 go out to meetings.
- Q. And it would not be the practice for you to go to those meetings I take it?
- A. Not at all, no.
- Q. No, no. And in that sense the issues were not issues arising from your work but arising from matters that Dr Reay was dealing with?
- 15 A. Well that's right, Dr Reay dealt with all those issues 'cos the issue would usually arrive in the office by letter of course.
- Q. Yes and do you recall ever having your work questioned by Mr Tapper during those processes?
- A. Not that I am aware of no.
- 20 Q. In paragraph 21 you refer to a name by which Alan Reay was called by some people?
- A. Yes.
- Q. And you say it was your perception of an importance that he attached?
- A. That is correct.
- 25 Q. Other people may have regarded it as an appropriate recognition of his degree?
- A. Quite possibly yes.
- Q. Engineers who hold doctorates are commonly called Dr plus their surname, aren't they?
- 30 A. Correct, yeah.
- Q. Yes, so it is really not a matter of any significance in terms of the quality of the work or any part of the process is it?
- A. It was my perception.
- Q. Of why some of them did it?

A. Yes.

Q. But calling Mr Tapper the Colonel or calling Dr Reay the Dr –

A. Yes.

Q. Is just one of those conversational things of daily life is it not?

5 A. Um, in the case of Graeme Tapper I suspect it was a little bit more than that. It was definitely a thing of frustration.

Q. It reflected the way that he actually approached such matters?

A. He being?

Q. Mr Tapper?

10 A. Ah, I think Graeme Tapper was thorough.

Q. And formal?

A. Ah, yes I would think formal would be correct as well.

CROSS-EXAMINATION: MR ELLIOTT – NIL

RE-EXAMINATION: MR ZARIFEH

15 Q. Just one question of clarification. Mr Horn when you were being referred to the columns on the drawing from the Landsborough House –

A. Yes.

Q. – building, you referred to the spiralling reinforcement or containment around the columns –

20 A. Yes.

Q. Or in the centre of the columns, I think you referred to it as stirrups, was that the term you used?

A. Oh, okay, column stirrups, really are ties and beams – it goes alphabetically so yeah beams have stirrups and columns have ties,
25 yeah.

Q. What I was wanting to check was, in your experience was the spiralling sometimes referred to as stirrups?

A. Yes well it is just a common way of referring to the confinement steel, to hold the vertical bars in place.

30 Q. And was your point that, in terms of how you detailed it, or used to detailing it, that when the spiralling or stirrups were closer to a floor they were more bunched up?

A. That's right, the centres closed up, yep.

QUESTIONS FROM COMMISSIONER FENWICK – NIL

QUESTIONS FROM COMMISSIONER CARTER:

Q. Just in regard to standard details?

5 A. Yes

Q. You have referred in clause 12 to the concrete tilt up design system office standard practices panel lifting, panel connection, post hole footing and roof steel work –

A. Yes.

10 Q. Were the other details such as connections between beams which became standard and were adopted?

A. Ah, no, that was more case by case depending on how much reinforcing you had to get between columns and beams and that is something I spent quite a lot of time doing was actually working out how to get a major amount of steel going horizontally crossing and a major amount of steel going vertically.

15

Q. Thank you and in regard to shear reinforcing, spiral reinforcing through joints, were there any standards in that area adopted or was that –

A. Not in the office, no.

20 QUESTIONS FROM JUSTICE COOPER:

Q. Mr Horn I just want to get it straight in my mind what you are saying about the timesheets that record you as having spent 141 hours on the CTV project between July and September 1986. Are you saying that those records are wrong?

25 A. I don't know where they got that information from, I don't –

Q. Yes but are you saying that it is wrong?

A. Well I would definitely say that I didn't do it. I don't know how they've generated that at all.

30 Q. And you recall filling in timesheets when you were employed at Alan Reay's firm?

- A. It was a daily thing, yep, the timesheet was a week long and you'd record every I think it was a half hour we'd fill actually, assigned to a project.
- Q. And you say it is possible that you designed the foundation –
- 5 A. No not designed.
- Q. – reinforcing –
- A. Not designed, no.
- Q. Detailed sorry?
- A. Detailed yeah, quite a difference, yes.
- 10 Q. Yep.
- A. Because I think the clue there was that I have used the word, or sorry the word "at" appears in the reinforcing rather than the little a with the thing around it.
- Q. And detailing the foundation reinforcing wouldn't have taken anything
- 15 like 141 hours I take it?
- A. No, two or three days at the most really because the engineer – the size and shape of the foundations would have already been predetermined. It was just about how much steel gets put in there and so you are given a note from the engineer how much to do and you just indicate where it
- 20 goes.
- Q. In your first statement you told us you looked at the drawing for the CTV building I take it back in May –
- A. Yes.
- Q. – when that was – you looked at all of the sheets that were shown to
- 25 you?
- A. Yes and I just flicked through and said, "Well I don't remember that, I don't remember that, or I could have done that 'cos that is the lettering I used."
- Q. And the last mentioned case, that was on the foundation details?
- 30 A. That's right.
- Q. But otherwise you looked at every sheet that was shown to you?
- A. And it just didn't make sense.

Q. And if I understood you correctly that an explanation would not be found, an explanation of this discrepancy doesn't relate to whoever it was who traced the drawing?

5 A. In my experience the tracer copied what you'd written but it was, just their handwriting is so much neater.

Q. They wouldn't be expected to deviate from anything -

A. No, well no.

Q. – if they were tracing?

10 A. That is correct, 'cos they most likely don't have an understanding of what they are truly writing down.

Q. And when you heard about the collapse of the CTV building in the February earthquake –

A. Yes.

15 Q. – did I understand you to say you weren't even aware that the building had been designed –

A. That is correct.

Q. – in Alan Reay's office?

20 A. Yep it was some time later I heard a news item that Alan Reay was the engineer involved and I just – my instant thought was when on earth did that building get built 'cos I don't remember it in the office. I actually thought the building was a lot newer than that 'cos it must have been after I left the office. I honestly didn't even know we had done it.

QUESTIONS ARISING – ALL COUNSEL – NIL

WITNESS EXCUSED

25

1055

MR ZARIFEH CALLS

WAYNE LESTER STRACHAN (SWORN)

Q. Mr Strachan is your full name Wayne Lester Strachan?

5 A. Yes.

Q. And you live here in Christchurch?

A. Yes I do.

Q. You've got in front of you I think two statements, one dated 18 May of this year and the other one dated 2 August?

10 A. I have them here somewhere yes.

Q. Have you got them with you or do you want a copy?

A. Yes, no I have them here somewhere.

Q. I can get you copies if you want?

A. Yes I've got them both here.

15 Q. Got them both?

A. Yes.

Q. Can I ask you first to read from the earlier one dated 18 May. Have you got that in front of you?

A. Yes.

20 **WITNESS REFERRED TO STATEMENT DATED 18 MAY 2012**

Q. Can you start from paragraph 2?

A. I worked for Alan Reay Consulting Limited (ARCL) between 1979 and 1988 as a structural draughtsman. I did the majority of the structural draughting for the building at 249 Madras Street which became known
25 as the CTV building.

Experience. In 1931 –

Q. 1971?

A. Thank you. In 1971 I started as a structural draughtsman for Powell Fenwick partnership, directly straight from high school.

30 At the same time I started studying for my NZ, sorry, New Zealand Certificate in Engineering in Civil and Structural which I completed at the end of 1973.

In 1979 I left Powell Fenwick and took up a position at Alan Reay Consulting Engineer.

My main work, sorry, my main area of work for Alan Reay was tilt up factories. By “tilt up” I mean that the walls were pre-cast and lifted into place. I also worked on the design of kitset buildings for Fletcher Brownbuilt.

5 I was also involved in doing site testing, test bores and inspections of construction. This was not usually part of a draughtsman’s job but because I had my NZCE I had the knowledge to carry out these tasks.

10 When I was employed by Powell Fenwick I was involved in the draughting of multi-level column or shear core buildings in Wellington and Palmerston North. However prior to 1986 I had no involvement in draughting multi-storey buildings with a shear core whilst working for ARCL.

15 I had no involvement in the draughting of Landsborough House. My only involvement with that building was when I took two draughtspeople who had just started at ARCL to see the steel reinforcing in the building at an early stage of construction and then I returned to measure the tenant area of the floors after the building was completed and occupied.

20 I had no involvement at all with the Mair Astley building, now known as the Bradley Nuttall building. I had no involvement with the draughting of the Aged Persons Welfare building, but did a final inspection to check paint finishes and other details.

25 John Henry did the structural design for the Landsborough House and he worked primarily with Terry Horn who was one of the other draughtsmen at ARCL. Both John Henry and Terry Horn had come to work for ARCL from Holmes, Wood, Poole and Johnstone.

30 When I was first contacted by telephone by the Royal Commission earlier this year I had no recollection of being involved in drafting the CTV building. It is now some years ago and the project was not particularly memorable for me as the detailed drawings only took about a month to do and I was not involved in doing any site inspections so I do not have an ongoing, sorry I did not have an ongoing involvement in the project. I have also been involved in exposure to chemicals in my current employment which has affected my memory. However since I look at a second full set of drawings for the CTV building there was no

doubt that I'd done the majority of the drafting for this building. The matters which are familiar to me are the amount of detail on the drawings, in particular the completeness of the dimensions. Sometimes Alan Reay would tell me I was putting too much detail on the drawings as no other consultants were providing as much. I also recognise some of the handwriting. Whilst most of the drawings were traced by a tracer, sometimes I had to do my own tracing or handwrite the dimensions. For example on drawing S14 that is my handwriting in the middle of the beam.

5

I cannot recall any particular reason for my involvement in the CTV building.

I can tell from my review of the drawings that I have not worked on every aspect of the drawings. I do not recognise the style of some of the steel reinforcing detail on the foundations and some of it does not include dimensions. I would have put dimensions on. I think that Terry Horn might have done these parts or supervised another draftsman.

15

I vaguely recall Gail Pringle working on the stairs which are on drawings S30 and S35.

I recall that Alan Reay was involved in the process of preparing initial drawings which were submitted to the Council with the building permit application. I recall that there was a rush to get the application into the Council. My involvement was in preparing a second more detailed set of drawings. Most of the input I received as to the size of members, dimensions and where to put the steel came from Dave Harding.

20

25

Working with the design engineer.

I have been asked to comment on the process of preparing the structural drawings when I was working at ARCL and the different roles played by the design engineer and the draftsman.

30

The process would start with the engineer drawing on architectural drawings. This would not include detail, just outlines and sizes. These drawings would not include the steel. I would then draw the members without steel. These would then be printed off. At this stage I would be working out the dimensions.

The engineer would add in the steel in freehand on drawings I had prepared and then I would prepare a second set of drawings with the steel drawn on. These drawings would only go out to a tracer to make them neat. A copy of the traced drawings would then come back to me for checking and then I would give them back to the engineer to review them and add any bits I had missed.

5

Q. Can I just interrupt you there. We've had a reference to the term "carcase drawings"?

A. Yes.

10

Q. Is that a reference to the first set that you're talking about before they –

A. Basically yes.

Q. Thank you. Paragraph 20.

A. I would be responsible for any change in the drawings. I would give the engineer the original marked up copies back so they could check I had interpreted them correctly. If I had not he would mark on the trace copy and send it back to me to change. I would then put it back through the tracer.

15

Right at the end of the process the engineer would be given the complete set of trace drawings to go back through. Once he was happy he would sign the drawings.

20

I have been informed that Dave Harding has stated in correspondence with the Royal Commission that the ARCL draftsmen were all under continuous supervision by Alan Reay and that he would "visit each draftsman at least once each day to look over the work they were preparing, to comment on their work and to ask them what information had been provided to them by the engineer". I do not agree with this, at the time Alan Reay was busy at the time –

25

Q. Just so busy.

A. Sorry, so busy at the time he did not have time to look over everyone's shoulder. I'd been working for him for five years by 1986 so he largely left me alone. My recollection is that when I was working on a job with Dave Harding, Alan Reay would only get involved with the work if there was a deadline looming or there was a need to get the permit application into the Council quickly. However because of the way the

30

office was laid out at the time I could not see Dave Harding's desk from my desk. Accordingly if Alan Reay was going down to Dave Harding's office to discuss matters with him I would not necessarily know anything about that.

5

Site visits

I remember going to a site on the Madras Street side of town on two occasions. I am unable to be certain that it was at the site that the CTV building was constructed on but because I do not remember being involved with any other in this area I think it likely that it was. I

10

remember the Arrow Building being next door to it on Madras Street. On one of these occasions I recall going with Jason Drain, now that's an error because Jason Drain wasn't employed at that stage.

Q. Right, so is it someone else or –

15

A. Yes it would be either Shane, I would think it would be Shane but you know.

Q. You're not sure who you went with?

A. It was definitely someone junior to me because there was some training going on.

20

JUSTICE COOPER:

Q. Shall we say a junior person?

A. Sorry.

Q. What do you want your evidence to say, a junior person?

25

A. Yeah, junior draftsman.

EXAMINATION CONTINUES: MR ZARIFEH

Q. All right, thank you.

A. One of the other –

Q. Hold on, on one of those occasions.

30

A. Sorry, yes, if we just leave out Jason Drain I think.

Q. Well read then, on one of those occasions I recall going with a junior draftsman to do test bores.

A. Yes, and I believe to use a penetrometer to get an idea of what sort of bearing you could have. I recall Dave Harding had to arrange to have a red corrugated iron fence that was about 12 foot high unpadlocked. The other occasion I recall attending the site was with Tania Bruce, one of the other ARCL draftspeople to establish a benchmark for the site.

5

I do not have any memory of doing site inspections on the building once construction got underway. Generally it was the engineer who would do the site inspections during construction.

Q. All right, now as we've indicated you've got another statement signed just the other day, which puts a slightly different gloss on things, correct.

10

A. Do you want me to read that?

Q. Yes I do, could you read that please from paragraph 2?

A. When I was first contracted by the Royal Commission I had a total disconnect from this project. This continued after viewing the permit set

15

of drawings. I subsequently started to doubt my memory as I had been advised that no other draftsman at the ARCE at that time had any recollection of this job. I then reviewed the complete set of drawings and concluded that apart from the foundations and block walls, I had carried out a majority of the work as it was in my drafting detailing and set out style.

20

Since signing that statement of evidence I have been provided with copies of monthly timesheets for all the staff at Alan Reay Consulting Engineer, ARCE, for 1986. I was first contacted by Kelly Patterson of Buddle Findlay on 19 June 2012 by telephone. She advised me that timesheet records had been located and that the hours

25

recorded for me against the CTV building job filed 2503, did not accord with what I'd said in my signed statement to the Royal Commission. She agreed to post me out a copy of these relevant timesheets for my consideration.

30

When I received these I found that most of each timesheet had been censored by blanking out many of the staff names and all other job numbers. I subsequently met with Sara Jamieson of the Royal Commission and we discussed the overall number of hours allocated across the draftspersons and tracers for this project. Based on the summary of hours, it was a document referred to there, my view was that the total number of hours spent by both draftsmen and tracers

tied up with that recorded on the timesheets, but only just. I have based this on the estimate of an average of 7.5 hours to draw each A1 sheet and 3.4 to four hours for it to be traced. It would not have expected these average times to be much less than this.

5 At this stage although my total record hours for this project was only 2.75 hours I could still not reconcile the fact that the majority of the drawings looked like my work. I spent some days trying to determine from the edited time sheets who had recorded time on this project. I could not be certain who the other staff members were who recorded
10 time on this project. I could not be certain who had recorded a total of 133 hours over the whole job. I could only guess.

I was unable to obtain an unedited version of the time sheets from Buddle Findlay but was able to obtain unedited copies from the Royal Commission on the 18th of July 2012. I could then see that the 133
15 hours was recorded by Shane Fairmaid whom I had personally trained in the office procedures for detailing buildings and building elements and it was for this reason that the drawings looked so familiar. I had always been sure that the drawings for the foundation and block walls were not my work because of their style. At that stage in 1986 Shane had been
20 at ARCE for about three years and was controlling his own projects, usually under Alan Reay.

Now that I've seen the full unedited time sheets I can reconcile why I thought I could recognise the majority of the CTV drawings as something that I had draughted but I now know that my initial disconnect
25 in terms of memory of this project was accurate as my involvement and it was only 2.75 hours. The time sheets indicate that they were not my drawings but the ones that appeared familiar to me appear to have been done by a person I trained and this would explain why the drawings had looked so familiar."

30 Q. Just a couple of clarification points. Do you have any independent memory of the CTV project going through the office?

A. Um, I recalled this big rush at one stage to get it in for a permit application and I think...

Q. And is that what you refer to in paragraph 16 of your first statement?

A. Yes.

Q. You also say in that paragraph that you recall Alan Reay being involved in the process of preparing initial drawings?

5 A. Yes I might need to explain that a bit. He was, um, he must have been arranging with Shane and myself to get all the tracings or enough tracings with the relevant information and detail on them into a set for the consent or permit at that stage.

Q. When you say “he must have” is that something you can remember him doing?

10 A. Well I remember him approaching me about detailing of the stairs, the exterior staircase.

Q. Right and what, if any, involvement did you have in that, in the detailing?

A. Yes well there was some disagreement about how we were going to detail it and I wasn’t prepared to just do a half pie job on it and then
15 have to come back later and re-do it.

Q. Are you saying that was something you did on the drawings?

A. No because I fobbed the issue off and Terry and Gail did that side of it, the stairs. Well Gail did under Terry’s supervision.

Q. And you refer to that in paragraph 15. “I vaguely recall Gail working on
20 the stairs.” Is that what you’re referring to?

A. Yes, yes I do.

Q. All right well what I’m interested in is to get as accurately as we can what you actually remember happening in terms of getting the application into the Council and the drawings for that purpose?

25 A. Well, as I said, Alan came to me about the stair details about getting something on paper to be put in with the permit.

Q. Why would he have come to you if you weren’t involved in the draughting of the plans?

A. Um, possibly because I might have been available, not sure sorry.

30 Q. And when you say you recall Alan Reay was involved in the process of preparing initial drawings which were submitted to the Council, you told us about him coming to you about the stair detailing?

A. Yes.

- Q. Were you aware from what you saw or what he said to you of any other involvement by Alan Reay in that process?
- A. Can you just repeat that last...
- Q. Were you aware of any other involvement by Alan Reay in that process,
5 other than asking you about stair detailing?
- A. Um, no, sorry when I say "prepare the drawings" it's probably not the right word for it. It was actually just getting them altogether. We're talking on one afternoon into a set we could put in for a permit.
- Q. And you're saying it was Alan Reay who was trying to get those plans
10 together for that purpose?
- A. He was involved because he came to me to try and get me to quickly detail some stairs which I wouldn't do.
- Q. What about David Harding. Do you remember him being involved on that day?
- 15 A. No I don't.
- Q. You referred to S14 with handwriting in the middle of the beam as being handwriting you recognised as yours?
- A. Yes.
- Q. Does that still apply given your second statement in your evidence that
20 you weren't involved?
- A. No.
- Q. How do you explain that?
- A. Well all the drawings were traced. If I was working on a project or a job all those drawings that I'd done would be traced and over the years the
25 tracer would almost start writing like myself.
- Q. And as I understand it you're saying you initially thought the style was yours but Shane Fairmaid had a similar style because you'd trained him. Is that what you're saying?
- A. That's right, yes.
- 30 Q. I wanted to ask you I think you've been sitting in Court when Mr Horn's been giving evidence?
- A. Yes I have.
- Q. You would have heard what he said?
- A. Yes.

