

Q. You used that as a starting point to reach your figure of 148 kilonewtons don't you? That's how you get to that figure?

A. I'm not sure what the 148 kilonewtons is sorry.

5 Q. That's the figure that you've reached in relation to – I'm sorry 184 kilonewtons, that redistribution that you've just mentioned preceded the calculation of that figure didn't it?

A. The 184 was the reduction because of the height. It wasn't a result of the redistribution. 184 was what I considered, when I was considering how much load to redistribute to the other walls.

10 Q. All right, well so are you saying that for the purpose of this clause that the diaphragm connections lines D and D/E were a resisting element using the words of that clause?

A. Yes.

Q. So are you saying that they had a stiffness, I suppose you must be?

15 A. Well this clause says to consider the stiffness of the horizontal bracing systems which I take it to be considering the stiffness of the wall and the way I had done that in my calculations was to consider the way that loads had been distributed in the original analysis between the walls.

20 Q. The effect of what you did was that you ended up with connections at lines D and D/E incapable of sustaining 184 kilonewtons. Is that right?

A. That's correct, yes it is.

Q. So that's the effect of it. I just now refer you now to the applicable bylaw, it's a bylaw from 1990, ENG.CCC.0045.85.

25 **COMMISSIONER FENWICK:**

Q. (inaudible 13:53:05) 184 you've got on three levels?

A. Yes.

Q. Now I assume that when you got to level three, the top one, it was 184.

A. Yes.

30 Q. And you didn't bother to work out the ones below because they would have been a good lower than 184. Is that correct?

A. No, my understanding of the code was that, whilst we might normally consider a triangular distribution, I think in the Parts and Portions it was

triangular at the upper part and then the same load was applied at the lower levels.

Q. That's certainly true of the current one but I thought this one came down as well. I may be wrong, I had a feeling this one came down as well.

5 A. I'm pretty – I mean that would have been my first instinct when I looked at it, to think it had reduced all the way down but I'm pretty sure it limited that value of K_x to one, so it was 1.6 something at the top and then reduced to one at level, at the third level up and then dropped.

Q. And then dropped, right.

10 A. (inaudible 13:54:00).

CROSS-EXAMINATION CONTINUES: MR ELLIOTT

Q. Commissioner, that's the case in terms of the code. That is the case in terms of clause 3.4.9.1, so the ENG.CCC.0045.85 and if clauses 11.1.4 and 5 could be enlarged please. Mr Banks if you just read that please
15 to yourself.

A. 11.1.4 and .5?

Q. Yes.

A. Yes.

Q. This is an extract from the Christchurch City Council bylaw applicable at
20 the time of your design, final design in 1991. Were you aware of this particular provision of the bylaw at that time?

A. To be honest when I was designing structures I wouldn't have had the bylaw on my desk. I would have had NZS4203 on my desk, given that 11.1.5 refers to that, so I'm not familiar with the bylaw but I understand
25 what's in it.

Q. Do you see those words in 11.1.4(d) about avoidance of collapse?

A. Yes.

Q. And minimising the probability of injury to, or loss of life of people in and
30 around the building. Is that a concept which you had in your mind when you were carrying out the design of the drag bars in 1991?

1356

A. Well I'm sure it would have been and that's the fundamental basis of NZS 4203.

Q. Just considering the drag bars that you –

5 **JUSTICE COOPER:**

Now this version of the bylaw. Which version is this because I've just noticed that in clause 11.1.5 the last reference in that clause is to the clause itself.

MR ELLIOTT:

10 Yes Your Honour. Well this is at tab 5 of the Commissioners' bundles and as I understand it this is the 1990, the Christchurch City bylaw, the Christchurch City Building Bylaw 1990 and the – it must be a typo. It must be a reference to –

15 **JUSTICE COOPER:**

Well it's interesting because in the other version that was attached to Mr McCarthy's evidence I think, yes, it was, the equivalent page is ENG.CCC.0044.123 and it's, there's an additional clause and at 11.1.6 and the cross-reference is back to 11.1.5 which one can make sense of, and this
20 version of the bylaw which is more congenial, the way it's printed, but Mr Laing said early on that this is the version that we should take as being the applicable one as I understood him. The difference, just on a quick look at it is, it's not easy to see.

25 **MR RENNIE:**

Sir if I can assist, I think the position is that 1.3 came out and became part of the general provisions of the bylaw between the two copies.

JUSTICE COOPER:

30 Came out or went in?

MR RENNIE:

No, came out Sir. Well it's in this version but in the 1990 version which of course is later the provision about (inaudible 1:59:18) was applied more generally in another part of the bylaw and it looks as if there was then a failure to renumber that clause to take account of the deletion so. I only mention that
5 because I looked at that at the time when I thought it might assist sir.

JUSTICE COOPER:

Thank you. So for our purposes it's obviously sensible to read the last clause as referring to the preceding clause anyway isn't it?

10

MR ELLIOTT:

Yes and I'm sorry I hadn't appreciated (inaudible 13:59:50).

JUSTICE COOPER:

15 No, that's all right.

MR ELLIOTT:

My question is directed really to that 11.1.4(d) which I think seems to be consistent.

20

JUSTICE COOPER:

Yes well in this one it's 11.1.5(d).

MR ELLIOTT:

25 I see.

JUSTICE COOPER:

No I just thought I'd raise that having spotted it, nothing to do with your question really.

30 **CROSS-EXAMINATION CONTINUES: MR ELLIOTT**

Q. Mr Banks.

A. Yes.

Q. I'm just going to ask you about the design given this context in the bylaw.

A. Yes.

5 Q. It's right isn't it that in an earthquake forces would have travelled along the diaphragms on levels 1 and 2 to every point of connection. That would have been the actual case during an earthquake wouldn't it?

10 A. Yes I think we have a series of concrete elements. The forces are actually coming from the ground up. So the earth's moving, moving suddenly, that's loading the foundations and the walls, and the walls are then trying to move the mass which is static when the earthquake starts, is sitting static, but the wall's moving and therefore trying to push the mass of the floors. But the way engineers look at it we analyse it sort of the other way round. We say the floor is imposing a load on the rest of it.

15 Q. But the diaphragm would have acted as a load path to the wall wouldn't it?

20 A. Well in an analytical sense but in a practical sense it's actually the other way round but yes the diaphragm acts as one of the elements and obviously there's a lot of, a fair amount of the mass of the building is the diaphragm itself.

Q. Well earthquake forces don't say, well there's no connection here, I'll just go over to somewhere else in the building where the engineers designed for the loadings to be sustained does it?

25 A. Well if the load can't be sustained at the point where there's a connection then, then it must, the load must be taken somewhere else.

Q. But given as you've already accepted that the, given the absence of drag bars there, the connection was not therefore designed to be able to sustain that 184 kilonewtons -

A. Mmm.

30 Q. – isn't it a consequence of that that it would fail when exposed to forces of 184 kilonewtons? Must be mustn't it?

A. Well I think, firstly the 184 is, is a number that's arrived at by analysis, making various assumptions and principally the assumption of the

stiffness of the wall. Now if there's very little connection between the floor and the wall then the connection may yield a bit, the reinforcing bars may move a little bit and then the load gets transferred to the other elements and that's what I imagine would have happened. That's the principle of redistribution.

5

Q. But when you were setting down to design this retrofit and considering whether you would locate a drag bar there at lines D and D/E –

A. Yes.

Q. – and levels 1 and 2 –

10

A. Yes.

Q. – and considering that you'd calculated the force of 184 kilonewtons –

A. Yes.

Q. – what were you saying would happen in the event that 184 kilonewtons of loading arrived at that point?

15

A. It would be taken by the two larger walls there, bearing in mind that those two larger walls, the transfer from the floor diaphragm to those walls would also have been diminished at those levels. Therefore there would have been extra capacity at that point.

Q. But it would fail at lines D and DE albeit the loadings could then be sustained as a whole at the other part of the connections. That's what you're saying isn't it?

20

A. I don't accept the word "fail," I'd use the word yield. In the same way that when loadings can be redistributed in a beam it causes some rotation of the beam to a small degree and then the load path, an alternative load path becomes the load path.

25

Q. All right. Well if your objective was as per the bylaw to avoid collapse and minimise the probability of injury or loss of life and you have a choice, drag bars at levels 1 and 2 or no drag bars at level 2. Which would have been more likely to satisfy that objective?

30

A. Well I think both satisfied the objective.

Q. You say equally likely?

A. Well they, they did given that 11.1.5 says complying with NZS 4203 shall be approved as complying with the requirements of that clause.

Q. And you're referring back there to the clause we've discussed earlier from NZS 4203?

A. Yes.

5 Q. You say that gives you the right, gave you the right to treat those connections as being likely to yield?

A. Well they would only have been likely to yield if that 184 had actually, if the actual structure had matched the actual analysis.

10 Q. There's been some evidence from Mr Harding that there was a philosophy within Alan Reay's office that was encouraged that if you couldn't justify something then you wouldn't do it. Does this decision not to put drag bars at level 1 reflect a similar philosophy at that time?

A. Could you just expand on that comment if you could?

Q. Well it's just a reference to Mr Harding so I can't give evidence.

A. Right, okay.

15 Q. But, "The philosophy we always had in the office that was encouraged that if you couldn't justify something then you didn't put it in."

A. Mmm.

20 Q. That's page 12, line 16 of the transcript from Wednesday which I don't think we have the full reference for yet. They were his words. So doesn't this decision not to put drag bars at level 1 reflect a similar philosophy?

A. I don't believe so in this case. I think the philosophy you're referring to is a general philosophy regarding efficiency of design so there were, the reputation of the office was to design buildings in an efficient manner.

25 1406

Q. And to no more than code?

30 A. Well, I think that was the perception but the reality is that it was more about buildability issues. I think the perception might have been less reinforcing in concrete wall panels but the reality was that the building systems enabled buildings to be built very efficiently. Now, I don't believe that's particularly relevant to this issue. This is a one off issue of designing a particular solution and it was designed with some conservatism along the way. I don't believe it was a solution that

focused on cost or whatever. I think it was focused on coming up with an appropriate solution.

Q. Would you accept that in order to comply with the objective in the bylaw I've referred you to, you should have installed drag bars at levels 1 and 2?

5

A. No I don't. And I also make the comment that Mr O'Leary even suggested I shouldn't have installed them at level 3.

RE-EXAMINATION: MS SMITH

Q. Just one point of clarification on the bylaw issue. If I could have Mr McCarthy's version of the 1990 bylaw back up on the screen if I could (ENG.CCC.0044, page 123). Mr Banks, you were asked some questions about clause 11.1.5(d) and I think your evidence was that the philosophy that is addressed in that clause was important to you in terms of the standards that you were applying at that time. Is that correct?

10

15

A. Yes, that's correct.

Q. At the very beginning of the bylaw, and I do apologise for this but I do not have page numbers of it, but clause 5 in the introductory section. Immediately after the contents section, there's a page headed "Christchurch City Council, the Christchurch City Bylaw Number 105(1985)." [page 11]. You'll see there if I can highlight clause 5 on that page please. I'll just get you to read that Mr Banks just to yourself.

20

A. Yes.

Q. So what that clause is saying is that, "Proof of compliance with the specification standards and appendices named in the second schedule is deemed to be an absence of proof to the contrary sufficient evidence that the relative degree of compliance required by this bylaw is satisfied." You see that?

25

A. Yes I do.

Q. And then if we can turn over three pages in that sequence please to the second schedule and you'll see there that that's the second schedule that was being referred to. Is that correct?

30

A. (No audible response 14:10:31).

Q. And if can get you to look sir on the following page in that sequence, if we can bring that up and you'll see there that seven lines down there's a reference to NZS 4203?

5 A. Yes.

Q. So what does that suggest to you?

A. Well it suggests to me that that standard is totally aligned with the bylaw requirements for design.

10 Q. And it goes further doesn't it to say that if you comply with that, then in absence of proof to the contrary, then you've complied with the bylaw?

A. Yes it does.

QUESTIONS FROM COMMISSIONER FENWICK:

15 Q. Can we have BUI.MAD249.0284.16 please and if we can have the floor plan on the left-hand side. Mr Banks, you checked the north-south direction and found the lack of attachment to those walls?

A. It was really only the issue of that duct that I checked. I didn't take it any further than that and it was simply because I'd spotted in looking at these other two walls that the duct was not there on this drawing but was there on the other.

20 Q. The point I wanted to raise was the excitation in the east-west direction. Now, there's the duct for the stairs and there's the duct for the lifts and so all the east-west direction shear, as I think you've indicated, has to go on the area between wall C and wall C/D?

A. Yes.

25 Q. That's the toilet area. Now, that shear of course comes in from the floor and is going to be resisted by the wall on line 5 together with the finger walls going the other way. Now, if one looks at that, the shear centre of that complex is around about a metre to two metres north of line 5?

A. Yes.

30 Q. If it warps, and it probably does, the centre will come back towards line 5. Now I think you said the forces you used were 700 kilonewtons was the contact connection force at that level?

A. Yes, that's right.

Q. So that connection force, if we're assuming that the minimum place where that can act, acts on line 5 and generates a shear which is constant virtually over that distance between line 5 and line 4?

5 A. Yes, that's correct.

Q. Which is about four and a half metres?

A. Yes.

Q. Giving you a bending moment of around about 3000 kilonewton metres or 3500 kilonewton metres if you assume that that north wall is not free to warp?

10

A. Yes.

Q. Did you look at the effect of that combined shear of 700 kilonewtons together with the corresponding moment of 3000 plus kilonewton metres?

15 A. No I didn't. The calculations I did initially were looking at just the issue of the shear at the interface.

Q. Yes.

A. I think the reason I didn't look at it is having had the interplay with Holmes, the focus was on the other walls.

20 Q. Yes.

A. I didn't, clearly in my looking at the shear friction, if I had been alerted to a general problem on all those walls, I would have followed those loads further back but from the evidence of my calculations, clearly I didn't do that in my final design a year later.

25 Q. I can assure you you're in very good company in not looking at it, but now if you had looked at it?

A. Yes.

Q. I don't know how good your mental arithmetic is, 3000 to 3500 kilonewton metres, look at this on the left-hand side of line 4, there's mesh, 664 mesh going over it and there is some 12 millimetre bars but those 12 millimetre bars don't extend too far so you can probably forget about them. Can you sort of do some mental arithmetic and say now, if you'd done that calculation would you have been alarmed?

30

A. I actually did that mental arithmetic recently.

Q. Right.

A. I thought it was useful to look at that. I think I came up with a flexural capacity of about 1800 kilonewton metres at that point.

5 Q. (Inaudible 14:15:20).

A. That's of course at the top floor and that would have been reducing down lower so clearly that particular mechanism, and I agree that that's the logical mechanism to look at, is looking as though it's overloaded. I think there may be several other mechanisms, for instance some of that moment may have been able to have be resisted by the two walls to the north and south of that piece of floor to some degree in terms of shear but that wouldn't have been the major issue.

10

Q. That would require the walls to be stiff out of plane wouldn't it which they –

15 1416

A. Well I'm talking more about a north-south, a north-south couple resisting part of that –

Q. Yes.

A. – east-west moment but –

20 Q. Yeah.

A. – I, I don't know that you would look at that being the dominant it would be one of the things if you modelled in, in detail.

Q. Yes. Now I agree the north-south couple but wouldn't that require the, the wall to bend out of the plane to transfer that couple, but never mind that's, that's, I know what you're meaning and I think it's a minor –

25

A. Yes I think it's –

Q. – when we look at the limiting –

A. Yes.

Q. – values that it's...

30 A. Yeah.

Q. Okay now wouldn't you have expected a designer to have looked at that action?

A. Yes I, I would have expected that if the designer had looked, had looked in detail that would've part of the –

Q. Yes.

A. – action.

5 Q. So if you had spotted that and I agree that you were directed in the other direction you might have been perhaps thinking, Oh I need to look further”?

A. Mhm. I think, I mean as I say the calculations I had seen were relatively minimal. It looked as though they hadn't been finished.

10 Q. Yes.

A. And I, I certainly would've expected given the scenario that that would have formed part of the –

Q. Yes.

A. – ongoing calculations yes.

15 Q. When one looks at the time history analysis we find the forces aren't 700 kilonewtons they're about 2500 kilonewtons?

A. That's right.

Q. About three times as big?

A. Yes.

20 Q. Which raises a issue for some concern doesn't it?

A. Yes.

QUESTIONS FROM COMMISIONER CARTER – NIL

QUESTIONS FROM JUSTICE COOPER:

25 Q. Paragraph 66 of your statement you state that your recollection of the early 1990s prior to the adoption of the Building Act is that the building permit process was much less structured than it is now?

A. Yes.

30 Q. And the balance of the paragraph suggests that there or implies that you thought when designing these remedial works that a building permit would not be required?

A. Mhm.

Q. Is that the case?

A. I think, I think that's, that's generally the case.

Q. No, no I'm talking about this case?

5 A. Yeah I think in this case the issue wasn't, didn't enter my mind and wasn't discussed as to whether or not a permit was required.

