

HEARING RESUMES ON TUESDAY 7 AUGUST 2012 AT 9.30 AM**STEPHEN MCCARTHY (RE-SWORN)****EXAMINATION CONTINUES: MR LAING**

5 Q. Mr McCarthy, could you go to page 18 of your evidence please.

A. Yes.

Q. I think we have completed construction issues and you were about to start on paragraph 75 please?

WITNESS CONTINUES READING STATEMENT FROM PARAGRAPH 75

10 A. Council process for assessing building consent applications and conducting building inspections.

Counsel assisting has asked the Council to give evidence regarding the procedure within the Council for checking and satisfying itself in respect of the structural integrity of designs presented for multi-storey commercial buildings at the time of the CTV building was constructed and whether the current process today is any different to that used in 15 1986.

I have already given evidence in relation to the procedure followed at the time of the CTV building permit application was considered. The situation has changed considerably since that time. The current requirements for obtaining building consents are set out in the Building Act 2004 and the Building Code. The Christchurch City Council operates as a Building Consent Authority. This means that the Council has been accredited by International Accreditation New Zealand (IANZ), against the standards and criteria in the Building, (Registration of Building Consent Authorities) Regulations 2007. The accreditation process involves IANZ assessing the technical competencies, resources, equipment, procedures, systems and processes of a local authority to ensure they are adequate, are being followed and that identified outcomes are being achieved. No accreditation process existed at the time of the building permit for the CTV building was issued. 20 25 30

The current procedures for the processing of building consent applications are prescribed by the Accreditation Procedure Manual required by the Building Act 2004 and the Regulations. In summary, the requirement in relation to a structure is for certification by a chartered professional engineer. These procedures are in electronic form on the Council's intranet page.

5

For commercial construction work, there are two paths that might be followed for the structural content. Most common practice is for the structural design to be supported by calculations required by the Building Act 2004 and a producer statement design, PS1. The alternative practice is for the applicant to obtain an independent peer review of the structural design and provide the Council with design calculations supported by a PS1 and with a peer review report supported by a producer statement design review PS2. The PS1 and PS2 must be authored by a chartered professional engineer with appropriate professional indemnity insurance.

10

15

The role of the structural engineers employed by the Council includes reviewing, sorry includes considering the plans submitted with the building consent applications and reviewing the associated producer statements to determine whether the signatory is suitably experienced and qualified and that all aspects of the design are appropriately covered by the producer statement. The engineers do not carry out a detailed assessment of calculations submitted with the applications but rather rely on the expertise of the external engineers in completing this check. This is particularly the case if the application is supported by a PS2 authored by another chartered professional engineer.

20

25

In terms of current practice for building inspections while the Council carries out a number of inspections (for example in relation to matters such as the initial site set out, foundation, plumbing, drainage, wall linings and accessibility) site inspections by the Council of the structural aspects of commercial buildings are usually audit inspections. These inspections check that the engineer has carried out the structural

30

inspections agreed in the consent documentation or nominated in the producer statement by the design engineer.

In terms of concrete testing this is not requested by Council for commercial buildings, as most concrete is supplied from certified batching plants that have their own quality control systems. The Concrete Structure Standard NZS 3101:2006 in clauses 1.4.1 and 1.4.2 requires a construction reviewer and the extent of review is to be nominated by the design engineer. NZS 3019:1997 Concrete Construction clause 1.3.1 requires all stages of the construction to be adequately reviewed. The standard also defines ready mixed concrete as concrete conforming to NZS 3104 and clause 6.1 requires compliance with NZS 3104.

Q. Continue at paragraph 86, sorry 83 please?

WITNESS CONTINUES READING STATEMENT FROM PARAGRAPH 82

A. 82? NZS 3014 specifies the production of concrete at ready mix plants and the production and testing systems are carried out by a plant supervisor and plant engineer and audited by an auditing engineer.

Q. Yes continue at paragraph 83 please?

A. The Council's involvement with the CTV building following the completion of construction and before 4 September 2010.

The Council's property file indicates that there were a number of occasions in the period after construction when building permits/consents were sought for internal fit-outs conducted on floors in the CTV building. Applications for building permits or later building consents for internal fit-outs did not generally require a reassessment of the structural elements of the building unless the application proposed structural alterations.

Change of use.

The structural condition of the building, and its ability to withstand a seismic event by comparison with the code requirements of the day may also have been required to be addressed in an application proposing an alteration which results in a change of use of the building. A change of

5 use is currently defined by the provisions of the Building Act 2004 and previously was defined in the Building Act 1991. Counsel assisting has asked the Council to address whether the CTV, Going Places, Kings Education and the Clinic tenancies were regarded as a change of use under the applicable statutes and regulations.

CTV tenancy.

10 On 26th of April 2000 the Council received an application for a building consent (ABA10003981) for the internal fit-out of the ground and first floors of the building. A building consent was issued on 11 May 2000. Documentation submitted with the consent application refers to the CHTV fit-out. the tenant is variously described as CHTV and CTV and this appears to be when the CTV moved into the building.

15 The application was not considered to be a change of use of the building and no structural upgrading was required. The Council will make legal submissions explaining the change of use provisions which existed at the time in and their application to the CTV fit-out.

Going Places tenancy.

20 A building permit application made on 16 May 2001.

JUSTICE COOPER:

You don't need to read the number.

EXAMINATION CONTINUES: MR LAING

25 A. Thank you. Related to the fit-out to one of the levels of the CTV building identified "Going Places," as the prospective tenant.

The application itself did not name the nature of the proposed tenancy. The application simply identified that the building would undergo a change of use as a result of the proposed works. The building consent subsequently issued on 20 June 2001 described the nature of the works as "Language School fit-out."

30

No structural upgrading was required before the change of use could proceed on the basis that the building complied with the building code in relation to structural behaviour as near as was reasonable practical to the same extent as if it were a new building. Upgrading work in relation to the other building code requirements in section 46 was required.

5

0940

Q. Could I just ask you to pause there. Can you tell the Royal Commission what the other upgrading work was Mr McCarthy?

10

A. There was some quite extensive review of the fire escape provisions of the code and so there were smoke detectors installed, doors were re-hinged to open out and there was some disabled access enhancement around ramps at the ground floor and access to disabled toilets.

Q. Thank you, continue at paragraph 90 please.

A. King's Education tenancy

15

I understand that Mr John Drew's evidence is that the King's Education occupied floor three, level 4 of the CTV building which was the floor above the Going Places Language school. The Council has no record of any notification of a change of use of the building or a separate application for a building consent related to the King's Education tenancy. The date that the tenancy began is therefore unclear.

20

As the Council was not notified of the new tenancy the issue of whether this constituted change of use of the building was not addressed by the Council.

25

The Clinic tenancy

Evidence available on the Royal Commission's secure website indicates that the Clinic occupied floor four, level 5 of the CTV building from approximately the 5th or 6th of January 2011.

30

The Council has not located any written record advising it of the Clinic's tenancy of level 5 of the building and accordingly the Council never addressed whether there was a change of use. Whether the new tenancy would in fact have been a change of use is discussed in submissions filed on behalf of the Council.

Application of earthquake prone policy

5 Counsel assisting has also asked whether the CTV building was regarded as potentially earthquake prone by the Council as at 4 September 2010. Because the building was built after 1976 it was not recorded as potentially earthquake prone building as at 4 September 2010.

Q. Thank you, now you have read the rest of your evidence on a prior occasion.

10 A. Yes I have.

Q. What I would now like to do though is to deal with some matters that arose during the course of your previous cross-examination where you were asked for information and you either agreed that you could look for it or you will certainly go away and find it?

15 A. Yes.

Q. Now the first one and I'll get you to look at the transcript, is TRANS.20120703.20. Sorry, TRANS.20120703.20, sorry I may have given you the wrong –

20 Now during this cross-examination you, my friend Mr Rennie asked you whether there was any possibility of advance requests for plans prior to 6 October and 6 October was the date when Recall advised that the CTV file was available. Now can I look at – get you to look at that transcript and starting at, what's line 19 Mr McCarthy:

25 “Was there any process which enabled persons such as engineers to make an accelerated or a special request before 6 October?”

“I'm unsure, I can't answer that.”

“Is it likely there was further information you could check as to whether such a process exists before 6 October?”

“I could ask, I could ask that.”

30 So can you now tell me whether you have made any further enquiries and what the results of those enquiries were?

A. Yes I can. The Recall facility was badly disrupted in the earthquake, 4th of September, and both our records and ECan's were strewn out of

their racks. It was possible for urgent requests they would focus on parts of getting records and ECan did make a request and that was accommodated, but it did disrupt the rehabilitation of the facility so there was a process that could have been done if in fact it had been established that this was a specially urgent request, the Council could have made that request on behalf of the engineer.

5

Q. Yes, now shortly thereafter Ms Bryant asked you some questions in cross-examination and you'll see her name at the bottom of that page at line 30. Can we go the next page 21 please. Line 6 you were asked a series of questions about:

10

"If somebody made a request for a file but didn't go through with it, didn't make the payment, would that be recorded?"

And you answered, "Yes it would have been,"

And next question, "If the person at the time said, oh no, I'm not going to go ahead, would that be recorded in that case?"

15

Answer, "Yes."

A. If a request, if a request for a file wasn't proceeded, the customer decided not to proceed with it; we wouldn't have recorded that in the normal course of events.

20

Q. Yes.

A. There's no evidence that we would record those types of requests, informal requests.

Q. So as I understand it you wish to draw a distinction between formal requests and informal requests. Is that correct?

25

A. That's correct, yes that's correct.

Q. Thank you. I now go to page 25 of the transcript please and if you look at line 23, it starts:

"Blue Star. With the CTV though you can't recall someone ringing up to request that this is an inspection?"

30

Answer, "They would not have rung me directly, it would have come through our call centre."

And, "Is there any record of that?"

"Not to my knowledge."

“Has it been looked for?”

“I would imagine so, I don't have any specific knowledge of that.”

“In trying to reconstruct this you haven't asked for that to be done?”

“No, I personally haven't, no.”

5 Now have you made some further investigations Mr McCarthy?

A. Yes I have. There's no record of a telephone call having been made to the Council which would have prompted that inspection.

Q. Yes, so you can't throw any further light on that topic?

A. I can't I'm afraid.

10 Q. Thank you, and lastly, can we go to page 44. Now if you look at line 14 to line 24, you were asked a series of questions about a gas cylinder bottle, gas cylinder being stored or kept somewhere on the CTV building?

A. Yes.

15 Q. And line 22: “Is that something you'd investigate in terms of Council records between now when you give evidence again?”

“Certainly can.”

So this is your opportunity now to comment further on that, have you made some further investigations?

20 A. Yes I have. Our hazardous substances officers don't – wouldn't require certification where a gas bottle was under gas – the quantity of gas was under 100 kilograms so there's no record of a dangerous goods licence or a hazardous substances certificate in respect of any gas bottles on that site. There was a suggestion that it might have been part of a
25 cooler cabinet. We've asked our health people if they have any recollection or record of that and there's nothing on the file to suggest that there was a 9 kg bottle of LPG gas on that site so the council records I've come up with no information with regards to that particular issue.

30 0950

Q. Just to put things in context and drawing on your experience as a somebody who might have the occasional barbecue how big is a 9kg bottle in physical terms?