- Q. I just wanted to ask you if I can run through some things to see if you can comment on some of the general matters that he commented on. You will recall that he referred to some evidence that David Harding had given in this hearing to the effect that the office was generally very quiet and that Alan Reay's view of things was that when you were on his time you were doing his work so there was no extraneous chat going on. Have you got any comment about that?
- 5
- A. Yes I have. I don't agree with that.
- Q. Why not?
- 10 A. For a start we had a radio going all day.
- Q. What, with music on it?
- A. Yes. The only rule on that was that if someone was really concentrating on something and it became annoying that they could switch it off and, no, it was quite relaxed. He didn't want to see, you know, talking an hour, half an hour at a time general chatter but most people didn't do that.
- 15
- Q. Right, and what makes you say he didn't want to see you talking for too long?
- A. Well you're time wasting aren't you.
- 20 Q. What makes you say that. Did he say something?
- A. He never has 'cos people didn't do it, you know.
- Q. What makes you say he didn't want you to talk for too long?
- A. Sorry, he didn't want to see us just standing round talking and chatting.
- Q. What makes you say that, what did he say to give you that impression?
- 25 A. Well he's never said anything. It wasn't as if he was gonna come out and bollock someone for, you just didn't do it you know.
- 1120
- Q. So what, everyone just got on and worked?
- A. Yes but it wasn't, it wasn't like the atmosphere was not like Terry explained it. Like I'd come from Powell Fenwick and that was real head down, bum up, no talking, tight control, where as Alan wasn't, no.
- 30
- Q. The next comment that Mr Horn made was that he said Alan was very aware, "Made us very aware of the project deadlines". Do you agree with that?

- A. Especially when you were dragging the chain, yes.
- Q. And he said as opposed to Alan going into, necessarily to the details of projects with you. Did that apply to you too in terms of supervision of you?
- 5 A. Yes but generally that side wasn't the issue. It was the time that you were taking to do the project. Normally you had all that information, but if, if he was saying, "Well why haven't you finished this?" It might be because Dave hadn't given me the reinforcing or something, but usually it wasn't, it was just the time, a time issue.
- 10 Q. So from your recollection Alan Reay was more concerned with the deadlines or the timeframes?
- A. No I think that's a bit vague and general that is. Initially he's given you, you're on the project, you've had all the information. He's coming to see you, why the deadline's coming up and it's, it's not complete.
- 15 Q. Mr Horn said that if, referring to a quote from David Harding's evidence which said that if Alan was having a noisy conversation on the phone everybody in the office could hear it. What's your recollection of hearing any noisy conversations?
- A. Well as Terry said, Alan worked in an enclosed office so that, even with
- 20 the door open it is very hard to hear Alan 'cos as you know at the hearing here he's got a low voice generally.
- Q. What if it was a noisy conversation, or a heated one? Can you recall any of those or not?
- A. Not on the telephone, no.
- 25 Q. What about with someone in his office?
- A. Well, yeah, if he was going to give you the bollocks for doing something wrong it would come up and everyone would know and yeah, but generally no he had a very soft voice.
- Q. He, Mr Harding in the hearing has said that the practice within the office
- 30 at the time he was there was, "To build no greater than necessary in terms of the strength of the building," and that Alan Reay, "Made his reputation by making buildings no stronger or more expensive than necessary". Have you got any comment about that?

A. Yes it might've been Dave's impression at that time but it was a, it was a end result of a series of developments that fine tuned those buildings to that stage.

Q. So are you talking about fine tuned similar buildings?

5 A. Yes and they basically were very, when I went to work with Alan as I said in my statement, there was either kitset farm buildings I was working on or just tilt up factories and warehouses and the highest at that stage with Alan for me was two storey.

Q. There's been reference made to the use of standard elements?

10 A. Yes.

Q. Do you agree with that, that there was a practice whenever possible to do that?

A. Yes there was, there were standard fix and corner fixing details, standard purlin details yes.

15 Q. And we've heard that applied to the tilt up buildings?

A. Yes.

Q. Did it apply in any way to the beam and column concrete buildings?

A. Ah, yeah.

Q. Things like using pre-cast beams and such?

20 A. That side of it, no, but there would've been standard fixings on that job maybe for connecting spandrel panels at the corner.

Q. And were they repeated on other jobs in your recollection?

A. The standard?

Q. The standard fixings?

25 A. Oh, yeah, all the, all the factory jobs yes, where it was appropriate we'd try and use a standard fix – standard detail or fixing, unless there was an issue we had to come up with something else for.

1125

30 Q. Mr Horn spoke of being aware of a number of occasions where there were issues between Alan Reay and Graeme Tapper?

A. Yes.

Q. Were you aware of any of those?

A. Over the years, yes I was.

- Q. And you recall he spoke of Alan Reay's attitude towards Graeme Tapper as a result of this frustration as he put it, was shown in the nickname that he used for him, calling him Colonel Tapper. Do you recall that?
- 5 A. No, that is new to me.
- Q. You weren't aware of that?
- A. No.
- Q. But you were aware of the instances or some instances between Alan Reay and Graeme Tapper?
- 10 A. I'd heard his name mentioned but to me I didn't know whether it was just one individual or he was having issues with the Council over different matters.
- Q. How many times do you think that would have happened as far as you were aware?
- 15 A. It tended to get worse. Initially when I started there, there were queries about the strength of his farm building frames and Alan and Brownbuilt had spent tens of thousands of dollars developing that technology doing full frame tests to destruction so they knew how it was going to behave but Alan wasn't going to turn around and give out that information to a
- 20 Council worker because he wouldn't know where it would end up, so that was that side of it. The other side, there was –
- Q. And did that cause frustrations in the relationship between Alan Reay and someone or one or more people from the Council?
- A. Yeah I think it did because they were pointing out where this building –
- 25 this frame was weak, in actual fact we knew it was not right. We knew where the weakest part of the frame was and Alan –
- Q. But he didn't want to tell the Council?
- A. No, because he, you know, it was sort of –
- Q. Right.
- 30 A. The other issues at that time when I first started were mainly, they weren't structural, they were mainly regarding fire ratings and egress lengths and things like that. The only –
- Q. And you are talking about issues between Alan Reay and the Council?

- 5 A. Yes, yeah because he was querying why, say on a boundary panel at that stage we had to have 150 thick concrete panel, which wasn't actually a party wall, so if someone else did a different project they could have that boundary wall sitting, straddling the boundary and only be 200 thick block.
- Q. Did you know Mr Tapper or not?
- A. No I didn't.
- Q. So these are – what you are recounting are things that you observed or you heard about?
- 10 A. They come up on jobs that I worked with, with Alan and at that stage there was only Alan, myself and Brenda who was the tracer come secretary.
- Q. And did he talk to you about any frustrations he had over these issues or not?
- 15 A. Well sort of chatted at morning tea time and that so I was aware of what Alan's thinking was and what the Council's were, yes.
- Q. Bryan Bluck we have heard was the chief engineer at the City Council at that time?
- A. Yes.
- 20 Q. Did you know of him or know him?
- A. I never met him I don't believe but I know of the name, yes.
- Q. Terry Horn spoke of being aware of Alan Reay going over Tapper's head to Bryan Bluck. Did you have any knowledge of that happening at all around that period?
- 25 A. No I don't.
- Q. And just finally the reference to the nickname, The Doctor. Had you heard that in reference to Alan Reay?
- A. Alan never referred to him as The Doctor.
- Q. No, no, other people referring to him?
- 30 A. Yeah but, yeah, no, only as a sort of builder saying to Alan what is up Doc sort of thing like you know as a joke and no, I have never heard people referring to him as a doctor and most people didn't even know he had a doctorate.

Q. Just finally when I was asking you about your recollection of, independent recollection of work on the CTV project –

A. Yes.

Q. You of course mentioned in your first brief going to the site?

5 A. Yes.

Q. Two occasions?

A. Yes.

Q. So apart from those two occasions and the occasion when Alan Reay was trying to get the plans together to put the permit application to the Council?

10

A. Yes.

Q. Do you recall any other involvement?

A. No.

Q. By yourself?

15 A. No.

HEARING ADJOURNS: 11.31 AM

HEARING RESUMES: 11.47 AM

CROSS-EXAMINATION: MR LAING

20 Q. Can I ask you to turn back to paragraph 16 of your first statement of evidence please?

WITNESS REFERRED TO PARAGRAPH 16 OF FIRST STATEMENT

A. Okay.

25 Q. You refer there to your involvement being in relation preparing a second more detailed set of drawings. Now I know it's a long time ago but can you, do you have any recollection as to what the differences were between the two sets of drawings?

30 A. No and there's still some confusion about that. When I first went to the Royal Commission Sarah Jamieson put down a set of drawings. At the time my memory was that they had a red stamp, Council permit stamp on it, and I, and I recall thinking that they'd done very well to get hold of

the set of drawings after such a long period of time. And they were the first lot of drawings that I looked at, and they're, I still didn't recognise them as being my work. It was only when I went, and at that time she informed me that no-one else had any recollection or anything to do with that project, so that's when I started to doubt my memory quite seriously. Because up to that stage, even when the building was being erected, I had a disconnect from the job. I didn't even realise it was an Alan Reay job. So yeah I've lost my train of thought there sorry.

5

Q. We'll just come back to my question. Can you recall what the differences were between the first set of drawings and the second more detailed set of drawings?

10

A. Yes, when I went, when I thought about it for about a week I went back to see Sarah and then she produced another set of drawings which had a black stamp on it, which was obviously photocopied with the Council permit, and when I went through there there seemed to be more drawings with more detail. I didn't, I couldn't see any, any structural changes. There was just more information.

15

Q. We might be at crossed purposes.

20 **JUSTICE COOPER:**

You are at crossed purposes Mr Laing, you will have to do better.

CROSS-EXAMINATION CONTINUES: MR LAING

Q. Can we go back to the time, to 1986?

A. Yes.

25

Q. And you refer there to Alan Reay being involved in preparing initial drawings, correct, in paragraph 16 of your evidence?

A. Yes but that, yeah, as I said before when I was questioned about that. That was one afternoon with Alan going round seeing me, seeing if he could get all this information all together to get sent in for a permit. It wasn't as if Alan was spending months doing this.

30

Q. Now what I'd like you to do if you could do is just focus on my question. And what I'm asking you, can you recall what the differences were

between the initial drawings that were sent into the Council with the permit application –

A. Yes.

5 Q. – and the later second more detailed set of drawings, that's my question?

A. Okay, well I did say there was more detail. I didn't, I didn't spend days looking at these. There didn't appear to be any structural changes. I know for a fact the external stair was fully detailed on the second set that I looked at. Things like that.

10 Q. You can't recall any other details though?

A. I know there was more details, there was more, there was more drawings than what I recalled which had more elevations of the spandrel panels and the external stair was fully, fully detailed as almost like a shop drawing.

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

CROSS-EXAMINATION: MR ZARIFEH

Q. Mr Strachan, when you are talking about these other more detailed drawings are you talking about back then in 1986, or are you talking about the drawings you looked at this year?

20 A. The drawings I looked at this year.

Q. But you were being asked about this paragraph 16 in your first brief?

A. Yes.

Q. So you weren't talking about that?

25 A. No but the wording's a bit, isn't the best in that, I was only referring to one, one day or one afternoon Alan was involved with coming to see me, trying to get enough details, say, for the external stair for to go into a permit.

Q. And so you didn't have any involvement in preparing more detailed drawings?

30 A. It's my understanding now that I didn't, no.

Q. Are you not sure about any of this?

A. Yes, yes, well I, initially I didn't have, I had a total disconnect from the job.

Q. Right?

A. And then –

5 Q. When you say “disconnect” you mean you couldn't remember a thing about it?

A. Well I didn't even relate that, I didn't, the first time that I realised it was an Alan Reay job was just over a year ago in June when they, there was a *Tonight on Sunday* programme at 7.30 and that's the first time that I, I
10 realised that it was an Alan Reay Consultants' job.

Q. Had you forgotten about going to the site on those two occasions that you talked about?

A. At what time, at that stage?

15 Q. When you heard about the CTV building and didn't know it was an Alan Reay job?

A. Yes because when I went to that site it was, it would've been right, when the test bores were done that would've been right at the very start of the project.

20 **JUSTICE COOPER:**

This isn't helping us Mr Zarifeh.

QUESTIONS FROM COMMISSIONER FENWICK – NIL

QUESTIONS FROM COMMISSIONER CARTER – NIL

QUESTIONS FROM JUSTICE COOPER - NIL

25 **WITNESS EXCUSED**

MR ZARIFEH:

Commissioners the next witness as I indicated is the last of those three draughtsmen known as Shane Fairmaid. He's not available today and tomorrow. We only were in contact with him, Ms Jamieson has been in
5 contact with him earlier but we were in contact with him at the end of last week and had a statement prepared which he signed and it was my intention, unless there was opposition, to have that read so that he didn't have to appear but as Your Honour will have heard it appears another statement's been taken from him in the weekend so I'm not sure how Your Honour wants
10 to deal with this matter if he's going to be called later –

JUSTICE COOPER:

Yes we better deal with them both together and hope there's not a third statement.
15 1155

MR PALMER:

I spoke with Mr Fairmaid yesterday and he did refer to a third statement. It's one that I've never seen but one ...
20

JUSTICE COOPER:

You what?

MR PALMER:

25 In discussions that I've had with Mr Fairmaid the statement that's before the Commission at the moment is apparently his second. He did refer to a first statement, it's one that I've not seen, I, perhaps all three should be read.

MR ZARIFEH:

30 There's only one Sir.

JUSTICE COOPER:

My reference to a third statement was an attempt at humour but I'm – I now find that –

MR PALMER:

5 Let's go with humour Sir.

JUSTICE COOPER :

Mr Palmer is there, what are you talking about?

10 **MR PALMER:**

Well in my discussions with Mr Fairmaid, Sir, he said that he had prepared two previous statements of evidence and provided them to the Commission. There is only one that I'm aware of, being one that was received on our email system on Sunday late morning and that –

15

JUSTICE COOPER:

Which hasn't been in anybody's materials up until now?

MR PALMER:

20 Well as far as I've never seen it before.

JUSTICE COOPER:

Well I can assure you I've never heard of him before.

25 **MR PALMER:**

Well thank you Sir, he can clarify that when –

MR ZARIFEH:

30 Well Sir I'm told by Ms Jamieson that there was a typo on the front of the page, referring to a second, but it was only the one statement taken from him. If we can move to the other witness who's being called by Buddle Findlay Sir and that's Paul Andrew Smith.

MR PALMER CALLS**PAUL ANDREW SMITH (SWORN)**

Q. Is your full name Paul Andrew Smith and do you reside in Christchurch?

A. Yes.

5 Q. Are you a director of Alan Reay Consultants Limited and have you been in that position since 2002?

A. Yes I am.

Q. Are you employed by ARCL as a senior draftsman and project coordinator?

10 A. Yes.

Q. And do you hold a New Zealand Certificate of design in architectural drafting?

A. Yes I do.

15 Q. And you are a licensed building practitioner with the qualification design 3 and have you had that since 2009?

A. Yes I have.

Q. Have you been involved with the Royal New Zealand Navy Reserve since 1994?

A. Yes I have.

20 Q. And were you commissioned as an officer in 1995?

A. Yes I am.

Q. Do you hold the position of Lieutenant Commander VRD in the Royal New Zealand Naval volunteer reserve?

A. Yes I do.

25 Q. You have in front of you a written brief of evidence. Could you please read that commencing at paragraph 4?

A. I joined ARCL in late November 1987 as a draftsman which was on the same day as Jason Drain, although at that time the firm practised as Alan N Reay Consulting Engineer. For a period of approximately
30 10 months I worked with David Harding before he left the firm in late 1988. My evidence focuses on this period.

Q. Before you go on, in so far as the office is concerned at the moment, how many office staff are there?

A. Forty-four.

Q. And how many engineers?

A. Thirteen engineers.

Q. And how many draftsmen?

A. About 12 to 14 draftsmen.

5 Q. Paragraph 5.

A. I do not recall having any involvement with the CTV building and I understand the design would have been completed by the time I joined the firm.

10 I did not have a lot to do with Mr Harding but I worked with him on a couple of small jobs and on preparing construction details from time to time. Both Mr Harding and other engineers such as Geoff Banks who joined after Mr Harding left, my job was to produce the structural drawings according to the engineering design.

15 Q. Now Mr Smith you've mentioned to me that you've heard evidence from Mr Harding relating to the way the draughtsmen and engineers interacted over the preparation of carcass drawings and the like?

Q. Yes.

1200

20 Q. Do you have anything that you wish to add to your evidence at this point about that?

A. Yes. I note David Harding said that the draughtsmen set out the joins and then changed the joins if they were sort of seeing that they weren't fit and our role as the draftsman was to actually check the clashes of reinforcing and then give it back to the engineer to sort out if that didn't work. It was not up to us to make the change.

25 Q. Paragraph 7?

A. Dr Reay's role within the firm in those days was primarily to be out getting the work. When he secured a new job he would pass it over to one of the structural engineers to design and manage. Dr Reay did not have much involvement from that point unless a particular issue arose.

30 Q. By "involvement", what do you mean?

A. The day-to-day management of the design.

Q. Paragraph 8?

A. I understand that David Harding has stated in correspondence with the Royal Commission that the ARCL draughtsmen were all under continuous supervision by Dr Alan Reay and that he would “visit each draughtsman at least once each day to look over the work that they were preparing, to comment on their work and to ask them what information had been provided to them by the engineer.” I disagree entirely with this statement. On projects where Dr Reay had handed over the structural design to another engineer, he had very little, if any, oversight of the draughtsmen. We would talk with the engineer or senior draughtsman managing the project if we needed clarification. This was usually Terry Horn, how was our mentor as a junior draughtsman for me.

In around 1992 and 1993 I started to work directly with Dr Reay on concept bulk and location plans and developed a direct relationship with him then. Prior to this time, I had very little interaction with Dr Reay at all for design and drafting projects.

The firm’s office at the time were at 147 Kilmore Street. I have allocated an old office plan, which is annexed and marked “A”. Based on the names that were on the plan and the fact that it appears that we have CAD stations, and that was the computer aided drafting, are provided at each desk, I estimate that the plan was prepared in the early 1990s. I have deleted any names not relevant to this hearing and marked on the plan where relevant people sat in the office at the time. I cannot exactly recall which of two stations Mr Harding sat at and I have marked both stations where he may have sat. I have also shown where Geoff Banks sat when he joined the firm after Mr Harding’s departure.

Q. If you could please bring that up. You should be able to use the mouse to show what you’ve just read into the evidence?

A. Okay, so this is the area that I was talking about. So we have the open plan office and I’d indicated Dave Harding sitting either in position to the left or to the right. With Terry’s evidence this morning indicating that there was a wall here, sorry, here, this makes it more relevant that it was the right-hand picture because I did remember that he sat against a wall.