Q. Can we just see paragraph, sorry ENG.CCC.0044.27.

WITNESS REFERRED TO ENG.CCC.00044.27

Q. Now clause 221 there says, "No person shall erect or commence to erect any building without first obtaining a building permit", doesn't it?

10 A. Yes it does.

Q. And then the question of whether a permit was required for these particular works would depend on the definition of building wouldn't it?

A. I think again Sir in, in my mind the building did have a permit. Now I understand that for separate work yes it would depend on the definition.

15 Q. So a building if we go to same series suffix 19.

WITNESS REFERRED TO SUFFIX 19 OF DOCUMENT

Q. It says in its opening words that it means anything or part of a thing constructed or erected and there follow some exclusions –

A. Yes.

20 Q. – which don't seem to me to be relevant but anything or part of a thing seems to me would extent quite readily to these drag bars wouldn't it?

A. Yes I, I think it would Sir. I think at that time though I would not have been very familiar with the detail of this bylaw but I accept that it's consistent.

25 Q. So well how, how did you decide whether or not to apply for a building permit for works that you were designing. If you didn't look at the bylaw, what did you look at?

30 A. I think it was, I mean it tended to be pretty obvious that we would design generally designing new buildings you prepare the documents submitted them to the Council and obtained a building permit. I think this particular circumstance where a building has a permit and then an alteration is made is not something I would have been familiar with.

- Q. You see another way of putting what you've said in paragraph 66 was that, would be that the system wasn't less structured at all. It just wasn't applied? Do you care to comment on that?
- A. My comment on, on the structure was more the, the detail with which the process is defined, is much more significant now than my recollection of what it was at that time.
- 5

QUESTIONS ARISING - NIL

WITNESS EXCUSED

MR RENNIE CALLS**ALAN MICHAEL REAY (SWORN)**

Q. Now Dr Reay do you have available to you your composite statement of evidence in relation to the Holmes' report in retrofit issues?

5 A. Yes.

Q. Do you confirm you're Alan Michael Reay and would you read from the paragraph numbered 60 of the composite brief under the heading 1990 Report by Holmes Consulting Group.

WITNESS READS BRIEF OF EVIDENCE

10 A. In around January 1990 ARCL was contacted by Holmes who had been engaged to prepare a structural report on the CTV building for a potential purchaser of the building from the receiver of Prime West. Holmes alerted ARCL to a possible issue in the detailing of the connection of several shear walls to the floor diaphragms. Geoff Banks
15 reviewed the drawing and agreed there appeared to be an issue. As noted above Mr Banks had joined ARCE in 1988.

I had little direct involvement in the events that followed but I have a general recollection of issues and I have reviewed documentation relative to the events which was obtained from ARCL files and from its
20 insurance broker.

The receivers provided us with a copy of Holmes' report dated January 1990. Holmes identified a possible issue with the tying of the walls to some of the shear walls. Should be tying of the floors to some of the shear walls. Holmes otherwise considered that the building generally
25 complies with current design loading and material codes.

On the 1st of February 1990 Mr Banks notified the possible issue relating to wall ties to ARCL's insurance broker Adam and Adam Limited.

ARCL's insurance was arranged through the Consulting Engineers Advancement Society Incorporated and was underwritten by Indemnity and General Insurance Company Limited.
30

Mr Banks copied his letter to Mr Peter Smith at CEAS. Mr Smith was and is a structural engineer at Spencer Holmes Miller Partners Limited

and was a CEAS claims committee member appointed by Adam and Adam to oversee the file and provide advice to the insurer.

When making the insurance

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5 notification ARCL was not sure whether there was an issue or not and if there was an issue whether ARCL or ARCE had any culpability. ARCL informed insurers out of abundance of caution and to ensure that should extensive work should be required the necessary insurance cover would be available.

10 I contacted Mr Harding to enquire whether any site instructions were given to Williams in respect of the diaphragm connections. Mr Harding was unable to recall any site instructions and there was no reference to any such instructions on ARCL's file.

15 I recall that Mr Banks used an electronic reinforcing bar locator at one level which indicated that some reinforcing was present but could not confirm the quantity.

20 As set out in Mr Banks' letter ARCL proposed to have further discussions with Holmes to agree the precise scope of the issue and the level of load for which the floor to wall ties should be designed. ARCL also proposed to design the remedial works if it was concluded that the ties were not present.

Mr Banks and I met with the receiver of Prime West on the 1st of February 1990 to discuss the issues. A letter from the Receiver records the content of the meeting.

25 As recorded in that letter we were of the view that it would be more pragmatic to assume that the steel was not in place as the cost of further investigation into the matter would probably exceed the cost of the remedial works and the investigation could cause damage to the structure.

30 Mr Banks wrote to Holmes on the 2nd of February 1990 confirming the scope of the possible non-compliance and the proposed remedial works. ARCL'S insurer broker confirmed notification of the possible claim.

It appears from file records that ARCL obtained a quote from Blake Brothers Contracting Limited dated 5th of February 1990.

Mr Smith wrote to ARCL on the 12th of February 1990 recording the position. As requested by Adam and Adam ARCL completed a notification and questionnaire in respect of the possible professional indemnity claim. Mr Banks completed these forms.

A file note records a discussion between Mr Banks and Mr Hare on the 14th of February 1990. It appears that the discussion included agreed loads at various floors of the building. Mr Banks prepared calculations for the remedial works.

On the 9th of April 1990 ARCL completed an annual report form for CEAS which recorded that ARCL was still investigating whether there was a deficiency and if so, details of the remedial work. ARCL heard nothing more about the matter from the Prime West receivers, Holmes or anyone.

On the 4th of February 1991 there is an article in *The Press* about the sale of the CTV building by the receivers. Having read this article Mr Banks and I decided we should notify the new owners of the correspondence from the previous year. It appears that Mr Banks contacted Mr Smith at CEAS to verify the obligation that ARCL had to notify anyone regarding the status of the review conducted the previous year. Mr Smith suggested that Mr Banks engage either Austin Forbes (now QC) or Sam Maling from Lane Neave for a legal opinion before taking any steps.

ARCL engaged Lane Neave to provide the advice the cost of which was met by CEAS. ARCL submitted a further report on the claim to CEAS on the 25th of February 1991 which reported that the building had been on-sold and ARCL was seeking advice as to possible obligations to the new owners.

Following receipt of the advice sought from Lane Neave Mr Banks wrote to the new owners on the 11th of September 1991, although a copy of this letter is not held. CEAS also approved this course.

A reply dated 30th of September 1991 was received from Pedofsky, Ibbotson and Cooney. The owners agreed that steps should be taken as proposed by ARCL to ensure the building was compliant with the required design specifications standard.

5 Mr Banks prepared constructions drawings for the remedial works and sent the drawings to CBD Construction Limited. He also completed further calculations.

10 CBD Construction Limited submitted a quotation of \$4633.50 plus GST for the proposed remedial works. Mr Banks wrote again to Pedofsky, Ibbotson and Cooney on the 15th of October 1991 referring to the quote and advising the work would take approximately four days. Mr Banks also notified the Ministry of Transport in respect of the remedial works in the lift shaft.

The owners confirmed acceptance of the quotation.

15 Mr Banks wrote to Mr Ibbotson on the 17th of October 1991 recording that the work would take place the following week. The remedial work proceeded as proposed.

I do not believe that a permit was sought for these works, however I recall that Mr Bluck was aware that the works were being undertaken.
20 For example see the reference. I believe that his view would have been that the works were part of the original job and that no permit was required. He probably would have asked to receive details about what was undertaken. I base this on my experience in dealing with Mr Bluck over many years. ARCL does not have its full file on these works so I cannot say whether there was any written correspondence with the
25 Council over the works. The builder may have also sent details to the Council.

ARCL completed an annual status report on the claim which was submitted to Adam and Adam on the 4th of March 1992 and as recorded
30 in Mr Banks' letter the remedial work had been completed. The building owner invoiced for the contractor and the contractor paid for the work. It recorded that Mr Banks had not had any contact from the building owner since the works were completed. ARCL never received any further

contact from the owner and was not asked to reimburse the cost of the remedial works.

5 I accepted at the time there was a potential deficiency. It was not possible to say if there was an actual deficiency. For the cost of the remedial works it seemed sensible to carry out these works rather than carry out further investigation to see if the building complied without them.

Involvement with the CTV building following retrofit.

10 ARCL had no further involvement with modification to the CTV building structure since the retrofit works were completed. We were not contacted following the earthquakes on the 4th of September or Boxing Day 2010 to undertake inspections or provide structural drawings.

15 Q. Thank you Dr Reay, and just for the record this is the fifth occasion on which you have read composite briefs, and do you confirm that they comprise the same evidence as that set out in the briefs of evidence that you initially filed which have now been broken out into these topics?

A. Yes, although I believe there was some amendment to the last brief I read.

20 Q. Yes, the last brief you read had some amendment to it, but other than that you've now given all the evidence which you have tabled with the Commission?

A. Yes.

25 **JUSTICE COOPER:**

To clarify that, what's meant by the last brief?

MR RENNIE:

30 The one immediately prior to that, the fourth composite brief Sir had some amendment to it in the light of evidence that Dr Reay had heard.

CROSS-EXAMINATION: MS SMITH - NIL

CROSS-EXAMINATION: MR REID

Q. Yes Dr Reay, can I just refer you please to paragraph 84 of your brief of evidence. Now you say there that you do not believe, firstly you do not believe that a permit was sought for these works and then you say,
5 however I recall that Mr Bluck was aware that the works were being undertaken and then you refer to a document. Do you have any recollection yourself of speaking to Mr Bluck about this matter?

A. I haven't been able to remember any specific discussion with him, no.

Q. Do you recall having a discussion about whether the building should be
10 – whether the drag bars should be permitted with anybody else around that time?

A. When you say anybody else –

Q. Well anybody in your office?

A. No I don't.

15 1436

Q. So do I take it then that what you say at the first part of paragraph 84 is entirely dependent on your interpretation of the document that you refer to?

A. Well and the fact that I did have discussions from time to time with
20 Mr Bluck.

Q. Yes but you're accepting though that you can't recall any specific discussions on this occasion.

A. That is correct.

Q. Just have a look please at the document you refer to. It's
25 BUI.MAD249.0130.6 and it's the third line down I think on the screen in front of you Dr Reay, the third paragraph reads doesn't it, "We have spoken to Mr Bryan Bluck, Buildings Control Manager at the Christchurch City Council, to discuss any concerns relating to the building permit and construction process. Now he's referring there on
30 the face of the sentence, or the report is referring there on the face of the sentence to the building permit and construction process in '87 isn't it?

A. Yes I believe he is.

- Q. So there's no indication in that document is there that the issue of whether a building permit for the drag bags was discussed with Mr Bluck at all is there?
- A. No and conversely there isn't a, it doesn't say that there wasn't. It's
5 silent on it.
- Q. No but, the author, you're aware though that the author of the report is Mr Hare?
- A. Yes.
- Q. And you've read Mr Hare's evidence?
- 10 A. Yes.
- Q. Yes and he confirms doesn't he that he, he didn't speak to Mr Bluck about the drag bar permitting issue when he had the discussions that he was referring to.
- A. That's correct but he didn't, I don't think he said, well I think he claimed
15 he didn't discuss the particular issue itself.
- Q. Yes and says that he didn't raise the issue about whether a permit was required.
- A. I can't remember reading that.
- Q. Shall I take you to the particular –
- 20 A. No I'll accept that, if you say that.
- Q. Well do you accept then there's no indication in the record in the evidence before the Commission that Mr Bluck was ever spoken to or anybody else at the City Council about whether a permit was required?
- A. Going by that, no.
- 25 Q. Now in the second sentence of paragraph 84 you then say, "I believe that his view would have been," this is Mr Bluck, "I believe that his view would have been that the works were part of the original job and that no permit was required." Now given that you didn't speak to him about the issue you're speculating there as to what his view would have been,
30 aren't you?
- A. Well it's based on my experience of dealing with Mr Bluck and from time to time when buildings were being constructed alterations would occur and if I thought they were alterations that he should be aware of I would

discuss them with him and sometimes he would say, send me a detail or he might say, that's minor, I don't need to know about that.

Q. And is that something that would typically occur during the construction process?

5 A. Either during or, it mightn't be at the particular time that something happened, it could be later on, months, a few months later or something like that.

Q. A number of months later when something arose before the completion of the project though. Is that correct?

10 A. Not necessarily. The project might have been completed.

Q. Well I'll just cut to the chase Dr Reay because what we're dealing with here is a situation where an issue has arisen four years later. Has a circumstances like that, are you aware of a circumstance like that ever occurring?

15 A. I can't specifically recall.

CROSS-EXAMINATION: MR HANNAN

Q. Dr Reay were you here yesterday afternoon when Mr Hare gave his evidence?

A. I wasn't present but I heard, I believe, most of it.

20 Q. And Mr Wilkinson?

A. The same.

Q. And Mr Robertson?

A. The same but possibly to a lesser extent.

Q. Right thank you. I'd just like to work through the sequence, the
25 chronology, just in that little portion of time, the end of January, early February. I'll do it quickly, we've already worked through it with Mr Banks, so if I seem to be overly summary please just pause if you want clarification. But the first point of contact that you have in respect of this issue is when Mr Hare telephones Alan Reay Consultants and his
30 evidence is that he believes that he spoke to you and that was on the 25th of January. Do you recall such a call?

A. I think he said he thought he spoke to me. He wasn't definitive.

- Q. He said that he believes that he spoke to you?
- A. Yes, yes, he isn't definitive. I do not recall.
- Q. But as a result of that call in any event Mr Hare then visited the, your offices on the following day, the 26th. Do you recall that visit?
- 5 A. I wasn't specifically involved in meeting him. I think Mr Banks met him that day.
- Q. Well Mr Hare says that he believes that he saw both yourself and Mr Banks.
- A. Yes, I don't recall it.
- 10 Q. Mr Hare says that on that day he advised whoever he spoke to at Alan Reay Consultants about the design concerns that he had ascertained from his examination of what he'd seen so far. Do you recall whether you got it from him or through Mr Banks, having those design concerns raised with you?
- 15 A. They would have been raised with me because if he'd discussed it with Geoff Banks, Geoff Banks would have told me about it.
- Q. Were you aware that Mr Banks went off to do an inspection of the building with Mr Hare on the 30th of January?
- A. No I don't recall that. I know that he went and took a reinforcing detector to check the reinforcing but I don't know or don't recall at all that he met Mr Hare that day.
- 20 Q. All right. So you do recall that he went off to inspect the building?
- A. Yes I believe he did, yeah.
- Q. And you're aware that Mr Banks had started undertaking some calculations on the 29th of January?
- 25 A. I don't recall that.
- Q. Would that have been something that he'd done at your request?
- A. No it's more something he would have done as part of investigating the issue that had been raised with him.
- 30 Q. Now you didn't know this at the time of course but on the 31st of January Mr Hare sent his draft report to Schulz Knight and then on the 1st of February you and Mr Banks met with KPMG the receivers. Do you recall that meeting?

A. Yes I don't, I didn't consider it was a draft report. I was not aware it was draft. I have a recollection of a meeting.

Q. Yes can you recall where the meeting took place, at your offices or at the, at KPMG's offices?

5 A. No I can't.

Q. Can you recall who initiated that meeting?

A. No I'd be guessing that it was the receiver but I wouldn't know.

Q. Do you have any recollection of how you actually got the copy of the Holmes report that you did get. For example, did the receiver give it to you at that meeting?

10

A. I couldn't say for sure except that I don't believe Holmes gave us a copy.

Q. And on that same day, the 1st of February, Mr Banks sent a notification to Alan Reay Consultants' insurers?

15 A. That's what I understand.

Q. Yes and he would have discussed that with you before he did it wouldn't he?

A. I don't recall but I would have expected that he would have.

Q. Yes. Now if you followed Mr Hare's evidence of yesterday, I realise you weren't here but you've told us that you've seen it or seen some of it, you may have seen that Mr Hare said that he wasn't aware, can we have please MAD249.0129.2 and possibly if we can have both pages at once please?

20

1446

25 **WITNESS REFERRED TO MAD249.0129.2**

Q. Now Dr Reay this is the letter from Alan Reay Consultants to Adam and Adam 1 February. We've briefly mentioned that notification. You'll see in the third paragraph there a mention of "a potential purchase has an option until 28 February 1990 and has engaged Holmes Consulting Group to undertake a structural survey and present a report". So this was knowledge that certainly Mr Banks had at this time. Do you accept that?

30

A. I'm sorry you'll have to repeat that.

Q. Well you've seen the paragraph, it states that, it tells the, it tells Adam and Adam that a potential purchaser has an option, and my question to you is this, that Mr Hare's evidence was that at the time that he was engaged with Alan Reay Consultants either yourself or Mr Banks throughout this period in January and February that he was at no time made aware that there was such an option. Are you able to comment on that?