A. So typically that's a standard LPG bottle that one might attach to a barbecue.

Q. Yes, thank you.

A. Stands about so high.

5 CROSS-EXAMINATION: MR RENNIE

Q. Mr McCarthy, I just have a small number of questions about the record keeping system detailed in paragraph 9 of your brief of evidence if you have that in front of you?

A. Yes, yes I do.

10 Q. And Sir if we might have up please, BUI.MAD249.0117? Now this is a scan of the index cards which you refer to in paragraph 9 supplied by the council to the Royal Commission. Do you recall that?

A. I do.

15 Q. The tag on the one we're looking at, sensitive information, relates to a later stage when the bank was moving into the building, you may recall that?

A. I wasn't aware of that but I accept that that would be a normal situation.

Q. Yes, a bank's internal layout would be regarded as sensitive information for permit and security purposes?

20 A. That's correct.

Q. Yes. Now just talking generally about the way the system worked. Do I understand that when a building file was opened these cards would be established and material would be transferred to them by microfiche?

A. Yes.

25 Q. Yes, and then as you indicated the actual site inspections would be written on the card, is that right?

A. That's correct.

Q. So the cards at that point would be held by those responsible for the site inspections?

30 A. Yes.

Q. And the plans which had been scanned into microfiche what would happen to the originals of those plans?

A. I'm a little unsure of the Christchurch City Council procedures at that time but in the normal course of events most councils would have been put them to storage for a period.

5 Q. Is it the position that now for this matter what the council has been able to find is the cards with the microfiche on them and not the plans themselves?

A. That's correct.

Q. Yes. Now –

JUSTICE COOPER:

10 Q. Can I just ask the question? Does the council employ an archivist?

A. Yes.

Q. And so if files have been microfiched and the originals were no longer needed for operational purposes?

A. Yes.

15 Q. Wouldn't they be given to the archivist?

A. I think the procedure was normally that the purpose of putting them on to microfiche was to reduce the amount of paper that the councils were storing and so generally after a period and generally that would be in a matter of a few years the, those hard copies would then be destroyed.

20 Q. But you're speaking in general terms without familiarity with the actual system adopted by the Christchurch City Council?

A. That's correct Sir.

CROSS-EXAMINATION CONTINUES: MR RENNIE

25 Q. Mr McCarthy, did it follow then that the persons conducting the site inspection would have the card with the microfiche on it but not the paper plans themselves?

A. That would be correct. There would be a hard copy stamped version of the plans held on site by the builder.

30 Q. Yes, I'm just going to come to that but the council record would be the card with the microfiche? On site would be the approved construction plans to which the construction company were working?

A. Yes.

Q. Could we have BUI.MAD249.0010A please? Now Mr McCarthy, I understand this and the next following documents in this scan to be the printout of the microfiches from the pages that we were looking at previously? Is that your understanding?

5

A. Yes it would have been.

Q. You will see in the centre of the one we're looking at, H6-2640 Roll and then a sheet, the word sheet and then a number which could be a 1 or a 7, do you see that?

10

A. Yes.

Q. Is that a reference that has meaning for you?

A. The Roll plans were held separately and they had a separate designation so that all of those plans would have been held at a separate storage facility generally just because of their bulk.

15 **JUSTICE COOPER:**

Q. I'm sorry, what is a roll plan?

A. The roll plan, yes. The plans all rolled up into a bundle so we would get historically we have got A3 flat plans and then we have roll, plans that have been rolled up and they're very bulky so we would wrap them in plastic and store them for a time on in our main facility and then we would transfer them to another facility.

20

CROSS-EXAMINATION CONTINUES: MR RENNIE

Q. Now Mr McCarthy, the latest date that I've been able to find on the microfiche we're looking at is actually on that document. You'll see it top right, 30 September 1986. Do you see that?

25

A. 1986?

Q. Yes.

A. Yes.

Q. Now that particular microfiche appears to have been created by laying out a number of documents relevant to the permit consent and then creating a single sheet microfiche of that. Do you agree?

30

A. Yes.

Q. And so by extension it would seem unlikely that that microfiche could have been created until some date after 30 September 1986. That follows logically doesn't it?

5 A. Yes it does.

Q. Now if we could just scan down to the next in sequence? This is you will see is now described as sheet 2 which would fit your description of the way the roll system worked, do you agree?

A. Yes.

10 Q. And if you look bottom right you will see that this is the architect's drawing. It's sheet A1 of Alun Wilkie Architects, do you see that?

A. Yes I do.

Q. And if we scan down very quickly over the next six sheets you will find that each of those has a permit stamp on it and is an Alun Wilkie Architectural design? Now I could take you back to the cards but if I can indicate to you that those microfiche appear to accompany the sequential notes of the building inspections on the cards, that's just the point I'm putting to you, then we come down to sheet 9 please? And if we could just enlarge perhaps the one with account 480 sheet 1 on it?

15

Q. You will see that we're now in 1991 and we're dealing with an internal office fit out. Do you see that?

20

A. Yes I do.

Q. And if you look bottom right you'll see the architects involved are different architects? Warren Mahoney?

25 A. Yes.

Q. And if you look bottom left you'll see the property has now passed into the hands of what is described as the Madras partnership –

A. Yes.

1000

30 Q. It's no longer Prime West.

A. Yes.

Q. Now I can take you through the next seven sheets but what I'm putting to you is that at this point and in the following cards and microfiches

were actually in 1991 or later, dealing with fit-out and not with construction. Would you accept that?

A. Yes.

5 Q. So can we then take it that the maximum which would be available to the inspection staff would be the first eight cards including seven permitted sheets of architect's drawings?

A. At that – you're saying the inspection process in 1986/87?

Q. Yes.

A. Yes.

10

JUSTICE COOPER:

Mr Rennie, could we just go back to one of the other sheets, the 1986.

MR RENNIE:

15 Yes certainly Sir, did you have a preference or –

JUSTICE COOPER :

No, I think – well number seven perhaps.

MR RENNIE:

20 Yes, go back to sheet 7.

JUSTICE COOPER:

Is it possible to focus on the Council stamp which is near the bottom? I just wanted to see the date there which is the 30th of September.

25

MR RENNIE:

Indeed Sir, it's consistent with the stamp that we've seen on the structural drawings but Your Honour and Commissioners will see that the structural drawings don't form part of this microfiche system.

CROSS-EXAMINATION CONTINUES: MR RENNIE

Q. So do you know how the structural drawings would have been handled by the Council at this period of time Mr McCarthy?

5 A. I would imagine they would have been appended to the consent documents and I would have expected that they would have been stamped at the same time.

Q. Yes, and would you expect them to have them travelled into this microfiche system and form part of the inspection process?

A. Yes I would.

10 Q. So we're then left at this distance with a couple of possibilities. One is that not all cards have been found, and the other is that that didn't happen. Are they the two possibilities you can see?

A. At this point in time, yes.

15 Q. As you understand the way the record system worked at that time, was there any possibility that the structural drawings could have been held separately and used separately by the Council's inspection staff?

20 A. I think that's unlikely in the inspection phase. I think the inspector would have depended on the consent documents that were held on the site and whilst – and one would expect that the structural drawings were accompanying that onto the site.

Q. So from the storage point of view you can't otherwise account for the fact that not all drawings made it into the microfiche system?

A. I can't no.

25 Q. Now in relation to the Holmes Consulting Group report there's a statement in that which you may well know of where it's indicated that the Holmes Consulting Group in 1990 met with Mr Bluck in relation to that matter and I appreciate you don't directly know anything of that, but would you expect a meeting or an outcome of such a meeting to be recorded in the Council system in some way?

30 A. My belief is that from Mr Hare's evidence that the discussion with Mr Bluck was were there any issues with the building that he was aware of and I'm assuming that Mr Bluck would have said there were no issues that he was aware of at that time. That conversation I wouldn't actually

have expected. It would have been perhaps a telephone call, I wouldn't have expected that to be recorded.

Q. An enquiry as to the state of the building would not have been recorded in some way by the Council in 1990?

5 A. An enquiry as to the ...

Q. The state of the building?

A. The state of the building, that's correct. I wouldn't expect that to be – he would have, Mr Bluck would have said, “This is the state of the construction at this time, this is what we know about the building,” but he wouldn't – I wouldn't have expected him to record that.

10

Q. You understand I'm asking you not about what happened, which you clearly can't be expected to know, but the process for recording enquiries of that type and replies which were given by the Council. Do you know whether there was –

15 A. There's no record of a – that we are aware of, of that conversation.

Q. I'm asking a first stage about process. Would there normally have been a record of an enquiry and in turn the response that was given?

A. I wouldn't have expected so.

Q. No. Is that a process more recently followed by the City Council, for example when Mr Drew enquired as to whether a change of use was involved?

20

A. I don't believe that enquiry of a general nature like that would be recorded either (overtalking 10:06:33).

Q. Would you accept as a matter of general principle that a person making an enquiry, whether it's Mr Hare or Mr Drew, would treat the Council's response as being of significance and rely on it?

25

A. Yes I would accept that.

JUSTICE COOPER:

30 Q. Mr McCarthy, you may already have said this, but when a building permit was issued, how long after that would the structural plans that had been approved, microfiched?

- A. I would have expected those to be microfiched at the same time as the permit was approved because they would have formed part of the permit record. I've no idea (overtalking 10:07:30).
- Q. And then what would happen with the plans at that point, do you know,
5 the hard copy?
- A. The Christchurch City Council procedures at that time I'm unaware of, but might I suggest Sir that to some sort of solution if that question were put to Mr O'Loughlin, Mr Leo O'Loughlin, he was intimately involved with the administration of those types of files at that time.
- 10 Q. Well the other question is insofar as a Council inspector is concerned, you've said that he would rely on the set of the approved drawings that was held at the site.
- A. Yes.
- Q. Was holding those plans at the site a matter of legal obligation?
- 15 A. It's something I would have to investigate but I imagine that it would be a permit of one of the, perhaps one of the conditions of the permit.
- Q. Yes.
- A. That the set of plans is held on the site. That's certainly the situation now.
- 20 Q. Well could you look at that and let us know.

JUSTICE COOPER:

And Mr Laing if there's some independent obligation, because quite often obligations which already exist are repeated in conditions, is there something
5 in the Bylaw about that.

MR LAING:

I'll have a look Your Honour. It does seem familiar to me but –

10 **JUSTICE COOPER:**

Yes, well I'm thinking of something along the same lines.

MR LAING:

But I can't quite put my finger on it at the moment, if I can come back to you
15 on that I would be very happy to.

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

Q. Firstly paragraph 21 of your brief, you say that in 1986 the drawing
specification and calculations would have been required. An alternative
20 was the provision of a design certificate. Is that correct?

A. Yes.

1010

Q. So as a matter of course for a building such as this, would the
calculations, drawings and specifications be required, can you say or
25 not?

A. I think it's a choice to be made between either – the engineer would
make the decision about whether to provide a design certificate or the
calculations. If they provided the calculations that would be accepted by
the Council and there would be no further request of that person. If they
30 decided to provide a design certificate and the Council would have to
make a decision about whether they were prepared to accept that and

that would be based on their knowledge of the engineering company involved.

Q. So was it the design engineer's decision, not the Council's, as to which route to go down?

5 A. In the initial application they would make that decision, then the Council would have a subsequent decision to make about the acceptance of that documentation.

Q. And there's no design certificate located in the Council file for this building was there?

10 A. No there wasn't.

Q. But does that not surprise you given that the calculations and drawings having been provided. Is that what you're saying?