JUSTICE COOPER:

Q. Who sat against the wall?

A. David Harding.

5 Q. So would he have been where Mr Strachan is shown?

A. Yes. Ah, on the right-hand side.

MR PALMER:

Q. On the right-hand option?

A. Yes.

10 Q. And so you confirm what was said this morning about the position of that wall?

A. Yes.

Q. Also, looking at that plan, where would the staff enter the building?

A. This area down the back was our rear entry to the office, came up a set
15 of stairs and that was generally the office entry used by all of us because our carparking was either at the back of the building or out on Peterborough Street and if you caught the bus or biked, you came in the front entry.

20 **JUSTICE COOPER:**

Q. What was the address of these premises?

A. 147 Kilmore Street.

MR PALMER:

25 Q. This plan shows computer stations by the look of it. Does that help you date the diagram in anyway?

A. Yes it does. It was about 1990 we got the first computer for CAD in the office.

1205

30 Q. But I take it from your evidence that the plan was largely the same when you joined the firm as it is shown here?

A. We altered the offices around to suit different work stations. As you see this one has got the computers and as Wayne and Terry mentioned,

sorry Terry mentioned before that this here, centre area was a wee bit different when the wall was in here.

QUESTIONS FROM THE COURT:

- Q. Mr Harding had told us the he had left by November 1988?
- 5 A. That is correct.
- Q. That doesn't affect anything you have just said?
- A. No 'cos I couldn't find an earlier plan of the office. This was the best I could find.

EXAMINATION CONTINUES: MR PALMER

- 10 Q. Now, Dr Reay's office is shown there you can see you have marked it, "Alan."?
- A. Yes.
- Q. There has been a lot of evidence given about him in the office. Do you have any observations about how you saw Dr Reay operating from his office?
- 15 A. Alan had an open – generally an open door policy with his office. If the door was closed we knew not to go in because he was either working on some project that he didn't want to be interrupted or making a private phone call.
- 20 Q. Mr Harding referred to him as having had loud conversations. What is your recollection of that?
- A. I wouldn't have called them loud at all. It is an open plan office, anybody can talk like this and it could sound loud.
- Q. And finally Mr Smith, Mr Harding was asked about the culture of the office, do you have any observations about the culture of the office as you saw it, when you came to join the firm?
- 25 A. When I joined the firm in November '87 it was a very quiet professional office because we had no computers and we were doing manual calculations for setting out our draughting. We needed it reasonably quiet so we could concentrate but apart from that there was nothing out
- 30 of the ordinary.

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

Q. Mr Smith, when you started at Alan Reay Consultants Limited in November 1987 were you interviewed by Dr Reay?

5 A. Yes I was.

Q. And was that a lengthy process?

A. Not that I recall.

Q. What about in terms of establishing your experience and your level of expertise at that time?

10 A. I was still at polytech in my first year training in '87 so I was –

Q. So you were a student?

A. I was a student.

Q. And you've been at Alan Reay Consultants Limited since that time so some 25 or so years?

15 A. Yes.

Q. You said that you were a director of Alan Reay Consultants Limited so that is the company that runs the business?

A. Yes.

Q. And you had been since 2002?

20 A. Yes.

Q. Are you also a director of other Alan Reay companies?

A. No.

Q. You are not?

A. No.

25 Q. What about Reay Consulting Group Limited?

A. Oh, yes, sorry yes I am.

Q. Had you forgotten about that one?

A. Yes I had.

Q. Right, what is that one?

30 A. What is that one? I don't know how you would explain it. It's, it gives us another vehicle for doing projects, consulting projects on.

Q. And was that – I think you were appointed a director on 20th of January of this year?

A. Yes.

Q. Was that when the company was formed?

A. Yes it was, yes.

Q. So is that a separate entity obviously from Alan Reay Consultants
5 Limited –

A. Yes.

Q. Separate company?

A. Yep.

Q. Why was it thought that you needed another company?

10 A. Well either way to say that best. I am not sure how to answer that
without making it sound wrong.

Q. Without making it sound wrong?

A. Or right or whatever.

Q. Is there a problem with that company?

15 A. No there is not, no. So the best way to put it, would be for future
proofing the company so if at any time Alan, Dr Alan Reay decides to
retire that we have a company set up that can carry on to run Alan Reay
Consultants.

Q. Why couldn't that happen with Alan Reay Consultants Limited?

20 A. Because Alan –

OBJECTION: MR PALMER (12.11.32)

MR PALMER:

(inaudible 12:11:25) comfortable at all with the fundamental questions before
25 the Commission. What Alan Reay Consultants Limited is doing in 2012 can
have no bearing on that and obviously this witness is perhaps not the best
person to answer these questions if they are relevant which I submit they are
not.

30

JUSTICE COOPER:

Why is that obvious?

MR PALMER:

What is that?

JUSTICE COOPER:

5 I said why is that obvious?

MR PALMER:

I didn't hear your last word.

10 **JUSTICE COOPER:**

You said obviously this witness is not the right person to be answering the questions or the most appropriate person and my question is why is that obvious?

15 **MR PALMER:**

Well perhaps Dr Reay might be the better person to answer these questions if they are relevant but of course he's a governing director whereas Mr Smith is a director. He doesn't hold the same status.

20 **JUSTICE COOPER:**

I see, well I am not sure what its relevance is Mr Palmer, Mr Zarifeh?

MR ZARIFEH:

25 Sir I initially was asking the questions on the basis that they were potentially relevant to the connection this witness has with Dr Alan Reay and I accept they have gone a bit deeper but that's simply because it has taken some time for the witness to answer a question and I was interested in how many companies he was a director with Alan Reay of and my next question about this company was going to be whether it has anything to do with the
30 CTV building so that is probably as far as I was going to go.

JUSTICE COOPER:

Yes, well I will let you continue.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. So Mr Smith, you said it was for future proofing the business?

A. Yes.

Q. And I asked you why the business couldn't carry on under the company
5 Alan Reay Consultants Limited. If Dr Reay retired he could presumably
sell his shares to the other directors or shareholders or whoever –

OBJECTION: MR PALMER (12.13.27)**JUSTICE COOPER:**

10 Well he hasn't finished the question Mr Palmer.

MR PALMER:

Well it is fairly obvious where it is going.

15 **JUSTICE COOPER:**

Well it is not to me. Start again Mr Zarifeh.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. What I was putting to you is that if Dr Reay retired he could sell his
shareholding to the other shareholders or whoever and Alan Reay
20 Consultants Limited could carry on running the same business. That is
the point of having a limited liability company isn't it?

A. We trade on the wealth of Alan's respect and knowledge in the
construction industry so to a certain extent a lot of that is on Alan's –
relies on Alan being there so, and Alan always is keen for us to future
25 proof or progress ourselves professionally so this is a way of setting it
up so if Alan decides to retire which I guess we are allowed to, then he,
the company can quite easily carry on.

Q. So remove the name Alan from the company essentially?

A. Correct.

30 Q. To distance that?

A. Yes.

Q. It didn't have anything to do with the CTV collapse?

A. No.

Q. And are you also a shareholder in Reay's Services Limited?

A. Yes, which is part of that same, same system.

1215

5 Q. So was that set up at the same time?

A. One is set up as a, oh, I can't remember the technical term, need Willie to advise me.

Q. Sorry, you need Willie to advise you?

10 A. I'm just trying to think what the technical terms are, you have, there's two companies. One's a trading company and one's the holding company which is standard practice for consulting industries.

Q. Now am I correct in my understanding that you said that in around 1992 you started to work directly with Dr Reay. Prior to that you'd had little interaction with him?

15 A. Correct.

Q. So from 1987 through to '92 or thereabouts?

A. Yes, that would be correct. In the draughting sense.

Q. And you've had very little to do, you had very little to do with David Harding?

20 A. Yes in that first period of, 'cos he was only there for 10 months.

Q. So you can't help us at all from firsthand experience or knowledge with anything to do with the initiation of the CTV project?

A. No.

Q. Or the design?

25 A. No.

Q. Or the calculations?

A. No.

Q. Or the permitting process?

A. No I can't sorry.

30 Q. Or the construction?

A. No 'cos they were all prior to my time of starting at Alan Reay Consultants.

Q. Or any of the contact or relationship in relation to that project between Alan Reay and David Harding?

A. I didn't even know we'd done the project until 1990.

Q. And your evidence, if you started in November '87, you started post the September '87 crash?

A. Correct.

5 Q. And things I imagine would've been quite different in terms of the financial scene and the effect it had on structural engineers following the period you started?

A. The building –

Q. From what you'd heard about?

10 A. The building industry you mean?

Q. Yes?

A. Yes.

CROSS-EXAMINATION: MR ELLIOTT – NIL

RE-EXAMINATION: MR PALMER – NIL

15 **QUESTIONS FROM COMMISSIONER FENWICK - NIL**

QUESTIONS FROM COMMISSIONER CARTER - NIL

QUESTIONS FROM JUSTICE COOPER - NIL

WITNESS EXCUSED

MR ZARIFEH:

Sir the next witness is Peter Nichols who's been referred to already and he has two briefs as well Sir. One, the second brief is actually one that's prepared by the Council solicitors. But I don't, I haven't discussed it with my
 5 friend but what I intended to do was to have Mr Nichols read both briefs, the first and second rather than have to have them led separately, if that's convenient.

JUSTICE COOPER:

10 Yes, is that all right with you Mr Laing?

MR LAING:

Sorry Sir, yes that's perfectly (inaudible 12:18:31)

15 **MR ZARIFEH CALLS****PETER NICHOLS (SWORN)**

Q. You have got a problem with your left arm. Is that as a result of a recent horse injury?

A. Yes.

20 Q. A riding injury?

A. A week ago yesterday.

Q. Your full name is Peter Nichols?

A. Correct.

Q. And you live here in Christchurch?

25 A. I do.

Q. And I think you retired from working at the end of 2003?

A. Correct.

Q. Now you have two statements. One that was prepared when you were spoken to by counsel assisting the Royal Commission. You've got
 30 another one that resulted from you speaking to solicitors from the Council?

1220

A. That's correct.

Q. Can I ask you please to refer to the first one in time, and that's one that you've dated 27 March 2012, have you got that in front of you?

A. Yeah, 27 March.

5 Q. Have you got a copy there or do you want a copy provided?

A. Can't I – I can't identify the date.

JUSTICE COOPER:

Maybe (inaudible 12:20:35) the ways these are set up because the titled page
10 has the date the hearing commenced back in June.

EXAMINATION CONTINUES: MR ZARIFEH

Q. I'll hand you a copy and you read this one.

A. Right, the date is right on the back page, got it.

Q. You'll see that it starts at paragraph 1 and then there's personal
15 background.

A. Page 1 yes.

Q. Can I ask you please to read from paragraph 2. Just read it out loud?

A. Personal background.

In 1965 I graduated from the University of Canterbury with a Bachelor of
20 Engineering Civil degree. During the last two years of completion of my degree I worked on a part-time basis as a staff engineer for the New Zealand Railways Department.

From 1966 to 1970 I was employed as a structural engineer by New Zealand Forest Products Limited.

25 In 1970 I moved to Australia and took up a position as a structural engineer with David Hamilton and Associates in Melbourne.

In 1972 I returned to Christchurch and was employed by Manson Seaward Stanton and Meikle, a firm of architects and engineers as a senior structural engineer.

30 I left Manson Seaward Stanton and Meikle in 1978 and took up a position with Christchurch City Council as a structural checking engineer. In 1981 I was appointed to the position of deputy buildings engineer.

In 1984 I left the Christchurch City Council to take up the position of Borough Engineer with the Riccarton Borough Council. At that time Riccarton Borough Council was a separate entity, separate local authority to the Christchurch City Council.

5 After the Riccarton Borough Council was amalgamated with other former local authorities to form the new Christchurch City Council on 1 November 1989, it was my perception that I was to be reappointed to my former position of structural checking engineer which I was reluctant to accept. Instead I was seconded to the property unit of the new
10 Christchurch City Council into the position of special projects engineer.

After two years with the new Christchurch City Council I decided to become self-employed and form my own consulting engineering practice. During that period I primarily designed the structural elements of several hundred residential buildings as well as several dozen
15 commercial and industrial buildings, all less than two storeys. Now that's incorrect, that should be all less than four storeys.

Q. Two should become four?

A. In height.

Q. Yes.

20 A. Plus a few residential subdivisions and earthworks projects. I continued that line of work until I retired at the end of 2003.

Christchurch City Council 1978 to 1984.

25 During the period from 1978 to 1984 when I held the position of structural checking engineer with the Council, it was my responsibility to check the plans, specifications, calculations and other documents that were submitted in support of building permit applications. Where calculations had not been submitted, which was the usual case, I carried out my own limited computations on the principal structural elements
30 depicted on the documents sufficiently to verify that they were appropriately sized and detailed for the specific function they were required to perform in the overall structure.

The chief buildings engineer at the Council was Bryan Bluck and I reported directly to him. Bryan Bluck held a civil engineering degree

and was a registered engineer with considerable experience in structural engineering. He had held that position for many years, certainly more than I am able to quantify and was almost an institution in his own right. During the period I worked with Bryan I was aware that his acknowledged expertise was being utilised by his periodic appointment as a committee representative responsible for the preparation of a number of New Zealand Standard building bylaw documents.

Bryan was not involved in the day to day structural checking of permit applications. His role was at management level. However if there was an issue with a particular design that was concerning me I would discuss it with Bryan and get a second opinion or direction.

In 1981 I was appointed deputy buildings engineer. I was then second-in-charge to Bryan Bluck. Other engineers I recall working with in the building department were Bill Sissons, Tim Priddy and Geoff Ward.

In checking a structural design my usual practice was to review the plans and identify critical points in the structure which could be isolated out for an independent check. I would do a series of manual computational analyses as best as I could as spot checks to determine whether under the required imposed loadings on the overall structure, the ballpark combinations of bending, shear, torsional and axial stresses as well as deflections, that were likely to occur at those critical points were within permissible building bylaw limits. The Council did not have computers available to the staff in our division at that time so the analyses had to be carried out manually. The checking time available to process a project which may have taken several months to design in detail was limited to a few hours or days perhaps for very large projects which was somewhat inequitable given the magnitude of the task involved.

On a few occasions I requested the structural engineer who was responsible for a major design to provide full structural computations. If the building was a complex structure it could be daunting to do your own independent analysis from first principles and would take far more time to than we had available to us, given the throughput of building permit

applications that we were required to process. It was far more expeditious to ask for a copy of the original computations, look at the assumptions, scope and design approach that had been made by the structural designer and then follow the mathematical analysis that had been carried out as far as was necessary in order to verify that the requirements of the related bylaws had been adequately complied with. With experience I began to develop an intuitive familiarity for different building designs including their scale and details and for the various structural elements which they contained. Most designs were quite conventional and required minimal assessment due to their conformity. Others were innovative or contained unfamiliar features that – and it would be those that I would feel the need to enquire into further.

I recall my six years at the Christchurch City Council was a fairly demanding period. There were a lot of building permits coming into the Council and there was a great deal of pressure to get permits through and buildings up. Full working drawings were lodged with the building permit application but the Council resources allocated to analysing the drawings were limited. As a general rule it was considered that the responsibility for the structural design lay with the structural engineer who had prepared the detailed design. If the design engineer certified the adequacy of the design by way of a formal design certificate, then this certification was usually relied on and a building permit would be issued. I cannot recall any occasion during the period when I held the position of Structural Checking Engineer, where a peer review by an independent structural engineer was considered to be necessary. However, I understand that such practice became the norm in later years, presumably under the influence of a new head of department.

The CTV Building.

I did not have any involvement in considering the building permit application, structural drawings or calculations that were submitted for the CTV Building, as I was then working for the Riccarton Borough Council. At that time Bryan Bluck was still the Buildings Engineer and I understood that his Deputy was Graeme Tapper.

Although I was with the Riccarton Borough Council I became aware through the engineers' grapevine that a new building in Christchurch had been the subject of some contention in the issuing of a building permit. In particular I heard that Graeme Tapper and Bryan Bluck had been involved in another of their fairly regular fracas, this time concerning assessment of the structural design content of the proposed new building. I heard it had been particularly trenchant on this occasion. This is the building that is now known as the CTV Building.

I did not know Graeme Tapper well. We were acquaintances but we never worked together. However, I knew that he was a very forthright person who held strong views and could be hard to move from those views. He could be quite argumentative and had the reputation of being a cantankerous person to deal with if you disagreed with him.

I was curious to know what the issue was with this building. As a result, one day when I was in the central City I took the opportunity to have a close up look at the project. I was standing on the footpath outside the then Farmers Department store on the south side of the Cashel Street. The CTV Building was then under construction directly opposite.

Q. Mr Nicholls, can I just get you to pause there and just ask you, can you recall roughly how long after you heard on the grapevine about this argument between Mr Tapper and Mr Bluck, how long after that was it that you went into the city on this occasion that you refer to?

A. It was a considerable time. It would be in months, probably of the order of six.

Q. Thank you.

A. I had not previously seen the structural drawings for the building. I have seen them for the first time in the course of preparing my evidence.

At that stage the structural skeleton to the building, up to about the fourth floor level had been constructed. External cladding had not been installed and the bare bones of the structural elements of the building were clearly visible. By its appearance I felt intuitively that it was a building that departed from the norm. In my perception, the structure superficially appeared to be inadequate and seemed to be pushing the limits. In short I was astonished that a building like that could comply

with the Code because it appeared to lack sufficient structural elements. I was unsure how its lateral stability was achieved. The reason I say this is that the columns looked very minimal in size. As I recall they were circular in cross-section. I also remember that the floor slabs were
5 integrated directly into the columns without the presence of supporting structural elements such as beams. I thought the columns must be subject to extremely high levels of stress at their conjunctions with the slabs. I also noted that the building appeared to lack any lateral load restraint system in the vertical plane of the south wall, in the form of a
10 shear wall, structural framing or cross bracing. The presence of such a structural element in that location would in my opinion have been the conventional expectation.

I had been standing there observing the construction of the building for about ten minutes when Bryan Bluck came up to me. I assumed he was
15 taking his usual midday constitutional walk as that was his habit when I had worked with him. We greeted each other and exchanged the usual pleasantries. I then commented that I had been studying the building under construction across the road and I was trying to get my head around how its structural mechanism worked because it was not a
20 system I was familiar with and in my opinion it superficially appeared to lack substance.

I specifically referred to the lack of any substantive lateral load restraint system in the south wall vertical plane, which I intuitively felt should have been present.

25 Bryan's response was that when he first saw the concept depicted on the plans he had shared my concerns. He agreed with me that it still gave me that superficial appearance as the construction proceeded. I recall him telling me that the building design incorporated a novel technological approach and that he initially had misgivings about
30 aspects of the design. Bryan assured me that he had carried out due diligence and had been convinced by Alan Reay that his reservations were unfounded. I remember that Bryan mentioned Alan Reay specifically. At that point our discussion ended and we went our separate ways.

I know from having worked for Bryan that whenever he or his staff held some concern about a particular building permit application, his standard practice was to invite the designer or designers to meet with him in his office to discuss in detail the design methods used including
5 any assumptions made and to convince him directly that the specific structural design incorporated in the project complied in all respects with the provisions of the Building Bylaws.

In my experience, by participation in perhaps two or three of them, these meetings could last up to a whole day and on some occasions involve
10 the attendance of up to three or four people from the structural designer's office who had been intimately involved in the project. The details of the design would be discussed item by item and if Bryan was not satisfied he would require the designer to provide further details at a subsequent meeting.