A. An option to what? I'm sorry I'm not, I'm not following you very well.

Q. If you look at the third paragraph?

10 A. Yeah.

Q. You'll see the statement in the second sentence. This is a statement made in a letter from Alan Reay Consultants to Adam and Adam that a potential purchaser has an option until 28 February on the building. This is clearly information that Alan Reay Consultants had at that stage. Mr Hare has said that he was not aware of this. I take it you're not suggesting that you advised Mr Hare or anyone at Holmes of this?

15

A. Well I didn't, I don't recall being involved with Mr Hare.

Q. And similarly you wouldn't have told Mr Hare or anyone else at Holmes that an insurer was involved in the picture?

20

A. I, I think a specific requirement of our insurance policy is that we didn't do that.

Q. Yes, well I'll take that as agreement that you wouldn't have told Mr Hare. Yes thank you Dr Reay.

CROSS-EXAMINATION: MR MATTHEWS – NIL

25 CROSS-EXAMINATION: MR ZARIFEH

Q. Dr Reay can I start by referring you to the CEAS letter of the 9th of April '91 it's, 0129.38.

WITNESS REFERRED TO LETTER 9 APRIL 1991

Q. You see that letter?

30

A. Yes.

- Q. Now the first paragraph refers to the enclosed opinion from Lane Neave Ronaldson. That's the legal opinion that you referred to as getting, you're getting, correct?
- A. I presume so but I wouldn't actually know that it was exactly that.
- 5 Q. Well did you, I thought you said in your brief that you obtained legal advice from Sam Maling of Lane Neave?
- A. Yes. But whether that's the exact advice that's being referred to I'm not sure.
- 10 Q. Right, did you receive other advice from Sam Maling of Lane Neave in relation to another building?
- A. No.
- Q. Right so is it likely to be the advice that you're talking about?
- A. Oh, it's, it's likely to be.
- Q. Well it's not likely to be any other advice is it?
- 15 A. Well not that I recall.
- Q. Right. Now I don't want to ask you about the content of that legal advice because I understand that as you're entitled you're claiming privilege about that advice, correct?
- A. That's my understanding that it's being handled by the company's lawyers.
- 20 Q. Okay. I want to refer you to the second paragraph where Mr Smith from CAS says, "We also advise that it is unlikely that the society would wish to recover from a staff member of your practice unless gross negligence was evident", see that?
- 25 A. Yes.
- Q. Now had you indicated that you thought that a staff member of your firm may have been negligent?
- A. No I don't believe so. I was, I may have asked for clarification of the, of the particular situation that existed.
- 30 Q. Right, what, what situation was that?
- A. Well where a staff member had worked on it and then left.
- Q. Right and the staff member was obviously Mr Harding? Is that who you are referring to?

A. I would think so at that time yes.

Q. All right and was your concern to do with the design of the building?

A. No it was just –

Q. The CTV building?

5 A. – a situation that I hadn't struck before and I don't believe and I might have sought clarification of it.

Q. Right as to whether the society would seek to recover from you in relation to Mr Harding's actions?

10 A. Well I'm not sure exactly what I asked but, yeah, I – no I'm uncertain really as to the background.

Q. When was it that you first became aware that there might be a, a negligence issue or potential negligence issue with Mr Harding's actions?

A. Well it was a, an issue for the company rather than Mr Harding.

15 Q. When was it that you or your company first became aware that there might be a potential negligence issue with the actions of Mr Harding?

A. Well it was the same as when the company was aware which was when we were advised of the issue by Holmes.

Q. In January 1990?

20 A. Yes.

Q. Okay, and just talking about that advice John Hare –

JUSTICE COOPER ADDRESSES MR ZARIFEH

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

25 Q. The Holmes' advice yes thank you Sir, John Hare's evidence is that he attended at your offices?

A. I think he came to our offices to, to obtain information drawings et cetera.

Q. Right. And he believed that he spoke to you and to Mr Banks?

A. Well I don't think he was that specific.

30 Q. Right but you say you can't recall?

A. I don't believe I was involved in the meeting, I certainly can't recall it.

Q. Right. So what's your recall that Mr Banks attends the meeting?

A. Well if it wasn't me it would have been Mr Banks.

Q. Right so are you saying you just can't recall it but it could well have been you that attended the meeting?

5 A. No I think it's unlikely that it was me. It was more likely to be Mr Banks.

Q. Would it not be more likely to have been you given that you had been there at the time the CTV building was designed and constructed?

A. Not necessarily. Mr Banks was a very competent engineer and familiar with the people at Holmes.

10 Q. Right but Mr Banks didn't have any firsthand knowledge of the building or the design did he? Whereas you did?

A. Well I don't know that that's necessarily right. I've already said that I wasn't involved directly in it.

Q. Oh, okay but even to a limited extent you had been there. Mr Harding had been working there ostensibly under your supervision, certainly in your employment at that time, and not Mr Banks'?

15 1456

A. Yes. Given Mr Banks' experience and knowledge of Holmes I would imagine I considered it quite appropriate that he actually dealt with them. He would have then, you know, discussed with me any issues.

20

Q. Right. So he finds out what the issue is from John Hare and then he reports it to you, Mr Banks?

A. Well, he would have told me what he thought the issue was as it was understood at whatever time it was that he met John Hare.

25 Q. So who would have told John Hare then that they thought that the issue might have dealt with at the time of construction?

A. I think I had that discussion with Geoff Banks, that it was possible that that had happened.

Q. When did you have that discussion?

30 A. Oh, I don't remember exactly but it would have been after obviously he told me about the problem and I believe I undertook to contact Mr Harding to see if I could find out if he was aware of anything that had happened on site that would assist us.

- Q. But you didn't tell Mr Hare that then, or can you not remember?
- A. I can't recall that and I don't believe I did.
- Q. Right, and why do you not believe you did if you can't recall?
- A. Well I don't recall having any discussions at all with Mr Hare.
- 5 Q. Right, so it was all left to Geoff Banks?
- A. In terms of dealing with Holmes, yes, he took that on.
- Q. And did he pass onto you then, Mr Banks, the concerns that he obviously had once the issue had been highlighted to him?
- A. Yes, I believe he did.
- 10 Q. And so presumably you agreed with his concerns?
- A. Yes.
- Q. And we've heard reference to it being a fundamental issue, critical structural weakness, descriptions of that nature. You agree with all those.
- 15 A. Yes. Some of those were not the terminology used at the time but I have heard those words used.
- Q. And when you looked at the structural drawings could you see the problem?
- A. Yes I did.
- 20 Q. And like Mr Banks could you see it within less than a minute or something of that order?
- A. Possibly not as quickly as Mr Banks did.
- Q. But it was glaringly obvious as someone said?
- A. Well it was evident that the sort or reinforcing you would expect there didn't appear to be there on the drawing.
- 25 Q. And do you say that you hadn't seen that obvious issue before that, before January, February 1990?
- A. I hadn't.
- Q. Hadn't seen it back in 1986 when the building was designed?
- 30 A. I hadn't.
- Q. Do you think that you never looked at the structural drawings then?
- A. I've already said that I did not review them.

- Q. But it would seem to follow that if it was glaringly obvious that you wouldn't have seen the drawings at all?
- A. Yes but it was obvious because somebody had written and said, "There's a problem here" and then you go and look at that specific point.
- 5 Q. And Mr Banks I think said the same thing but said that if it hadn't been pointed out to him and he was just looking at it, conducting a review himself, it might have taken him a bit longer but probably not a lot. You agree with that don't you?
- A. Well that's what Mr Banks said.
- 10 Q. You agree as well that it wouldn't have taken too long to identify it?
- A. I'm uncertain as to how long it would have specifically taken me.
- Q. What I'm suggesting to you is that because it was an issue that was an obvious one, whether it took one minute or 60 minutes to observe or to see, it must follow that you never looked at the structural drawings if you
- 15 hadn't seen that before. You never did any review at all of them?
- A. Well that's what I've said already.
- Q. So back in 86, you don't think you ever looked at any of the structural drawings that Mr Harding completed while in your employment in relation to CTV?
- 20 A. Well I don't recall doing so and I don't believe I reviewed them from that point of view.
- Q. When you say, "review them from that point of view" –
- A. A structural review.
- Q. Right. Well, would you look at them for some other purpose?
- 25 A. Not that I recall.
- Q. So you don't think you ever looked at them?
- A. Well I don't recall looking at them.
- Q. Right, so does that mean you could have?
- A. Not in terms of a structural review.
- 30 Q. Well, when you saw it in January, February 1990 and it was obvious to you, did you have a discussion with Mr Banks about it, about this issue, this serious issue?

A. I would have discussed with him more around what the next steps were in relation to it.

Q. Did you think to yourself, "I wonder how that happened, that obvious but serious issue?"

5 A. I don't specifically recall that.

Q. And did you tell Mr Banks anything of how that might have come about?

A. Well I doubt it because I wouldn't have known how it came about.

Q. Well did you tell him that David Harding designed it and that maybe looking at that obvious but serious error the trust that you had put in David Harding may have been misplaced?

10

A. No I don't think so. It seemed to be a, not so much a calculation error but a blunder or an omission and at the time of course I had the Holmes report which identified that apart from that, that the building was generally compliant with the codes et cetera as they said.

15 Q. And are you putting that forward as a basis for not having to have any concerns about the rest of the building at that time?

A. Well, Holmes were the leading engineer in Christchurch at the time and they had designed other buildings that were of a similar structural characteristic and it gave me confidence that the remainder of the building was okay.

20

Q. And back then was John Hare the experienced engineer that he is today?

A. As I recall John Hare was very highly thought of, even back then.

Q. Just going back to Mr Banks then, so you didn't tell him that the building was designed by David Harding who had had no previous experience in designing multi-rise buildings of that sort?

25

A. Well I don't recall actually specifically telling Geoff Banks anything in relation to David Harding other than that it would have been evident that probably to him that David Harding was the person who had designed it because of course it had DH on the drawings.

30

Q. Well, were you here this morning when Mr Banks said that he was not aware of David Harding's inexperience at the time he designed CTV?

A. Um, yes but I didn't quite understand the level of inexperience or what that related to because, particularly in this particular issue that we're talking about, um, it's really fundamental engineering, it's not really related to experience.

5 Q. So it's a fundamental issue that you got wrong?

A. Well it's a load path issue, applies to every building that you design.

Q. Well Mr Banks' evidence was that that was something that would have been relevant to him to know in terms of the enquiries that he was going to obviously have to make into this issue. Do you accept that?

10 A. Well, if that's what he said, that's what I accept he said.

Q. But you didn't think that it was something you should disclose to him?

A. Well I don't recall whether I did or didn't discuss that with him.

1506

Q. Well he says you didn't. So if you don't recall it do you accept that?

15 A. Well in the context he was asked he answered a question. I don't know.

Q. When you had this issue pointed out to you did it not give you cause to stop and think about three or so, four years earlier when David Harding had been left essentially on his own to design the CTV building?

20 A. No because there was no issue that I was aware of in David Harding's work in the time he was with me.

Q. Right but here a short time later you've got this fundamental error or issue being pointed out to you that related to that design. Did that not cause alarm bells to ring?

25 A. Not in the context in which I learnt about it and that context included the Holmes report.

Q. So you didn't consider that you should review the rest of the building and have a look at other details that he had designed?

A. No not in the context of what I knew at that time, no.

Q. Do you think in hindsight you should have?

30 A. If I was faced with the same information that I had then today I would probably make the same decision today.

Q. Really?

A. I'm not, I'm excluding the fact that there's been a collapse, but in terms of a report that says the rest of the building is compliant and the fact that I was unaware of any issues with Mr Harding's work it would tend to lead one to the same conclusion.

5 Q. Well would it not cause you to think that, if you cast your mind back obviously to 1986 and as you've said before in evidence you knew that David Harding didn't have any previous experience in designing multi-rise buildings, he was new to ETABS, and then this fundamental error is pointed out to you. I suggest that that should have caused you to stop
10 and think about the design and have a look at, perhaps for the first time according to you, at the structural plans that he had designed.

A. Well I don't agree because the issue was nothing to do with ETABS. The issue was nothing to do with whether he'd designed a six-storey building before or not. When he designed a four-storey building or the
15 other building that was nine storeys the same sort of, or a two-storey building, the same issue of load paths and transfer of forces applies.

Q. So you say that it was the Holmes report that gave you comfort that the rest of the building would be all right. Is that what you're saying?

A. Well not so much comfort. It was quite clear in the Holmes report that
20 the rest of the building was all right.

Q. And if you hadn't had that do you think that you would have had a review of the whole building then? Is that what you're saying?

A. I think it would have altered my approach to it.

Q. What, that might have given you concerns then about the rest of the
25 building?

A. Well it's hard to say in hindsight what one would have done but certainly the Holmes report was a key factor to me anyway in terms of whether it was necessary to investigate further.

Q. Right and had it not been for the Holmes report then because of
30 David Harding's inexperience at the time and this fundamental error you may well have had concerns about the rest of the building. Is that what you're saying?

- 5 A. Well it's hard to tell because errors do happen and sometimes people make what I would call a blunder. They forget to do something. That doesn't mean to, that's not necessarily inexperience. That's just a straight blunder. That's why I'm hesitant about saying, well, if I didn't have the Holmes report I would definitely have done something else. I can't say that for sure.
- Q. The Holmes report though you knew was not a full peer review of the building and the design was it?
- 10 A. Well that's not as you read the report. The report was quite clear. They had come to a conclusion that the building was generally in compliance with the codes except for the item they identified.
- Q. But the report made it clear as well that it was, they had a limited time to do their review and they'd looked at limited things, didn't it? Do you recall that?
- 15 A. Well looked at limited things in the sense of on-site inspections I think. The issue for me is that how can you write a report that says that certain things are okay if you haven't investigated them? How can you say it? So when you read in a report that those other aspects were okay then you expect that they have actually considered them?
- 20 Q. And done full calculations and all the things a peer review might have done?
- A. Well considered them to the extent that gave them the ability to write the, what they did.
- Q. But it was a report that was qualified by that limited nature. It specifically said, "Given these qualifications," didn't it?
- 25 A. Yes but then if they hadn't considered those items they wouldn't have been in a position to write and say that they complied.
- Q. What I'm suggesting to you Dr Reay is that as the principal of the firm, as the person that was presumably going to be responsible if there was an error made, as the person who was the principal at the time the building was designed by Mr Harding was it not part of your obligation to have a look at the rest of the building for yourself and satisfy yourself that it was, there were no problems with it?
- 30

A. No I believe I was entitled to and did rely on the statement in the Holmes report.

5 Q. Mr Banks you said was likely to have met Mr Hare and passed it onto you, the concern, and then we've heard from him as to the things we did and the liaising he had with Holmes, Mr Hare and Mr Wilkinson. He did that under your oversight, correct?

A. He, he kept me advised of what, what he was doing in relation to this issue.

10 Q. Right. His evidence at paragraph 14 was his role was focussed on the more detailed aspects while Dr Reay had an oversight role. Do you agree with that?

A. Well I'm not sure what oversight means. He would have told me what was happening, if he had any concerns he would have discussed them with me and we would have agreed on what we were going to do.

15 Q. Right. So you oversaw what he did then?

A. Well no it was more of a joint situation rather than I would describe it as an overseeing situation in terms of any issues that he had.

20 Q. And he went onto say that, "As I was relatively new in the company and also new to the building I liaised with Dr Reay throughout my involvement." Do you agree with that?

A. Yes well liaise is probably a better way of putting it.

Q. So he kept you apprised of what was happening and you discussed what should be done next. Is that correct?

25 A. He certainly, he kept me apprised of what was happening. If he was going to go and do calculations he probably wouldn't have discussed that particular aspect with me, he probably discussed more insurance matters, that sort of thing.

1516

30 Q. All right, but it wasn't as if he was out there acting on his own, it was as you put it, at least a joint approach?

A. He wasn't acting on his own, no, he was involving me where he saw he needed to.

Q. So you were aware of what was going on?

A. Very aware.

Q. And approved it presumably?

A. I don't think we just had any disagreement so what we were doing between us I think it was pretty clear.

5 Q. So you said a moment ago that you contacted Mr Harding.

A. Yes.

Q. And we heard that from Mr Banks, and that was to find out if the issue had been dealt with at construction stage, correct?

10 A. Well more to tell him that the – that we'd been told there was an issue and to find out if he had any information or knowledge that would assist us in understanding whether that issue had been identified and during his work on the project.

Q. But both Mr Banks and Mr Hare said that you had indicated that you thought that the issue may have been dealt with at the construction stage. Do you accept – do you agree with that?

15 A. No, no, that isn't how it was, I didn't know whether it had or not. All I said to – I would have said to Geoff Banks is that there is a possibility that there is something that's happened during the construction phase that we're not aware of. I will find out if that is a possibility.

20 Q. Right, so you're not saying that you recalled something or were aware of something?

A. No.

Q. And so you spoke to Mr Harding and you would have heard I think you were at the hearing, that the reply that Mr Harding gave to an information request, that he told you that he had not installed any drag bars in relation to those slabs and north core connections?