A. What I'm saying is with the calculations having been provided there perhaps wasn't a requirement or a request for the design certificate. It
15 appears from the Tapper letter that he didn't specifically ask for a design certificate, he asked for the calculations and I think he also asked for the plans to be approved by the design engineer and submitted in the name of the company that was submitting it.

Q. He wanted the plans signed didn't he?

20 A. Yes he did.

Q. Now paragraph 26, you refer to the evidence of Mr Nichols and the conversation with Mr Bluck, see that?

A. Yes.

Q. You're aware of, you've read the evidence of Mr Nichols about that
25 conversation?

A. Yes I have.

Q. Do you think that that kind of thing could happen today in respect of the issuing of a building permit or the principal of a firm that was the design engineers to talk to the manager of the engineering department, whatever the title would be now, and assure him that it was okay.
30 Would that kind of thing still happen do you think?

A. In my experience it's very unusual. We depend currently on the producer statements. We are very meticulous about ensuring the scope

of the producer statement covers the required work and we only accept producer statements from companies that we know, their background and their experience and that they understand the Christchurch scene. So that's the process. It's very unusual for an engineering company to come straight to the manager, extremely.

5

Q. Are you saying, I know you talk about how things are now and clearly they've changed haven't they?

A. Yes they have.

Q. So have they tightened up in your view?

10

A. I think the whole industry has tightened up. Certainly the engineers have a much more meticulous, professional in their approach in terms of the documentation they provide to the Council and indeed our decision-making has tightened up as well.

15

Q. Paragraph 34, you talk about the condition 2 in the permit that the design engineer had to provide written confirmation that the design had been complied with, see that?

A. Yes.

20

Q. And you said that Council has been unable to locate such a document. You said it's possible that some or all of these confirming letters were held on a file separate to the property files. I just wanted to ask you about that in terms of the records. So was there a separate file for some of the material that would relate to this building?

A. More generally there was a separate file I understand where they did put some of these design certificates. We've been unable to find that.

25

JUSTICE COOPER:

Q. Unable to find the file?

A. That particular file, the general file that had a whole lot of design certificates. It would be fair to say sir that we have searched very extensively for all of these records.

30

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. And is this, the fact that you can't find, we don't know they existed but we presume there were documents that might have existed and they

can't be found on the CTV file. Is that unusual or have you struck that with other buildings given the time that's elapsed where records can't be found but are likely to have been in existence?

5 A. There are some files that are not complete, other files that are not complete, yes.

10 Q. I just wanted to ask you about the change of use issue briefly, in particular the Going Places tenancy. Am I right that the only documentation on the Council file that gives any indication that the matter was considered, the change of use was considered, is that structural checklist that Mr Laing referred to in his opening? I'll get it bought up for you if you like, BUI.MAD249.0151C.37.

15 A. So while that's coming up can I say that we did treat that was a change of use fairly and that was Design Edge presented to us, this is a change of use, so we took it from that point, we said, "Yes, that is a change of use", we concurred and there were a number of considerations following that.

Q. That's not the document is it, I think it's .37? Is that the document?

A. Yes it is. Sorry, can I just clarify the nature of your question? So are you asking me in respect of structural matters or –

20 Q. Structural yes.

A. I'll link those momentarily and say that in the consideration of the change of use the fire engineer considered the occupancy. The occupancy drives a lot of the change of use considerations so what was determined with Design Edge was that each of the floors would typically have about 80 people on them, or they talked about fire cells in fact, so they linked the first and second floor, said that's 80 people and all the other floors would typically have 80 people. They then –

25 Q. Excuse me, where can we see that this exercise was done. Is there a document that shows that?

30 A. There is a document that – I'm not certain –

Q. But there is a document –

A. It would have been supplied to the Commission but I'm not sure of the reference.

1020

Q. But it sets out that exercise does it?

A. It does. What they determined with the Going Places tenancy was, there would be 100 people and that was linked to the fact that they said, okay, well this was a CL crowd large change of use. The structural engineer then looks at the design of the floor and I have spoken to Mr Harry who was the engineer, the Council engineer, at that time and he looked at the layout of the particular floor involved and determined that the extra 20 people would not have increased, structurally increased the live load on the floor to an extent where he felt that there was a structural upgrade required.

Q. Do you know if the structural engineer gave any consideration to the age of the building and the code that it would have been built under?

A. Yes he did. That's, I think, apparent from the words in the, alongside of the change of use so I think what he – what that says is something like this was a modern 1986 building with a shear wall, a shear wall frame building –

Q. Shear wall building –

A. – something along those lines so that was his consideration. He advises me that typically buildings built after 1976 were generally considered to be, at this time, around about two-thirds of the design code as at early 2000.

Q. Do you know if any consideration was given to the fact that there had been a change I think in 1995 to the code in particular as it affected transverse reinforcement in columns? Do you recall that? It came out I think in week 1 of this hearing, the reference to that. Do you know if that was considered?

A. I am not aware of that, of what happened in the first week of the hearing but certainly what I would say is that Mr Harrow would have been very well aware of that, he's – and broadly I think that would have been in the consideration of the fact that there was two-thirds – the building was assessed at being approximately two-thirds of the code at that stage.

Q. Just finally – Mr Rennie touched on it – we heard evidence from Mr John Drew in the second week of the hearing when he said that he moved the Clinic to the CTV building in early January 2011?

A. Yes.

5 Q. He said he wasn't aware that he had to obtain any consent from the Council to do so. I have lost the page I had. I was going to try and be accurate but that he had phoned the Council to, I don't know that he necessarily talked about a change of use or anything in technical terms but to say that he was moving the Clinic in to see if there was any
10 problem.

A. Yes I gave evidence in my earlier appearance with regards to that and I heard Mr Drew's evidence in respect of that. That would be consistent with my understanding of his proposed use of the building that there would be in present day terms, no change of use associated with his
15 moving in.

Q. So my other question was going to be, he said that he did that by phone. Could that have happened as he says?

A. Very likely.

Q. And from what you said before there wouldn't necessarily be any record
20 of that?

A. That is correct.

CROSS-EXAMINATION: MR ELLIOTT

Q. Mr McCarthy, firstly I would just like to acknowledge the condolences that you expressed earlier on.

25 I am just going to raise four issues briefly of concern to families. First is the concern that not all of the Council file seems to have been located and I just wanted to note on that point that Mr Laing has indicated that a memorandum is going to be filed by the Council, is that right, setting out in detail what searches have been made for the Council file. That is the
30 case?

A. I think that might have been included in Mr Laing's statement yesterday but I will take advice on that. I think it may have been covered.

Q. But if necessary you can come back and answer further questions on that -

A. Certainly can yes.

Q. – issue if points arise?

5 A. Yes.

Q. Secondly, Mr Laing referred to the issue of the Clinic's occupation not amounting to a change of use and that is a legal question and I won't ask you about that. I just wanted to ask you about the effect of it though. Is the effect of that, if it is correct, that Mr Drew could have in effect converted the whole building to a medical clinic as he apparently intended to do without any notification to the Council unless he had to apply for a building permit for a change to the fit-out?

10

A. He would have still needed to notify us that the level 3 was a change of use because in our record level 3 was an education facility. So he would have had to have notified us of that. We, in our consideration of that, we may well have said, yes changing that whole building is a, there may be, there may be no further requirements in terms of the Building Act but one can only – I can only imagine that a medical facility, they would need a whole lot of plumbing and sanitary facilities installed so we would have to consider that in its totality.

15

20

Q. Thirdly, the change of use Mr Zarifeh referred to back in 2001, did I understand you to say that apart from the document which was brought up there is another document which reflects the Council's reasoning -

A. Yes –

25

Q. – around that –

A. – it is around the occupancy, it is around the fire considerations so it may have escaped your attention. It would have been provided to the Commission but it's, it was about, typically about that, that occupancy, there is a whole lot of notes on – and a letter from Design Edge –

30

Q. Can I ask you after your evidence just to identify that document please and to let us know what it is?

A. Yes certainly.

Q. But from your review of that document is there any evidence that the engineer gave consideration to steel props being placed adjacent to columns for example in the same way that we saw was done in the PGC Building in 1997?

5 A. I don't believe he considered that and having spoken to him he considered the building to, as I say, to have been two-thirds of the structural design code at that stage so he didn't consider that I don't believe.

10 Q. When you say, "Having spoken," you mean you have spoken to Mr Harrow?

A. I have.

Q. Have you?

A. Yes.

15 Q. Finally, another area of concern for families is the permitting of this building back in the 1980s. However you can't give evidence on that can you, on the question of the reviewing engineer's assessment of compliance. What the Council has done is to ask Mr O'Leary to comment on that, is that right?

A. That is correct.

20 Q. And I can direct questions on that issue to him?

A. Yes you can, I think I would like to say that in 1986 the Council engineers who were very well qualified and experienced did consider all of the evidence, the calculations, the design, the plans.

25 Q. Well just pause there Mr McCarthy. Is that a submission that you are making or quite speculation that you are making or is that evidence based upon some knowledge, some direct knowledge at the time?

30 A. All of the evidence has come out in front of the Royal Commission I'm largely aware of and so I suppose I am summarising our situation, I was just trying to be helpful but I am happy to give a much more bland answer if that's -

1030

Q. Well just seeking direct evidence from people who can give evidence. If it's a submission then Mr Laing might perhaps be the person to make it.

A. Yes.

Q. Thank you.

RE-EXAMINATION: MR LAING

5 Q. Mr McCarthy, you were asked a question by His Honour concerning the documents to be held on the construction site. Could we look at ENG.CCC.0044.33 please? And in particular clause 2.12.2. Could you just read that out for us please?

10 A. "A second copy of drawings and other documents which are required to be deposited in duplicate under this or any other bylaw in force shall be returned to the applicant or his agent at the time of issue of the permit shall be kept by the builder on the site of the work during construction."

15 Q. Yes, thank you. Just going back to the topic of what was provided by Design Edge. There are a number of other documents and I'm sure you'd be happy to come back to answer any further questions but I just get you to look at one document for me, BUI.MAD249.0151C.52, and what I'll be showing you is the letter from Design Edge to the Christchurch City Council dated 15 May 2001?

A. Yes.

20 Q. I think when you were answering questions before you referred to the number of persons per level?

A. Yes I did.

Q. And does that letter now jog your memory?

A. Yes it does. That's the reference I was making.

25 Q. Yes, and if you look at under 3.0 purpose group and occupant load, the building is all WL apart from level 2 which will be the CL purpose group, and then the author there refers to five main fire cells?

A. Yes.

Q. Yes, thank you.

QUESTIONS FROM THE COMMISSION - NIL

30 **WITNESS EXCUSED**

MR LAING CALLS**LEO FRANCIS O'LOUGHLIN (SWORN)**

Q. Mr O'Loughlin, you have got a brief of evidence? You have a brief of evidence with you? Statement of evidence?

5 A. Yes I do.

Q. Yes, and is your full name Leo Francis O'Loughlin?

A. Yes.

Q. And you're a building consent officer for the Christchurch City Council?

A. Yes.

10 Q. And you've worked with the council since November 1983?

A. Yes, that's correct.

Q. Now could you turn to paragraph 1 of your evidence please, and can you start reading at the third line on paragraph 1? "Prior to this."

WITNESS READS BRIEF OF EVIDENCE

15 A. "Prior to this I have worked as a foreman for JJ Construction for two years. I had also previously worked as a foreman for TH Alexander for 13 years and as a foreman for Robyn Smith Limited for two years. Prior to this I was an apprentice carpenter and then foreman for R L Kennedy Limited for 10 years. My experience as a foreman included
20 the construction of commercial buildings, schools, hospitals, retirement homes and residential properties.