It was Bryan's practice when he was finally satisfied to require the
15 designer as a qualified professional engineer to issue a specifically worded Design Certificate accepting responsibility for the key parameters of the design. Bryan believed that he, on the Council's behalf, was entitled to rely upon the expertise of a qualified professional
20 engineer for assurance that his specific design met the required standard and if that was obtained to his satisfaction there was no reason to withhold the permit.

I retained a copy of a guidelines document Bryan Bluck issued to the
25 structural checking engineer staff at the Council during the time I worked with him.

Q. Just pause there we'll get it brought up and I'll get you to read it and carry on in a minute. Is that the document?

A. Yes, that's the document all right.

Q. Thank you. Can I ask you please to carry on reading where you left off,
30 "All of the engineering staff" in paragraph 30, second sentence.

A. All of the engineering staff were required to comply with these guidelines when assessing whether a building permit application complied with the Building Bylaws. The third item on the list advises staff to rely on what is referred to as the "Professional Designer" when

that designer is prepared to certify that the design complies with NZS 1900 chapter 8.

5 Peer review of a particular design by external consultants was never considered to be necessary or even an option at the time I worked with Bryan.

Tapper letter of 27 August 1986.

10 In the course of preparing my evidence I have been shown a letter written to Alan Reay Consultants by Graeme Tapper dated 27 August 1986. I have also been shown for the first time the structural drawings for the CTV building dated August 1986. My attention has been drawn to drawings 15 and 16 which are referred to in Graeme Tapper's letter. These show the details of the connections between the floor diaphragms and the shear walls.

15 I am astonished by the weak appearance of these connections. They appear to rely on nothing more than a single layer of 664 steel mesh and D12 starter bars –

Q. "D12 slab tie" you've got, "D12 slab tie"?

20 A. Oh, slab tie, I'm sorry, D12 slab tie starter bars at 400 centres. This is the sort of connection I would expect to see for a house to connect the floor slab onto the foundation, rather than a multi-level commercial building. The only difference, the only real difference is that for a house the D12s would be at 600 centres. I'm not surprised that Graeme Tapper was concerned. It jumps out of the page at you when
25 you have some experience looking at structural drawings.

In my opinion Graeme Tapper was very thorough in his assessment of the building permit application documents for the CTV building, based on the scale of the items listed in his letter and adopting a no-nonsense tone which indicated that he felt strongly about them. They also
30 appeared to be in an unusually large number of important details omitted from the drawings which he had meticulously listed. In my time at the Council I never had to deal with a recognised consulting engineer in such a fashion. It was more in the form of an amicable dialogue

between professional peers, with the matters of concern being of far less magnitude and significance.

5 I find it hard to believe that Bryan Bluck would not have been consulted by Graeme Tapper at the time his letter was written, given the scale of the matters he is referring to. That would certainly have been the case during my time at the Council.

Alan Reay.

10 I have had relatively few dealings with Alan Reay over the years. In my experience if you agreed with Alan Reay about a design he would be fine to deal with. However, if you did not agree with him, or challenged him about any aspect of the design he had a tendency to go over the head of the ordinary engineer and speak to Bryan Bluck directly. It was implicit that he believed that when he was dealing with mere Council
15 engineering staff that his doctorate qualification conferred greater significance to his viewpoints.

David Harding.

20 I am advised that David Harding was employed by Alan Reay at the time of the CTV building, at the time the CTV building was designed and was involved in the design process. I did not know David Harding well, but I do recall him being less dogmatic than Alan Reay, although still assertive. I regarded him as a very competent engineer whose design work I considered to be characterised with elegant simplicity, practicality
25 and economic construction.

Q. Now if I can get you to turn to the second statement, have you got that in front of you?

WITNESS REFERRED TO SECOND STATEMENT DATED 13 JUNE 2012

A. Yes I do.

30 Q. That's the one dated on the third page, or the last page, 13 June 2012?

A. Yep I have it

Q. So can you read from paragraph 2 please?

1245

**WITNESS CONTINUES READING STATEMENT OF EVIDENCE FROM
PAGE 2**

A. Two. I have previously provided a statement of evidence to the Royal Commission and its given there –

5 Q. Don't worry about the number.

A. The purpose of my second statement of evidence is to provide additional information about my role as a Council structural checking engineer and the approach of structural engineers to the design of columns and shear wall structures. I also make further observations
10 about my visit to the CTV building while it was under construction. Since preparing my first statement of evidence I have taken the opportunity to review more thoroughly in my own time a complete set of structural drawings and this has assisted me with further observations I make in my second statement.

15

Structural checking process.

At paragraph 15 of my first statement of evidence I note that on a few occasions in my role as structural checking engineer I requested the engineer who was responsible for the design to provide full structural
20 computations to the Council. Although I refer to a few occasions in my evidence this was my usual practice for building permit applications for multi-storey or complex buildings which it needs to be stated were not frequently encountered. For these buildings it would have been a major commitment of both time and resources to carry out a full structural
25 check starting from first principles. It was a great deal more efficient to request the computations from a structural engineer, from the design engineer and to carry out a thorough check on them.

For all building permit applications I would also carry out a preliminary check of the plans to look for any other issues or areas of concern. It
30 was not possible to review all of the building elements in the plans. I would generally look at the maximum stress areas and the primary structural elements and consider whether they appear to have been appropriately sized and detailed. If any issues were identified I would

ask the design engineer for more details about these at the same time as requesting the computations.

5 I have reviewed the letter from Graeme Tapper to Alan Reay Consulting dated 27th August 1986 in relation to the CTV building. It appears to me that he has carried out a similar preliminary review of the plans to that which I have described.

10 When I had received the computations from the design engineer I would review these to check that all of the important structural components had been included. I would also check that the mathematical approach taken by the design engineer confirm that the correct dimensions, material properties and formulas had been used and consider whether all of the significant elements in the calculations were correct. I would be looking for any obvious errors or omissions rather than reviewing every number in the computations.

15 I am aware that one of the issues the Royal Commission will be considering is whether the columns in the CTV building should have been designed for seismic loading. It is my recollection that at the time the CTV building was designed it was accepted that where adequate shear walls were included to provide the required lateral constraint to the structure, the columns could be designed for gravity loads only with the proviso that the shear wall disposition was sufficiently symmetrical to ensure an equitable distribution of lateral loadings between them.

25 At paragraphs 23 to 26 in my first statement of evidence I refer to a visit I made to the 249 Madras Street site while the building was under construction and I make some observations about my opinion of the building at the time.

30 I will firstly make the point that my observations of the building were made from the opposite side of Cashel Street to the construction site which was surrounded by a security fence so that I could not make a close observation of the building.

At paragraph 23 of my first statement of evidence I suggest that the floor slabs were integrated directly into the columns without the presence of supporting structural elements such as beams. From my advantage

point across the road the columns appeared to be integrated into a thickened edge of the floor slab. However having reviewed the structural drawings in more detail I understand that structural supporting beams would have been present. So what I thought was the edge of the floor slab must in fact have been the encastre beams although they appeared to be quite slender.

5

I also say at paragraph 23 of my first statement of evidence that the building appeared to lack any lateral load restraint system on the vertical plane of the south wall in the form of a shear wall, structural framing or cross bracing. Again having now reviewed the drawings in more detail I understand the building included a slender south shear wall. I wonder now whether this wall was built after I visited the building because I do not remember it being apparent at the time I visited the site.

10

I commented, paragraph 23, about being astonished that a building like that could comply with the code because it appeared to lack sufficient structure elements, that the structure superficially appeared to be inadequate and pushing the limits and that I was unsure how its lateral stability was achieved. I now consider that my judgement on the day was impromptu and largely uninformed given the brief duration of my visit and that I had not reviewed the plans at the time. However, in my opinion the overall structure did contain sufficient unconventional aspects for it to attract the close scrutiny that it apparently did in the structural checking process, with the arousal of some decent among the participants involved in the checking process.

15

20

25 **CROSS-EXAMINATION: MR LAING**

Q. Mr Nichols, I'm wanting to refer to you a statement made by another witness Mr Henry, WIT.HENRY.0001.39. In this part of Mr Henry's evidence he is commenting about Bryan Bluck and I am going to ask you to look at paragraph 156. Can you read that in front of you on that screen?

30

JUSTICE COOPER:

Expand it. It is up there now.

CROSS-EXAMINATION CONTINUES: MR LAING

Q. I will read it to you –

A. Could you?

5 **JUSTICE COOPER:**

Mr Nichols, what Mr Laing is trying to direct your attention to is the computer screen and that is paragraph 156 from evidence that has been given to us by Mr Henry.

CROSS-EXAMINATION CONTINUES: MR LAING

10 Q. I'll read it to you Mr Nichols so?

A. I can see it on the screen.

Q. Do you want me to read it to you?

A. I was looking at my paper, I didn't think to look at the screen. My observation was that part of the reason from Bryan Bluck over ruling

15 Graeme Tapper –

JUSTICE COOPER:

Q. Yes there's no need for you to read it out aloud, but just read it to yourself.

20 A. Okay.

1255

CROSS-EXAMINATION CONTINUES: MR LAING

Q. The words that I want to ask you about are in the last two lines where where he says, "I do not think Bryan Bluck would have known enough of
25 the technical details of the code to determine whether the aspects queried by Graeme Tapper met the code or not." Now do you have any comment to make about that statement?

A. Well I strongly disagree with it. I can't imagine that the gentleman knew Bryan as well as I did but if it was even vaguely true then we wouldn't
30 have had one catastrophic collapse, we would have had a multitude of them because Bryan had the overall responsibility for approving them and obviously he got it right most of the time.

Q. So your evidence would be that he did have sufficient technical knowledge of the code. Is that correct?

A. That was my opinion, yes, strongly.

CROSS-EXAMINATION: MR RENNIE

5 Q. Mr Nichols, in paragraph 26 of your first brief you quote Mr Bluck as telling you when you met on the street that day that he had carried out “due diligence” on the building. Do you recall those words?

A. Yeah he actually used those words.

Q. What did you understand the expression “due diligence” to mean?

10 A. I understood them to mean that he had been pretty thorough about having it checked.

Q. Did you understand whether he’d done it himself or whether he’d had somebody do it for him?

A. Well it was my understanding the way he sort of spoke of it was that he had. At least he’d had an involvement.

15 Q. Now my friend Mr Laing asked you about a remark Mr Henry made about Mr Bluck just now, was the one that was on the screen. Thinking of your own experience do you recall whether Mr Bluck had any involvement in setting or making standards at the time you were working there?

20 A. He was absent for a period of a week or more where he was in Wellington on a committee doing exactly that. They were preparing a new building by-law document. I think it was a loading document.

25 Q. And separately to that in terms of the Christchurch Council’s own by-laws, do you recall whether Mr Bluck had an involvement in that?

A. Oh yes he certainly had an involvement in it.

Q. And in terms of interpreting and applying those by-laws, was that done individually by the engineers or did Mr Bluck have some overall role?

30 A. He allowed us a great deal of discretion to interpret the by-laws and apply them and it was only in instances where we were in difficulty in either of those two areas that we went to him for his guidance on that.

Q. And in terms of guidance and who made the final decision was it him or was it you?

A. He didn't dictate to us. Once he had given his interpretation we were pretty much allowed to go away and do what had to be done.

Q. Can you recall ever being overruled by Mr Bluck and required to do something you didn't want to do as a building engineer?

5 A. No.

HEARING ADJOURNS: 1.00 PM

HEARING RESUMES: 2.16 PM**CROSS-EXAMINATION CONTINUES: MR RENNIE**

- 5 Q. Mr Nichols, we are still at paragraph 26 of your first brief. Do you still have that available to you in front of you?
- A. Twenty-six.
- Q. Twenty-six.
- A. Yeah, I have it.
- 10 Q. In that you say that Mr Bluck told you that the CTV building, the way that you put is incorporated, this is in the third line, 'incorporated a novel technological approach.' Do you see that?
- A. Yes.
- Q. Did you understand whether that was the first building in which this had been used or was it that there was an approach which had been developed which was being used in this building?
- 15 A. Well I understand this was the first time that Bryan had encountered it.
- Q. Mr Henry has described the basic design approach to this as a shear wall protected gravity load system, shear wall protected gravity load system. Is that an expression that has meaning for you?
- 20 A. Yes.
- Q. Would you regard that as a novel technological approach?
- A. Not in itself, no, but I'd like to qualify that?
- Q. Yes please, take your time.
- 25 A. For that to be an acceptable system you would need some balance between the load (inaudible 14:18:05) capacity of the shear walls otherwise you get distortion.
- Q. Yes. Do you know whether the novel technological approach that Mr Bluck was referring to was in fact the way in which that system was used in this building?
- 30 A. Yes I – that was my understanding.
- Q. Thank you. Did he make any reference to an earlier building, Landsborough House, as following the same concept?

A. No, we didn't have long enough to get into those sort of details.

Q. Now if you turn to your second brief and if you have a look at paragraph 3.

A. Yes.

5 Q. You refer to having looked at a complete set of drawings?

A. Yes.

Q. Do you mean by that that when you earlier looked at the matter and did your first brief you did not have a complete set of drawings?

10 A. No I was shown a set of drawings but we were sort of mainly focused on sheet 16 I think, and 15, which had been mentioned in somebody's – I think they were mentioned in Graeme Tapper's letter.

Q. Yes.

A. So that was the main point of looking at them at that time.

15 Q. So in your second brief are you saying there the conclusions you've reached after looking through all the drawings?

A. Yes, I had a set of microfilm drawings that I took away with me and had time to sort of study them at my leisure.

Q. You had much more extensive time I take it to study before you reached a view?

20 A. Yes.

Q. So am I right that your second brief states the opinion that you currently hold in relation to the design?

A. I currently –

25 Q. The opinion that you currently hold in relation to the design is what you set out in your second brief?

A. Yes.

30 Q. Now I'm going to ask you to look at some photographs which will come up on the screen. The reference for the first is BUI.MAD249.0077A.1 and this as you can see in the narration at the bottom right is construction of the CTV building in 1987. See that?

A. I can.

Q. And would you agree that that shows the Madras Street face of the building?

A. Madras, yes definitely the east wall, yes.

Q. Now you were standing on the south side of Cashel Street looking at the building. Is that correct?

A. That's where I was located, yes.

5 Q. Would you accept that that is the street which is to be seen immediately on the left of the photograph where you can see the top of the two storey building?

A. Yes.

Q. And were you on that location, that part of Cashel Street or were you to the east on the other side of Cashel Street?

10

JUSTICE COOPER ADDRESSES MR RENNIE – DOES NOT FOLLOW QUESTION

CROSS-EXAMINATION CONTINUES: MR RENNIE

15 A. Well I was almost diametrically opposite that – where that photograph was taken from, I was on, I was on the south side of Cashel Street slightly towards the west.

Q. The – His Honour has indicated that a little more detail will be needed, we've established it's Madras Street in front, Cashel Street runs at right angles to that doesn't it?

20 A. It does.

Q. And at the time there was a Farmer's store and you were standing outside the Farmer's store?

A. Yes I was.

25 Q. And if you imagine out slightly to the left of that photo that is where the intersection between Madras and Cashel takes place isn't it?

A. It is.

Q. And what I was asking you not very clearly was, were you on Cashel Street to the west of that intersection or to the east of that intersection?

A. Oh, definitely to the west.

30 Q. Yes. Now I think in your evidence you indicated that the building at the point you saw it had reached approximately four levels. Is that right?

A. I think it was one more floor than appears in that photograph, yes.

Q. If you look immediately to the left of the builders' shed in that photo, you will see what appears to be another building. You see that?

A. I can see what you're referring to, yes.

5 Q. We'll see it again in a moment, but that appears to be a single storey building between Cashel Street and the CTV building doesn't it?

A. That's what it appears to be, yeah.

Q. If we could now have please BUI.MAD249.00077A.3. This you will see again is the CTV building but it has now reached its total of six levels hasn't it?

10 A. Yes it has.

Q. And do you agree you can more clearly see that single storey building in Madras Street immediately to the south of the CTV building?

A. Yes.

15 Q. Does it follow that the view you would have had from Cashel Street looking towards the CTV building will have been a view looking over and above the single storey building which you can see there?

A. Yes.

20 Q. So that in that sense the part of the building that you could see from Cashel Street will not have comprised at least the first two levels or perhaps even part of the first three. Is that correct?

A. Yes.

25 Q. Can we now please have WIT.COATSWORTH.0001G.10. Now Mr Nichols, this is a view taken from Cashel Street but after the demolition of the single storey building that I was referring you to, you see that?

A. Yes.

1425

Q. This is a photograph which was taken, you can see top right on the 19th of October 2010 by an engineer, Mr Coatsworth. Do you see that?

30 A. Yeah I can.

Q. And would you agree that you can now see in that photograph the shear wall to the front of which is affects the fire escape system?

A. I can see it quite clearly, yes.

Q. But if you think back to when you were looking at it, when you were discussing it with Mr Bluck, you can see I suggest that the shear wall would not have been particularly obvious to you as a shear element in the design at level 4 which have been reached?

5 A. Well I can understand why it didn't register, yes.

Q. But you can now see why although there was a shear wall there you didn't realise that at the time?

A. No and it stood out. It's absence.

Q. Yes, but I'm suggesting to you that you failed to pick up that there was a shear wall there because you could see only level 4, maybe part of level
10 3, and the only construction that would have been there at that time would have been part of the shear wall there?

A. I couldn't fully understand why I didn't identify it.

Q. Yes, and what concerned you at the time was as you couldn't see a
15 shear wall where you expected to be one, you couldn't see how the building would stay up?

A. Precisely, yes.

CROSS-EXAMINATION: MR ELLIOTT – NIL

CROSS-EXAMINATION: MR ZARIFEH

20 Q. Mr Nichols, just on that last point, you were asked about this phrase that Mr Bluck used, the "novel technological approach"?

A. Yes.

Q. In that conversation and you said that you understood that it was referring to the way that the shear wall gravity protected system was
25 used in that building?

A. Yes.

Q. Now if I can refer you to paragraph 8 of your second brief?

A. Yes.

Q. You talk about this principle of a gravity protected system in that
30 paragraph?

A. Yes.

Q. Is that correct?

A. Yes.

5 Q. You say that, "At the time that the CTV building was designed it was accepted that where adequate shear walls were included to provide the required lateral restraints of the structure the columns could be designed for gravity loads only," and you add, "With the proviso that the shear wall disposition was sufficiently symmetrical to ensure inequitable distribution of lateral loadings between them", right?

A. Yes.

10 Q. I just want you to explain if you could what you mean by that proviso that you've added?

A. Well, if you have a – two structures that are sharing between them a lateral load applied to the building then their responses will be different if the, if there's not some equality about their stiffness so if you've got one that's very stiff and one that's very flexible then there's going to be a redistribution of the sharing of that lateral load between them.

15 Q. Right, so with the CTV building we've heard evidence that there was a very substantial shear wall on the north side?

A. Yes.

20 Q. And you've seen a photo a moment ago of the slender or more slender shear wall, coupled wall, system in the south?

A. Well that's a complete mismatch it is in terms of load sharing.

Q. So if an earthquake occurs are you saying that the south, the slender shear wall might go first?

25 A. The south in my opinion that south shear wall which is effectively a vertical cantilever is going to be subjected to some significant deflections under load whereas the shear wall at the other end is not, hardly going to move.