25 A. Yes I believe that's what he said.

Q. So that's what you recall?

A. Well I don't think I would have used the term drag bar back then.

30 Q. All right, well ties or whatever the term was.

A. Well connections or ...

Q. He told you that nothing was installed in that area that wasn't on the structural drawings?

- A. I think he told me he couldn't recall anything. Not that there was definitely nothing, I think he said he couldn't recall is what he told me.
- Q. So are you saying that his reply to that to the effect that he told you that he hadn't, that's wrong, you thought it was more vague than that?
- 5 A. Yes, my recollection is he said he couldn't recall anything.
- Q. So what did you pass onto Mr Banks then?
- A. Well – I would have passed on exactly that, that there is no recollection of anything being installed so we still didn't know for sure whether the problem had been sorted but it was increasingly unlikely that it was.
- 10 Q. Right, so Mr Banks' recollection that you still left open that possibility is right?
- A. Well given that Mr Harding from my recollection was not absolutely specific, that possibility still existed that the issue had been sorted.
- Q. Well if he was unsure, Mr Harding, did you ask him then if it had been
- 15 dealt with, how it had been dealt with?
- A. No he simply said he didn't know so that was the end of the conversation really.
- Q. He didn't know or that nothing had been done?
- A. He wasn't adamant that nothing had been done. He had no recollection
- 20 of anything being done I think is how he put it. It wasn't absolutely specific.
- Q. Did you look in the ARC records for any site instructions or sketches or anything of that nature that might have covered such a thing?
- A. I'm sure I would have checked. I don't remember (overtalking 15:20:51).
- 25 Q. And there was nothing was there?
- A. I believe there was nothing, that would have been why I rang Mr Harding.
- Q. Right, there was nothing to suggest that anything had been done at the construction stage, correct.
- 30 A. Not within the records we had.
- Q. Or in the recollection of Mr Harding?
- A. That's right.
- Q. Mr Jones, the foreman, did you ring him?

A. Well I can't recall.

Q. Because his evidence was of getting a call. He was a bit vague about the details but he wasn't aware of anything being done differently at the construction stage than was on the drawings.

5 A. Mmm, I don't recall talking to Mr Jones. I'm not saying didn't but –

Q. Could that have been someone else?

A. Well it would only have been either myself or Geoff Banks.

Q. All right, so this is going on, these enquiries are going on in the days immediately following Mr Hare's visit on the 26th of January?

10 A. Well I'm not, I'm not – I can't recollect the exact timetable for it.

Q. Well I'll just get a document brought up, 0129.2. That's the letter from Mr Banks to the insurer. In the last paragraph on that first page you'll see that that says, "We have contacted the engineer directly involved with the design and observation of the project (he's no longer employed by this practice). He was unable to recall any site instructions given on this item, and we have found no reference to it in written instructions we have on file." That's confirming what you've just told us?

15

A. I believe so.

Q. "We forwarded him a copy of the relevant drawings to help his recall and also attempting to contact the foreman involved". So did you send the drawings to David Harding?

20

A. Well until I read that I didn't recall that drawings had been sent to him to assist him.

Q. So is that something you could have done?

25

A. Oh either I or Geoff Banks or someone in the office could've.

Q. The next page, at the top there, refers to the electronic reinforcing bar locator. Correct?

A. Yes.

Q. So all of that obviously had gone on before the 1st of February of 1990, the date of that letter?

30

A. Yes.

Q. And Mr Banks said that with those enquiries and that investigation, the view was taken by the two of you essentially that it was better to

assume that there'd been nothing done and that remedial work should proceed. Do you agree with that?

A. No, I've just lost the –

5 Q. Well it's not in the letter, I'm just saying that was what he said that you and he had decided.

A. I would like to read the letter if we're referring to it please, thank you. So which particular part are you –

Q. Well I'm not. I'm just asking a question. Mr Banks said that, after those enquires and investigations had been made that.

10 A. Yes.

Q. That, you and he essentially decided that you should proceed on the basis that nothing had been done and that remedial work should be proceeded with. I'm not saying it's in the letter, I'm saying that's what he said. Do you agree with that?

15 A. Whether we'd come to that conclusion at this particular time or a few days later, I'm not sure but that is a conclusion that we came to.

Q. And so you proceeded to get a quote, we saw a quote from Blake Brothers I think for hole drilling, presumably for the bolts?

20 A. Well I don't know as Mr Banks doesn't know either why that quote was obtained, because it doesn't seem to be relevant to anything that was happening.

1526

Q. Right but it must have been obtained by one of you mustn't it?

A. It might have been a quote to do some intrusive investigation.

25 Q. Okay. But it related –

A. Which then never proceeded.

Q. Okay. Do you agree with Mr Banks that the matter was being treated urgently by you and he?

30 A. I don't know about urgently but it was something we were treating seriously and wanting to move forward with it at that time and were being asked to.

Q. Right and was that because you felt some responsibility for it and because it was serious?

- A. Well that would be two matters that we would have considered and the third would be relatively to the owner who at that stage I think was the receiver or whoever was, was asking, you know, in terms of what they wanted to happen.
- 5 Q. Right and in relation to the sale of the property, do you recall that evidence was put to Mr Banks about the sale not being affected by this issue?
- A. Yes and I think in that letter it talks about a two-month extension or something like that.
- 10 Q. Right and the letter from the receiver you might recall mentions that issue about the sale not being affected. Do you recall that being a consideration?
- A. Well it's a consideration in terms of giving the matter some urgency which is what we were doing at the time. We were treating it seriously and wanting to, if there was a problem, to get the problem sorted.
- 15 Q. Right what I'm just trying to establish is was the reason that you were treating it urgently because of the sale and not wanting there to be any flow-on effect from that if it collapsed or was it because you took the issue seriously anyway and felt some responsibility for it?
- 20 A. Well it's a combination of factors. I don't think you can say it's either one.
- Q. Okay. So you had Geoff Banks proceed to try and design remedial works, liaise with Holmes and then come up with a remedy?
- A. Well I didn't. He, he proposed that as the way forward for that part and he, I agreed with him and he carried on and worked on it and dealt with Holmes.
- 25 Q. And did you have any involvement in the remedial design or the calculations that he did?
- A. Not directly, no.
- 30 Q. What do you mean by that, not directly?
- A. Well he did the calculations, I didn't.
- Q. Did you check them?
- A. No I don't believe so.

Q. Did you not think that you should?

A. No I relied on Mr Banks. He would have told me what he was doing and, more importantly, he would have explained whatever the principle was of what he was doing and that would be the key factor for me.

5 Q. And ultimately when they were installed and the ties or drag bars were not put on floors 2 and 3, did you agree with that?

A. I can't remember whether I was specifically involved in that. I have thought about it since, I –

Q. Do you recall knowing about it at the time?

10 A. Well I think I would have known about it. I can't say for sure but I believe I would have.

Q. What do you say to the proposition that was put to Mr Banks that, and I think John Hare voiced this opinion, that would it not have been (a) easier and (b) more conservative to simply put ties on all of the floors including those two, whether or not you strictly speaking needed them?

15 A. I think that there's two factors and one of them has been explained very well by Geoff Banks which is the load distributions and the redistribution and that. I think the other factor is that the particular two walls which didn't have the connections that we considered were required were
20 more flexible than the walls on the other two grids and as such the actual compatibility in the system would have probably been better served by only connecting the actual floors that you needed to, to the more flexible walls. So in principle there are benefits in what he did. So I wouldn't have, I wouldn't have seen it as a, as a particular problem as
25 long as he had calculated that the load path was available through the other walls.

Q. All right and just to be clear are you saying that these are the matters you've looked at since then?

30 A. I don't know to what extent I would have thought about that at the time but I do know that I have been aware of for a long time, you know, the issue of compatibility between walls of different stiffness when you have a rigid diaphragm.

HEARING ADJOURNS: 3.32 PM

HEARING RESUMES: 3.47 PM

5 CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. Dr Reay I was just asking you before the break about the activity that was going on on your part and Mr Banks's part in terms of doing the calculations, getting the remedial work, he doing the calculations and getting the remedial, or remedial design sorted, putting the notification in
10 to your insurers, meeting with the receiver, I think on the 1st of February where you both met Mr Young from KPMG and acknowledging that as you said you had a responsibility to try and resolve this serious issue. That was all going on in those days or weeks that follow the Holmes Consulting advice of the issue right?

15 A. Yes that's as I understand it.

Q. And then you say in your evidence that nothing happened, you didn't hear from the receivers. But that was for a whole year wasn't it, or longer?

A. In my recollection is that no-one actually told us that for example
20 Holmes didn't tell us that they were no longer involved and I don't believe the receiver communicated anything to us and I think for quite some time we carried on, we got some insurance approvals, and time went by and I think that we envisaged that people were work- either working out that they were going to buy the building or not buy it or
25 whatever was happening and to a degree we'd, well we had made sure, or we knew that the people who needed to know there was a problem knew there was a problem.

Q. And who was that the owners or the receivers?

A. Well the owner slash receiver and, and we knew that Holmes had been
30 dealing with the potential purchaser.

- Q. All right but do you not accept I thought it was accepted by Mr Banks that the responsibility had been passed on to the original designer firm which was yours?
- A. Well I wouldn't use the word "passed on". Mr Banks and I accepted that we had a responsibility but we didn't consider whether that Holmes for example had, had passed it on. They may still have had some but we weren't considering that.
- Q. Right but whether that was the case or not your responsibility still existed didn't it?
- A. Oh, I believe it did and –
- Q. Right and nothing had been done to rectify the problem?
- A. No at that stage we were, I, I, from – my recollection is we were anticipating that and expecting that the receiver would ask for the work to proceed once he had come to whatever arrangements he was coming to.
- Q. What, and so you just left it indefinitely?
- A. Well no, my recollection is that you know when I drove up Madras Street I would actually have a look to see if the building, if there was any activity happening in the building for example because I was concerned that if it started to be, if they sold it or whatever and started to get occupied I would have been concerned so I did, I can recall thinking you know you drive past a building and you think about an issue.
- Q. Is that, in that in your brief? Which paragraph's that in?
- A. No it's not in there.
- Q. But that's something you recall doing is it?
- A. Yes I can, well you drive past the building and you're thinking about oh there's an issue there and then the first thing you – I would think about is you know is it, is this building being occupied and I think towards the end of that year I think we were becoming concerned and then we learnt of course that it had been sold and that's –
- Q. Okay, so you drove past regularly?
- A. I wouldn't say regularly. I didn't deliberately drive past. It was when I was travelling up Madras Street.

- Q. When you were travelling down Madras Street or up Madras Street you thought about the building and whether it was sold or occupied, correct?
- A. Mainly, not sold so much as whether it was, someone was starting to do fit out work in there or something like that.
- 5 Q. All right so signs of occupation?
- A. Mhm.
- Q. And you were –
- A. Or beginnings of occupation.
- 10 Q. You were concerned about that because clearly of what Holmes had said could well happen if there was an earthquake given that problem correct?
- A. Well no just concerned from an engineering point of view that this work that we'd agreed ought to be done wasn't actually moving forward, that was my concern and, and it did hinge to a degree around whether you know the level, well the occupation of the building obviously because
- 15 that was a key factor.
- Q. Because of the risk?
- A. But it yeah, but it wasn't at those days it wasn't a you know while there was an issue it wasn't an issue that drove one to think that thing's a calamity because of the relatively low level definitions of earthquake prone buildings.
- 20 Q. Right but I thought you said that when you did pass the building you were concerned about it?
- A. Well I, no you just think about it and you think about well I wonder what's happening.
- 25 Q. Right but I thought you were concerned in case it had, there were signs of occupation?
- A. Oh the word concerned applies to engineering every minute of the day. What I, all I was noting was that it would remind you about the building and you'd think about it.
- 30 Q. Right. And all I'm saying is the reason you'd think about it was because of the risk, potential risk?
- A. Well it was only in my mind a risk if it, if it was occupied.

- Q. Right.
- A. And my understanding was it wasn't.
- Q. Right. But it was presumably still on the market?
- A. Well we didn't know.
- 5 Q. But there could have been workmen in there, real estate agents, you wouldn't necessarily know about that from driving past it would you?
- A. Oh yes you would. You'd see the activity, you'd see the lights on, you'd –
- Q. So when you -
- 10 A. – see signs.
- Q. Were you keeping an eye out for that were you?
- A. Oh when I'd drive past I'd just have a look and...
- Q. Making sure there wasn't?
- A. Well and, and –
- 15 Q. That it wasn't –
- A. – just thinking "I wonder what's happening and oh yeah there's nothing going on there I wonder", you know and assuming that they're still trying to sort out whatever they're trying to sort out.
- Q. Okay are you saying that you were keeping a watch on the building for
- 20 that reason?
- A. I wasn't keeping a watch on it, it was just when you drive past you're reminded.
- Q. Right. Well would it not have been easier to get on to that retrofit work back in January, February, March 1990 when the building was definitely
- 25 empty? Would have been easier to retrofit wouldn't it?
- A. Well I don't think the status of the building changed right through 1990.
- Q. So you do nothing. You don't approach the receiver and say, "Can we get on to fixing this fundamental error that Alan Reay Consultants made?" You do nothing of that sort do you?
- 30 A. We didn't, I don't believe we've con- well I can't recall contacting the receiver. We may have but I don't recall.
- Q. No and there's no indication of that in the documentation is there?
- A. No but if, if you were going to ring them up there may not be.

Q. Right. And you just happened to see it in the paper that it's been sold. So if you hadn't seen it in the paper you would have carried on presumably as you've described?

5 A. Oh I don't think so because I think, I mean Geoff and I would've discussed it at some point and we wouldn't, we wouldn't have let it run on indefinitely.

Q. Would you? So you're happy to let it run on for at least a year?

A. Well it wasn't a year. I, I – I mean Geoff's talked about it in the newspaper.

10 Q. Sorry?

A. Geoff talked about reading that it had been sold in the newspaper, I can't recall that?

Q. Well I thought you did that,

A. No I –

15 Q. He didn't talk about that?

A. Didn't he.

Q. He didn't know how. You're the one who said that you saw it, you and he saw it in the paper?

A. Yes.

20 Q. So on 4 February '91 there was an article in *The Press*?

A. Mhm.

Q. "Having read this article Mr Banks and I decided we should notify the new owners"?

A. Mhm. Yes well that may be the, the earliest we learnt.

25 Q. Well that's your evidence that I'm looking at?

A. Mhm. Well that's the, obviously the positive evidence that, that we had.

Q. But you say that towards the end of that year you and he would have discussed it?

1557

30 A. Well it would have come up at some point, I can't remember exactly but it wasn't something that we'd totally – that we just dropped and forgot about.

Q. What, because you were continually aware of your obligation?

A. Well I didn't forget that we had an obligation, if you put it like that.

Q. And as I say, if you hadn't read it in the paper you would have carried on as you had been?

5 A. No I think we would have got to a point where we would have said, well hang on, this can't go on any longer, but - well I didn't forget that we had an obligation, if you put it like that.

Q. And as I say, if you hadn't read it in the paper you would have carried on as you had been?

10 A. No I think we would have got to a point where we would have said, well hang on, this can't go on any longer, but – because nobody had actually told us that the negotiations or the arrangements or whatever they were had come to an end, we were sort of the – we were of the understanding that they were still working on it and that at some point the receiver would come back to us and say, “Well yep now’s the time to
15 sort this out.”

Q. What I'm trying to understand and maybe this is my lay person's point of view, but where an engineering firm has made this fundamental error, one of your employees as you put it made this error, where that's happened and it's been – you've been notified about it, wouldn't you be
20 keen to get that rectified knowing the potential risks?

A. Well yes but I would imagine that the time to rectify it maybe when other fitout work is happening in the building for other purposes so that the builders are there working. It – with a building that was as I understand it unoccupied, it did take some of the pressure off.

25 Q. Did you feel the pressure was off because it was unoccupied?

A. Well no I just said some of the pressure, I didn't say it was all off, it ...

Q. Were you not just hoping that it had gone away?

A. Oh certainly not, it was never going to go away.

Q. So why did you not then take a more proactive approach, as I suggest
30 would be expected of you?

A. I think we had and I think the issue sat with the receiver, the owner.

Q. So it was back to the receiver and because they –

A. To initiate the work, yes.

- Q. Okay, so you see it in *The Press*, 4th of February 91 and you and Mr Banks discuss it, see it's been sold so what, you decide that you better do something about it then. You hadn't up until then but you'd better now.
- 5 A. Oh we decided we should make sure that the new owner is aware of the issue.
- Q. But I thought you just said that you passed it back to the receiver, it was –
- A. Well clearly it's now sold.
- 10 Q. Right.
- A. And the status of it has changed, there's a new owner and we were concerned to make sure that the new owner was aware of the problem, because it seemed – it would have, seemed surprising to us if the new owner was actually aware of the problem I would have thought he would
- 15 have approached us before he bought it and it was somewhat surprising to find the building had been sold and nobody had actually contacted us.
- Q. So was it because you didn't get contacted that you thought you'd better go forward then?
- A. Well it was just another sort of level of concern really.
- 20 Q. Well wouldn't it have been a lot easier right at the beginning to be more proactive than just sit round and wait and wonder what's happening?
- A. Well it's 20 something years ago. I can't remember exactly the sequence but.
- Q. Okay, well after seeing it in *The Press* you say that you then got legal
- 25 advice as to your obligation?
- A. The legal advice related to ensuring that our insurance remained intact. As far as we were concerned we had an obligation to make sure that the new owner knew.
- Q. But you've seen the file notes from Mr Banks on the file?
- 30 A. Yes.
- Q. And don't they record that you were seeking legal advice as to your possible obligations and I think in one he put, if any, now I accept that he couldn't understand why he'd written that but that was his record at

the time. Was that not what you were doing, seeking advice to see if you did have an obligation to advise?