I have a New Zealand Certificate in Building Inspection, a New Zealand Certificate in Building, and an Advanced Trade Certificate in Carpentry. I am a member of the Building Officials Institute of New Zealand and the
25 New Zealand Institute of Building.

My first role at the Council until November 1984 was as a building egress inspector. This work involved annual inspections of retirement homes, public buildings, licensed premises, heating appliances and the processing of building permits for egress requirements. From November
30 1984 to June 1985 I was a relieving building inspector. In this role I would fill in for other building inspectors who were on leave processing building permits and carrying out inspections for unit title certification.

From June 1985 to October 1986 I worked as a district building inspector for the central city area responsible for the area between the four avenues. On the 31st of October 1986 I transferred to the role of district building inspector for Papanui. Then in 1990 I became the district building inspector for the Shirley area. I have since had various building inspection and building consent roles all with the Christchurch City Council.

5

When I was working in the city central area I reported to the chief building inspector. The chief building inspector reported to Mr Bryan Bluck, the chief building engineer.

10

My tasks as a district building inspector included receiving and processing building permit applications and carrying out building inspections for the construction work, fit outs and alterations of commercial and residential buildings.

15

In my role as the district building inspector for the central city area I received the building permit applications for the construction of an office building at 249 Madras Street. This is the building which later became known as the CTV building.

20

My role in relation to the CTV building permit application.

At the time the CTV building permit application was made the general process in the central city area was that the application and the supporting documents would be handed in to the council's public counter. The application would be assigned a permit number and a permit cover sheet would be attached. The file would then be referred to the district building inspector.

25

My usual process when I received a building application at the time was to review the documents provided with the application to determine whether any information was missing. If I thought that further information was needed I would request this from the applicant and the information would be added to the permit application file when it was received.

30

The Council's property file for the CTV building includes a letter from me to Alun Wilkie Associates dated 21st of July 1986."

1040

Q. Just stop there please. Could that document be brought up. Now that document is addressed to Alun Wilkie Associates and it refers to permit number 1747 to erect an office building at 249 Madras Street.

5

JUSTICE COOPER ADDRESSES MR LAING

Application number.

MR LAING:

10 1747

JUSTICE COOPER:

You said that was the permit number. It's an application number.

15 **MR LAING:**

Sorry, sorry Sir.

EXAMINATION CONTINUES: MR LAING

Q. And that's your signature?

A. That is correct.

20 Q. Come back to your paragraph 10 and start again at the second sentence please.

A. "This is an example of the letter asking for further information from the building permit application [*sic*].

I would also review parts of the plan to make sure that they complied with the relevant Bylaw requirements. This checking was limited to matters such as architectural features, for example the detailing for handrails, stair treads and ventilation. If the application related to the construction of a building I would also check the siting of the building on the plans. All applications for the construction of multi-storey or complex single storey buildings would be sent to the Council's structural checking engineer. The engineer would review any structural components. It was not part of my role to check these details.

25

30

I would then send the application to the relevant units of the Council that needed to review it. The first page of the processing check sheet had a box at the bottom for each of the units to sign when they had checked the relevant parts of the application. If the units needed any more information from the applicant they would usually write to the applicant directly to ask for this. Any comments that the units had about the application and any recommended permit conditions were written on the second page of the check sheet.

A copy of the check sheet for the CTV building permit application has been provided to the Royal Commission. The abbreviation STR on the first page of the processing check sheets refers to the structural checking engineer. I believe that it is Graeme Tapper's signature in this box on the CTV processing check sheet."

Q. We'll bring that up now please 0141.8. Now I'll get you to read the next paragraph and then I'll ask you some more questions about it so if you just can read paragraph 14 please.

JUSTICE COOPER ADDRESSES MR LAING

Well before you do, what's 0141.4 which is also referred to at paragraph 13.

MR LAING:

I don't have a copy in front of me Your Honour. I'll bring it up now if you want to look at it. I'm sorry I do have it here. Perhaps I'll ask some questions about that in a moment.

BOTH 0141.4 AND 0141.8 REFERRED TO LEFT ON SCREEN

EXAMINATION CONTINUES: MR LAING

Q. Can you read them all right with both up Mr O'Loughlin?
 A. Yes, not too bad.
 Q. Is it okay?
 A. Mmm.
 Q. So can I just get you to read paragraph 14 if you would.

- A. “The other abbreviations on the check sheet refer to the administration staff (OFF) who signed on receipt; the design office (DES), who would check features such as ground and floor levels; the survey office (SUR); the egress/fire safety officer (EGR); town planning (TP); the drainage team (DRN); the street works team (SW); the traffic engineering team (TE); the health inspector (HI); and the waterworks inspector (WWI). The abbreviation DBI means the District Building Inspector. It is my signature on the CTV check sheet in the District Building Inspector’s box.”
- 5
- 10 Q. Now can I just take you to the second document. It should be on your right and can you just tell the Royal Commission what that document is?

JUSTICE COOPER:

I don’t mind if it’s highlighted Mr Laing.

15

DOCUMENT BROUGHT UP ON SCREEN

EXAMINATION CONTINUES: MR LAING

- Q. Is that the document, the second page of the document on the left of your screen?
- 20 A. Yes.
- Q. And can you just take me through that. You see there in the middle of that document a whole lot of things for building inspectors to look at and immediately under that “Structural Engineers” and there’s a notation there – “Letter sent 27/8”
- 25 A. Yeah that's correct.
- Q. And so that's where the various units the Council would record any comments about the process. Is that correct?
- A. That is correct.
- Q. Thank you. We go back to your evidence now please at 15.
- 30 A. “When each of the relevant units had signed the processing check sheet, the permit application would be returned to me and I would prepare a handwritten list of draft building permit conditions. I would

select relevant conditions from a standard list and add any conditions recommended by the other units of the Council that had checked the application.

The handwritten list of conditions that I prepared for the CTV building permit has been provided to the Royal Commission.”

5

Q. Just pause there and we'll get that brought up for you. Do you recognise that document?

A. Yes.

Q. That's your handwriting is it?

10

A. That is correct.

Q. Can you then continue reading please – “The numbers...

A. “The numbers on the list which are not circled, for example the 18 next to condition number 10 are codes for standard conditions. Condition 12 is an example of a condition recommended by another unit of the Council. The health inspector has made the comment – ‘All noise producing plant and equipment to be suitably acoustically shielded so as not to cause a nuisance to neighbouring properties’ and I have included this in the list of conditions.

15

I would then prepare the whole application file with a review by the Chief Building Inspector. Once the application filed and the draft conditions had been reviewed and approved, the conditions would be typed up, the plans would be stamped and a permit approval and building permit would be prepared. The applicant could then uplift the permit from the Council once the permit fee had been paid.

20

The building permit approval, plans and conditions for the CTV building have all been signed by Maurice Faulkner. I believe that he was the Chief Building Inspector at the time. Mr Faulkner is now deceased.”

25

Q. Thank you. Now could we firstly have up 0141.6 please and is that the building permit approval notification to Williams Construction?

30

A. Yes that's telling them. That's notification of it in the fee that they've got to pay.

Q. So they don't get the permit until the fee is paid?

A. That's correct.

1050

Q. The next document 0284 please. And this is obviously the first page of the structural drawings. If I can just go to .2 and if you look at the bottom right-hand corner and do you see a signature there?

5 A. Yes.

Q. Whose signature is that?

A. I take that it is Maurice Faulkner's signature.

Q. Thank you. And then can we go to the final document 0141.10 please. And do you recognise that document?

10 A. Yes, they were the conditions.

Q. And at the bottom of the page the signature there, do you recognise that signature?

A. Yes, Maurice Faulkner's signature.

Q. Thank you, start at paragraph 19 again please.

15 A. At the time the CTV building was constructed Council building inspectors recorded the details of the building inspections on microfiche cards. I reviewed the microfiche inspection records for the CTV building. I believed that the handwriting on the cards belongs to Mr Kevin Sutherland who was another building inspector working in the city central team. Mr Sutherland is now deceased. I recall that he was an experienced building inspector who had worked in the building trade before joining the Council.

20

Q. Just stop there again and we'll have a look at 0117 please. Now that document has been up this morning already, and when you are referring to Mr Sutherland's writing what are you referring to specifically on those documents there?

25

A. That was on the inspections.

Q. Yes. Can we go to the next page please and perhaps one over again because there's not much there. There's some writing there in the columns. Do you recognise that writing?

30

A. Well by my memory it appears to be Kevin Sutherland's.

Q. Yes, and we'll go to the next page as well please. More writing there, does that help you recognise the writing?

A. Yeah that appears to be Mr Sutherland's writing as far as I can remember it.

Q. Yes, so just to – you were at the hearing this morning when Mr McCarthy was asked some questions about microfiche?

5 A. Yes.

Q. Could you explain to me in a little bit more detail about how the process worked. The building inspections you say were recorded on microfiche cards?

A. That is correct.

10 Q. And then what happened to them at that stage? Did they go into some system that you're aware of, what happened to them?

A. Well while the construction was on for the building, they would remain in the inspector's case. We each had a case where we kept all our microfilm cards in. They would remain there until he had done his final inspection on the job. You'd then write the job off and they would go back into a file. They were – at one stage they were kept in a cabinet separate from the property files but in later years they were put in the property files.

15 Q. Thank you, now as far as structural drawings are concerned, how were they treated while the building process was in force? Where were they located?

A. Well my recollection from that time, all plans were microfiched on the microfiche cards so they should have been in my opinion there should have been more cards there showing all the structural plans.

25 Q. Yes.

A. Yeah.

Q. Now in the current case there's been evidence that the structural plans were found on the property file but not on microfiche. Do you have an explanation why that might have occurred?

30 A. No I couldn't explain that.

Q. Well perhaps we continue now at paragraph 20?

A. In the late 1980s Council building inspectors carried out a mandatory building inspection before foundations were poured and before any

linings were fixed. The building contractors should also have been notifying the Council before any other major concrete pours, for columns and floor slabs. Otherwise the timing of the building inspections were largely at the discretion of the building inspector. The inspector would

5

call in on a regular basis to review any progress on the building work. If an experienced design engineer was in charge of the building site then my role as a Council building inspector would include checking that the engineer was carrying out appropriate supervision in relation to the building work. I would check this by reviewing the engineer's site

10

reports. I would also usually carry out specific inspection prior to the pouring of foundations to check the siting of the building; inspections before any major concrete pours; an inspection prior to the fixing of wall linings; an inspection of any block work and also random inspections to review features such as guard rails, plumbing and drainage, disabled access, exterior cladding, flashings, roof flashings and stair construction.

15

Q. Thank you, now in the second sentence in paragraph 21 you refer to reviewing the engineer's site reports. Are these reports that would have been held on site?

20

A. Yeah, they were the reports that were held on site when he would make a visit, he used to leave a – mainly they would leave a report on site if he'd been there so I could view that.

Q. And when you went to the site you would ask to see these reports?

A. Yes I would.

25

Q. Yes, and check them?

A. Yes.

Q. Paragraph 22.

A. Mr Sutherland's notes on the CTV microfiche cards are similar to those which I would have written when carrying out inspections for other projects like the CTV building.