Q. And therefore there's not the symmetry?

A. Yes, so you've got a redistribution of...

30 Q. Right, and just so we're clear were you saying in that paragraph that the accepted approach was that you could have this gravity only as long as you had that symmetry about the shear walls?

A. Yes, it's just not simply a matter of accepting that you can do without or you can ignore the column flexure if you've got shear walls, there is a

requirement, an additional requirement that the shear walls have got to have some equitability between them.

Q. And in terms of what we see in the CTV building did that comply with that symmetry that you said would be accepted?

5 A. Well –

Q. Did it appear to?

A. Not to me, if I had been checking that I would have been really concerned about that.

QUESTIONS FROM THE COMMISSION - NIL

10 **WITNESS EXCUSED**

MR ZARIFEH ADDRESSES JUSTICE COOPER – NEXT WITNESSES**MR LAING:**

Commissioners, do you have my opening submissions?

5

JUSTICE COOPER:

We do.

MR LAING:

10 The secure website reference is now TRANS.20120806.OS for those who might be interested. Your Honour you should also have a bundle of annexures which includes legislation and one High Court decision so I'll be referring to those as I move through my submissions. So if I could start at page 2.

These submissions are made on behalf of the Christchurch City Council.

15 At the outset the council wishes to express its condolences to the families and friends of those who died and to those who were injured in the collapse of the CTV building during the earthquake of 22 February 2011.

The council has taken part in most of the hearings before the Royal Commission and has made submissions on a number of topics. Most
20 relevantly for this hearing it has made two submissions relating to the post-earthquake assessment and management of buildings. I just list them there.

There was an initial submission on building assessments after the earthquakes and I don't think that's on the secure website if Your Honour
25 pleases but I have noted find where that is but it is, has been lodged with the

Commission and then submissions on the Royal Commission discussion
paper, 'Building managements after earthquakes.' and that's a reference to
that paper and those submissions were filed with the Commission on
27 July 2012.

30 JUSTICE COOPER:

That, if the first of those documents isn't on the website, well it may not be on the secure website, in fact there is no reason why it would be.

MR LAING:

It's not in the open website either Your Honour.

JUSTICE COOPER:

Well that's simply will be an oversight in that case. We can fix that.

5

MR LAING:

It's not a matter that's going to be dealt till next month anyway. So these submissions will be considered at a later hearing of the Royal Commission scheduled for September of this year along with the council's report in the building safety evaluation process in the central business district following the 4 September 2010 earthquake and there's a reference to that document. It is not intended to repeat these submissions but they do enclose some observations about damage-based assessment as opposed to seismic-based assessments following earthquakes and then I also just mention it's been the subject of evidence during the course of the present hearing as well.

15

1435

The terms of reference of the Royal Commission are set out at page 16 of the opening submissions of Counsel Assisting. The areas where the Council can be particularly of assistance are paragraphs D, E and F as follows and I don't think I need to read those. I can move over to paragraph 6.

20

The Council has had a number of distinct roles in relation to the CTV building. These broadly can be divided into firstly the issue of building permits, the construction of the CTV building and the inspection of that building in the course of construction. The issue of subsequent building consents relating to alterations to the building, including one case of change of use and, lastly, the Council's role as part of the Regional Civil Defence Emergency Response after the 4 September 2010 earthquake. After the 22nd of February 2011 earthquake a local state of emergency was only briefly enforced followed by a National State of Emergency on 23 February 2011.

25

30

I then turn to the Statutory framework. At the time when the CTV building was constructed, building construction was regulated by by-laws made under the Local Government Act 1974. In the case of Christchurch City Council the

relevant by-law in force in 1986 was by-law 105 (1985) Buildings. This by-law was largely based on New Zealand Model By-law NZS 1900 but with changes.

5 It was necessary to discuss by-law 105 in more detail below but it listed various standards, standard specifications and Codes of Practice in the Second Schedule as means of compliance with provisions of the by-law. These very relevantly included Codes of Practice for general structure of design and design loadings 4203:1984 and for the design of concrete structures NZS 3010:1982. These codes are referred to in the opening
10 submissions of Counsel Assisting at paragraphs 23–26.

A fundamental statutory change to the building control system was introduced by the Building Act 1991 which, for most purposes, came into force on 1 July 1992. This legislation follows a 1990 report reforming building controls by the
15 Building Industry Commission. A single performance-based Building Code for the whole of New Zealand was promulgated by Regulations under the 1991 Act. It was administered by territorial local authorities with Central Government involvement through the building industry authority.

20 And then I list a number of the key features of the regime – replacement of building permits of building consents; provision for code compliance certificates following the completion of building work; compliance documents issued by the Chief Executive, BIA and containing acceptable solution and compliance methods; notices to Rectify and Stop Work notices; provision for
25 private building certifiers; provision for dangerous earthquake prone and insanitary notices. I note that there were provisions of a similar but certainly not identical nature previously in the Local Government Act 1974 and (inaudible 14:38:43) Corporations Act 1954. Requirements for up-grading some building elements to as nearly as reasonably practicable to current
30 building code standards, a case of alterations to buildings and changes of use. There were previously materially different change of use and alteration of buildings provisions in by-law 105 which included reference to an increase in seismic co-efficient and seismic forces and I just refer you to clauses 3.15 and 3.16 of the by-law.

Next, expressed provision for producer statements and we've already heard some evidence about producer statements, national accreditation of building products and techniques and, finally, requirements for compliance schedules and annual building warrant of fitness to ensure that building systems such as lifts, automatic doors, air-conditioning and fire safety systems continue to function properly. A number of building consents were issued by the Council under the 1991 Act for the CTV building. These included consent for the CTV fit-out internal staircase and the fit-out for the Going Places tenancy and I'll be coming back to deal with that particular matter.

The 1991 Act was in turn replaced by the Building Act 2004 which came into force on various dates between 30 November 2004 and 30 November 2005. The 1991 Act had been under review for some time but the legislation was accelerated by the leaky building crisis. The 2004 Act was essentially evolutionary but it contains some new provisions which are relevant to the Commission's wider terms of reference. These include a provision for firstly earthquake-prone building policies to be adopted by territorial local authorities, changes to definition of earthquake-prone buildings (s 122), the introduction regime providing for licensed building practitioners, changing of notices to rectify to notices to fix, BIA to be replaced by Department of Building and Housing which is now the Ministry of Business Innovation and Employment, wide warranties for residential building work, certificates of acceptance for approving aspects of work done without a building consent, accreditation of building consent authorities, issues of warnings and bans on building products and techniques and, lastly, removal of specific reference to producer statements.

There have been a number of important recent changes to the 2004 Act, including those contained in the Building (Amendment) Act 2012. These changes include: making explicit reference to the respective responsibilities of owners, owner/builders, designers, builders and building consent authorities under the Act; provision for different categories of building consent applications not yet in force; regulating who may carry out or supervise

restricted building consent work; and a Code of Ethics and competence requirements for licensed building practitioners.

5 Finally, there is a No. 4 Bill before Parliament which provides yet more comprehensive consumer protection measures, including manager written contracts, residential building work and disclosure of certain information by building contractors. Secondly, for clarification of the exempt building work categories in Schedule 1 and, lastly, a new power for Council to deal with buildings that are at risk because they are near or adjacent to dangerous
10 buildings which is similar to some of the powers given to the Canterbury councils by the Canterbury Earthquakes Building Order 2011.

I now move on to the topic of the compliance for the CTV building with the codes in force in 1986. As foreshadowed in opening submissions of Counsel
15 Assisting, there is considerable conflict in the expert evidence either already given or to be given relating to the extent which the CTV building complied with by-law 105 and relevant codes of practice. Most witnesses have concluded there were areas of non-compliance but there is no consensus, at least at this stage, as to the extent of that non-compliance. The disparity and
20 views of expert witnesses relate to how the relevant codes of practice should be interpreted generally and how they should have been applied to the CTV building. It is apparent that NZS 4203:1984 in particular involved a considerable change from the earlier standard. It is perhaps not entirely surprising if there were at the time, that is 1986, reasonably held competing
25 views within the structural engineering profession as to how the relatively new codes of practice should be interpreted. These codes of practice had to be interpreted in a workable and practical manner by structural engineers, and if I can just interpolate there for one second, these codes were drafted by non-lawyers and clearly were intended to be interpreted by non-lawyers and put
30 into place, so that is the reality of the situation.

JUSTICE COOPER ADDRESSES MR LAING

That is a submission that it would be well not to take too far Mr Laing because it will be received very differently on different parts of this bench.

MR LAING:

Yes, yes and I was trying to be as neutral as I could be.

5 **JUSTICE COOPER:**

I know what you mean.

MR LAING:

And I'm sure your Commissioners really do too.

10

1445

MR LAING CONTINUES WITH INTRODUCTION:

An important preliminary issue of interpretation has arisen in relation to clause 321 of NZS 4203, that is the words, "The building is a whole and all of its elements that resist seismic forces or movements or that in the case of the failure or risk to life shall be designed to possess ductility." This clause is subject to comment in opening submissions of counsel assisting at paragraph 61 to 64. It has to be accepted that the wording of clause 321 by itself and in the wider context of NZS 4203 and 3101 can be subject to competing interpretations. Dr O'Leary who will be giving evidence later on in this hearing will say in his first statement of evidence at paragraphs 21 to 25, that clause 321 first needs to be put into context by commentary clause C32 and should further be considered in the wider context of clauses 322 and 323. Next he will say that clause 323 refers the designer to the appropriate material code which in his view is NZS 3101 and that provides quantitative guidance. He then turns to clause 333 of NZS 4203 and notes the requirements relate to ductile frames and not secondary members.

20
25
30

JUSTICE COOPER:

Elements.

MR LAING:

Elements, sorry yes, secondary elements. Another interpretation issue which is relevant to the beams and columns of the CTV building relate to –

JUSTICE COOPER:

I don't want to have this argument now but as you have described that argument it moved further and further away from the words that are to be
5 interpreted, doesn't it.

MR LAING:

Yes well if you look at the dichotomy between various expert witnesses there are some who I put in the camp of, you only need to look at 321 and that tells
10 you all you need to know, through to Dr O'Leary who, in my submission takes a fairly holistic approach to the two codes.

JUSTICE COOPER:

This is, do you accept the proposition that this has to be construed as a legal
15 instrument, part of a bylaw isn't it.

MR LAING:

Yes if Your Honour pleases of course that is a truism that they are bylaws and they are legal instruments, that is correct.
20

JUSTICE COOPER:

So normally if one has to depart from the words that are used in a provision that one is construing in order to justify departure from those words one has to start with some sort of ambiguity for absurdity in the legal sense which
25 suggests that the literal meaning should not be adopted.

MR LAING:

Yes.

JUSTICE COOPER:

And that is where I wonder – what is the difficulty with just applying those words as they are.

MR LAING:

Well I was really going to deal with this after the evidence has been called but even on the face of it, though I would say those words are not unambiguous, you have the words the building as a whole.

5 **JUSTICE COOPER:**

Well that is not ambiguous is it.

MR LAING:

No, no I am moving to the next part.

10 **JUSTICE COOPER:**

All right.

MR LAING:

And all its elements that resist seismic forces or movements.

15

JUSTICE COOPER:

Yep.

MR LAING:

20 Then you have a comma, or that in the case of failure or risk to life.

JUSTICE COOPER:

Yeah.

25 **MR LAING:**

So the way I believe I read that is that everything after the building as a whole, there is really three different elements or elements probably a wrong word to use, the three different parts to that, and I read that so the words after, "all that in the case of failure or risk to life." I read that as something different to
30 elements that resist seismic forces.

JUSTICE COOPER:

Do you?

MR LAING:

The three parts to it.

JUSTICE COOPER:

- 5 Right. But the – in the line, the second line the verb “are,” must be, relate to something preceding it which is plural and that must be elements?

MR LAING:

Yes.

10 **JUSTICE COOPER:**

So there are two kinds of elements. One is those that resist seismic forces or movements and the other kind of element is one which, in the case of failure is a risk to life?

15 **MR LAING:**

Risk to life, yes.

JUSTICE COOPER:

That is the logic of it to me.

20

MR LAING:

That is – yes, I don't think there is any difference between us on that.

JUSTICE COOPER:

25 Yes, all right.

MR LAING:

But it really comes down to what the case of, failure or risk to life, means and if you took that literally that would mean that every part of the building could
30 be – any part of a multi-storey building could be regarded as a risk to life if it failed so you would have to then –

JUSTICE COOPER:

Well it is a matter of – well why so? Surely some would be more, there must be some classification that goes on between important and less important –

MR LAING:

5 Well exactly my point Your Honour.

JUSTICE COOPER:

(inaudible 14:50:30) to the integrity of the structure.

10 **MR LAING:**

That is exactly my point, you can't just read this in isolation from the rest of the two codes. You have to find, you have to sort of put meaning around those words by looking elsewhere in those codes.

15 **JUSTICE COOPER:**

Well maybe we are not so far apart on that. The interpretation though is of the phrase, "That in case of failure are risk to life."

MR LAING:

20 Yes.

JUSTICE COOPER:

There is no difficulty or I don't see any problem with the interpretation of this clause to bring one to that point. So that then one has to ask what is meant
25 by that in case of failure are a risk to life, what is that category of building element.

MR LAING:

Yes, well –

30

JUSTICE COOPER:

And then that is the question of law and fact, isn't it?

MR LAING:

That is a question.

JUSTICE COOPER:

That will depend upon the qualities of, or the nature of the particular design.

5 The role that that element plays in that design.

MR LAING:

That is correct and I would say it is a matter of fact but it is also a matter to be informed, in my view not only by those words but looking at the other
10 provisions in the code as well. I think all I was really wanting to do at this stage was to say in my view there are, well there is three things, resist seismic forces or movements but they could be bracketed or in the case of failure of risk to life, so there seems to be two or three, however you regard two or three categories there and certainly in terms of – or I will be saying in closing, but I
15 think it is important we hear the evidence, that is that we look at what the seismic forces that resist, the elements resist seismic forces, that is something that has to be informed by the other provisions in the same standard and indeed in the concrete standard as well.

20 **JUSTICE COOPER:**

Well as I say, I don't want to bog things down at this point but if the result of the approach you are talking about is to exclude elements whose failure is a risk to life, that's quite a – on the face of it you need, you'd need to have quite a lot of justification for taking that approach because I think it is just, my first
25 reaction to what you've said is that it's, it is not necessarily all that convincing Mr Laing to say, oh, of course you could exclude – you could extend the reach of this to every element of a building because the failure of any element of a building might cause a risk to life. It's on the face of it a bit difficult.

30 **MR LAING:**

Well you took a – yes if you took a literal approach to that provision you would have to say that every, consider every, if every part of the building is a risk to life then every part of the building would have to be designed for it to possess ductility and in my submission I won't keep dwelling on this but we need to

move on, but in my submission that can't literally be the case. There must be some judgement made about what that entails for a specific building.

JUSTICE COOPER:

5 All right.

MR LAING:

Twenty two I think I am at.

10 **JUSTICE COOPER:**

Yes. Another interpretation issue which is relevant to the beams and columns of the CTV building relates to clause 35.14 of NZS 3101. Dr O'Leary in his first statement of evidence at paras 38 to 45, includes the beams and columns of the CTV building were group two secondary elements based on his interpretation of clause 35.14.1 and at 35.14.3 then becomes applicable and I say the other witnesses clearly have a different view. A further interpretation issue has arisen relates of course, 3.4.7.1 of NZS4203 and is where there's a need to use a 3D modal analysis for structures more than four storeys in height. This analysis in turn is carried out using an extended three-dimensional analysis of building systems as ETABS. A three-dimensional ETABS analysis in fact carried out for the CTV building by Mr Harding and there has evidence already been given about that.

Given that there a number of important matters of interpretation at issue between the experts it is important to understand how the engineering profession practising in Christchurch saw these issues at the time. John O'Loughlin, the senior Christchurch engineer practising at the time will give evidence as to how Christchurch engineers dealt with these issues on a practical day to day basis. The scope of his evidence is mentioned in more detail below.

30

And then I come to ERSA.

A related issue has arisen during the course of the hearing as to whether the elastic response spectra analysis, ERSA, referred to in appendix F of the Hyland Smith report, adequately reproduce analysis of the kind that would

have been undertaken in 1986 based on NZS4203 and 3101. Dr O'Leary comments on this in his first statement of evidence. The ETABS analysis undertaken by Mr Harding in 1986 was not of course available to the Royal Commission, but it would seem clear that the analysis was ultimately reflected

5 in the calculations that were carried out for the CTV building. Most importantly where an ERSA analysis has given weight as a means of determining whether the CTV building complied with the codes of the time, it is important it does as accurately as possible replicate the then provisions of those two standards.

There are a number of other complex interpretation issues that are relevant to code of compliance in relation to the CTV building and again these are dealt

10 with in the evidence of Dr O'Leary and other witnesses.

There is an important issue at stake in the interpretation of the codes relevant to the compliance of the CTV building. If there is possible criticism of individuals or organisations involved in design and permitting of the CTV

15 building, it is submitted the focus should be whether the approach taken at the time was reasonable, having regard to technology available and the technical understanding of engineers in 1986. So again it focuses the evidence of Dr O'Leary and Mr O'Loughlin to be called for the Council.

20 I then come to Bylaw 105, and I'm going to take you through it in some detail, just pointing out the most relevant provisions that may have a bearing on this hearing. Bylaw 105 came into force on 1 December 1985 and consisted of the bylaw itself and two schedules. Bylaw 105 is on the website in two forms. Firstly CI44 is a reprinted version of Bylaw 105 which incorporates

25 amendments made by Bylaw 105A in 1987. These amendments related to part 5 of the bylaw, not material for present purposes. The other form of the bylaw is a photocopy of the original Bylaw 105. The first scheduled Bylaw 105

—

30 **JUSTICE COOPER:**

So we can, for all practical purposes we can rely on the reprint, 044.

MR LAING:

Yes, if the Commission pleases, it's much easier to read than the photocopy, that's why I'm using that version. Sometimes it's quite hard to read the photocopied version.

5 **JUSTICE COOPER:**

Somebody's had the presence of mind to give us that version of the bylaw in our file here.

MR LAING:

10 You've only got the photocopied version.

JUSTICE COOPER:

We've got – it's the one that you say we should be looking at.

15 **MR LAING:**

Yes.

JUSTICE COOPER:

That's CCC.0044.

20

MR LAING:

Yes, I had a comparison done between that version and the photocopy version and its only changes appear to relate to part 5.

25 **JUSTICE COOPER:**

I'm not quite following you when you talk about the photocopy version.

MR LAING:

Well that's the CO44A.

30

JUSTICE COOPER:

This is a – the important thing about or the issue about 0044 is that it is the reprint, not that it's a copy of anything. I'm not quite following you when you talk about a copy.

MR LAING:

It's a reprinted version if Your Honour pleases and –

5 **JUSTICE COOPER:**

Yes, I understand that.

MR LAING:

10 So the other version has been, it's been – this thing here has been
photocopied but it's much clearer, it's not – the other one is like it's been
frame sort of frame around it. We can bring one up if you want to.

JUSTICE COOPER:

15 No, no, I'm not sure that we're on the same page but it doesn't matter,
because we've got the version that you say we should be looking at anyway.