A. No I don't believe it was obligations in relation to advising –

OBJECTION: MR RENNIE (16:01:57)

5 (inaudible 16:01:57) that question goes over the boundary because it asks what the advice was about.

JUSTICE COOPER:

That may be right, Mr Zarifeh.

10

MR ZARIFEH:

Well I'm referring to the memorandums that have been disclosed and are in the folders Sir as to seeking legal advice as to possible obligations to new owners.

15

JUSTICE COOPER:

Well Mr Rennie if there's a document that's in the record which actually – I mean Mr Zarifeh's question doesn't seem to go beyond what's already in evidence.

20

MR RENNIE:

It appeared to me Sir that the answer was likely to go over the boundary and in relation to the way the question was asked. The document is the record of what the matter related to.

25

JUSTICE COOPER:

Well would it be sufficient if Dr Reay was reminded that he's not obliged to disclose privileged legal advice.

30 **MR RENNIE:**

I'm sure that would meet it Sir. The other the basis for my issue was that he's actually being asked about a matter which is actually in the document and

he's – the question really invites an oral gloss on the document if I can put it that way.

JUSTICE COOPER:

5 Q. Yes, well he may want to give an oral gloss for all I know but Dr Reay just to remind you, you're not obliged to answer questions where to do so would disclose a privilege to which you or your firm are entitled. You understand that?

A. Yes.

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

Q. Well Dr Reay, I'll just get one of those documents brought up, 0.0227.5. So that's a form completed by Mr Banks, see his signature at the bottom?

A. Yes.

15 Q. And just above that signature under general comments, see it says, "Building has been on-sold, seeking legal advice as to possible obligations to new owners as instructed by I&G." Correct?

A. Yes.

20 Q. So all I was suggesting to you was that that recorded that you were seeking legal advice as to possible obligations and I thought you said that's not what you were doing.

A. We were seeking legal advice but I'm not sure that the way that's put was, or the way that you're inferring it is actually the reason for the advice.

25 Q. Okay, well let's look at the next page, .6.

30 A. We – I should explain that we have an obligation under our insurance policy not to commit the insurance company in any way that they don't agree with, otherwise we become uninsured and it was essential to us to remain insured, because we didn't know the extent to which the problem, the extent of the problem for sure, or the extent of the obligations that we may have had, so it's a normal situation to actually, if

you're going to advise someone of a problem that you do it in a manner that is satisfactory to an insurance company.

Q. Right, and the other one you'll see up on the screen is another file note Mr Banks made. You see the second entry or bullet point, "What are our obligations if any to notify anyone re status of review to date." See that?

5

A. Yes, he's specifically referring to the review to date there and he would have, Geoff Banks would have been thinking about to what degree we should be notifying that, not whether we should notify the people per se, but more to do with the way in which they would be notified.

10

Q. And what do you mean by that?

A. Well, Geoff Banks and I agreed that no matter what we needed to notify the new owner of the problem.

Q. Right.

15

A. But we had to do it in a manner that was satisfactory obviously to the insurance company. That's it.

Q. So why did you need advice from the insurance as to what your obligations if any were to notify them as to the status of it?

A. Well the obligations relate to the way in which you write things. It's not to do with an obligation to fulfil an ethical requirement.

20

Q. Right, so you think that he was meaning the way you would advise them, not the fact that you would advise them?

A. Well yes, very definitely because you may not know but the insurance company, CEAS, is actually owned by engineers and it's controlled by engineers, and so in terms of our dealing with the insurance company, we know that they're very well aware of what our ethical obligations are. We wouldn't need to ask them what they were.

25

1607

Q. So what about the next line then, "preliminary advice from insurance point of view is no further action."

30

A. I don't know what that means at that time.

Q. Well, it's the opposite of what you're saying isn't it? It's advice not to take any further action then?

- A. Yes, I don't know what that meant. It doesn't add up to me. It doesn't mean to me that we weren't going to go and tell, to advise someone that there was an issue. We clearly needed to.
- Q. Right, and you needed to do it urgently didn't you?
- 5 A. Well, when there was a new owner we did.
- Q. Well there was a new owner by then wasn't there? 4th of February is when you found out and –
- A. Well it said it had been sold but I don't know what the transaction dates were, whether it was bought for six months forward or whatever it was, I
- 10 don't know.
- Q. But the point is, as you yourself say, because there was a new owner there was some urgency to do something about it?
- A. It was important to do something.
- Q. Right, so then you go off and get legal advice I think around March of 91
- 15 and you say in your brief following receipt of the legal advice you notified the owners?
- A. I beg your pardon?
- Q. You say in your brief following receipt of the legal advice you got from Lane Neave you notified the new owners, Mr Ibbotson?
- 20 A. Well I don't know if the advice from Lane Neave related –
- Q. No, no, I'm not asking about the advice. I'm saying following receipt of the advice from Lane Neave you said you then notified the new owners?
- A. Yes I'm not sure because, you know, you've read one line but the next
- 25 line says that "PS", which is Peter Smith, "to consider and advise." So whether he said something like, "There's no further action now, I'll consider and advise."
- Q. Forget about that document for a moment. I'm reading from your brief of evidence that you read a moment ago, paragraph 78, "Following receipt of the advice sought from Lane Neave Mr Banks wrote to the
- 30 new owners on 11 September 1991 although a copy of this letter is not held." Paragraph 78?
- A. Yep.
- Q. So that's your evidence?

A. Yes.

Q. That advice that you got was back in March of 1991. What were you doing between March and September of 91?

5 A. My recollection is that at some stage we asked the receiver who had bought the building.

Q. Right, and he told you?

A. Beg your pardon?

Q. And he told you?

10 A. Well I believe he eventually did and whether that was why there was a delay I'm not sure.

Q. Well, a delay of five or six months?

A. Um, I can't actually explain that length of that delay as to what was happening in the interim.

15 Q. But you're saying, we always knew we had that obligation, weren't so concerned because it wasn't occupied and when you passed by you were checking that and you then find out that it's been sold?

A. Mhm.

20 Q. So you need to act pretty quickly and you know your obligations you say, but you're required to deal with your insurers so you end up getting advice, March 91, and then you do nothing until September. That's not consistent with your evidence is it?

25 A. Whether that advice was the final advice we needed to do what we did, I don't know. I don't know in finding out from the receiver who had bought it, whether we were told what the programme was, I don't know. I can't explain the gap but it wouldn't have been something that we would have ignored until finally someone said, "Do something." It was us that actually initiated and told the new owners that there was an issue they should be aware of.

30 Q. And I'm not disputing that. What I'm putting to you is that there was this five or so month delay?

A. I'm uncertain as to the total, why that delay is there.

Q. So you can't explain it?

- A. Well only in part in that I believe for some reason we chose to ask, I think we asked the receiver who it was and whether he had told them where there was a problem. I think that's probably where it started.
- Q. And that took five months?
- 5 A. I have no idea what it took.
- Q. Because it's not in your brief about any explanation?
- A. No, well it's just my recollection now, what I recall.
- Q. Why did you not offer to pay for the remedial work?
- A. Well, if we want to maintain our insurance cover we have to follow the
- 10 rules of the insurance company. For us to be in a position to do what we knew we needed to do, we needed to maintain the insurance cover, and to do that we had to write in terms of what was satisfactory to them.
- Q. But it was only your excess wasn't it, \$12,000?
- A. It doesn't make any difference. Who knows what the figure was going
- 15 to finally be.
- Q. You could have made a payment without prejudice, you knew that?
- A. Well I didn't actually know that exactly, no. As I understand it we just follow what the insurance company says we need to do to maintain our insurance and if they tell us something, that's it.
- 20 Q. But Mr Banks was writing letters with the phrase, "without prejudice" in them?
- A. Well obviously the insurance company was satisfied with what he was writing.
- Q. What I'm querying is you saying you didn't know that you could do that?
- 25 A. Well, we follow what the insurance company says we can do. They make the rules, not us.
- Q. Wasn't it the fit-out in September, October that triggered your action?
- A. I'm not sure what actually triggered the action.
- Q. But it could have been?
- 30 A. I'm not sure.
- Q. I just want to ask you quickly about the, you've been asked about the lack of permit, that no-one from Alan Reay applied for a permit for this retro-fit?

A. We believe we did.

Q. And Mr Reid took you through that, I'm not going to take you through that again, but your belief that Mr Bluck would have known, you said in paragraph 84 that you believe that his view would have been that the works were part of the original job and that no permit was required, right?

A. That's how I think he would have handled it.

Q. So you're saying that on the basis of your experience of dealing with him?

10 A. Mmm.

Q. Not your recollection of this matter?

A. That's correct. I don't specifically recollect dealing with him specifically on it.

Q. And you say in fact, "I base this on my experience in dealing with Mr Bluck over many years?"

15 A. Yes.

Q. And did I understand you correctly that there have been other occasions when you had spoken to Mr Bluck and he was happy with you giving him an assurance about a detail or something that you could perhaps send in later?

20 A. Oh, if there was an alteration on the site, some change depending on the scale of it. It's something that I might have asked him about. Generally small changes were never discussed with the Council. If you modified some reinforcing or did something, that was never something that you were at a need to advise them of.

25 Q. But he was happy to take your assurance in those cases that you're talking about?

A. No, because – well if he wasn't advised of it there was no assurance, but, no, it would be a matter of saying to him, "Well this is a change here, how do you want it handled," and he may say, "Well, just send me a copy of it."

30

Q. But that was because of the relationship you had with him?

A. No. I think that was common with everyone.

Q. Certainly applied to you anyway?

A. Well, in terms of some things, yes.

Q. So just so I understand you correctly, you're saying you knew Mr Bluck so well from your dealings with him that you think you know what he would have thought about this job even though you can't recollect the –

A. All I can say is how I thought he might have handled it. It wasn't that I knew him that well. It was more the way he handled things.

Q. Right, but you're basing your comment and what you think would have happened on your experience in dealing with him over those years?

10 A. Yes, that's the best I can do.

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CROSS-EXAMINATION: MR ELLIOTT

Q. I only have two brief matters Dr Reay. Firstly, I think you were here when I questioned Mr Banks about the decision not to install drag bars in levels 1 and 2. You heard that evidence did you?

A. Yes I did.

Q. So just in fairness I want to put the same point to you so you have the opportunity to comment. I put it to him that the relevant bylaw set out the objective which you're familiar with of avoiding collapse and minimising the probability of injury to or loss of life and I put it to him that in order to comply with that objective drag bars should have been installed at levels 1 and 2. Do you accept that?

A. No I don't. No I consider that what he did was appropriate and complied with the code.

25 Q. Thank you and secondly just one or two questions on behalf of families of those who died. The other day you talked about what your standards were. Do you recall that you said some words about that?

A. Yes.

Q. You named various groups of people in this order – the engineer, architects, the client, the builder and then the community, at the end of the list, and in that respect you said the innovation of safe, attractive, quality constructions. Firstly, I take it the absence of reference to those

30

who occupy a building 40 hours of the working week was just an oversight?

A. I'm sorry I can't hear.

5 Q. I take it that the absence of any reference in that list to those who occupy a building that you design was just an oversight?

A. I'm sorry I'm still not with you on this one.

Q. All right well when you said these things –

A. Yes.

Q. – you referred to various categories of people –

10 A. Yes.

Q. – which I've listed but you didn't refer in that section to the occupants of a building.

A. Well except when I referred to the community really.

15 Q. I see so you include them in the community group at the end and you refer to safe in that context I think?

A. Yes.

20 Q. So the question, can you point to any particular safety features which were incorporated into the design of the CTV building for the purpose of minimising loss of life in the event of full or partial collapse and as has happened in this case fire?

A. Well compliance with the codes is, is to provide exactly that.

RE-EXAMINATION: MR RENNIE – NIL

QUESTIONS FROM COMMISSIONERS FENWICK AND CARTER – NIL

QUESTIONS FROM JUSTICE COOPER – NIL

25 **WITNESS EXCUSED**

MR RENNIE ADDRESSES JUSTICE COOPER

MR ZARIFEH CALLS**RUSSELL WARREN IBBOTSON (SWORN)**

Q. Mr Ibbotson is your full name Russell Warren Ibbotson?

A. Yes it is.

5 Q. Do you live in Alexandra?

A. Yes.

Q. And I think you retired in 2010 after 45 years as a chartered accountant and a partner of the firm Ibbotson Cooney Limited in Alexandra?

A. That's correct.

10 Q. Have you got your statement of evidence in front of you?

A. I have.

Q. Can I ask you please to read that to the Commissioners starting at paragraph 2 and unless the Commissioners require it I won't get you to refer to any of the documents but rather just to read through the brief, all right, starting with paragraph 2 thank you.

15

A. Thank you. Your Honour before reading my evidence on behalf of the previous owners and current owners of the CTV collapsed building I would like to take this opportunity of publicly expressing sympathy and our deepest regret to the families that lost loved ones, relatives and friends in this tragedy and I do that publicly on behalf of previous and current owners. Thank you.

20

JUSTICE COOPER:

Thank you. I'm sure that will be appreciated.

25 **EXAMINATION CONTINUES: MR ZARIFEH**

Q. From paragraph 2.

A. On 18th of December 1990 I was appointed as one of the two directors for a company incorporated on the same date, Madras Equities Limited. Madras Equities purchased 249 Madras Street, the CTV building, with settlement taking place on 21st of December 1990.

30

I was a shareholder and director of Madras Equities Limited and manager of the property through to March 2010. Due to circumstances

beyond my control the official Companies Office website did not correctly record these changes taking place until some considerable time later. I had no further involvement with the property management of the CTV building after March 2010 and, effectively, ceased my directorship in Madras Equities Limited and financial ownership in that building at that time.

5

From December 1990 to March 2010 I was the building manager for the CTV building. My responsibilities in the role included financial management, liaising with tenants as required and attending to operational matters as necessary. I have been asked to give evidence to the Royal Commission about the CTV building.

10

Purchase of the CTV building by Madras Equities.

In 1990 two adjoining properties on the corner of Madras and Cashel Street were being offered for sale by Peat Marwick (KPMG) as the receivers of Prime West Corporation. One of the sites had the building on it which is now referred to as the CTV building. I refer throughout my evidence to the building as the CTV building. The other site incorporated an older style commercial building.

15

The shareholders of City Equities Limited, a Christchurch-based property company, entered into a contract to purchase both properties as nominee for a new syndicated entity. However, for the reasons outlined in a letter to UDC dated 6 November 1990 it was decided that a nominee company would be formed for the purpose of holding land and buildings in trust for a partnership.

20

On the 19th of December 1990 Madras Equities Limited was incorporated for that purpose. Matthew Brownlie and I were appointed as directors and each held 50 of a total 100 shares.

25

At the same date Madras Equities executed a deed of trust recording that the beneficial of the owners of Madras Street property would be a partnership on a custodian/trustee basis between Lionel Walter Hunter, David Curson Murray, David Stanley Duns, Matthew Francis Brownlie,

30

Kieran John Egging, Faye Lynette Egging, Clifford Arthur Egging and Jean Egging and myself. It was Madras Equities Partnership.

The purchase was made

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5 as a passive investment. The partnership included two chartered accountants, a lawyer, the principal of a substantial real estate firm and three experienced businessmen and company directors. Settlement of the purchase of the by Madras Equities took place on 21st of December 1990.

10 Over the succeeding 20 year period from 1990 to 2010 there were a number of changes to the original nine member partnership holding. This occurred solely in the normal course of business.

I held a one ninth ownership share in Madras Equities until March 2010 when I sold it to Egging Holdings.

15 Due to circumstances beyond my control this change of ownership was never officially recorded with the Companies Office website until the 6th of April 2011.

I had very limited involvement in negotiations relating to the purchase of the building. This was handled directly by representatives of City Equities Limited which I was not a shareholder of, but I was kept fully informed of these proceedings.

Due Diligence.