30

There are 11 dates recorded for inspections on the microfiche cards although the final date of 15 April 1988 has no entry next to it. This number of inspection is reasonably low for a building the size of the CTV

building although I note that at times inspections were occasionally carried out that were not recorded on the microfiche cards.

Q. Yes, and just again there, what would be the reason or reasons why an inspection would not be recorded on a microfiche card?

5 A. Well, at times you could have another relieving inspector doing the work. He would not necessarily have the cards with him, and sometimes that wasn't transferred back to the inspector whose job it was to do – who was doing the main inspections on that job.

Q. Twenty-four.

10 A. There is an approximately five months gap in inspections between the 31st of March 1987 and 20th of August 1987. I cannot explain why this would have occurred if construction was continuing during this period.

I would normally expect to have seen an entry on the microfiche cards recording a final inspection by the building inspector. The notes for the
15 22nd of February 1988 inspection records that handrails and hardware are being finished which suggests that the building was nearing completion at that stage, and as I mentioned there is an entry on the
15th of April 1988 with no notes recorded against it.

I have reviewed the guidelines for building permit related inspections
20 referred to in Mr McCarthy's evidence to the Commission. Although the guidelines are dated after the building permit for the CTV building was issued they provide a reasonable indication on the types of inspections being carried out at that time the CTV building was constructed to the best of my recollection.

25 1100

CROSS-EXAMINATION: MR RENNIE

Q. Mr O'Loughlin I understand you correctly that if a building inspector who was not the one normally inspected the job went to the site, that inspector would not necessarily have the microfiche cards with them?

30 A. No he normally would not have those with him because he'd rely on the plans that were on site to do his inspection from.

- Q. The relevance of the microfiche cards then would be the notations made by building inspectors on prior inspections rather than the contents of the microfiche?
- A. That is correct.
- 5 Q. So an inspector going to the site without the cards would not have the information as to what had been found or not found on prior inspections?
- A. Mmm, no not always but sometimes they might look at the cards before they went out.
- 10 Q. Even in that event it would be more logical that they would take them with them, wouldn't it?
- A. Not unless – because at times when they cards were taken out they wouldn't get returned back to where they (inaudible 11:01:50) –
- Q. Wouldn't go back to where they belong?
- 15 A. Yes, mmm.
- Q. When the inspector took the card with the microfiche out to the site, was the practical position that the inspector at the site would not be able to read the microfiche?
- A. We had a viewer to view the microfiche but it was okay for small jobs
- 20 but on big const – big job like the CTV building, you wouldn't be able to do it. You would have to rely on the plans that were kept on site.
- Q. When you say you had a viewer, you mean a portable viewer that you could take with you?
- A. Yeah it was just a wee viewer that you held up to your eye, very hard to
- 25 look at the details on the microfiche.
- Q. So that for the sake of argument if you were looking at a microfiche of the documents which I was discussing with Mr McCarthy earlier where there was a single microfiche with a number of documents on it, it would pretty well impossible to read that on site, wouldn't it?
- 30 A. That would be correct.
- Q. And another weakness I take it would be that if notes or explanatory material had been written on the Council's documents checking the

onsite building permit documents wouldn't give you that information either. Is that correct?

A. No you wouldn't pick that up either.

5 Q. No. In terms of the onsite documents that the contractor held, was it your understanding that it was the contractor's obligations to have them onsite throughout the construction period?

A. That is correct.

Q. And in your practical experience as a building inspector did you find that generally to be the case?

10 A. That was generally the case but they – the plans that were actually, the main plans that were signed weren't the actual plans that they kept onsite. They were more than likely photocopies of those, or copies of those because that was their record.

15 Q. In other words the contractor would hold a clean original copy amongst their business records but a photocopy onsite, no doubt to take into account rain, concrete spills, mud and all those other considerations?

A. That is correct.

20 Q. Yes. Could we have BUI.MAD249.0141.8 the first of the two documents Mr O'Loughlin was looking at before and could we enlarge the bottom quarter or so of that please. You agree that in the third line from the bottom reads, "Structural drawings to come," and then a note, "Received 26/8." Do you see that?

A. Yes.

25 Q. Other than that endorsement on that document, do you know of any other reference in the Council's records as to the receipt of structural drawings, that you have seen?

A. Not that I am aware of that I have actually seen, but yes the structural drawings if they were taken directly to the engineer I would have no record of it.

30 Q. Now the receipt of those drawings by the look of it was about four days before you signed as the DBI reference on the right, that is correct?

A. Is this –

Q. Sorry I stand corrected, my maths fails –

- A. Yep.
- Q. But yours will be better and you will actually give me a figure somewhere around about a –
- A. Around about a month –
- 5 Q. – 35?
- A. Yes.
- Q. Yes. Do you know who wrote the “Received 26/8,” on that document?
- A. No I do not.
- Q. You don’t recognise the handwriting?
- 10 A. No.
- Q. Could we go to BUI.MAD249.0141.4 the second document that Mr O’Loughlin was looking at and could we enlarge the section please which refers to structure. It’s about two-thirds of the way down. You will see although we have slightly lost on the left the (inaudible 11:06:31)
- 15 structural engineers, you see that?
- A. Yes.
- Q. And Mr Laing asked you about the reference letter sent 27/8 you see that?
- A. Yes.
- 20 Q. Do you agree that that relates to the fire resistance requirements?
- A. Not necessarily, that is the structural engineers they start at the top of that list and just normally work their way down.
- Q. So is it your understanding as a building inspector that that statement could apply to any of the headings within that box?
- 25 A. Yes that would be correct.
- Q. Other than the reference letter sent 27/8, you agree there is nothing on the checklist that would indicate that structural stability was identified as an issue?
- A. Going by the check sheet I would have to say that is the only reference.
- 30 Q. Well I will put it around the other way because you notice, you will recall from the document we previously looked at that the structural drawings were received on 26/8 which is the day before the letter we are looking

at, so that on 27/8 a letter was sent as to whatever it was, that was of concern to the structural engineers?

A. Yes.

Q. That is how you would read that as a building inspector?

5 A. Yes that is how I would read it.

Q. And I take it that by the time that you signed off on 30 September on the document we were looking at previously, you had before you evidence that the requirements in that box had been satisfied?

10 A. Yes going by the check sheet or the box that had been signed off when I actually checked everything out.

CROSS-EXAMINATION: MR KIRKLAND – NIL

CROSS-EXAMINATION: MR ZARIFEH

Q. Mr O'Loughlin just on that last issue in the document that you had up, if we can go back to that.

15

JUSTICE COOPER:

That is 0141.4.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. Thank you Sir and you refer to the entry letter sent 27/8?

20 A. Mmm.

Q. You have also referred to and we have had reference to it already a letter from Mr Tapper dated 27 August '86, that is likely to be that letter?

A. I would be pretty much sure that that would be that letter.

25 Q. And so looking at the documentation, the permit application you told us was dated 17 July '86. If you go back to the document before that please, the page before.

JUSTICE COOPER:

It is 041.8 we want.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. Thank you. The date at the top –

A. Yep.

Q. – under the permit number is 17/07/86?

5 A. That is correct.

1110

Q. And can we assume that the plans that came in with that permit application were the architectural plans, or not? Is there any way of telling from that form?

10 A. Except for the note down the bottom which says, “Structural drawings to come.”

Q. Right, so but the architectural plans were on the council file weren't they? We saw those referred to on the microfiche?

15 A. Yeah, I'd, I'd say that there would have had to have been the architectural drawings there for us to accept them.

Q. There'd have to be something wouldn't there?

A. Permit, yes.

Q. And as you've pointed out structural drawings to come, and then received 26/8, so the structural drawings would have come in that day.

20 So just the day before the letter that's been referred to as the Tapper letter of 27 August, correct?

A. That's correct.

25 Q. Now I take it from what you've said that you had no personal involvement in assessing any documentation that came in? You were simply processing things? Did you have to make any assessments in the granting of this permit?

A. In the granting of the permit I was only looking at the architectural features and (inaudible 11:11:52) on probably the handrails, stairways and that but it was very limited.

30 Q. And you had nothing to do with the structural side?

A. No I didn't have any.

Q. So you had no discussions with Mr Tapper or Mr Bluck in the engineering department about it?

A. Not in regard to the structural, no.

Q. And no discussions with them about any concerns they may or may not have had about the structure?

A. Would you repeat that please?

5 Q. Did you have any discussions with Mr Tapper or Mr Bluck about any structural concerns they may or may not have had about the building?

A. No I did not.

Q. And presumably you wouldn't have been consulted by Mr Tapper before he wrote that letter?

10 A. No he was the engineer doing the check sheets, yeah, I haven't got the expertise to do that.

Q. Did, you obviously knew Mr Tapper?

A. Yes I did.

Q. And Mr Bluck?

15 A. Yes.

Q. We've heard evidence that, I'll put it neutrally, that there were often arguments between the two of them over permitting of buildings and requisitions or requirements. Were you aware of that?

A. At times they would have a heated debate on the pros and cons of jobs.

20 Q. And how do you know that? Were you part of that or?

A. I wasn't part of it but I wasn't too far away from where they were.

Q. So you heard it?

A. Mmm.

JUSTICE COOPER:

25 Q. That's a yes is it?

A. Yes, I heard them but they were, but it was only about the job, afterwards you know they could go and have a cup of tea. It wasn't as though they were against each other it was just that the pros and cons of the job they would vigorously debate.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

- 5 Q. And we've heard some descriptions of Mr Tapper and his character and things to the effect that he was perhaps a bit of a stickler for procedure and for and thorough in terms of his scrutiny of permit applications. Is that your recall?
- A. That is my recollection. He was a very thorough person.
- Q. We've also heard that he was someone who would stick to his guns and was quite hard to move if he had a certain view about the way something should be done. Do you agree with that?
- 10 A. Probably in some things but I wouldn't say it would be in all.
- Q. And would you have had, we've also heard evidence of contact between Alan Reay and the council, in particular Mr Bluck. Would you have had any knowledge of that back at the time?
- A. Well, I can remember Alan Reay coming in to the council but –
- 15 Q. About permit applications?
- A. – but whether, what it was actually for I couldn't actually tell you. He did go and meet Mr Bluck, but he also talked to Graeme Tapper as well.
- Q. Sorry, what was the last bit?
- A. He also talked to Graeme Tapper as well.
- 20 Q. All right, so you're just saying you can recall him coming in to the council to talk to the engineers? Is that what you're saying?
- A. Well he used to come in and talk to him about what jobs are what I wouldn't know but I remember him coming in.
- Q. Just want to ask you a couple of questions about the inspection process, and I understand that you didn't do any of the inspections that are recorded on the documents?
- 25 A. That is correct.
- Q. Did you do any at all of CTV?
- A. No, I didn't do any inspections.
- 30 Q. And you set out in paragraph 21 the kind of things that would be inspected or part of an inspection?
- A. Yes.