MR LAING:

20 Yes. I think – there's different page numbers at the bottom, that's the only
difference.

JUSTICE COOPER:

25 Yes, well the one I've got has got only – the pages are at the top and we've
got the Bylaw itself, I suppose it's all the Bylaw itself, but we've got the Bylaw
and the schedule of the contents and then –

MR LAING:

30 Well if I could just ask them to bring it up that would probably clear it up. Could
we have ENG.CCC.0044.1 brought up please. Is that the version you've got?

JUSTICE COOPER:

Yes.

MR LAING:

Well that's the clearer version.

Paragraph 30, the first schedule of the Bylaw 105 contained the substance of the bylaw, see clause 4, and consisted of 12 parts. The second schedule lists the specification standards and appendices already mentioned. They were deemed in the absence of proof to the contrary to be sufficient evidence that a relevant degree of compliance to the Bylaw was satisfied, clause 5.

Of particular relevance to this hearing are the following parts of the first schedule:

- part 1, preliminary which contains definitions,
- part 2, building permits,
- 10 part 8, concrete and
- part 11, structural design and design loadings.

Part 1 contained a number of definitions that are relevant. Firstly erection of building which includes the making of any alteration, repair or addition to any building and that has the 1990, 1981 retrofit with drag bars was under the later version, the different version of the bylaw, it has the same definition in it though, if you had to make any alteration, repair or any additions. Inspection which means inspection by the engineer which is the Council's principal engineer or other person authorised on that behalf by the Council. The definition of structural design features report meaning a check list completed by the building designer for the purpose of which was to ensure the structural design requirements of the Bylaw were met, and then part 2 dealing with building permits. Clause 2.4.2 which provides where a proposed building is subject to specific design, the engineer may require the applicant's engineer to complete and sign additional forms as applicable. The note to the clause indicates such forms include a structural design feature summary and a fire safety feature summary. Clause 2.5.4 which provides that where a building is subject to specific design, the applicant may, and if the engineer so requires the applicant shall submit a structural design feature summary or a fire safety feature summary or both. Clause 2.6.2.1 relates to the provision of structural details, except it's set out in 2.7.

JUSTICE COOPER:

Just pausing there, the design features summary, is that different from the design certificates that we – has been discussed in the evidence to date?

MR LAING:

5 Yes, I come back to this, when we get to the concrete section of the bylaw. There wasn't a specific creature called a design certificate that was a general application. The one that you may recall Your Honour I asked Mr Henry a question about it. He referred to an ACENZ form that was in common use. In fact I he said that he had a pad of them.

10

1505

JUSTICE COOPER:

Is that the one we saw that had been signed in respect of the, was it
15 Landsborough House?

MR LAING:

Landsborough House.

20 **JUSTICE COOPER:**

Yes.

MR LAING:

Yes, and –

25

JUSTICE COOPER:

Westpark Mr Mills has said. Westpark.

MR LAING:

30 Sorry, Westpark, yes, and they were documents that were obviously supplied whether in case where they might be asked for by the council or volunteered and I think Mr Henry said that both situations often they were volunteered but there's nothing, there's no general provision in the bylaw for design

certificates, there is provision for design certificates for concrete structures which I'll come to.

JUSTICE COOPER:

- 5 So when the council said as it might have on some occasions, "We want a design certificate for this," they were asking somebody to volunteer a certificate were they?

MR LAING:

- 10 Not necessarily.

JUSTICE COOPER:

I mean, they weren't exercising a bylaw power.

15 **MR LAING:**

If it was a concrete structure so it come to there was provision, yes, so all I'm really saying here there was provision for a design feature summary which seems to be some sort of, it's called a checklist, it's not called a certificate or something like that, but I'll come to the concrete situation in a minute.

- 20 The C2.6.2.1 related to the provision of structural details except that set out in clause 2.7 and required for buildings wholly or partly subject to structural design under the bylaw, such stress diagrams, computations and other data is necessary to show the design complies with the bylaw requirements. And 2.7.1 stated, "All buildings shall be subject of the specific structural design including calculations unless provided by the bylaw."

2.15.1 dealt with the effect of a building permit and deemed it to operate as a permit to erect on a site showing the application a structure as therein described subject to compliance in every respect with the requirements of this bylaw.

- 30 And clause 2.15.2 imposed the duty on the owner, the employer/builder, contractor or person in charge to see the provision to the bylaw were fully complied with, with in the (inaudible 15:07:49) execution of the building work. Clause 2.16.2 provided after a permit had been issued. No departure shall be made from either particulars submitted unless amended particulars clearly

describe the intended deviations supplied to the council engineer and written approval is given to the deviation.

Clause 2.19 dealt with inspections generally. While there was an entitlement to inspect at all times the builder was also required to provide facilities for the
 5 inspector to examine the foundation excavation before the placing of any site concrete or any part of the foundation structure. In addition the builder had to give the inspector not less than 24 hours' notice before any structural concrete was placed in the excavation to enable the inspector to inspect all reinforcing steel.

10 Under clause 2.19.4 the engineer could require the inspection be made of or before other particular operations and for that purpose notify the builder in writing or endorse such requirements in the drawings at the time of issue of any permit. The builder was then required to give the inspector specific notice of the operations involved.

15 Then I turn to part 8 relating to concrete which had the stated objective of setting down the design and construction requirements of buildings or parts of buildings and structures of concrete. Provisions with particular interest for present purposes include clause 8.2.1 which required concrete elements to be designed to resist the loads specified in part 11 of the bylaw.

20 Clause 8.2.5 required the designer to provide calculations to establish that the concrete element had been, has been designed in accordance with the requirements of the bylaw or, alternatively, certified in an approved manner the design method confirms whether it, that should be 'conforms' Your Honour, not 'confirms', conforms with a recognised code of practice.

25 If I could just pause there, that is clearly a form of the design certificate that either could be given, given as an alternative to supplying calculations. So it seems that in terms of a concrete structure at least there was that alternative, either that the, either the calculations had to be provided or a certification in an approved manner was to be given.

30

JUSTICE COOPER:

Do you say the council would never ask for both? Or simply that this appears to envisage alternative?

MR LAING:

Well, I'm, I cannot be definitive as to what the council did or not do at the time.

JUSTICE COOPER:

5 I was just thinking that that memorandum that we've seen under Mr Bluck's hand which talked about the designer putting his name to it or signing it which wouldn't be satisfied that that memorandum (inaudible 15:11:20) its words is applicable (inaudible 15:11:24)

10 **MR LAING:**

(inaudible 15:11:24)

JUSTICE COOPER:

Would not be satisfied simply by providing calculations.

15

MR LAING:

No, well, he, the memorandum clearly has got the intent of encouraging –

JUSTICE COOPER:

20 Certificate.

MR LAING:

Certification, that I can't, well I will come on to some other provisions, a few more provisions that are of some use but certainly the way I read that part of
25 the bylaw it was an alternative so it does seem that it was very common to provide design certificates and I can refer the Commission to the hearing on the Grand Chancellor building where there were, there was design certificate provided in that case.

30 **JUSTICE COOPER:**

Yes.

MR LAING:

And I'm sure and I believe so on the Forsyth Barr building as well.

JUSTICE COOPER:

Can't remember. I can remember Grand Chancellor.

5 MR LAING:

Anyway I'll just keep going but –

JUSTICE COOPER:

Yes.

10

MR LAING:

Clause 8.2.6 requires a designer to supervise the construction of key elements or arrange that the work's supervised by an agent appointed by the designer. Supervision is then clarified to mean general supervision only and includes such periodic supervision and inspection as may be necessary to ensure the structural work is executed generally in accordance with design as distinct from any special supervision that may be required for a particular situation.

And then clause 8.4.1 provides that the concrete elements designed in accordance with the requirements of NZS3101 or a recognised equivalent standard shall be deemed to comply with the requirements of the bylaw.

And then a similar manner clause 8.4.2 provides that concrete elements erected in accordance with NZS3109 or a recognised equivalent standard shall be deemed to comply with the bylaw.

25 Turning to part 11, clauses 11.1.5 and 11.1.6 relate to general structural design method and cross-reference to NZS4203. Clause 11.2.5 relates specifically to earthquake provisions. Clause 11.2.5.1 relates to symmetry and clause 11.2.5.2 relates to ductility and has already been referred to by counsel assisting in his opening. Finally clause 11.3 relating to earthquake loads refers specifically to Zone B for Christchurch, that was Zone B at the time. Counsel assisting in opening submissions at paragraphs 31 and 32 places some importance on the fact that bylaw 105 incorporates in clauses 11.2.5.1, 11.5.2.5.2 ductility provisions from NZS3101 and NZS4203 presumably on the basis that these provisions are entrenched rather than merely being

30

compliance documents referred to in the second schedule. It is submitted, however, these bylaw provisions cannot be interpreted in isolation especially given that clause 11.2.5.2C refers to adequate ductility by cross-referencing to the appropriate material code which is NZS3101. A search of Council minutes
5 from 1985 has not revealed any information about the reasons for including clauses 11.2.5.1, 11.2.5.2 and Bylaw 105 and those minutes have now been sent to the Royal Commission but I don't think it's anything there which assists in relation to these specific issues that I've mentioned above.

10 Now I now turn to a different topic and that is the building permit process. As Mr McCarthy will say in evidence, plans, specifications and calculations would have been required to be supplied to Council in support of a building permit application for the CTV building. Mr McCarthy who was not at the Council in 1986, will provide evidence about his understanding of the building permit
15 process. As already mentioned above there was an alternative procedure not used in the case of the CTV building under clause 8.2.5 of Bylaw 105 relating to concrete structures, provides certification to design method, conform to the requirements of recognised code of practice. Clause 2.5.4 of Bylaw 105 also enabled the engineer to require an applicant to submit a structural
20 design features summary.

It seems clear from the Council's file to the extent that has been able to be located, that the structural drawings were supplied to the Council after the building permit application. The application's dated 17 July 1986. Mr Leo O'Loughlin will give evidence as to his role in receiving and processing the
25 CTV building permit application.

It was following receipt of the structural drawings on 26 August 1986 that Mr Tapper signed a largely handwritten letter addressed to Dr Reay's firm. The Council now holds only the permitted plans and is not clear what differences there were in the original set of plans submitted to the Council, and obviously
30 this morning we were trying to get some clarity on that but unfortunately not very successfully as it turned out. It is not possible to be definitive about the complete scope of the response from Dr Reay's firm as there is no record of a general written response to the letter on the Council's files or Dr Reay's files but there are handwritten notations on the letter held by the Council. I say no

more on that topic on the moment. In addition there is the document transfer form dated 5 September 1986 from Dr Reay's firm. Whatever happened it would seem that Mr Tapper personally signed off the structural drawings on 10 September 1986. Dr O'Leary will comment in his first statement of evidence on how a reviewing Council engineer may have reasonably interpreted the codes, and Mr John O'Loughlin will comment in his evidence about the expectations of the engineering community in Christchurch in the 1980s as to the nature of structural review undertaken by the Council's reviewing engineers when considering applications for building permits. Next how difficult it would have been for a reviewing engineer to pick out the various non-compliances and from his perspective and knowledge some general comments in the role of the Council reviewing engineers in the mid 1980s.

15 **JUSTICE COOPER:**

Is Mr Leo O'Loughlin a relation to Mr John O'Loughlin?

MR LAING:

No. Whilst evidence has been given relating to the relationship between Mr Bluck and Mr Tapper, and their relevant roles, experience and more particularly their involvement with the permitting of the CTV building, none of this evidence establishes that whatever their respective roles were they did not apply themselves diligently in good faith to a structural assessment of the CTV building.

25 Then turning to the inspection process. The inspection process generally, and as related to the CTV building is dealt with in the evidence Mr McCarthy at his paragraphs 44 to 59. His evidence includes an annexure A which provides a timeline of inspection records and related correspondence. There is a five month gap in inspection records which is discussed in Mr McCarthy's evidence and this will be the subject of evidence from other witnesses. Mr Leo O'Loughlin will also give evidence on the inspection process.

Bylaw 105 early contemplated that there should be an element of supervision by structural engineers during the course of construction. Reference has already been made to clause 8.2.6 relating to concrete elements. In addition

the building permit conditions for the CTV building, and they've already have been up on our screen previously, require the engineer responsible for the structural design to confirm in writing that the intent of his design has been complied with before the building was occupied. This again suggests the structural engineer would need to have undertaken sufficient supervision of the construction process in order to provide such a certificate. There is of course no actual certificate on the Council's file. Given the complexity of the design and construction of multi-storey commercial buildings it is not surprising the Council's building inspectors at the time and subsequently would need to rely on the design engineer to carry out an appropriate level of supervision of the site. Mr Jones states in his evidence it was his impression the Council relied on design engineers for supervision and maintenance. Now I'll very briefly refer to construction issues. The Hyland Smith report raised a number of construction issues as does the expert panel report.

15

JUSTICE COOPER:

Who's Mr Jones?

MR LAING:

20 He is a person who worked for the – foreman of Williams Construction. He will be giving evidence during the construction stage of this hearing.

I'm in the middle of 51. These issues which have already been canvassed under (inaudible 15:22:26) detail in evidence, the subject of commentary to Dr O'Leary in his first statement of evidence.

25 Then I come to the 1991 remedial work. Drag bars. No building permit obtained for this work. Mr McCarthy will give evidence this work would have required a building permit. The work was carried out some four years after the building was constructed. In the Council's view the construction of drag bars would amount to an alteration to the building, clause 221 of the 1990 Building Bylaw. Even if with the installation of drag bars could be regarded as a continuation of the original building permit process, no consent of the engineer was obtained as required to a departure from the building permit, see clause 2.16(1) of the 1990 Building Bylaw referred to in Mr McCarthy's evidence.

30

I haven't included that in my annexure but it's in Mr McCarthy's evidence that we'll come to in due course.

I now come to the section of our submissions dealing with changes of use and we have dealt with this in some detail, given that it's quite a complex topic.

5 Prior to the commencement of this hearing, the Council was asked to advise whether the Going Places, Kings Education, CTV and the Clinic tenancies constituted a change of use under applicable legislation. While the Council provided initial response it was indicated as the issues are of some legal complexity, they would be the subject of legal submissions to the
10 Commission.

The Council's position in relation to each of the tenancies in the CTV building insofar as they may have a bearing on change of use issues, are summarised in the evidence of Mr McCarthy. It is noted that there have been some difficulties in determining the use of particular floors of the building over time,
15 due to the floors of the building being described in building consent permit documentation sometimes with level 1 as the ground floor and sometimes the level 1 in fact being the second floor. Issues arising from this uncertainty are explained below where relevant. These submissions refer to the ground floor as level one and subsequent floors as levels two to six. I now set out below a
20 summary of the applicable legislation and its application to the CTV building tenancies.

Starting with the Building Act 1991, section 46(1) which is included in my annexure of, annexure A and I will come back to it in a moment, provided it was the duty of the owner of the building to advise the territory authority in
25 writing if it was proposed to change the use of a building and the change of use would require alterations to the building alterations to the building in order to bring the building into compliance with the Building Code. Such notice would normally be given in the context of building consent application. Section 46(2) of the 1991 Act provides that the use of the building shall not be
30 changed unless the Council is satisfied on reasonable grounds that in its new use the building would comply with the Building Code of various matters including means of escape from fire and structural and fire rating behaviour as nearly as is reasonably practical to the same extent as if it were a new building. If I could just pause there, my annexure A is a copy of section 46

and is a sent version. There was subsequent amendments of that provision which I only realised late yesterday and it doesn't actually impact on any of the issues but if we look at 2(a) and over the next page, page 2011 and there are some words in brackets, where there is a requirement in terms of section
5 25 of the Disabled Persons Community Welfare Act 1975 and those words were removed and substituted later on and there is a similar change in section 46(4)(a) but again nothing turns on that for the present purposes.

JUSTICE COOPER:

10 The disabled, was the Disabled Persons Community Welfare Act repealed by the Building Act itself?

MR LAING:

Not by the Building Act itself.

15

JUSTICE COOPER:

Doesn't matter. I thought that all those requirements that used to be separately provided for were replaced by the Building Act provisions.

20 **MR LAING:**

No, Your Honour because those words were clearly in the Building Act in 1991.

JUSTICE COOPER:

25 Yes at some stage.

MR LAING:

But later on – at some stage. Later on the words were replaced by the following, "Where this is a requirement in terms of section 47(a) of this Act."

30

JUSTICE COOPER:

Yeah.

MR LAING:

And a new 47(a) was inserted, access and facilities for persons with disabilities to and within buildings and I presume that is what replaced the – that 75 –

5 **JUSTICE COOPER:**

Yeah that is as I recall it. It just didn't happen in – at the outset.

MR LAING:

No Your Honour. I am at 59. The 1991 Act did not define the words, “use of a
10 building or change of use,” which led to territorial authorities to determine
where there had been a change of use. The general approach set out in
Brookers Building Law Commentary on section 46 was to determine first
whether there had been a change in the classified use of the buildings
specified in clause A(1) of the Building Code, annexure B. This was
15 considered a constituted change of use for the purposes of section 46 and I
have got in my annexure B, I have got that set out and firstly if we can just, if I
could take you over to that. Unfortunately I am sideways. It is on page D1/156
under D46.06.

20 **JUSTICE COOPER:**

What page sorry?

MR LAING:

Your Honour it is D1/156.

25

JUSTICE COOPER:

Yes.

MR LAING:

30 And it is the paragraph D46.06 and there it states the use of building not
defining it is, doubts about whether a change of use for this proposal has
occurred and therefore whether section 46 applies, appear to arise quite
frequently. If there a change in the classified use specified in clause A1 of the
Building Code then it appears that there is a change of use for purposes of

section 46. However the fact that there is no change to the classified use does not mean that there is not a change of use in the ordinary natural meaning of those words. For example, a change from a prison to an old people's home or a change from a factory manufacturing dairy products to a factory manufacturing explosives which each clearly be a change of use but not a change of classified use and then down the last paragraph. It suggests the word change of use should be given the ordinary natural meaning of bearing in mind if the Building Code requirements for the new use differed from the old then it is probably a change of use.

10

JUSTICE COOPER:

Who is the author of this material -

MR LAING:

15 I am – I was one of the authors of this but I did not write that so I've complete disclaimer if Your Honour pleases, I did not write that.

JUSTICE COOPER:

We will take the afternoon adjournment now Mr Laing.

20 **HEARING ADJOURNS: 3.31 PM**

25 **HEARING RESUMES: 3.48 PM**

MR LAING CONTINUES:

As Your Honour pleases, we were just dwelling on that provision at D46.06 in the Brookers Commentary and I'll now turn, I think I've already got down to 30 61. It is apparent from s 46(2)(a) of the Building Act that the structural behaviour of a building would need to be considered if there was a change of use. The territorial authority would need to be satisfied that the building's

structural behaviour was at a level at or be up-graded to as nearly as reasonably practical to the current structural standard at the time of change of use.

5 The next issue is, however, the application of s 46 and the situation where only part of a building is subject to a change of use. Building was defined in s 3 (1) of the 1991 Act as any temporary or permanent, moveable or removable structure. Then s 3(2) stated: “The purpose of Part IX of this Act building consent, a code compliance certificate and a compliance schedule,
10 the term “building” also includes any part of a building and any two or more buildings which on the completion of any building work are intended to managed as one building with a common use and a common set of ownership arrangements.