25 Due Diligence was carried out prior to Madras Equities purchasing the CTV building. This is standard procedure and there was nothing specific to the other building on the adjoining site that required this as it was envisaged that this building would be demolished to create additional car parking. In carrying out due diligence the Madras Equities partnership placed considerable reliance on the following matters:

30 (a) The CTV building was designed by Alun Wilkie Limited one of Christchurch's leading architectural firms whose work and reputation was well known to members of Madras Equities partnership.

(b) The engineering and structural design of the building had been completed by Alan Reay Consultants Limited ARC which was likewise highly regarded and very experienced in the engineering design and construction of a number of Christchurch commercial office buildings.

5 (c) The construction of the building was commissioned and carried out for a publicly listed company by an experienced and recognised construction company and would have been subject to standard architectural and engineering construction progress inspections and sign offs. I have asked by counsel assisting whether I had any
10 knowledge that the project was taken over by Union Construction part way through. I had no knowledge of that.

(d) The building itself was a new building and had only recently been constructed. This in itself gave every confidence that it was built and engineered in compliance with the code of the day.

15 (e) The building had been fully approved and signed off by the Christchurch City Council which gave further endorsement to the building both in respect of the integrity of the structure of the building and its compliance with all current standards. Prior to confirming the purchase of the, (f) sorry.

20 (f) Prior to confirming the purchase of the CTV building City Equities had also arranged for independent valuation assessments to be carried out by two separate reputable Christchurch valuation firms. These valuations were considered very satisfactory and raised no concerns in relation to the integrity or structure of the building.

25 Based on the collective factors the purchasers felt satisfied that there were no underlying issues with the property and this understanding certainly applied in relation to all negotiations that were carried out with KPMG regarding the purchase of the property. Because Madras Equity's partnership comprised responsible and experienced
30 professionals and business people I can emphatically state that the purchase would not have proceeded if there had been any indications of underlying issues or concerns with the structure of the building.

Holmes Consulting Report January 1990.

5 Madras Equities and the Madras Equities partnership were totally
unaware and had no reason to suspect that there were any
shortcomings or deficiencies with the building. At no stage was I or any
member of the Madras Equities partnership advised by KPMG or
10 anyone else that Holmes Consulting Group had prepared a report on
the building in January 1990 and identified an area of critical structural
weakness in the tying of the floors to the walls. Because of the nature
of the partnership I am confident that if any other members of the
partnership had become aware of this we would have all been advised.
15 The complete surprise of the partnership when I first learned of the
Holmes' report and its content is recorded in a letter I wrote to ARC
dated 30th of September 1991 where I said quote, "At no stage were
Madras Equities Limited or any other parties associated thereto advised
of this possible problem by Peat Marwick in their capacity as receivers".

Advice on possible design fault by ARC and subsequent remedial work,
11th of September 1991.

20 The Madras Equities partnership first became aware of a possible
design fault with the CTV building either by a letter of 11th of September
1991 by Alan Reay Consultants or possibly by Mr Banks of ARC in a
telephone call I received from him shortly before this date. I've not been
able to provide the Royal Commission with a copy of this, copy of the
letter from ARC dated 11th of September 1991 but I am aware I received
25 it as was acknowledged by my subsequent response to ARC dated 30th
of September 1991.

30 My response on behalf of the partnership in my letter dated 30th of
September 1991 refers to the remedial work quote, "If required" and the,
quote "possibility that the apparent problem may not in fact be a
problem". The advice given by ARC was that any problem was of a
minor nature and that the remedial work if required would be relatively
simple to carry out but could only be determined by an engineer's on
site inspection. I was told that this would involved some testing work

including drilling to determine the extent of the reinforcing steel in the area that had been identified as the potential weakness.

JUSTICE COOPER:

- 5 Q. Four lines into that, or sorry, five lines into that paragraph you left out the word “fully”, do you see that in the middle of the line, “could only be fully determined”? You omit -
- A. Sorry –
- Q. You omitted, you omitted –
- A. Sorry Sir.
- 10 Q. – that word when reading it but I take it you want, you want it –
- A. Yeah.
- Q. – you want it to be included?
- A. Yes I do Sir.
- Q. Right oh, thanks.
- 15 A. Thank you.

EXAMINATION CONTINUES: MR ZARIFEH

WITNESS CONTINUES READING BRIEF OF EVIDENCE

- 20 A. In my letter of the 30th September 1991 I authorised ARC to further investigate the matter and to take steps to ensure that the building met the required design specification standard for earthquake and other loading requirements. I noted that it was important that this issue was rectified prior to the ANZ Banking Corporation commencing its tenancy of the building on the 1st of November 1991.
- 25 In a letter dated 15th of October 1991 Mr Banks of ARC advised some investigative work had been carried out in an area of the floor and a small area of concrete had been removed at the end of the walls adjoining the lift shaft. He advised that several reinforcing bars had been quoted but that whilst these provided a structural tie, quote, “a limited amount of remedial work was required in order to provide the
- 30 seismic strength to meet the current New Zealand standards.” He advised that this remedial work was required at levels 4, 5 and 6 only

and would take approximately four days and would cost \$4,633.50 plus GST.

5 I immediately replied on behalf of Madras Equities Limited accepting the quotation and instructed that the work could be completed prior to the end of October 1991. The entire contract including supervision of this remedial work was handed by ARC. The correspondence reflects I both emphasised and understood that following the completion of this work the structural integrity of the building would be completely in accordance with all structural and earthquake loadings in every respect.

10 I received a further letter from Mr Banks dated 17th of October 1991 in which he confirmed that ARC had instructed CBD Construction to proceed with the remedial work and that the work was to take place during the next week. He stated, "We advise that the proposed remedial work will give the floor to wall connection the seismic strength
15 required by the current New Zealand loadings code which is the code that was also current when

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the building was designed, so that's code NZS4203:1984. We would note however that a number of other codes to which the building was
20 designed, including material codes have since been amended. An original design may therefore not necessarily comply with all aspects of these codes, those codes.

The issue was discussed with the other members of the Madras Equities partnership following receipt of the letter. It was not considered
25 necessary to obtain other independent structural engineering advice given that the building was effectively a brand new building and had been designed and engineered by recognised experienced and professional firms.

Regard was also had to the following factors.

30 (a) The assessment of ARC as the engineers who designed the structural of the building. The partnership regarded ARC as the best qualified party to assess any apparent shortcomings.

(b) The matter was raised as a possible problem only and was subject to further on site physical testing to determine what if any remedial work was required.

5 (c) The remedial work was described by ARC as being work of a minor nature which was subsequently reflected in the cost of the work of \$4633.50 plus GST. This figure did not give any cause for concern. Indeed it was not considered necessary to advise the incoming tenant, ANZ Banking Corporation of the issue since it had been described by ARC as being of a minor nature.

10 The matter was dealt with very promptly and it was assumed that any problem that did exist had been rectified by ARC and that the remedial work had ensured the integrity of the building was structurally sound in every respect and complied with the applicable code standards of the day.

15

Building permit for remedial works.

I have been asked by counsel assisting that there is no record of a building permit being obtained for the CTV building in respect of the repair work carried out and that counsel's position is that a permit was required. I have no knowledge of whether a building permit was sought for the remedial work. This was never raised with me at any point. The entire aspect of the remedial work was organised and supervised by ARC. If a building permit was required I would have expected ARC to advise this. The possibility that the Christchurch City Council needed to be advised of the situation never occurred to me. It had been presented to me by ARC as a very minor repair that normally would not have required a building permit.

20

25

Cost of repairs

30 The question of responsibility for the cost of repair was initially left open. This is recorded in my letter of the 30th of September 1991. It seemed clear to me from the 15th of October 1991 letter from Mr Banks of ARC that ARC was not immediately offering to carry the cost and I did not

want a dispute over this to delay the repair work, particularly as the partnership did not to run any risk of this affecting the ANZ Bank tenancy. Because of this concern I approved the recommended remedial work in my letter dated 16th of October 1991, leaving open the question of who would be responsible for paying for the work.

5

Madras Equities as building owner was subsequently forwarded an account for the repair work on the basis of a quotation given and duly arranged for payment.

10

The CTV building between 1990 and March 2010.

During the 20 year period from 1990 to March 2010 that I was associated with the building, both as a part owner and also as building manager, there were never any issues or concerns raised with me in relation to the structural integrity of the building. If any structural issues had been identified I have no doubt they would have been dealt with in a timely manner in the same way that the remedial work was carried out in October 1991.

15

The building had always been considered as being a “user friendly” building to work in with good features and was regarded as being cost effective and efficient as far as fixed yearly operating costs were concerned.

20

During the 20 year association I had with the building through to March 2010 there were relatively few maintenance or repair issues of any significance apart from what could be regarded as normal building maintenance. As I have stated I cannot recall any concerns being raised at any time I was acting as property manager as to the structural integrity of the building.

25

CROSS-EXAMINATION: MR MATTHEWS – NIL

CROSS-EXAMINATION: MR HANNAN

30

Q. Mr Ibbotson, I act for Holmes Consulting Group and I should tell you that the questions I'm going to ask you are not intended in any way as

raising any criticism of you or the partnership, it's just a little bit of information that is not perhaps entirely clear from your brief of evidence. You refer to at paragraph 17, 18 and 19 of your brief of evidence to, and in particular at paragraph 19 to the Holmes Consulting Group report of
5 January 1990, and you refer at paragraph 19 to the complete surprise of the partnership when you first learned of the Holmes report and its contents, and you say that's recorded in a letter I wrote to ARC dated 30 September 1991.

A. Yes.

10 Q. Now that letter itself, the letter to Alan Reay Consultants dated 30 September 1991 doesn't itself name or refer to the Holmes report and I'm wondering whether in fact the situation here is that you may have been told by Alan Reay Consulting that there was a problem with the building but you were neither told of nor given a copy of the Holmes
15 report at that time?

A. That is correct. At no stage to the best of my knowledge did any members of the partnership sight the Holmes report or inferred that such a report existed.

20 Q. All right, so just taking that on a little further just to be entirely clear then, is it correct to say that the first time that you learned of its existence was when the question of preparing evidence for the Commission arose?

A. I think that's correct as I would understand it.

CROSS-EXAMINATION: MS SMITH

25 Q. Just on that aspect Mr Ibbotson, do you remember how the matter was raised with you, how Alan Reay Consultants had explained that the issue had been identified?

A. I think as I have referred to in my evidence initially it was I think by way of a, perhaps a phone call from Mr Geoff Banks of ARC. It was certainly not until September 1991 that I or the Madras Equities partnership
30 became aware that there was a potential or possible problem with the building.

- Q. But when either you spoke with somebody from that firm or received the letter they would have explained to you did they how they came to know that there was a problem with this building or do you simply not – I accept that it was a long time ago?
- 5 A. Yeah, I'm sorry I can't recall specifically the extent, I think probably as is reflected in my correspondence, I was really for the avoidance of doubt, and part I suppose professional experience in situations, covering in detail what their correspondence had said to me, just making it quite clear what our understanding of the position or my understanding and
- 10 Madras Equities' understanding of the position was.
- Q. And the point that you were making is that you were surprised that the owner who you'd purchased it from who had known about the problem hadn't told you?
- A. Yes definitely.
- 15 Q. Just one point of clarification is that you've spoken about the remedial work being required being minor in nature and that was your understanding?
- A. Mmm.
- Q. And you're aware aren't you that that work was carried out?
- 20 A. Yes.
- Q. You've indicated as well that the advice to you from ARC was that the problem was minor in nature as well?
- A. Correct.
- 1647
- 25 Q. But you were aware though weren't you that some further work or investigation had to be done and was in fact done on the building?
- A. Yes I think it was all part of the same situation because when it was first raised, and again it's very clear from the correspondence, it was put forward as a possible problem.
- 30 Q. That's right.
- A. Rather than a definite problem.

Q. But it was clear in the communications and if we, your letter of 30 September, and you've said that, you know, you dutifully recorded back your understanding of things to ARC –

A. Yes.

5 Q. – you were aware that if that, those further investigations had revealed that there was a problem that that could impact on insufficient loadings to meet the normal earthquake requirements.

A. Yes I was. The concern of the Madras Equities Partnership was that there was a lease agreement which had been entered into with the ANZ Bank. It was going to involve something like I understand 200 people moving into that building and Madras Equities and myself quite rightly considered we had a responsibility as building owners at that time to deal with a, particularly a structural or an earthquake problem, potential earthquake problem.

15 Q. So a potential earthquake as you describe it and as you've recorded in your letter, a failure to meet the normal loadings –

A. Yes.

Q. – couldn't be described as a minor problem could it?

A. I'm sorry?

20 Q. It wouldn't be described as a minor problem?

A. Well I'm not sure. The use of the word minor. I can't be emphatic on this but it may well have been, the fact I refer to it in subsequent correspondence back could have been referred to as a, something that was perhaps raised in discussions or raised in the letter of the 15th of September.

25 Q. I suggest to you that it may have been raised in the context of the remedial work that was required but it wasn't actually raised in the context of the issue that had been identified. Do you accept that that's a possibility?

30 A. Yes I do. I think it was accepted, I accept it was in relation to the remedial work.

Q. Thank you Mr Ibbotson.

CROSS-EXAMINATION: MESSRS PALMER, REID, ELLIOTT – NIL

RE-EXAMINATION: MR ZARIFEH – NIL

QUESTIONS FROM THE COMMISSIONERS – NIL

QUESTIONS FROM JUSTICE COOPER – NIL

5 WITNESS EXCUSED

DISCUSSION TIMETABLING

BRIEF OF EVIDENCE OF ANDREW DICKSON ADMITTED BY CONSENT

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BRIEF OF EVIDENCE OF LIONEL HUNTER ADMITTED BY CONSENT

**BRIEF OF EVIDENCE OF MURRAY THOMAS MITCHELL READ BY
CONSENT****5 MR MILLS:**

I, Murray Thomas Mitchell of Christchurch, Structural Engineer, state:

I hold a Bachelor of Engineering, Civil (Honours) Degree. I am a member of the Institution of Professional Engineers of New Zealand. I have 42 years experience as a civil and structural engineer.

10 From 1971 to the present I have been employed by Opus International Consultants Limited and hold the position of Senior Structural Engineer. I am a past member of the Structural Engineering Society of New Zealand (SESOC). I

15 In 1998 or 1999 I was asked by Opus Management to provide comment on premises that Opus was considering leasing in Christchurch. I believe that I considered four buildings which had been short-listed as potentially suitable by Opus. One of these was the CTV building. The following is my recollection of the review that I carried out.

20 I was provided with structural drawings of the building and I carried out a desk-top review. I cannot recall the exact time that this review took but it would have been hours not days. As part of this review I examined the symmetry of the seismic load resisting system of the building and noted that it was asymmetrical. It had a shear core at the north end and a frame structure elsewhere. I considered how the columns and beams were reinforced and
25 whether these were in line with design standards and practices applicable at the time the building was constructed.

30 My review presumed that the design would have complied with the standards applicable at the time of construction since a building consent must have been issued and the design and construction would have been checked through that process.

A desk-top review involves a qualitative assessment of the robustness of the building. It also involves a consideration of the likely mode of failure if the building was subjected to a seismic load greater than its design capacity.

Because the building's seismic structure was asymmetrical it would be more heavily loaded in an earthquake than a similar building with a symmetrical seismic structure.

5 I concluded that the interconnections between the floor diaphragm and the shear core were not as strong as I considered they should have been for an asymmetrical design such as this. The building also lacked structural redundancy, meaning that there were no alternative load paths available in the event that the primary load path failed. My conclusions were an initial view only.

10 Counsel assisting the Royal Commission has asked me how serious I considered the issue with the CTV building to be and would I characterise it as an actual or potential critical structural weakness in the building. "Actual Or Potential Critical Structural Weakness" was not an expression that was in use at the time of my desk-top review. However, to the best of my recollection of
15 my observations and applying the expression put to me by counsel I would have characterised the building as having an actual critical structural weakness under seismic load.

I have also been asked whether I formed a view on what effect this weakness might have on the building if it was subjected to ground shaking in an
20 earthquake. Again, looking back as best I can my view was that there was a significant risk that the building would be subject to premature and catastrophic collapse in a moderate earthquake. I repeat that my desk-top review was brief and lacked the detail of a full structural assessment.

Given the other leasing options available I did not consider that a more
25 detailed assessment was warranted but having said this my concerns were such that I thought that the building should not be considered further.

I compared the building with others on Opus' short-list and in my opinion it did not compare favourably. For example, Te Waipounamu House in Hereford Street which Opus ended up leasing had a similar height to the
30 CTV building and was originally built as the Reserve Bank building.

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Compared to the CTV building it was generously designed and had alternative load paths. It's overall strength appeared to be in excess of that which was

typical for buildings of its period. My advice to Opus management was to the effect that the CTV building should not be pursued as a leasing option.

In January 2012 I was provided with a copy of a 1990 Holmes Consulting Group report. I did not have a copy of the report when I carried out the
5 desktop review. Section 6.3 of the report deals with the issue of the interconnection between the shear walls and the floor diaphragms. This section summarises the same concerns that I had which I have described above. I have not retained a copy of the desktop review that I carried out and nor has one been found after a search of Opus' records.