- Q. Can you tell from the records that the council has whether Mr Sutherland I think you said it was would have done all those things or not?
- 5 A. As I said in my, that they appeared to be a bit light on the number of inspections.
- Q. Right.
- A. I think from memory the first, the ground floor and the first floor are recorded but nothing after that in the way of the concrete floors.
- Q. Right.
- 10 A. I would have probably done another inspection on them.
- Q. So when you say a bit light are you referring both to the number of inspections that are recorded?
- A. The number of inspections recorded.
- Q. And you seem to also be referring to the extent of the building inspected? You said the ground and first floor but not above it?
- 15 A. On the floor –
- Q. Is that correct?
- A. – well there doesn't appear to be any inspections done on the upper floors.
- 20 Q. And is that something you would have done if you'd been inspecting?
- A. Yes I think I would have.
- Q. The five month gap from March to August you said you can't explain from the records why that might have been. We're going to hear some evidence from the Williams Construction people that were involved with the building, Mr Brooks, in his brief refers to work slowing down after March. Could that be an explanation if the work has slowed down would the inspections slow down or cease?
- 25 A. Unless they were virtually stopped I would have thought an inspection would call in at some stage just to see what was happening.
- 30 Q. All right, so there's still not an answer in your mind?
- A. Not fully, no.
- Q. And Mr Scott, in his second brief, he said that he thought that it was possible that the council inspectors were satisfied with the standard of

workmanship in the engineering supervision up to level 2 and as a result council inspections were reduced. Now that's just him giving an opinion, is that something that you think would happen or not?

5 A. That could have been a possibility but I, yeah, without the only person that would have been able to explain that fully would be Kevin Sullivan.

Q. Right, but you think that if the council inspector was satisfied that the engineer was inspecting or that the standard of workmanship was okay then he might not inspect?

10 A. He might not inspect but I'd still if you weren't there just prior to the pour I'd be, you know, when you next visit you'd be checking the engineer's site reports to see that he'd carried out those inspections.

Q. Right, so just so we're clear, are you saying that sometimes the building inspector, the council building inspector would really pass over and rely on the engineer doing his inspections?

15 A. Occasionally that would happen because if you had quite a bit of the afternoon with concrete pours or something that you had to check before (inaudible 11:20:23) some of the well-known ones that you were more than happy with their workmanship and all that, you know, you could rely on their engineer to do that for you.

20 1120

Q. And does that still happen or is that something back in the '80s?

A. I can't comment fully on that because I haven't done any inspections for a number of years.

CROSS-EXAMINATION: MR ELLIOTT – NIL

25 **RE-EXAMINATION: MR LAING – NIL**

QUESTIONS FROM COMMISSIONERS FENWICK AND CARTER – NIL

QUESTIONS FROM JUSTICE COOPER:

30 Q. Mr O'Loughlin can I just ask you to have a look again at the document with the suffix 0141.8 which is the application for the building permit.

There's no Council stamp on it indicating the date it was received. Was that not normal practice to stamp such applications.

A. It's not a stamp. When it was received the date would be handwritten in.

5 Q. The date would be handwritten in, what, by whoever was receiving it over the counter?

A. Yes.

Q. So the applicant would present it with the date blank –

A. Yeah.

10 Q. – and the Council would then fill it in.

A. That was usually the way it went.

Q. Now this idea that one can make an application for a building permit on the basis that structural drawings are to come, was that a standard sort of practice in Christchurch City in those days?

15 A. There was some jobs where that would happen like that but it was mainly a lot of times the pressure was on whoever was just signing the building to get them into the Council so the checking process could start so without the structural drawings there was still a certain amount of work on the architectural drawings that could be carried out.

20 Q. Can I just ask ENG.CCC.0044.29 to be displayed. This is a page from the Building Bylaw that was applicable at the time and when that is displayed I want you to have a look at clause 2.6.1.1. 2.6 deals with plans and specifications, 2.6.1.1 begins, "Together with every application there shall be submitted to the engineer in duplicate detailed plans....." et cetera, "which shall together furnish complete details of design." The wording of that Bylaw suggested to me that it was envisaged that all of the plans describing the building would be submitted at the same time. I take it that wasn't always done?

25 A. It wasn't always done but that's the way it's worded. You would expect everything to come in when the application was made.

30 Q. Now can we have a look from the same Bylaw at .28 rather than .29 which is the page before and if we could have a look at clause 2.5.3

which is at the bottom of the page and it says, "It applies to buildings for which specific design has been necessary." I take it that was this case?

A. Yeah, I'd take it there would have been a specific design for a building.

Q. "And to assist the Council and to speed up the issue of a permit a statement of responsibility for documentation shall be supplied containing the name of a person or organisation directly responsible for each of the following and they include the principal consultant, architectural drawings, structural engineering design, structural engineering drawings, compliance with Town Planning requirements and compliance with fire safety requirements".

Now presumably, having regarding to your role with the Council, this is a clause of the Bylaw which you would have been familiar with and which you would have applied in going about your work. Am I right?

A. Yes we would look at those things.

Q. Well the Bylaw requires a statement to be provided doesn't it?

A. Yes it does say that.

Q. A statement of responsibility for documentation. Was that a provision of the Bylaw that was in force?

A. I just can't remember entirely whether it would have been in force entirely or not.

Q. I haven't seen anything in this case which indicates that such a statement of responsibility was required for the CTV building. Does that surprise you?

A. I just, sorry, I can't remember back then what the general process was for that.

Q. I'm inferring from what you've described as your role in the processing of the application for building permit if that requirement was to be applied you would have been the one responsible for doing so. Is that a fair conclusion?

A. From memory I only just to look at the architect..., I didn't go right back through that part of the Bylaw.

Q. So is it something you may have overlooked?

A. Possibly could have been. As for that job I just really don't have a great deal of recollection of actually working on it.

QUESTIONS ARISING: MR RENNIE

5 Q. If we could go back to the permit document please and you may be able to pick up on there Mr O'Loughlin but just by the applicant's signature, Mr Wilkie, I suspect his name's underneath, is what appears to be a stamp "Return to L O'Loughlin". Do you see that?

A. That's correct.

10 Q. His Honour was asking you about the process under the Bylaw. Could you explain how that stamp would come to appear on that document?

A. I would have put it on there.

Q. At the outset or at some later point?

15 A. I would have put that on there when I first received the documents before I'd sent it to any other of the departments so they knew who to return it back to.

Q. And your purpose in doing that was?

A. When I sent it to the other units that had to look at it when they finished with it they would know who to return it back to.

1130

20 Q. And what level of authority did that show you had over the application as a whole?

25 A. I was more of the general co-ordinator of the process so that it would go round all the other units that it had to and that they'd all sign it off and then I'd gather all those documentation at the finish and give that to the chief building inspector.

Q. And would that go on after you'd made an initial bylaw compliance check?

A. I would have put that on at the start when I received it first, I used to check it through.

30 **CROSS-EXAMINATION: MR KIRKLAND, MR LAING AND MR ZARIFEH –
NIL**

QUESTIONS FROM JUSTICE COOPER – NIL

QUESTIONS FROM COMMISSIONERS CARTER AND FENWICK – NIL

WITNESS EXCUSED

HEARING ADJOURNS: 11.31 AM

HEARING RESUMES: 11.48 AM**MR KIRKLAND CALLS****DAVID HARDING (SWORN)**

5

MR KIRKLAND:

Mr Harding's evidence in respect of this matter was given when he first provided evidence so I'm not going to traverse that other than one question I want to put to Mr Harding, but before I do that Sir, I'm just wondering if this is an appropriate time to revisit the two questions that Commissioner Fenwick put to Mr Harding in respect to calculations. What I've done to assist Sir I've reduced the two questions to answers in writing from Mr Harding. I was going to provide that at lunchtime so if I can provide that to you now Sir, they're very short, the answers, but I thought that might help.

15

JUSTICE COOPER:

Thank you.

MR KIRKLAND:

The first question posed is on page 88 of the transcript and if I can take the Commission to TRANS.2012073.88 and at lines seven Commissioner Fenwick I think that's where you referred two questions to Mr Harding and in particular when you refer to, in line 10, that's a fairly crucial question. I think if I just basically leave it to you Commissioner to take those two questions further. The first question is on page 88, the second question on page 97.

25

COMMISSIONER FENWICK:

Q. The question was: do you think you might have taken the inter-storey deflections straight from your modal analysis?

A. Sir, I've reviewed the original calculations regarding the calculation of the building deflections. The location for the loads, the cases A and B are shown on sheet S7 of those calculations. The deflections in the X direction which is north-south are shown on sheet S15 and the Y

30

direction east-west are shown on sheet S18. These deflections appear to be for the equivalent static method as set out in section 3.4 of NZS4203. The wall shears for a dynamic analysis as per section 3.5 are typically lower than for section 3.4 so it's assumed at this time that these deflections were also lower and therefore not recorded in the calculations. Accordingly the value for K equals 2 was used as set out in section 3.8.1.1.

5 Q. Now you actually said sheet S18, you mean sheet S16 I take it?

10 **JUSTICE COOPER:**

Q. Line 4 Mr Harding.

A. No there's two - well actually I'll get them. No sheet S16 is where the Y direction earthquake deflections are shown.

15 **COMMISSIONER FENWICK:**

Q. Thank you. The next question: would the reinforcement you put in the wall and the slab have been sufficient to resist the shear and bending moment?

A. Yes sir, I have reviewed the original calculations regarding the bending moment in the floor slab under the calculated shear force on line 5, that is gridline 5, for an east-west earthquake. The calculation for shear in this slab is on sheet S57 but this did not include a calculation of bending moment. I believe it may have been sir on page 58 but that's not there. It appears that the walls on line C and line CD were assumed to act as flanges to a horizontal beam which was able to take this bending moment. I enclose two additional calculation sheets which show that six of the existing eight-sixteen horizontal rods in each wall are able to carry this bending moment. It is noted that these rods enclosed the vertical reinforcement in the ends of the walls on line 4 and that the top and bottom bars of the floor beams on line 4 also engage with these rods. So those additional sheets are ones which I prepared yesterday. They're not part of the original calculations, just to clarify what I've done.

20
25
30 Q. Thank you, I'll check those later on, but thank you very much.

JUSTICE COOPER:

Q. Do you say that there's a sheet that you know to be missing?

A. No Sir, I'm just saying that that 57 was the last page in the calculations.

5 I would normally have done that calculation next. It may have fallen off the end, it's just one of those things really.

EXAMINATION: MR KIRKLAND

Q. Mr Harding, would you please just tell the Commission when you go on site to carry out an inspection, the protocol of that inspection, and in particular with the CTV building?

A. Well normally the builder will give me a – preferably 24 hours, but normally slightly longer than that – notice of when he wants the inspection, so if he's pouring concrete say on a Wednesday, and it's going to be ready for inspection on a Tuesday, he'll ring me on the Monday and ask for the inspection and I'll go round, usually a couple of hours before the end of the day and do the inspection. I have a pad with me which has a carbon sheet underneath the top page so I fill out the top page of that sheet which is a site report form, and when I've made a list of usually the progress to date and then a list of things which I have checked, that goes on that top page. I then sign that and date it, and leave that top copy with the builder. On returning to the office the carbon copy is given to the secretary who then will type that up and put a number on it which is a sequential number following on from whatever the previous site instruction was. Then that typed copy is normally distributed to the affected parties and the typed copy and the carbon copy are put in the building file. Normally in a case like the CTV building you would expect to send a copy of that typed copy to the builder and to the architect.

1158

30 Q. And back in the early 80s Mr Harding was it common as you heard this morning for the Council to inspect say, or to attend inspections say two

out of six floors and then rely on an engineer to complete the inspections for the balance of the building?

A. Yeah I think it does depend a little bit on, I think what often happens is if the building inspector comes on site a few times and sees that the engineer has been making regular visits and he scans over what the site reports that the engineer has left behind are and asks the foreman whether in fact the engineer has been coming regularly, that gives them a degree of confidence perhaps if he also knows the person as well that in fact regular inspections are in fact being made in which case it probably falls down his priority list and he may not make as many inspections.