15 Given that s 3(2) does not apply to s 46, it could well follow that a change of use would only arise if there was a change of use of the building as a whole. This receives some support from s 46(4) which especially refers to a building, or any part thereof, unlike obviously s 46(2). By way of contrast Brookers Building Law Commentary at D3.10 which is Annexure C suggests that –

20

JUSTICE COOPER:

I was only half tongue in cheek before. Who did write this? I mean there used to be a law –

25

MR LAING:

I think that part was written by Brian Cashin who is now deceased who was the former senior legal advisor to the Department of Building and Housing.

30 **JUSTICE COOPER:**

Responsible for drafting the Act.

MR LAING:

Yes. I make no further comment.

JUSTICE COOPER:

This is the thing. I mean I don't know what sort of a lift up you get from referring to this text Mr Laing.

5

MR LAING:

It's really mainly to say what, if I just go back to the previous issue about if there was a change of use, my understanding is that there was a degree of reliance placed on the classified uses as a matter of practice. I'm not necessarily saying that was the only or the correct interpretation but that certainly was the practice and here, here of course, I'm just referring to another paragraph of his and it's in my Annexure C and it's D3.10 and it's some way down that paragraph C and I can read it now:

10

15 "When an identifiable part of a building such as a storey, a wing, a fire cell or unit title is to be altered or undergo a change of use et cetera, it is the building as a whole not merely part which is required to be up-graded at all under s 38 or 46."

20 Again there isn't really any, as far as I know, any authority on that point at all but as I will later mention, the only change of use the Council considered was in relation to Going Places tenancy and the Council did in fact treat that as a change of use but I thought I just want to put some context around this issue.

25 JUSTICE COOPER:

I don't want to harp on about this but does this text to which you are referring identify who was responsible for various parts of the commentary?

MR LAING:

30 No, no.

JUSTICE COOPER:

So we have the privilege of your good self as a co-author who is able to tell us these things but otherwise we don't know what the standing of the person who wrote this is.

5 **MR LAING:**

No but certainly it's not my work I know.

JUSTICE COOPER:

10 Yes, well, as I say, I prefer to hear from counsel in front of me rather than people quoting counsel who aren't here.

MR LAING:

15 Well Your Honour two things – one I wanted to make the point that there is no, the part (inaudible 15:54:02) building definition doesn't apply to s 46 but I felt duty bound to point out an alternative interpretation I was aware of. I don't place any reliance on it at all but I just thought I should point it out to you.

MR LAING CONTINUES INTRODUCTION:

20 So I now come to the Building Act 2004. Section 114(2)(a) provides that an owner of a building must give written notice to the territorial authority if the owner proposes to change the use of the building, and it's pretty similar to the old provision. 115 provides that an owner must not change the use of the building unless the territorial authority gives the owner written notice that it is satisfied on reasonable grounds the building in its new use will comply as
25 nearly as reasonably practicable with every provision of the building code that relates to various matters, including means of escape from fire and structural performance. Regulations 5 and 6 and Schedule 2 of the Building Specified Systems changed the use in Earthquake-prone Buildings Regulations 2005 specify the method that must be used in determining whether the change of
30 use for the purpose of ss 114 and 115 of the Act and those provisions are in my Annexure D. Regulation 5 defines change of use in relation to a building as meaning changing all or a part of the building from its old use to a new use and with the result that the requirements compliance with the building code in

relation to the new use are additional to or more onerous than the requirements of the old use.

5 Under Regulation 6(1) every building or part of a building has a use specified in the Table in Schedule 2. In order to establish the appropriate use category Regulation 6(2) provides that account must be taken of the primary group for whom the building or part was constructed and not any other use of the building or part. A descriptor of the use in column 1 of the Table in Schedule 2 of the Regulations is set out in column 2 of the Table while column 3 of the 10 Table provides examples of buildings that fall within that use.

And then I go over to Schedule 2 in my Annexure D. Just an example at page 6 – CL – Crowd large – that's the first column, spaces or dwellings and it then contains examples – cinemas et cetera. So that's how those Regulations 15 work.

At 70 – Additional or more onerous requirements compliance with the building code between one use and another will not on their own mean that there is a change of use. The new use must come within a different use category from 20 the old use as specified in the first column of the Table in Schedule 2 of the Regulations. For example, the crowd large use includes both a restaurant and a library. There would be no change of use from a restaurant to a library for the purposes of the Act even though there are more onerous building code requirements in respect to structural floor loads for a library. Another example 25 a change from a restaurant to a hairdressers would be a change from crowd large to working low use categories. However, if there are no additional or more onerous building code requirements with in the hairdresser use compared to the restaurant use then it will not be a change of use regulation 5.

30 I now come to the CTV tenancy. Mr McCarthy will say in his evidence at paragraph 85 that a building consent was issued for the CTV fit out in levels 1 and 2, the ground and first floors of the building on 11 May 2000. The council's files indicate that prior to this the whole building had been used as office space, the ANZ Bank and a Post Shop. A fire safety summary submitted

with the application for the CTV fit out stated that there was to be no change of use for the first two levels of the building because the space was still to be used as an office occupancy. The report later notes that the occupancy in the ground floor is to be new offices and a studio and store areas in the second level of the building was to be used as office space.

The original use of the building for office space and the subsequent use of levels 1 and 2 as offices and a television studio both dealt with in classified use 5.0.1 commercial of clause A1 schedule 1 of the Building Regulations 1992, annexure E, and I set that regulation out there. The CTV fit out involved the change from office spaces to new offices, a studio and store areas. The use of the floors after fit out would not have been significantly different to the use prior to fit out and therefore not in a space as being a change of use under the ordinary natural meaning of those words.

I now come to the Going Places tenancy. Mr McCarthy will state in evidence the 2001 building consent application identified Going Places as the prospective tenant, paragraph 87. The application identified the building would undergo a change of use as a result of proposed works and it was treated by the council on that basis. The building consent issued on 20 June 2001 described the nature of the works as language school fit out. It is understood from the evidence of Mr Drew that Going Places occupied level 3 of the building. The building as a whole, namely all five of the levels, was primarily used as offices. For the building consent application the other five levels were assessed in terms of the fire safety compliance document C/AS1 as WL, working low, and only the one level that was fitted out as the language school was to be assessed as becoming CL crowd large.

In relation to the loading standards in NZS4203:1992 I've set out in this the relevant pages that my annexure of F which applied in 2001 it was necessary to ascertain the classification for this building under clause 2.3.1 and table 2.3.1, page 17. If I can just take you to that, that's the first page of annexure F and you'll see page 17 the top there 2.3.1 Buildings. Buildings shall be classified in accordance with table 2.3.1 and there are two categories that I will be mentioning, one is II Buildings which as a whole contain people in crowds and IV Buildings not included in the other category. All buildings came within one of the building category classifications in 2.3.1 of NZS4203:1992.

Clause 2.3.1 in table 2.3.1 was in turn relevant to assessing the seismic risk factor for the structure as set out in table 4.6.2 at page 45 and that is set out in my bundle some distance down, page 45 and there is a table 4.6.2 there, risk factor for structure, and then a list category, refer table 2.3.1, and it's got the Roman numerals, I–V and then a risk factor. You'll see the risk factor for II is 1.2, the risk factor for IV is 1.0. The building and building work on the building that was described in consent application ABA1013756 would have been within category 4 buildings not included in any other category and not category 2 buildings which as a whole contain people and crowds. It seems clear that there would have been increased loading standards for the building compared to a new one built at the same site. The risk factor itself did not on the basis that of above increase with the change of use. So there were really two issues in there. There was whether the risk factor had changed and then what were the increased loading standards.

Counsel assisting has previously asked whether the council took any steps to satisfy itself the building met increased loading standards for a school other than to consider when the building had been designed and constructed. There is no contemporaneous record as how the council addresses the particular issue apart from the council's structural checklist and I provide a reference to it there. As already mentioned the council would have been required to be satisfied on reasonable grounds that in its new use the building would comply with provisions of the building code for all the matters identified in section 46 including structural behaviour as nearly as reasonably practical to the same extent as if it were a new building. The only applicable case law at the time in relation to the as nearly as reasonably practical test in section 46 is Auckland City Council v New Zealand Fire Service and that's partially reported at 1996 1 NZLR 330 and I've got a copy of the complete case at my annexure G, however, the relevant paragraph is at 3.3.8, set out there. I might just read the start of that paragraph as well if Your Honour pleases but so I'll start:

"In the end, what the cases say is the obligation is not absolute. It must be considered in relation to the purpose of the requirement and the problems involved in complying with it, sometimes referred to as 'the sacrifice'. A weighing exercise is involved. The weight of the considerations will vary according to the circumstances and it is generally accepted that where the

considerations of human safety are involved, factors which impinge on those considerations must be given an appropriate weight.”

That case of course was in relation to fire safety and the issue whether there should be two sets of stairs, fire escape stairs rather than one.

5 I go to my paragraph 85. At the time when the council was considering the building consent application in 2001 there did not appear to be any building industry authority determinations. It had considered the change of use situation involving structural issues only to say what access and issues, ways and means escape from fire had been the subject of determinations and I use
10 the words there advisedly, ‘did not appear’, I haven't been able to find any. If there were some then they, I have not been able to find them. I then set out section 47 of the 1991 Act. I don't think I need to read it. It contains a very large shopping list of factors, including the size and complexity of the building, intended life, how often people visit the building.

15

JUSTICE COOPER:

Yes, you can take that as read.

MR LAING:

20 Thank you Sir, and considering what was reasonably practical in this case it would have been necessary to weigh up a number of factors including the upgrading of the whole building compared to the building work proposed under the consent, which was building work on one level, part of the building. The date when the building was designed and constructed would also be
25 relevant to Council's consideration of what was reasonably practicable in relation to this building consent, any upgrading related structural behaviour applied as a result of the change of use. In the context of this building there was no structure upgrading work, in fact required, but for the change of use would proceed with upgrading work in relation to other building code
30 requirements in section 46 was required.

The next tenancy that I refer to is King's Education. Mr Drew's evidence is that King's Education occupied the floor above the Going Places Language School which was level four. The Council has no record of any notification of a change of use of the building, or a separate application for a building

consent relating to the King's Education tenancy. The date when the tenancy began is therefore unclear. However the new tenancy would have been a change of use of the building, level four of the building, under the provisions of both the 1991 Act and the 2004 Act. It is unclear what specific use of level
5 four of the building was prior to the King's Education's tenancy. A building consent was issued in 1999 for a fit out of level 3 of the building for Health Link South dental. The application documentation includes a fax from Design Edge, the applicant's consultants to the Council dated 22 February 1999. The fax discusses the proposed use of the building as follows:

10 "The offices and combined surgeries provide a management service for school dental staff. A limited range of dental services is included for routine assessment and treatment, and as a community service type function. No anaesthetic is used in treatment and hours are normal office hours. The maximum number of persons would be six for this part of the operation. The
15 training room was used to train school dental staff and generally 10 people would be in a session".

And "the" should probably be "there".

"There are four cubicles or open offices for the management team."

If this application in fact related to the third floor being level four of the
20 building, then it seems according to Council's records this was the use of the floor prior to the King's Education tenancy. Alternatively, the dental facilities were on floor two, level three of the building, then according to Council's records level four would have been used as offices before the King's Education tenancy and so there would have been a change of use for the
25 King's Education tenancy where the prior use was office space or dental facilities.

Under the 1991 Act, the use of office space or dental facilities would have fallen within classified use 501 commercial, under clause A1 of schedule 1 of the Building Regulations 1992. However the use of the floor as a language
30 school would have fallen in the classified use 4.0.3 communal non-residential which applies to a building or use for a large degree of care and services provided, examples an Early Childhood education care centre, college, day care institution, centre for handicapped persons, kindergartens, school or university. As this would have been a change in the classified use under the

regulations there would, based on the analysis above have been a change of use for the purposes of section 46.

Under the 2004 Act, a dental facility or office use would be classified as WL, working low, under the 2005 regulations. However use as a language school
5 would be classified as either CS, crowd small or CL, crowd large, as this would be a change in the category use under the regulations, it would also be considered to be a change of use for the purposes of section 114 of the 2004 Act. While the King's Education tenancy may have been a change in use on level four of the building, as discussed above in relation to the Going Places
10 tenancy, this does not mean that structural upgrading the building would necessarily have been required, had the Council been notified of the change of use.

I then come onto the final tenancy and this is the Clinic tenancy. As stated in the evidence of Mr McCarthy, the Council's not found any record notifying it of
15 the occupation of level five of the CTV building by the Clinic. The Council's records indicate before the Clinic occupied level five of the building in January 2011, this floor had been used by Empower Rehabilitation as a physiotherapy clinic. This was a change from a physiotherapy use to a medical clinic use. As a result a new occupation of the floor would not have been a change of
20 use under 2004 Act. Even if Empower Rehabilitation occupied a different floor, and the floor instead of being previously used as office space, the Clinic tenancy would not have constituted a change of use at level five of the building under the 2004 Act. The use of the floor as offices, a physiotherapy clinic and medical clinic all fall within category WL, working low. The clinic's
25 occupation would not therefore result in a change of use of the floor under the 2005 regulations and would not have been a change of use for the purposes of section 114 of the 2004 Act.

I just very briefly then turn to the internal staircase and there's been evidence given about this building consent previously. The Council issued a building
30 consent for this work on 11 May 2000. The structural engineer involved, Mr Falloon, provided the Council with a producer statement in support of the building consent application and a construction review statement once the building was complete. The Council was entitled to place reliance on these producer statements. Mr Falloon has given evidence describing his

involvement in the process and Mr William Holmes has also provided evidence which reviews the compliance issues, issues associated with the construction of the staircase.

5 The demolition of the Les Mills building, or rather buildings. It is clear from the evidence previously given by Mr McCarthy that the building consent issued for the demolition of Les Mills building, did not contemplate the use of a wrecking ball. There is no evidence any complaints were received by the Council about the demolition. If complaints had been received, the Council could have been expected to investigate the demolition process. The building consent was
10 stated to be issued under section 51 of the 2004 Act. Section 51(1)(a) provides the building consent must be issued in the prescribed form which in this case is form 5 in the Buildings Forms Regulations 2004. Form 5 does not refer to compliance with the building code, but section 17 provides 'all building work must comply with the building code to the extent required by this Act
15 whether or not a building consent is required in respect of that work.' Mr Dray will give evidence about how the demolition consent application was assessed by him in terms of the effect of demolition on neighbouring buildings.

JUSTICE COOPER:

20 Mr Dray's brief is to hand is it?

MR LAING:

Still to come Your Honour. It's only been fairly recently we've been asked for a brief and I – it's in progress. It probably could be most conveniently dealt
25 with towards the end of this hearing I think. It doesn't fit neatly into the other –

JUSTICE COOPER:

Next week.

30 **MR LAING:**

Well next week, next week's fine.

Come to the question of the holes cut in floors and beams. A review has been carried out by the Council in relation to building consent applications 1990 to 2000. There was no evidence located of any holes in beams being included

in the applications. There was reference in two applications for pipe penetration through the floor and I then refer to the two building consent numbers. The penetrations were of a 35 to 40 mm diameter and were for sinks and shower and floor waste.

5 I now come to the quite different topic of the post-September earthquake response. Evidence has already been given by Mr McCarthy and other witnesses about the Council's involvement as far as the emergency response following the 4 September 2010 earthquake. It is not intended to review this evidence as part of these opening submissions but there are some matters,
10 many in common with earlier hearings, related to the post-September earthquake response that the Council believes are of wider interest in terms of emergency management for the future.

Firstly, the vulnerability of paper Council records, the damage and destruction and their consequential lack of availability following a major earthquake event.

15 The ultimate solution is the conversion of all building records to an electronic system. This is underway in Christchurch. In the past three years the Council has converted 25% of its property records to a secure electronic data management system. It is understood that many other Councils either scan or are scanning their property records.

20 The next matter is the necessity for ongoing training of civil defence officials. It has been suggested a national register of building officials who have experience and training and building evaluation be established and that initially training be directed towards this group which can be expanded over time. The formal adoption of a national system of assessing buildings after an
25 emergency, a BSE or a building safety evaluation system, would enable Council's to focus their training on building officials. The present review of the BSE guidance materials not complete and will be influenced by the Royal Commission findings. Formal adoption of an amended BSE system will ensure ongoing training and this is not part of Mr McCarthy's evidence but I
30 know he will be very happy to answer any questions about, on that topic.

Next, the need for electronic emergency management information systems (inaudible 16:20:03) information about placarding buildings available, civil defence officials, when coordinating rapid assessments of buildings, and in common with other hearings, problems around public land owner

understanding of the rapid assessment process and green placards in particular.

Next, wider issues around building owner follow-up when a building has been given a green placard. For instance, should owners of all or some categories

5 of buildings be required to carry out detailed engineering assessments and if so should the scope of these assessments be mandated. Lastly, owners and insurers sharing engineering information with Councils, that the changing statuses of buildings can be better understood with ongoing aftershocks and the safety of tenants and the public safety in streets and adjacent buildings
10 can be better protected.

Post-Boxing Day response. Evidence has already been given by Marie Holland as the issue of green placard level 1 following the Boxing Day earthquake.

Then witnesses. In addition to the Council witnesses already been called,
15 Council will be calling evidence from the following persons: Mr McCarthy and I will be leading his evidence shortly. Mr Leon of Auckland. Dr Arthur O'Leary, he has two statements of evidence already filed with the Commission. He wishes to lodge a further statement of evidence that deals with a calculation by Dr Reay in relation to the live loading with the Going Places change of use,
20 so he wants to comment on Dr Reay's calculations. It is very brief. He also does have an interest in Mr Latham's evidence as well so I will, we will be discussing that with him as well but we are waiting to see what happens with the evidence about to be filed and then Mr John O'Loughlin who has got two statements of evidence lodged with the Commission and Mr Dray who, his
25 statement will be lodged very shortly.

And finally the Council will be lodging a memorandum with the Royal Commission providing additional information of the scope of the researchers for records relating to the CTV building and this was a topic raised by counsel assisting and a request was made that more detailed
30 information which is currently being collected and I will hopefully be following that further shortly. So that concludes my –

JUSTICE COOPER:

Thank you Mr Laing, that is helpful.

MR LAING:

So unless there any questions I will now call Mr McCarthy.

MR LAING CALLS:**STEPHEN MCCARTHY (SWORN)**

**THE COURT ADDRESSES MR LAING – (JUDGEMENT EXERCISED,
5 SOME EVIDENCE TAKEN AS READ)**

EXAMINATION: MR LAING

Q. Is your full name Stephen James McCarthy?

A. Yes it is.

Q. And you've worked for the Christchurch City Council since 1st of
10 May 2006?

A. Yes I have.

Q. And you were the environmental policies and approvals manager for the
Council from 1 May 2006 until 1 March 2012?

A. Yes.

15 Q. And you are currently the resource consents and building policy
manager?

A. Yes I am.

Q. Yes if you can take paragraphs 2, 3 and 4 as read. Before you embark
on your evidence proper, do you wish to say something?

20 A. I would, thank you. On behalf of the Council I would like to express our
sympathy and condolences to the families and the friends of victims of
and the people injured in the CTV collapse. The Council is very much
part of the community and we also feel the pain of the loss of so many
lives. Thank you.

25 Q. Thank you Mr McCarthy. I think we – we don't need to read paragraph
5, you identify there the documents that have been provided to the
Commission and in terms of your scope of evidence it will be primarily
(f) to (i) which we will be dealing with, so can we start over on – and you
have already dealt with 7 to 15 so I can ask you to start at 16?