10

JUSTICE COOPER ADDRESSES MR REID – DISCUSSION

JUSTICE COOPER:

The evidence of Mr Hutt will be taken into evidence and taken as read. I
15 reserve leave to the City Council to advise the Commission by memorandum if there is any issue in the conclusions set out in that brief. If that advice is to be given, it should be given by next Wednesday 22 August.

BRIEF OF EVIDENCE OF DAVID HUTT ADMITTED BY CONSENT

20

**MS SMITH NOW APPEARING FOR THE NEW ZEALAND FIRE SERVICE
IN RELATION THIS ASPECT OF THE HEARING**

MS SMITH CALLS

5 PETER JOHN WILDING (SWORN)

Q. Mr Wilding, can you confirm please that your full name is Peter John Wilding?

A. It is.

Q. And you're the National Manager of Fire Investigation and Arson
10 Reduction for the New Zealand Fire Service?

A. I am.

Q. And in that role you are responsible for the development and quality of
fire investigation training and processes in the New Zealand Fire
Service?

15 A. I am.

Q. Do you have your brief of evidence before you?

A. Yes I do.

Q. If I can get you to read that from paragraph 2 please.

A. I was deployed to Christchurch on the 27th of February 2011 as part of
20 the New Zealand Fire Service Incident Management Team and was
tasked to manage the safety of all New Zealand Fire Service operations,
that is whether teams were operating safe work practices. As part of my
role I visited incident sites where the New Zealand Fire Service
operations were being conducted including the CTV site.

25 I visited the CTV site on my arrival into Christchurch on the 27th of
February and a number of times after that date.

I have been asked to give evidence to assist the Royal Commission with
it's inquiry in relation to the collapse of the CTV building. Counsel
assisting the Royal Commission has asked me to comment on why a
30 fire investigation was not conducted to determine the possible cause of
fire which occurred at the CTV site.

In the course of preparing this statement I have reviewed the witness
statements of Margaret Aydon, Thomas Hawker, Penelope Spencer,

Michael Williams, Stephen Gill, Alan Edge, Matthew Ross, Graham Frost and Dr Robert Heywood as they make comment about the fire. I have also received information from some New Zealand Fire Service personnel who were charged with fire suppression at the CTV site on the 22nd and 23rd of February 2011.

My qualifications.

I have been employed by the New Zealand Fire Service for 25 years as an operational fire fighter. I have held various ranks during that time. In 2004 I was appointed Deputy Chief Fire Officer for West Auckland and in 2008 I was appointed National Manager of Fire Investigation and Arson Reduction with the rank of Assistant Regional Commander.

I currently respond to major incidents as an executive officer which helps to maintain my operational management experience. I'm a member of the United Fire Brigades Institute through examination. I have been responsible for determining cause and origin of fires for the last 16 years. I have completed the New Zealand Fire Service Investigation training as well as Crime Scene Investigators Fire Investigation training course in the UK delivered by the Home Office Forensic Science Service.

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Q. And if I can just stop you there Mr Wilding. You said that you'd completed the New Zealand Fire Service training. That's specifically the New Zealand Fire Service Investigation training is it not?

25 A. That is correct.

Q. If you continue reading from, "I am also..."

A. I am also a member of the Institute of Fire Engineers UK for examination which is an internationally recognised qualification within the fire industry, and the recipient of the Godiva Award for the highest performing international candidate.

As the New Zealand Fire Service representative I sit on the Australasian Fire Authorities council, fire investigation coordination group, an organisation that promotes fire investigation best practice and process

and the exchange of information relating to the fire cause and origin across fire agencies throughout Australasia.

I have developed and delivered fire investigation training to New Zealand Fire Service specialist fire investigators on national courses run throughout the country for over the last four years. I have also delivered fire investigation training to New Zealand Fire Service personnel and to police at the New Zealand Police College. Police attend New Zealand Fire Service fire investigation training courses and we also run specific police courses to help them understand our functions and needs at incidents so that their actions where possible do not compromise our fire investigations. It also assists us in supporting police investigations at possible crime scenes. I have previously given evidence on fire investigation in the District Court in New Zealand and have recently been called as an expert witness in the Niue High Court.

Fire investigations.

The New Zealand Fire Service was established by the Fire Service Act 1975. The Act sets out the powers and duties that the New Zealand Fire Service has and provides that it is under the control of the New Zealand Fire Service Commission. Section 86 of the Act provides that the Minister may at the request of the Commission or a National commander appoint a person to hold an enquiry into a fire. This is something different from a fire investigation and I understand there would be more likely to occur when the National Commander considered that it would be in the public interests to hold an independent enquiry into the actions and performance of the Fire Service at a significant incident. I am not aware of an enquiry having been held previously.

The only other provision in the Act that refers to fire investigation is section 29(2) which provides that the power to access land and buildings may be used for post incident investigation to determine the cause of any fire or hazardous substance emergency. It does not however require a fire investigation to be carried out. Other than that

there is nothing in the Act which specifically refers to a fire investigation or which requires the New Zealand Fire Service to investigate fires to establish cause. However the Act provides that it is a matter of prime importance for the Commission to take an active and coordinating role in the promotion of fire safety in New Zealand. In promoting fire safety section 20(2) of the Act requires the Commission to be concerned to reduce the incidence and consequences of fire. The New Zealand Fire Service carries out fire investigations to support the Commission's role in reducing the incidence and consequences of unwanted fires rather than pursuant to a specific legislative requirement. It does so on the basis that by learning about what starts fires, what contributes to their growth, how they can be effectively controlled and the level of damage they cause, the New Zealand Fire Service can develop strategies and actions to reduce the chances of them happening again.

The New Zealand Fire Service National Commander is responsible for the operational activities of the New Zealand Fire Service. The National Commander does that in part by issuing operational instructions under section 27(a) of the Act. New Zealand Fire Service personnel are required to obey and be guided by those operational instructions as well as other legislation and policies relevant to the New Zealand Fire Service.

The operational instruction relevant to fire investigation is operational instruction P3, fire investigation and reporting of the operational instruction series. All investigations as to the origin and cause of a fire are carried out pursuant to operational instruction P3.

Operational instruction P3 details the requirements for fire investigation and describes the consequent reporting requirements, in particular it requires that all fire incidents attended by the New Zealand Fire Service are to be investigated to establish cause. It does not prescribe the nature of the investigation however that must be undertaken, the type of investigation depends on the scope, severity and complexity of the incident.

5 The responsibility for carrying out a fire investigation rests with the National Commander but delegated to the first arriving officer at a fire scene. The most common fire report is the Station Management System, SMS, incident report, that includes a basic determination of origin and cause. This is a simple report completed by the reporting officer selecting options from a drop down menu. SMS information about fire cause is examined weekly by the Fire Research and Investigation unit, and I will make a note that I've actually, in my brief there, have my title rather than my unit's name – to look for trends as such as unsafe installation or operating practices, faulty equipment, unsafe fire behaviour or deliberate fire setting. The larger complex or serious incidents are usually investigated by specialist fire investigators who are New Zealand Fire Service staff based in each region who have undergone advanced training in fire investigation. That is because operational instruction P3 requires a specialist fire investigator to attend and investigate certain fires including those relevant to the CTV site where fires where fatalities occur, fires in buildings where built-in fire safety features have failed or not performed to known or expected standards, and/or fires of significant consequence.

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JUSTICE COOPER:

Q. Just pausing there, what is the – was there an alteration you wanted us to make to that paragraph. Fire investigation and arson induction unit, do you want to change that?

25 A. Yes Your Honour, that should read the fire research and investigation unit.

Q. Fire research and investigation.

A. The confusion between my title and the unit's name.

EXAMINATION CONTINUES: MS SMITH

30 A. Paragraph 18, although operational instructions, and that should read P3, requires a fire investigation to be carried out. There are a number of other important matters including legislative and policy considerations

which might defer the lay or prohibit a fire investigation from being undertaken.

The most important consideration is risk to New Zealand Fire Service personnel. The New Zealand Fire Service's obligations under the Health and Safety and Employment Act 1992. A fire scene is a place of work and as an employer the New Zealand Fire Service is obliged to eliminate, isolate or minimise any hazards in that place. In some cases that can be done by certain control measures such as protective equipment, shoring up structures et cetera. However in some circumstances the New Zealand Fire Service will decide not to commence or complete an investigation if it is too dangerous. We will not for example commence an internal examination of a structure if the safety of our staff will be compromised by entering an unsafe site to gather evidence. Usually where a fire cannot be investigated for safety reasons the cause will be listed as undetermined with the reason for no investigation stated.

Paragraph 20. Other important policy considerations are the safe person concept, and dynamic risk assessment. These illustrate that there are limits to the level of risk that New Zealand Fire Service personnel are expected to accept and times when personnel will and will not risk their safety.

The safe person concept governs everything we do. It provides that in a highly considered way fire fighters will take some risk to save saveable lives. They may take some risks to save saveable property but will not take any risk at all to try and save lives or properties that are already lost. The dynamic risk assessment model also supports the safe person concept.

In addition to those legislative and policy considerations, where it is unlikely that the cause of the fire can be determined for any useful learning to be gained, the New Zealand Fire Service may elect to discontinue an investigation, that is because the purpose of an investigation is to establish the cause and origin of a fire. Fire investigation relies heavily on maintaining an undisturbed fire scene.

Evidence left by the effects of fire such as burn packings, smoke layering and other directional indicators are used to determine where a fire started. That area is then investigated to find the point of origin and then the possible ignition sources in that location. If the scene has been

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significantly disturbed then it is unlikely that we would obtain any useful information about the cause. The more variables there are the greater the degree of uncertainty and likely inaccuracy. Any conclusion, conclusions drawn are likely to be helpful. As such unless we are certain of the cause of a fire the cause will be recorded as “undetermined”.

10

Q. Mr Wilding perhaps at this point if I can take you to operational, P3 which BUI.MAD249.0572.1

WITNESS REFERRED TO BUI.MAD249.0572.1

15

Q. So this is the operational instruction and is relevant to fire investigations, is that correct?

A. It is.

Q. And is your evidence that it is a living document so it's being updated as and when required?

20

A. That's correct, there's new technologies and new issues that emerge that require us to amend our, our operational instructions.

Q. Can we have page 7 in that series please. Now you'll see at the bottom of that page it refers to post-incident analysis reports. What's the purpose of those reports?

25

A. In addition to determining what has started a fire, the Fire Service recognises there's value in learning about how a building performed, how the fire suppression and detection systems operated and how people behaved so that we can inform the community which is part of our legislative mandate.

30

This, this section within the P3 was added some time after, in fact I think May 2012, this latest amendment, I think if you read, I refer you to the bottom of the page, the latest amendment. I actually had drafted this and had it as a draft operation instruction with our national manager of

standards at the time of the February earthquake and its adoption into our procedures was actually delayed because of the earthquake.

Q. So to be clear on that point this part of the operational instruction was not part of the operational instruction on the 22nd of February.

5 A. That's correct.

Q. 2010. Mr Wilding if you can continue reading at paragraph 23 please.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE AT
PARAGRAPH 23**

10 A. A fire investigation was not undertaken at the CTV site because there was a lack of available specialist fire investigators to undertake the investigation.

I have spoken to the senior fire risk management officer for Christchurch. He, along with other on-call specialist fire investigators was committed to response functions and management roles for the first
15 11 hours after the earthquake and was not available to undertake a fire investigation. Following his 11 hours of duty he went home for a short break and then returned to assist the incident management team.

Although the Royal Commission is focused on the CTV site from a New Zealand Fire Service perspective it is important to remember that at the
20 time we were dealing with a devastating event across a wide area of damage, a number of critical sites across the city and a high number of persons reported missing. Resources were focused on all rescue efforts as well as responding to fires around the city during this time.

The New Zealand Fire Service operations at the CTV site were focused
25 on rescue, fire suppression to aid rescue and later assisting with body recovery. Throughout those phases the building was unsafe and could not be accessed for fire investigation purposes as it meant, as it was being delayed.

The collapse pattern meant, of the building meant that it was unstable
30 underfoot and significant aftershocks were being experienced. Even in the second week after the earthquake when I was on site we were still experiencing aftershocks of magnitude 3 and 4 which caused further movement in already compromised structures. To carry out an

investigation within the structure remains on this occasion, remains on this occasion would have put New Zealand Fire Service fire investigators at unaccepted, unacceptable physical risk. I refer again to the safe person concept and the dynamic risk assessment in particular.

5 The nature of the collapse meant that only a guess could have been made as to the cause of the fire. When we are investigating the cause of a fire we work progressively towards determining the area of origin, the point of origin and then towards finding a credible ignition source. At the CTV site this would have been impossible. Walls had come down,
10 the building had completely lost its integrity and everything had been moved about. The fire was reported as being deep seated. As a result and due to the nature of the collapse it would not have been possible to determine, even to determine an area of origin.

The later delayering of the building during the rescue and body recover
15 phases prevented any likelihood of gathering useful evidence about where and how the fire started. We have not looked at alternative sources of information such as the video footage or photographs because they are normally of limited value. To put this in context for the CTV building those sources may have given us a broad area where the
20 fire was located but it would not assist us in determining a point of origin or a credible ignition source for the fire. As I have stated a fire investigation relies heavily on maintaining an undetermined fire scene. Undisturbed sorry fire scene.

From early in the response there was a great deal of disturbance on the
25 fire scene at the CTV site. The extensive 'quake damage, coupled with the delayering and deconstruction that was necessary as part of the rescue operation and later the recovery operation meant that the scene was significantly disrupted from an evidential view point. As a result the New Zealand Fire Service considers that it would not have been able to
30 draw any credible and reliable conclusions about the origin and cause of the fire.

A reason for undertaking a fire investigation is to comment on the performance or availability of fire safety features in the building. The

fire safety features include automatic sprinklers, safe egress routes and alarm system rely on the structural integrity of the building as well as the maintenance of services to the building.

5 The fire safety features of the CTV building were immediately and catastrophically rendered useless by the earthquake and therefore any potential for learning was taken away. The New Zealand Fire Service consider that the fire at the CTV site started during or after the catastrophic building collapse but beyond that we have no credible information available to establish the cause.

10 The SMS report that refers to the incident type as “structure with fire damage” goes on to include some details about the fire. It notes various details about the possible heat source and the first object ignited and concludes that the indicated cause was earthquake. The information included in this section of the SMS report was the officer’s best guess
15 provided in order to complete the data fields but there was no way having regard to the nature and extent of the collapse that he could have definitively determined the first object ignited or the heat source.

Q. Can I just you at that point and maybe we could have a look at that SMS report which is BUI.MAD249.0574.1

20 **WITNESS REFERRED TO SMS REPORT**

Q. So this is the SMS incident report that you’re referring to?

A. It is.

Q. And you’ll note there that the incident type is listed as structure fire with damage which you’ve explained. You’ll see in the first section though it
25 says report completed Wednesday 9 March 2011. Do you know why the report was completed on that date?

A. It was, I’ve spoken to the officer who completed the report and he and a team of others in the region were attempting to close or complete reports for over 6000 incidents that had been generated during the
30 ‘quake period. The only information that he had available to him was the incident log which is the first pages of this report. He had no further information so it really was a best guess.

Q. And sorry if you can continue paragraph 24 from “While an earthquake”.

**WITNESS CONTINUES READING BRIEF OF EVIDENCE FROM
PARAGRAPH 24**

5 A. While an earthquake may create an environment where a fire may start the 'quake itself does not ignite combustibles therefore technically the cause of this fire should have been listed as undetermined.

As a fatality was recorded in this report it was automatically referred to a specialist fire investigator Mr Graham Davies on the 29th of March 2011. Mr Davies added a notation in the report that the fire, the building collapsed in the earthquake and that no investigation was carried out.

10 Two further SMS reports and the numbers are listed were generated by the New Zealand Fire Service computer system for this event on the 22nd of February and were completed by two other fire crews from different stations. They recorded the event as an earthquake and as a structural, as a collapsed structure. As such there was no data fields presented in either of these fields, of these reports which would have enabled the reporting officers to refer to the fire.

15 Q. And so just to be clear on that point, is that a case of them not filling it in or simply there's nothing on the form because of the way that the event had been described to enable this part to be filled in on the form.

20 1727

A. Your latter explanation, the report's automatically generated and if you select either of those options you don't get fields that talk about a fire situation.

Q. Paragraph 26 thank you.

25 A. It is common when dealing with large emergency incidents for the computer system to generate multiple event logs as different callers may refer to slightly different address points. However, these are usually collated by the communications centre staff into one event for one incident. In this case they were not because of the significant number of emergency calls being generated at the time.

30

The New Zealand Fire Service has received no evidence to suggest that the fire started before the earthquake. There were no 111 calls prior to

the event and the automatic detection system was not triggered. Fire appliances self-deployed to the CTV site.