Q. So you as the engineer could continue on a standalone basis inspecting for the balance of a building?

A. Well I mean normally the builder himself will check it. I mean you don't just do his quality control work for him. The builder has his own people on site who will check it but in terms of an independent check that would probably be right, yes.

Q. So if the Council is not there for the balance of the building is that a second line of defence that is lost?

A. Yes I believe that is true.

CROSS-EXAMINATION: MR RENNIE

Q. Mr Harding, in paragraph 24 of your brief which I think you have in front of you, you discuss the permit process and you indicate that you have limited if any recollection of the process. Is that correct?

A. Yes, yes.

Q. So to an extent are you now in the position of having to describe what happened by gaining information from such documents as exist?

A. Yes Sir, yes.

Q. Now if we go to BUI.MAD249.0141.1 this is the document transfer form in your handwriting of the 5th of September 1996 is it not?

A. Yes.

- Q. And you will see immediately below Mr Tapper's name the next line that you are saying that this is said as requested by Mr Tapper by letter on the 27th of August. That is correct?
- A. Yes.
- 5 Q. And we've seen that letter, do you – I am not sure whether you need to go back to it but do you accept that what you are dealing with here is responding to requests that Mr Tapper made in his 27 August letter for further information in support of the permit application?
- A. Yes this is providing that additional information, yes.
- 10 Q. So that prior to this you or someone at Alan Reay Consultants will have sent an earlier set or plans or drawings in support of the application?
- A. I assume so yes.
- Q. Yes. Do you actually recall sending that earlier set of plans?
- A. No I don't. I wouldn't have sent them.
- 15 Q. You say you would not have sent them?
- A. Well as I said in my earlier evidence I had the impression that the earlier set of plans, what like from the Tapper letter most of the things on that Tapper letter are draughting items, they are pointing –
- Q. Yes.
- 20 A. – out omissions of things which haven't been done and it is referring to a set of plans which haven't been signed, so somebody sent off a set of plans to the Council which weren't complete. Now I wouldn't have done that.
- Q. And that might have – they might have gone direct or through the architect?
- 25 A. I don't – I can't comment, I don't know.
- Q. On the basis of the earlier plans were incomplete in draughting details is it possible what may have gone in is a set of plans held by the architect rather than by Alan Reay Consultants?
- 30 A. I have no idea.
- Q. Now all events in that document you then state that the drawings that you are now sending including amendments as requested?
- A. Yes.

Q. And can we read that correctly as indicating that in your view at that time with those amendments the drawings were complete in all respects?

A. Yes.

5 Q. In addition to that as we can see from the check box above, you were forwarding the calculations?

A. So it would seem, yes.

Q. And that is a second item listed below, it says "Calculations relating to Bondek structure after fire". You see that?

10 A. Yes.

Q. Do you have any recollection of having to do those calculations to support the drawings?

A. I have the calculations here.

15 Q. Yes it wasn't what they were, it was just whether you actually remember that now?

A. No.

20 Q. Now if we go down to .14 on the same document. You will recall this well. This is Mr Tapper's letter which has been discussed frequently and it is your view I understand it that the writing in the top right-hand corner is a note of yours received 1/9/86, see that?

A. I believe so.

Q. Yes, so can we take it from that that Mr Tapper's request went to you to be actioned and to be responded to by the document transfer form?

25 A. No I don't think you can assume that. That is just the day it was put on my desk. Whether it came direct to me from Mr Tapper, most things went through Alan or whoever the applicant was I presume. That is the date I would have received it.

30 Q. Yes the proposition I am putting to you is slightly different and that is that from the time you got it until you sent the document transfer form it was your task to assemble the response and send it off?

A. Yes.

Q. And again do I understand that you have no particular recollection of doing that process?

- 5 A. No well that list is basically a draughting list. It is a list of things which from a draughtsman point of view weren't on the drawings. They weren't a complete set of drawings so normally that letter would be passed to the draughtsman and you'd say to him, well make sure when you finish the drawings you also include these items here.
- Q. So although you had no direct recollection the process you expect you would have followed would have been to say that to the draughtsman, to receive back the plans, completed, check that?
- A. Yeah then signed the drawings.
- 10 Q. Yes?
- A. And then send them away.
- Q. Yes. And at that point in your mind the application for the building permit would have been complete unless the Council came back with further queries or requisitions?
- 15 A. Yes.
- Q. But you have no direct recollection now of who you spoke to in achieving that task?
- A. Well I don't believe I spoke to anybody. I think that was purely receiving that piece of paper and sending off the prints. I can't recollect having
- 20 spoken to anybody about that.
- Q. Shall we put it this way, you could see what needed to be done and you did it?
- A. Yes, well I didn't, the draughtsman did it, it was a draughting, as I say most of the things on that list are draughting items and I check that they
- 25 had been completed.
- Q. Now one of Mr Tapper's requests in that letter was the provision of calculations?
- A. Yes.
- Q. See that at the top?
- 30 A. To support the design, yes.
- Q. Yes, and those are not the calculations which are described on the document transfer form are they? They are the main calculations for the design?

A. Yeah well I don't know what calculations were sent to him, I mean, I do, as you say, we sent the last two pages of G78 with that document transfer form but whether the other calculations were also sent, I don't know.

5 1208

Q. Someone has written a note to the left of that received a day or two after letter sent. Do you see that?

A. Yes.

10 Q. Does that encourage you to the view that you sent the calculations earlier than you sent the document transfer form?

A. No I don't know whose note that is or what it means (overtalking 12:08:33).

15 Q. I'm not asking you whose note it is, but would it appear at least possible that your calculations for this building were sent at an earlier date than the 5th of September when you sent the document transfer form?

A. Yeah, I would be speculating. I've no way of knowing sir.

Q. In all events the calculations as now found are your calculations for the building aren't they? No one else did them?

A. No, not the final calculations. That's correct.

20 Q. And again having – knowing that those calculations by whatever means had made it to the Council, is it the position you would regard those as complete unless the Council came back with fresh questions or requisitions?

A. Yes sir.

25 **CROSS-EXAMINATION: MR LAING**

Q. Mr Harding I wasn't here for your prior evidence so if I cover matters that may have been already covered please let me know, but you say your recollection of inspections on the CTV site is very limited. Is that a fair summary of your evidence?

30 A. Yeah, there's one or two inspections that stand out in my mind but as a general run of them, there's nothing that stood out. The only ones that I can particularly remember are to do with the base for the tower crane

that I did and how that fitted in, and the block wall on the west side but other than that it was – it's just a blur really, there's nothing else there that particularly stood out.

5 Q. I think you said relying on your general procedures that you would be there before all concrete pours or be asked to be there before all concrete pours. That's correct isn't it?

A. That would be the ideal yes.

Q. And when you went to an inspection for concrete pours, would you look at any other related elements of the building that were in place?

10 A. Yeah, you check the boxing, the form work to make sure that that's all secure, that it's properly strutted down to either to ground or to enough floors to support the wet concrete. You check the cover to the reinforcing, that the reinforcing's in the correct location relative to the form work. Any other fixings that might be required for connecting one
15 panel to another or casting in anchors for floor slabs or precast items.

Q. Yes, and you said earlier that your practice was to complete the site record and leave a copy on site?

A. Yes.

20 Q. And is it likely that you would have adopted that procedure for the CTV building?

A. Oh, certainly.

Q. So there would at some stage have been records on site of all your inspections?

25 A. Yes, they wouldn't be numbered. The handwritten ones would have a date on them so you'd know what sequence they were, but the typed ones would have a sequential number on them, and usually that gets sent to the office and it may or may not be sent to the site as well, so normally those handwritten ones are kept in a folder in the foreman's office so that the building inspector can see them.

30 Q. Now you were asked about the issue of Council inspections and the words, second line of defence were put to you. Just to clarify that you have no personal knowledge about what inspections the Council took on the site have you?

A. No I don't, no way of knowing.

Q. Thank you, so there's a number of other possibilities isn't there?

A. Yes.

CROSS-EXAMINATION: MR ZARIFEH

5 Q. In paragraph 2 of your brief, dealing with the permitting issue, you said that Alan would normally complete the design certificate as principal of the firm. Now I take it you can't recall if there was a design certificate in this case, or can you?

A. No I can't recall.

10 Q. And did you hear the evidence this morning, the Council evidence that if calculations and structural drawings were sent in there might not be a design certificate required?

A. Yes.

Q. Is that your recollection of that time or not?

15 A. That's quite likely. I think it's one of those things which seems to vary as to whether councils require a design certificate or whether they require calculations or both, and each council has a different procedure so that's quite reasonable that that may have happened.

Q. But you're not sure?

20 A. No I've no way of knowing.

Q. And you also said that in paragraph 21 that prior to the submission of documents for a building consent, Alan would review the drawings and calculations and some cases Alan may redesign elements himself or refer them back to me for amendment or redesign. Now you've said,
25 "would" and "may", right?

A. Yeah.

Q. What actually happened on the CTV file, can you recall?

A. I have no way of knowing really. Once I've finished the drawings and signed them, if I don't hear back I assume everything's going well.

30 Q. So when you say once you've completed them and signed them –

A. Well once Alan has got a copy of them, I mean whether he – how he reviews them, what sort of review they get, you know, if there's a

problem I expect he would come back and discuss it but if there's no, if nothing comes back I'm assuming there's no problem.

Q. So once you've completed the drawings, what did you physically do with them?

5 A. Well gave them to him. I didn't submit, like you're talking about the tracings and signed them.

Q. Once the structural drawings were completed by you and you were happy with them?

A. Yeah, normally he would look at them before they go out of the office.

10 Q. And is that what you're saying in paragraph 21?

A. Yes.

Q. And was that something that he was religious about at the time?

A. I have no way of knowing.

Q. Well is that –

15 A. I believe so, yes, it was a generally, kept a pretty tight control on what went out of the office and if something wasn't right then he'd be asking it to be put right.

Q. All right, but to be fair you can't specifically remember handing him these drawings –

20 A. No I wouldn't remember, no that's just a routine day to day thing.

Q. So if your course was to hand him the drawings when you're finished, would you have signed them at that stage or not?

A. No I signed them after I'm comfortable with them.

25 Q. So would you be giving them to him before you were comfortable with them?

A. No, I – draftsman does the work and I check it. I make sure that if anything that should be on there is on there, when I believe it's on there, then I sign them and then it's a case of the review happening, after I've signed them.

30 Q. Right, so in this case it seems clear that the permit application went into the Council before that had happened, correct?

A. That's what I said before. I get that impression looking at the fact that the original ones weren't signed and that the list that Mr Tapper came

back with had some items on it which you know, Wayne wouldn't have missed, he would have got them if he'd finished the drawings, there wouldn't have been those things needed to be asked for. They would have been done.

5 Q. Did you – were you here when Wayne Strachan gave evidence yesterday?

A. No.

Q. Have you read it or heard it?

A. I've read it, I've read the first set of evidence and a later set, yes.

10 Q. So you will be aware of his change in evidence in terms of whether he was involved?

A. Yes I did read that in the second set, yes.

Q. Does that affect the evidence you gave?

15 A. I – my recollection is pretty much in line with Wayne's original set of evidence, I've –

Q. That he was involved you mean?

A. Yes, that's my recollection.

20 Q. Do you recall him saying that he recalled that on a certain day there was a rush, I think he put it, Alan Reay was – asked him to do something in relation to the CTV drawings and there was a gathering up of documents, presumably to go into the permit. Do you recall that?