30 A. The building permit process, CTV building.
The bottom permit application for the construction of the CTV building is
made by Alun Wilkie Associates on 17 July 1986. The application form
identifies Prime West Corporation Limited as the owner and Williams

Construction Limited as the builder. The application was received and processed at the Council by Mr Leo O'Loughlin, although his role was largely to coordinate the building permit process.

5 I was not employed by the Council in 1986. My comments below concerning the Council's processes followed at the time are based on the review of the material on the Council's building file, the requirements of the Bylaw that was current at the time and from discussions with some of the building consent officers and other staff who were employed by the Council at the time.

10 It should be borne in mind that the CTV building was permitted and constructed around 25 years ago. There are very few council officers involved in permitting and inspections in the 1980s who are currently employed by the council. There was only one current staff member, Mr Leo O'Loughlin, who had any direct (although peripheral)
15 involvement in the building permit processes for the CTV building. A separate statement has been provided to the council from Mr Leo O'Loughlin."

JUSTICE COOPER:

Q. Did you mean the Commission?

20 A. Pardon me?

Q. Did you mean to say council, the word that you've got the word Commission in that last line? Provided to the Commission from Mr O'Loughlin?

A. I'm sorry, yes to the Commission, thank you.

25 **EXAMINATION CONTINUES: MR LAING**

Q. Now I think you can pause there because your paragraph 19 refers to matters that I have covered?

A. Yes.

30 Q. And also too I think 20 relating to Mr Bluck and Mr Tapper's also been matters well covered?

A. Yes.

Q. 21 you refer to the building application and I think we can go over that paragraph and start at 22 again.

WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH 22

5 A. "From the council's file, it appears that Graham Tapper was involved with the structural assessment of the proposed building. Mr Tapper wrote to Alan Reay Consultants on 27 August 1986 seeking information and details that appear to have been missing from the documentation supplied with the application. The letter asked for calculations and a
10 signature on the drawings to show that the plans had been checked and approved by the designer. The letter requests a list of other matters to be clarified. For example, the letter refers to plan S16, structural plans 16 and says, "Shear core floor slab and stair landing details are missing."

15 The council's file does not contain all of the documents that were submitted by Alan Reay Consultants in response to this request. The only record the council has of a response is the notes in red ink on the letter. Next to the underlined words 'calculations' and 'foundation report' there is note written in red ink stating, "Received a day or two after letter
20 sent." There are also a number of ticks in the margins against various items.

It appears likely that these notes made by someone at the council recording documents and information received in response to the 27 August 1986 letter. A document transfer form, dated 5 September 1986,
25 on the file, indicates that the drawings have been amended as requested and calculations relating to the Bondek structure after fire were supplied by Alan Reay Consulting. I note that Mr Wayne Strachan has stated at paragraph 16 of his evidence that he was involved in preparing a second more detailed set of drawings.

30 A further letter from Alan Reay Consultants dated 19 August 1987 also states, "I've had a recent meeting with Mr Tapper of the city council and can confirm that the council holds copies of our drawings and calculations."

Q. 26 you refer -

JUSTICE COOPER:

Just pause there, can I see that document? BUI.MAD249.0259A.4.

EXAMINATION CONTINUES: MR LAING

5 Q. 26, I think we can pass because it deals just recording what Mr Nichols says in his evidence and also 27 which deals with a, something which was being dealt with this morning in terms of Mr Bluck's expertise in structural engineering and the same in 28. Can I then ask you to start again at paragraph 29 please?

A. "The structural checking process.

10 It has been difficult to find contemporary information about the level of checking. The council's structural checking engineer such as Mr Tapper would normally have carried out in respect of the plans and calculations submitted with a building permit application.

15 I have however read the statement of evidence of Peter Nichols in relation to the CTV building. At paragraphs 10 to 17 of his evidence Mr Nichols discusses the method that he adopted when reviewing the plans, specifications, calculations and other documents submitted with building permit applications. I have no reason to doubt that the process described by Mr Nichols was the usual process carried out by structural
20 checking engineers employed by the council at the time. Mr Nichols –

JUSTICE COOPER:

Mr Laing, he is just telling us what Mr Nichols told us this morning in this paragraph.

25 **MR LAING:**

I have no reason to doubt that the –

JUSTICE COOPER:

No, paragraph 31 we're on now.

30

MR LAING:

Sorry?

JUSTICE COOPER:

“Mr Nichols says” –

MR LAING:

5 Yes Sir. That’s –

JUSTICE COOPER:

Are your numbers the same as ours? 31.

10 **MR LAING:**

“Mr Nichols says” –

JUSTICE COOPER:

Yes, paragraph 14, “That in checking the structural design.”

15

MR LAING:

Yes.

JUSTICE COOPER:

20 Well I am saying Mr Nichols has told us this.

MR LAING:

Yes, he can omit that, and 32 as well.

25 **JUSTICE COOPER:**

Yes.

MR LAING:

I would like you to go to 33 though.

30 **EXAMINATION CONTINUES: MR LAING**

A. “Building permit conditions.

Council records indicate that the building permit to erect the building was approved and issued on 30 September 1986. The plans and

foundation specifications for the building are stamped the same day. The stamped plans are the only set of drawings on the council's file. Copies of the permit approval, the building permit and the permit conditions have been provided to the Royal Commission.

5 Q. Just pause there. I think we should probably look at these documents. Firstly 0141.6 please? Could you have a look at that document on your screen Mr McCarthy?

A. Yes.

Q. What is that document?

10 A. Yes.

Q. Yes, is that the permit approval document notifying Williams Construction that the permit's been approved?

A. Yes it is.

15 Q. Next one, 0010A.1 please? Can you look at the, actually it's not on that, can we move that document, if you look at the far top right corner please?

A. Yes.

Q. That's the building permit?

A. Yes.

20 Q. Yes, thank you. And we'll now look at the permit conditions. 0141.10 please?

A. Yes those are the conditions.

Q. Yes. And if you look at condition number 2?

A. Yes.

25 Q. "The Engineer responsible for the structural design (including the foundation system) confirming in writing the intent of his design has been complied with before the building is occupied"?

A. (no audible answer 16:37:32)

Q. Right, can you continue reading at paragraph 34?

30 A. "The building permit issued on 30 September 1986 contained a range of standard conditions. Counsel for the Royal Commission has asked the council to comment on condition 2. This condition required the design engineer to provide a written confirmation to the intent of his design had been complied with before the building was occupied. The council has

not been able to locate a record of a confirming document from the design engineer in relation to the CTV building. It is possible that some, or all of these confirming letters were held on a file separate to the property files but the Council has been unable to confirm this.

5 I can confirm however that it was the Council's practice to include conditions of this kind on building permits. There were for example similar conditions in building permits for the Forsyth Barr and Hotel Grand Chancellor buildings. The Council's expectation would have been that the building permit conditions should have been complied with. The Council has located some examples of letters received from the engineers in relation to other building permits certifying that the work as built is in accordance with their design and also examples of letters from the Council to engineers requesting that certification. The Council letters are not clear copies as they were photographed on microfiche film.

15

Q. And can we have a look at 0245.5 please. And that's a letter from O'Loughlin, Taylor, Spence to the Council?

A. Yes it is.

Q. It is about a telephone conversation to confirm you made inspection (inaudible 16:39:33), and the next page please. The next one Mr McCarthy?

20

A. Yes, that's certification as well that the foundations for the property have been constructed in accordance with the drawings and the details.

Q. Yes, that's from Mr Falloon?

25

A. Yes it is.

Q. The next one please, seven, and what does that relate to?

A. That's a request for the design engineer to confirm in writing that the intent of his design had been complied with. This is in respect of 64 Cashel Street.

30

Q. Thank you, and the final one, .8 please and that's addressed to Morecombe Construction.

A. Yes it is.

Q. And what does that say?

A. Once again this is asking for a confirmation in writing from the design engineer that the intent of the design had been complied with and the construction players.

Q. Thank you, if we can briefly go to 36?

5 A. Counsel assisting is asked whether it is the Council's view that the CTV building did comply, first as permitted, and second as-built with the then applicable sign codes and standards.

Q. Yes.

A. The building permit was signed codes and standards.

10 Q. Yes.

A. The building permit was signed by a representative of the Council which indicates that the Council considered at the time that the proposed building complied with the Building Bylaw and applicable standards.

Q. Thirty-eight please.

15 A. There was no record of Council approval of the completed works. It's noted by Mr Anthony Scott at paragraph 23 of his first statement of evidence, there was no requirement in this Christchurch City Council Bylaw 105 1985 Buildings for an as-built set of drawings to be supplied to the Council on the completion of construction work. There was also
20 no requirement in the bylaw for the Council to certify compliance with the permit plans on completion of the work. As discussed in paragraph 48 of my evidence there are requirements in the bylaw for the design engineer to supervise the works. In addition as already mentioned it was a condition of the building permit that the building was not to be
25 occupied until there was confirmation from the engineer responsible for the structural design that the structural design had been complied with.

Q. And then finally 39 on that one.

A. As for a detailed assessment as to whether the building was in fact complied with the applicable standards in the Building Bylaw, I refer to
30 the evidence of Mr John O'Loughlin and Mr O'Leary.

Q. Thank you. Now I don't think there are any issues that I'm aware of concerning the nature of the land. You were asked to provide some information but I think we could take paragraphs 40 to 43 as read Mr McCarthy.

A. Yes.

Q. Could you start again at paragraph 44?

A. The building inspection process at the time of construction of the CTV building.

5 Counsel assisting has asked what level of supervision the Council would have engaged in during the construction of the CTV building and whether this differs from the current practice. I discuss this matter generally below. Further information is also included in a statement of evidence of Mr Leo O'Loughlin. The Council's current building
10 inspection practices are discussed later in my evidence.

Clause 2.15.2 of the Bylaw states that it is the duty of the owner of the land on which work is being carried out, the employer for whom work is being carried out, and the builder or contractor who is carrying out the work, to ensure that the provisions of the Bylaw are fully complied with
15 in the commencement and execution of building work.

Inspections were covered in clause 2.19 of the Building Bylaw.

Q. I think we can take that as read, beginning of 48 please.

A. There were also specific requirements for supervision by designers in various sections of the Building Bylaw. For concrete, section 8.2.6
20 states –

Q. And we can take that as read as well. Paragraph 49.

A. Similar supervision requirements are provided for in the steel and masonry section of the Building Bylaw. Mr Harding notes in paragraphs 9 to 32 of his evidence that he would typically visit a site prior to any
25 concrete pour to inspect reinforcement placement. He also states that he would visit after concrete pours to view the concrete after form removal and to view the concrete supplier documents. Mr Jones also notes in his evidence that the Council building inspectors would rely on the design engineer to carry out appropriate supervision at the site.

30 The Council has not been able to locate any guidance document current in 1986 that would indicate the level of supervision that the Council is likely to have engaged in during the construction of the CTV building or other similar buildings constructed at the time. The actual inspection

records related to CTV building have already been supplied to the Royal Commission and are discussed later in my evidence.

5 The Council has however located a document developed by staff in September 1989 which sets out general guidelines to Council building inspectors about the scope of inspections to be carried out for particular types of buildings.

Q. Just pause there, with respect to identify that document please, 0259A.6. Is that the document you're referring to?

A. It is indeed.

10 Q. Thank you, could you continue reading?

A. It is likely that the 1989 Guidance Document was developed out of existing inspection practices within the Council and to this extent it may provide some indication of inspection practices current in 1986.

15 I can also perhaps add from my own experience, not in Christchurch, that a building inspector would not normally – would I'm sorry, that a building inspector would usually undertake inspections prior to concrete being placed at each floor or in columns. These inspections would be carried out with the site foreman or construction manager in attendance. The inspector would check that the form work was secure and that steel was tied in place and was appropriately sized. The building plans would be held on site and the inspector would check these to ensure that the steel matched what was agreed to in the specifications. The inspector would be auditing to detect faults on site which might require further investigation. The inspector would also check that the site records show that the design engineer had checked, was due to check before the concrete was poured. The building inspector would be unlikely to be on site during the pouring of the concrete.

20

25

Q. Right, we continue over on paragraph 53.

30 1648

A. "Inspection records for CTV building.

The Council's inspection records relating to the original construction of the CTV building are written on inspection cards which contain a

microfiche transparency of each of the architectural and structural plans for the building. As all of the plans were microfiched there are often many more cards produced than were required for the amount of space needed for the inspection record. This is the case with the CTV building and explains why many of the inspection cards for this building are blank.”

INSPECTION CARD 0117

Q. There are a number of pages there Mr McCarthy. I don't have any particular comment to make but can you just go through each one and just make sure you have identified them. I believe there's 8?

A. Yes there are.

Q. And they are the only records that the Council are now holding on inspections?

A. I think there's some more.

Q. There's more there.

A. Yes. So that's the complete –

Q. The ones that you refer to there are the complete set though?

A. Yes.

Q. My friend's pointed out that, Mr McCarthy are there some other blank records that are not reproduced?

A. There are.

Q. Can you continue at paragraph 54.

WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH 54

A. “The cards show that inspections were carried out at various stages of the building process. There were also other interactions between Council staff and the design engineers during construction. Attached as Annexure A is the schedule reconciling the date of the recorded inspections, the comments on the inspection cards and other Council correspondence on the Council file. It appears from the records on the file, as summarised in this schedule, that not all of the site inspections were reflected in a written comment on the inspections cards.”

Q. Can I ask you to now look at your Annexure A. Are there any matters there that you would like to refer to particularly?

A. Are we able to bring it up on the screen. I didn't bring it to the table with me.

Q. It's 0001.29 please. Can you read that all right Mr McCarthy?

A. Yes I can thank you.

5 Q. And that starts with the building permit application on 17 July 1986?

A. Yes.

Q. And then there's an item – building permit issued 30.9.86 and then there are records of five inspections going down to 31 March 1987. Do you see that?

10 A. Yes that's correct.

Q. And then there's a letter from the engineer about the Hi-Bond floor system dated 17 August 1987 and I'll just get you to look at that letter. BUI.MAD249.0259A.5.

A. Yes.

15 Q. Is that the letter you're referring to?

A. It is indeed.

Q. And who's that letter signed by?

A. Bryan Bluck.

20 Q. And then there's a letter from Mr Harding dated 19 August 1987 and that's 029A.4. I'll get you to look at that letter. We've already referred to that letter but the last paragraph: "... we believe that the as-built floor slabs have a fire rating of at least one and a half hours without the application of any fire rating material".

A. Yes.

25 Q. And did that seem to be the end of that potential dispute between Mr Harding and the Council?

A. That's correct.

30 Q. And then there's a reference to an inspection card left on 20 August 1987 then the letter of 2 September 1987 which I'd like to find a reference to. I might come back to that in a minute if I find that reference, and then there's a reference to an inspection on the 9th of October 1987 and then no contact from (inaudible 16:53:40) that's on the 16th.

A. Yes.

Q. Then over the next page you've got references to other inspections with the canopy which is "final, noted OK", which is undated.

A. That's correct.

Q. I'll see if I can find that reference. So if you start at 55.

5

WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH 55

10 A. "I particularly note that in August 1987 an issue apparently arose about the Hi-Bond floor system and whether it had been built in accordance with the plans. However, this issue was not the subject of an inspection record. On 17 August 1987 Christchurch City Council wrote to Williams Construction Limited stating that the Hi-Bond system had not been built in accordance with the plans and so did not have the required fire resistance rating. The letter noted that as the letter [sic] was nearing

15

completion and this was a fire safety matter, it was imperative an approved solution be achieved prior to the building being occupied. In a response dated 19 August 1987 Alan Reay Consultants disputed this. Alan Reay Consultants stated that they believed the fire resistance rating was as it should be. The Council responded on 2 September

20

of 17 August."

Q. Thank you. I think you can skip 57 and 58 which is largely recording other people's evidence but if you could go to 59 just to conclude that section please.

25

A. "There is another inspection record on 16 October 1987 which states that there had been no contact from the site following an inspection on 9 October 1987 so the inspector visited anyway. This suggests that the inspector was being pro-active in following up on progress on site. Given the absence of further information on the Council file, or any other

30

clear evidence on the topic, I cannot comment further about the five month gap in the inspection records."

Q. I think you can leave 60, 61 about concrete testing. I don't think there's been any dispute about information you've provided there. If I could go over to the next page and to 64 – Construction issues.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT PARAGRAPH
64**

5 A. “Counsel assisting has referred to certain construction deficiencies mentioned in the Hyland Smith Report. Mr O’Leary has discussed these construction deficiencies in his evidence, in particular in relation to the ability of the Council building inspector to identify the issues. I would also make the general comment that a Council building inspector is not required to be a Clerk of Works or a project manager during the construction of a building. This was confirmed in a letter from the Office of the Ombudsman dated 18 December 1986.”

10 Q. And could you just identify your Annexure B please for me.
I will bring that up for you. 0001.31. There it is. Is that the letter you’re referring to?

A. Yes it is.

15 **WITNESS CONTINUES READING BRIEF OF EVIDENCE**

A. “As I referred to earlier, the Council must instead place some reliance on the design engineer to determine the appropriate site practices with the Construction Manager/Site Foreman early in the project and to carry out appropriate supervision during construction.

20 Q. 65.

A. “The Holmes Report 1990.
Counsel Assisting has asked the Council to provide evidence in relation to a number of matters concerning the Holmes Consulting Group Report 1990. There is no record of the Council having been notified about the design matters identified in the Holmes Report of 1990 nor is there any record of a building permit application having been made for the remedial work carried out on the building around that time.

25
30 Counsel Assisting has asked whether there was any change in the applicable design codes and standards between the date on which the building permit was issued for the building and the date of the Holmes report. The building regulatory framework briefing paper prepared by the Department of Building and Housing for the Royal Commission records that section 3.2.3 that design requirements changed in 1984 and 1992. In 1984 standard therefore applied in 1986 and 1990.

The question also arises whether the work carried out on the building in response to the Holmes Consulting Group's report required a building permit. The Council understands from information on the Royal Commission secure website that the remedial work was undertaken in the latter part of 1991. At this time the Christchurch City Council bylaw in 1990, the 1990 bylaw applied. The relevant parts to the 1990 bylaw came into force on 4 July 1990."

5

Q. I think you can take 69 as being read?

A. Yes.

10

Q. If you go on to 70 please.

WITNESS CONTINUES READING BRIEF OF EVIDENCE FROM PAGE 70

A. This requirement also set out in clause 2.16.1 of the Christchurch City Bylaw Number 105 1985 buildings. There is no record of amended particulars submitted to the Council in relation to the remedial work.

15

Further, the approvals process in clause 2.16.1 would appear to have only been intended to apply while the work authorised under the building permit was still in progress. In this case the work was carried out approximately five years after the permitted construction work was completed.

20

Under clause 2.2.1 of the 1990 Bylaw a building permit was required for any erection of a building. The bylaw states that "erection of a building" including 'making of any alteration or repair or addition to any building theretofore, or hereafter erected'.

25

The same requirement existed under Christchurch City Council, sorry, the same requirement existed under Christchurch City Bylaw Number 105 1985 Buildings.

The corrective work in this case appears to have been an addition alteration to the building. Therefore the Council's view is that the work would at the relevant time have required a building permit.

30

THE COURT ADDRESSES MR LAING

HEARING ADJOURNS: 5.01 PM

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