In the course of preparing this statement I have reviewed the witness statements before the Royal Commission of those who were in or
5 around the CTV building at the time of the collapse or shortly after. There are a number of differing reports as to where the fire started and where it was located. They have also –

Q. Mr Wilding that should be “when the fire started,” is that correct, “and where it was located?”

10 A. Sorry it does say, “when the fire started and where it was located.” They have also stated its location at various points in the building making it difficult to be certain as to the fire’s exact location and cause. However, several of the statements indicate that the fire was most prevalent in the north to north-west area of the building and also around
15 the tower. New Zealand Fire Service personnel who crewed the first two appliances to arrive at the CTV building recall seeing a fire at the site and particularly in the area around the base of the tower, up the face of the tower and in the centre of the building.

20 New Zealand Fire Service are not aware of the cause of the fire or the fuel source. The New Zealand Fire Service does not hold any records about the hazardous substances present at the CTV building. However, the New Zealand Fire Service understands that there may have been a nine kilo LPG cylinder in the building. The New Zealand Fire Service is not aware of where in the building such a cylinder may have been
25 stored. While flammable gas will obviously ignite if present with a credible ignition source it would be pure speculation to suggest that this was the initial fuel source and the New Zealand Fire Service will not speculate on fire cause.

30 There would have been a huge range of potential ignition sources and considerable fire loading as with any commercial office building.

I have also seen the comments made by Graham Frost as to the potential for cars parked in the building to be a source of ignition and fuel the fire. Vehicles catch fire but, again, it is just one of a huge range

of potential sources and it is impossible on the basis of information available to determine whether that was the source of ignition. The reference text that the New Zealand Fire Service uses for fire investigation which is the National Fire Protection Association 921
 5 Guide for Fire and Explosions Investigation states that it is, “Improper to opine a specific ignition source that has no evidence to support it even though all other hypothesised sources were eliminated.” That is the case here.

CROSS-EXAMINATION: MESSRS PALMER, REID, MILLS, ZARIFEH - NIL

10 **CROSS-EXAMINATION: MR ELLIOTT**

Q. Mr Wilding thank you for coming here and giving that detailed evidence. I'll just refer you firstly to the document attached to your statement which Ms Smith referred you to. It's BUI.MAD249.0572.7. This is page 7 of the attachment.

15 A. I'll just wait for it to come up, yes I can see it.

Q. And you were referred to that section down the bottom there which begins, “The Fire Service Act obligates,” et cetera and I think you made a comment that this part of the document was added after 2011, in fact in 2012.

20 A. That's correct.

Q. Is it right though that the obligations which are referred to there from the Fire Service Act would have been in existence in 2011?

A. The mechanisms that we had as an organisation were not present and I'll refer you back to the very beginning of P3 which is this document
 25 which refers to the purpose. If we can look at page 1 of the document, the purpose of fire investigation.

Q. Yes.

A. So page 2.

Q. So you're looking for the next page?

30 A. Yes please.

Q. That's 0572.2.

A. At the very first line, "All fire incidents attended by the fire service are required to be investigated to establish cause," and if we look down the bottom of that page under definitions the cause means the means by which a possible fuel source is brought into contact with a possible
5 ignition source to start the fire. That was the focus of our fire investigations and it was the, I actually conducted a review of our fire investigation processes in 2008 and '09 and concluded that we needed a more comprehensive investigation of fires, hence the development of the PIA process.

10 Q. I see but I think from what you've said the fact is that some consideration was given to investigating the fire but the decision was made not to do so?

A. By the time we had the opportunity, well there were several issues stacking up. Initially operational requirements where the focus was on
15 life, preservation of life and then on recovery and in, in both of those priorities there was considerable disruption of evidence and de-layering and deconstruction. So by the time we got to a point where we could actually carry out a fire investigation the scene was so compromised there was no fire investigation done.

20 Q. So you're referring there to the reasons you've given in paragraph 23 of your evidence aren't you?

A. That's correct.

Q. It would be possible I suppose even now to interview people with some knowledge of the building to identify possible ignition sources and fuel
25 sources in the building?

A. Yeah I believe I've, well I've referred it to a number of times in my brief that this was a commercial office building with several floors. There would have been hundreds if not thousands of potential ignition sources. That would provide no useable information. We had electrical sources,
30 we had numerous types, heating, lighting and many other types, and that's just electrical and there's many, many more. So people could tell us what potentially could have caused the fire but that's valueless.

Q. And you know that without having actually looked at that sort of evidence here just because of the type of building it was likely to have been?

5 A. Any building, in fact a house, it doesn't need to be a multi-storey building but a multi-storey building will have multiple sources of ignition. Anything that will initiate, provide sufficient energy to initiate a fire with the fuel.

10 Q. So if you were to try and map out where potential fuel sources or ignition points were you're really saying that map would extend across every part of the building and every level of the building?

A. That is correct.

15 Q. And so if one was to carry out the, an investigation of the sources of information you've referred to such as video footage or photographs or witness' statements I imagine that that could yield some indication about where the fire may have started and where it burned? That would be right?

20 A. No I don't believe it would have been. You had a pancake scenario. You could have had horizontal fire travel coming out one end of the building when the fire was at another end of the building. So an external view would have really been unhelpful to us. It wouldn't have led us to other conclude that a fire started at some stage in the building. It wouldn't have even given us a start time because it would have taken time to develop and then travel. So when, there's a difference in being able to identify possible ignition sources and to identify the ignition source and that's what's important for us if we were to get learning from this.

25 Q. I see. So the reference in paragraph 23.4 where you say, "We've not looked at alternative sources of information," et cetera, but then you go on to say in paragraph 23.5 that you consider that it would not have been possible to draw conclusions. The question I was going to ask you, well how can you say that it wasn't possible without having looked at those sources of information in paragraph 23.4. Perhaps you've answered that already?

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A. I think I have.

Q. So is it the Fire Service's position that it's not possible to derive any learnings at all from this situation?

5 A. I would put to the Inquiry that it would be impossible to determine what caused the fire.

Q. But what about any other points of learning such as whether there are or could have been potential safety features that could have been incorporated into the design or construction that might have helped
10 minimise injury or death?

A. At the time we didn't have the investigation processes to do that. Even now, we've got the PIA process, the Post Incident Analysis process which relies on a series of triggers and this building collapse would have met some of those triggers but you'll notice even in the operational
15 instruction, in fact allow me to refer you to that again. I think it's on one of the last pages of the operation instruction, P3, page 8.

Q. BUI.MAD249.0572.8.

A. The very last note. Up above it you'll see bullet points which are triggers where a specialist fire investigator was to notify a fire engineer.
20 Then if you follow that process there is to be a discussion around what learning that could potentially be gained. At the bottom it says, "Note. Contacting the on-call fire engineer does not generate an automatic response of a fire engineer to an incident." We need to be sure that we will get some benefit out of doing that and I think you've seen images of
25 this site where there was just absolute devastation and total collapse. So to suggest that we would be looking at sprinkler systems or something like that, the system would have just been rendered absolutely useless. It was on that basis we decided there would just not be worthwhile putting time into trying to do further investigation.

30 Q. I appreciate your point about the risk to safety in terms of people being on the building during subsequent earthquakes. What about the possibility of keeping some record, photographic record, during the

delaying process. Would that have yielded some information of any use?

5 A. If you've seen the images you just had a massive rubble pile. It's very different to extracting a member of the, a girder, concrete member, and then putting it aside to examine later. If we're trying to look at patterns of fire going up walls which no longer exist or it's in multiple parts, photographic evidence would be very difficult.

Q. And it would be possible wouldn't it to distinguish between ignition point and fuel source, wouldn't it?

10 A. Can you explain that?

Q. You've referred to ignition points as potentially the electrical connections and so on but they wouldn't be a fuel source would they?

15 A. Well there's two different things you're talking about. Fuel sources are combustible, something that will burn. An ignition source is something that will provide heat to ignite the combustible. I'm not sure what your question is.

Q. Well I'm just asking if there's a distinction between the two and I think you're saying there is, and so you could narrow down the number of fuel sources that would have been within that building I take it?

20 A. Not really because everything from flooring to walls to ceilings and all furnishings inside. There's very little that won't burn short of concrete and steel. There would just be no way a credible fire investigation could identify what started the fire. A lot of things would have burnt without a doubt but fire would have transferred from one to another and our job in investigation is to try and trace that back. We had a scene where that was just not possible.

25 Q. So you're really saying it's not possible not only to not distinguish the ignition point, but to distinguish how it continued to burn, where it burned and what caused it to continue to burn.

30 A. It could have burnt down, along and up or down the other way. There's just no way – and if you look at the state of the building in those photographs, the pile of debris such as it was, there was just no way to trace that.

Q. And in these points this is the reason why you can't give any definitive position about whether Mr Frost was correct or not about the cars being a fuel source, is that right?

5 A. There is an enormous number of potential fuel sources so it would be speculation to say one or the another and as I've referred to on my last page of my brief. It's actually – the document which we use as our guiding reference and fire investigation in the New Zealand Fire Service and in most modern fire services in the world refer to this document. It's improper to suggest an ignition source, opine a specific ignition source
10 that has no evidence to support it even though all other hypothesised sources were eliminated.

Q. And just finally, are there any safety features of which you're aware that might have been incorporated into the design or construction that might have helped to minimise the risk of injury or death in some way here?

15 A. You're asking?

Q. I'm asking if you know of any potential safety features that may have been incorporated?

OBJECTION: MS SMITH (17:43:00)

CROSS-EXAMINATION: MR ELLIOTT

20 Q. Were there any safety features that could have been incorporated into this, or potentially other buildings, to help to minimise the risk of injury or death due to fire and I'll say in either a partial or full collapse of the building?

25 A. I think your question is one around fire engineering which is outside of my brief. I did talk to the Director of Fire Engineering for the New Zealand Fire Service, Dr Paula Beever and we both agreed that due to the level of destruction, attempting to examine what was in place in that building was not going to yield anything because of the level of destruction. What might be able to go into buildings is something I can't
30 answer.

RE-EXAMINATION: MS SMITH – NIL**QUESTIONS FROM COMMISSIONER FENWICK - NIL****QUESTIONS FROM COMMISSIONER CARTER - NIL****QUESTIONS FROM THE JUSTICE COOPER:**

5 Q. Just one question about these documents I suppose they are that you referred to in paragraph 20, the Safe Person Concept and the Dynamic Risk Assessment. Are they part of operational instruction P3 or are they independent of that?

10 A. They are independent of it. They're part of our operational instructions and they describe the way our staff are to assess risk in order to determine whether they should undertake any action or not. I understood it was going to be attached as part of evidence. I'll just if I can – section 21, it's referred to there. Sorry, my brief in paragraph 21, they Dynamic Risk Assessment model should be attached to that.

15 Q. The Dynamic Risk Assessment model also supports the Safe Person Concept. So perhaps we could have that document up, BUI.MAD249.0573. That's that.

20 A. That's the flow chart and you will see there's a process they follow and at the bottom it's either they should proceed with the task or there is actually a recognised and accepted action, do not proceed if –

Q. Yes. This is a flow chart which is summarising material which is stated more extensively in a couple of documents I take it?

A. Which is the Safe Person Concept Your Honour, which should also be attached.

25

MS SMITH ADDRESSES THE COMMISSION

QUESTION FROM JUSTICE COOPER CONTINUES:

A. There is the over-riding principles of the Safe Person Concept, are actually stated in 20, 20.1, 2 and 3. It's obviously much expanded on that but it talks about the levels of acceptable risk.

5 1747

Q. Yes, all right. Thank you. Thank you for coming. You've had a bit of a wait today and so thank you for sitting late with us.

WITNESS EXCUSED

10 **JUSTICE COOPER:**

Mr Mills, has –

MR REID:

(inaudible 17:47:20) that relates to the brief of evidence for Bill William Dray, so that is a matter that was dealt with by the Council and has been provided to the Commission. He is the individual who considered the demolition consent application for the next door building so that's been provided and I'm not sure how the Commission wants to deal with that but perhaps that can also be taken as read.

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JUSTICE COOPER:

Well is that what's suggested, is that what you're suggesting Mr Reid?

MR REID:

25 Yes Sir.

MR ELLIOTT:

Your Honour I think the brief arises from my request. This relates to the decision to grant the permit to demolish next door. We received it, I'm sorry I haven't read it yet myself and I don't think my colleagues have seen it. I suspect we could – if the Commission was willing to receive it I don't imagine

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there'll be any questions arising from it, although I am conscious that other counsel might not have seen it either.

JUSTICE COOPER:

5 Mr Palmer, do you know about this?

MR PALMER:

I know Sir, but I had a view with the basis that we have time to review it.

10 **JUSTICE COOPER:**

Well I'm not going to receive it unless it's by consent and we can't have consent, so do you want to take that further Mr Reid, you'll have to just confer with counsel and work out how that is to be done.

15 **MR MILLS:**

(inaudible 15:49:06).

JUSTICE COOPER:

Yes.

20

MR MILLS:

Then when we resume for the closing or whenever.

JUSTICE COOPER:

25 Yes, well I had nursed the fond hope that we would finish the evidence today so it's not – I'm not very pleased to have a loose end such as this, however so be it. Now has there been agreement as to process for exchange of submissions?

30 **MR MILLS:**

I think sufficiently to give it that description. There's been some moving of dates of course as a result of the fact that we didn't expect to sit today but I did mention it at least to Mr Rennie that the likelihood now was that the

submissions, closing submissions from counsel assisting would come in Monday week and the likelihood then would be that the hearing dates for the closing submissions be delivered from counsel assisting and from the affected parties who wish to deliver closing submissions would be the week following
5 and probably the Wednesday, Thursday but there's a little bit of discussion needs to take place with the Chief Executive of the Commission about dates, but that ...

JUSTICE COOPER:

10 I had a discussion with her in which I was told that the suggestion was that we hear the closing submissions on Wednesday and Thursday, 5 and 6 September.

MR MILLS:

15 If you've had that confirming discussion. I hadn't had the confirming discussion, but that's certainly what I had in mind.

JUSTICE COOPER:

Well I'm content with that.

20

MR MILLS:

So we'll formalise this including the order of address and so on and we'll advise affected parties of that.

25 **JUSTICE COOPER:**

Well I was planning to make an order. If the affected parties' submissions are a week following those of counsel assisting, is that what's intended?

MR MILLS:

30 That is what's intended yes, we would have ours in on the Monday and then ...

JUSTICE COOPER:

That would be Monday the 27th, so it seems that one always ends up between two months when one's doing this sort of exercise without a calendar, but – Monday the 3rd. Can we hear them on the 5th and 6th? Not much time is it?

5 **MR MILLS:**

Are you thinking two days isn't much time?

JUSTICE COOPER:

No I'm sure two days will probably suffice, but we would be starting effectively
10 two days after submissions have been completed but that's all right.

MR MILLS:

I'm not pressing out of desire to have it on that tight timetable but you're well aware as I am of the schedule the Commission's running to and one way or
15 another we'll just have to try and accommodate this as counsel at any rate.

JUSTICE COOPER:

Does anyone wish to say anything about this subject?

20 **MR PALMER:**

Just that if we're going to involve Mr Rennie in this Sir he's got some long term commitments out of New Zealand after the 8th of September.

JUSTICE COOPER:

25 Well we have long term commitments in New Zealand Mr Palmer and I'm inclined to think they should have preference.

MR PALMER:

I realise that Sir but I was just saying that senior counsel's only available up to
30 the 8th.

JUSTICE COOPER:

It must have been the way you started out to say that Mr Palmer, so that's convenient for him?

MR PALMER:

5 Yes Sir.

JUSTICE COOPER:

Well what do you say in those circumstances is yes, that's acceptable Your Honour and then there's no need for that kind of misunderstanding.

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MR PALMER:

That's acceptable Sir.

JUSTICE COOPER:

15 I now order submissions from counsel assisting will be filed on or before the 27th of August. Those of any other affected parties wishing to make submissions by the 3rd of September, and we will hear them on the two days commencing 5th of September. Can I rely on counsel to ensure that those who might be affected by the orders just made are aware of them, those who
20 may not be here at the moment?

MR MILLS:

Can we just ask you one other matter before you go and that is whether the Commissioners have any view on the order in which they want closings
25 presented. I've had a brief discussion about it with Mr Rennie, with no others but it's conceivable the Commission might have a view, if you want to think about it.

JUSTICE COOPER:

30 I don't have a view at the moment. It may be that – I think I prefer to leave that to counsel to work out and I would resolve any differences of view. Is that acceptable?

MR MILLS:

Yes, I don't think there will be any differences of view, I think it will just follow the normal course in the High Court where we'll address last.

5 JUSTICE COOPER:

I think that would be consistent also with the nature of the inquiry and also in this case of course other parties would have had the benefit of seeing your submissions in advance. I will leave it on the basis that counsel can agree an order but I will resolve any differences that there may be. So it only remains
10 for us to thank counsel for their assistance and indeed all those who have been involved in the preparation of the evidence that has been so comprehensively called before us and we look forward to a continuation of that assistance when the hearing resumes for submissions.

15 HEARING ADJOURNS: 5.56 PM

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