A. No.

1218

Q. Do you recall anything that indicated there might have been a rush?

25 A. Not at this time, no. No more so than any other building. I mean every building there's a deadline on and we're usually behind it. That's just the way it goes so there's usually a rush on at the end of each job.

30 Q. And who would be putting, in terms of the office back then in 1986, who would have been trying to ensure that the deadlines were met and that permits were going in if that wasn't happening?

A. That's pretty much Alan. I often wouldn't know what the deadline was except that we were usually behind it.

Q. So are you essentially saying that apart from your part in the drawings and the calculations you didn't have anything to do with the permitting process other than that document transfer and doing what was required there?

5 A. Yeah, if there had been a request for information that affected the structure then I would have done it. In this case, as I say, I think the request for information was essentially draughting and so I would have made sure the things on that list were taken care of by the draughtsmen before I signed it but, no, other than that I had no other real input into
10 the permit process.

Q. I'll come back to that letter in a moment but we've heard that the permit application went in 17 June '86. That's the date on it.

JUSTICE COOPER:

15 It's July I think.

MR ZARIFEH:

July, sorry. Thank you Sir.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

20 Q. You heard that this morning?

A. Yes.

Q. And there's also that notation that records, "Structural plans to come" and then the date 26/8?

A. Yes.

25 Q. That seems to be an indicator that structural drawings were not with the original permit application, correct?

A. So it would seem, yes.

Q. They've gone in on the 26th of August if that note's correct and the Tapper letter's come out the next day hasn't it, 27 August?

30 A. Yes.

Q. And one of the things he's noted is that the plans weren't signed, isn't it?

A. Yes.

- Q. So that indicates doesn't it that some considerable time after the permit application has actually been filed by the architect the structural plans go in but even at that stage they're not signed by you?
- A. Yes that's how it seems, yes.
- 5 Q. And again one possible reason for that could be that there was a rush to get them in. You just can't recall?
- A. No.
- Q. Now you said that correspondence that came in such as the Tapper letter would normally go through Alan Reay first?
- 10 A. Yeah normally he would see everything first and then pass it on to whoever needed to be involved.
- Q. All right so presumably if he owns the business he wants to see what's going on?
- A. I assume so.
- 15 Q. But you would have got that Tapper letter then, not that you can necessarily remember now, but presumably from him if you'd got the letter in the first place?
- A. Yes I would and probably Wayne would as well.
- Q. Right but we know you got it because you wrote –
- 20 A. "Received" on it.
- Q. – "Received" on it?
- A. Yeah.
- Q. Have you seen the original that the Council provided the Royal Commission?
- 25 A. I don't think I have, no.
- Q. I'll hand it up to you. Can you see where you've written at the top right?
- A. Yes.
- Q. And have you written that in pencil?
- A. Ah, it looks like it, yes.
- 30 Q. All right, presumably as a structural engineer you would have a pencil handy at all times?
- A. Yes.
- Q. So that's when you would have received it from, you think, Alan Reay?

A. Or from the secretary, just down the chain yeah.

Q. Down the chain?

A. Yeah.

5 Q. And, as you've said, you would have set about trying to deal with the matters you could or forwarding them on to the changes in draughting that were required?

10 A. Well I don't imagine I would have done very much at all at this stage because I would have gone to talk to Wayne and say, "Well I assume you've got this under control, all these things that weren't done. Are you working on them?" And usually he was so I'd just leave it with him to go through and complete all the work on the drawings before I would look at it again.

15 Q. Now you said in paragraph 23 of your brief you said about the correspondence going through Alan and you said that he'd then refer it to you or the draughtsmen. If there was any contentious element then Alan may become involved?

A. Yes.

Q. So you meant a contentious element in relation to the permit application?

20 A. Yeah I mean if they had sent us a request for information and there was something on there that was, well we didn't think we needed to provide it or he was asking for something which would make a major difference to the job then that would be a contentious element. There's nothing contentious in that list.

25 Q. Well so you disagree with Mr Nichols on that. Do you recall his evidence?

A. No I don't.

Q. You don't recall it?

A. I don't think, I've probably read it but not recently.

30 Q. Well he said that in his view there were quite a number of items in the Tapper letter, including obviously the procedural things at the beginning, things that weren't signed, no calculations, et cetera?

A. Yes.

Q. And then I think some 14 or 15 items, separate items?

A. Yeah. Yes there are a lot of items there. As I say you wouldn't expect that many items if the drawings that had been provided were complete. I think the fact that they were half finished drawings or partly finished drawings is why there's such a big list.

5

Q. Right and I'll just find you what he said. He said in paragraph 34, "There also appeared to be an unusually large number of important details omitted in the drawings." Would you agree with that?

A. Yeah, as I say, a lot of the details haven't been drawn yet.

10

Q. Which he had meticulously listed, this is referring to Mr Tapper?

A. Yes.

Q. "In my time at the Council I never had to deal with a recognised consulting engineer in such a fashion."

15

A. Yeah, well it wouldn't be my practice to submit drawings that weren't complete. That's what happened when you were trying to speed things up I guess.

Q. Do you think that's the reason?

A. Why they were submitted as incomplete?

Q. Yes.

20

A. Certainly. I believe that they put them in so that the process can keep going with the Council while Wayne was finishing the drawings.

Q. Right, and was that something that happened not just on that occasion?

A. Well I'm not aware. As I say it's not something I would have done but how often it happened. I can't comment on that. I don't know.

25

Q. Right, the fact that it was a design-build and there was obviously financial pressure as a result would that have had anything to do with it?

A. It may well have. As I say, there would probably be pressure from that field, yes.

30

Q. Mr Nichols went on to say it was usually in the form of an amicable dialogue between professional peers with the matters of concern being of less, far less magnitude and significance. So he was saying that he thought that was an unusual number of items in significance. You don't agree?

A. No I think, as I say, if the drawings had been complete you wouldn't have a list that long. I think the reason the list is that long is because the drawings were not complete.

Q. Well do you say that they're all draughting?

5 A. I believe they are. Obviously there are calculations that he required for the –

Q. the fire rating.

A. For the fire rating.

Q. That's the item at the top of page 2 isn't it?

10 A. Yes it is but I wouldn't call that contentious.

Q. 0141.14. Tapper letter. It would be, oh the next page. Are you referring to the entry at the top?

A. Yeah.

1228

15 Q. "Incomplete notes. Refer line 1 Hibond mesh reinforced encasting does not provide restraint to Hi-bond for FRR purposes". Fire resistant is it?

A. Yes, fire resistance rating.

Q. So that's what you dealt with with the calculations?

A. Yes.

20 Q. Correct?

A. Yes.

Q. It also though goes on to say also "floor connection to shear wall system and general connection between floor slab and walls", correct?

25 A. Yes, that's correct. I think at that time it hadn't been drawn. When I look at the plan I see that on the, there are two plans. There's one plan that shows the overall floor and there's another drawing which shows a blow up of the lift shaft and it may be that Wayne hadn't yet completed that second drawing. I can refer to the numbers if you wish.

JUSTICE COOPER:

30 Well it is sheet 15 so that's 0284.16.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

- A. And the next page after that is the detail of the shear core so it may be at the time he was looking at sheet 15 and there's no details on sheet 15 of the reinforcing in the shear core.
- 5 Q. No but there is 16 isn't there?
- A. Yes, but you know whether 16 had been completed at that time I don't know. It says here shear core floor slab and landing details are missing, so it looked like that sheet hadn't been completed at that time.
- Q. Right, so you really just don't know what was there?
- 10 A. No. I just know that the drawings weren't finished so there was no point in me looking at them until the drawings were finished.
- Q. Okay, so when do you think you would have signed those structural drawings?
- A. Well once they had been finished.
- 15 Q. But you can't remember when that was?
- A. There's no date on them when I signed them I don't think but it would, it'd be close to the date when I sent out the document transfer because it would all happen once I'd signed them they'd be pretty much gone straight away.
- 20 Q. So this letter and we're talking about the original that you've got, that would appear to be the original that came from the Council to Alan Reay, correct?
- A. Yes.
- Q. And you said you passed on matters to the draughtsman to do?
- 25 A. Well I may have or Alan may have. I mean I imagine because of the items being mainly draughting that we would have perhaps both got a copy.
- Q. Right, and you completed the structural drawings or you signed them once they were complete?
- 30 A. Yes.
- Q. And you'd checked them?
- A. Yes.

- Q. And you forwarded them off on the 5th of September with the document transfer?
- A. Well I wouldn't have forwarded them I would have probably filled out the form or normally somebody else copies them and forwards them off.
- 5 Q. All right, but they were sent back to the Council?
- A. I assume so.
- Q. So this, the letter that you've got, the original, must have got back to the Council at some stage mustn't it, because that's where it came from?
- A. Sorry sir?
- 10 Q. That letter you're holding came from the Council file?
- A. Oh did it?
- Q. Yes.
- A. It's not from Alan Reay's file?
- Q. No.
- 15 A. Okay.
- Q. So it somehow got back to the Council. What I want to ask you is you said that you didn't have any dealings with Mr Bluck or Mr Tapper in person at that time?
- A. Yes.
- 20 Q. Correct?
- A. That's my recollection. I wouldn't have had any, any, anything with Mr Bluck but I don't recall any conversation with Mr Tapper that's correct.
- Q. So you can't explain how that letter might have got back to the Council?
- 25 A. This letter?
- Q. Yes. It didn't go back by you is what I'm asking?
- A. I –
- Q. Okay.
- A. I have no idea.
- 30 Q. If we can just get that document transfer form please? 0141.1.

JUSTICE COOPER:

Q. Can we just clear up that last answer reflecting on it? You say, your answer was you have no idea –

A. Well I –

5 Q. Just, what I think the question wants to know is whether in some way you were responsible for delivering back to the Council the original of the 27 August letter?

10 A. I didn't, I mean, I don't know, you're saying this is a Council letter. I have, it looks like my pencil on it as if this is the one that arrived on my desk for me to action so I –

Q. Yes, assume for the sake of the question that the letter that was sent by Mr Tapper dated the 27th of August, that original letter having been received by you and noted as having been received by you, ended up back with the Council?

15 A. Yeah, I've no idea how that would have happened.

Q. And is it possible that you delivered it back?

A. No, I wouldn't have visited the Council at all. Everything I did with the Council was pretty much by phone or by letter.

Q. You're quite sure about that?

20 A. Yes.

Q. Thank you.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. When you gave evidence last time you said that you thought that the writing on the left-hand margin of the first page was Alan Reay's?

25 A. Well I, I believed it was. I can't you know, that's just...

Q. But you're not sure?

A. I can't be sure, no.

Q. And if Alan Reay was responsible for that letter going back to the Council did you know anything about that?

30 A. No.

Q. Now it seems that the only documents that we have in relation to this permit application in terms of documents that came from Alan Reay's

office to the Council are the document transfer form that I was going to refer you to a moment ago? Correct?

A. Well they're the only ones I've been sent, I mean –

5 Q. And possibly this letter if it went back as we're discussing but there's no other documentation –

A. Yeah I –

Q. – that you've been made aware of?

10 A. No. No, I mean, there's a letter which I wrote to the Council regarding the fire rating of the Hibond which is a, it isn't at the time of the building consent but someone's sent me a copy of that letter. I don't know of any others.

Q. Well that's the next year I think isn't it?

A. Yes it is.

Q. Yes.

15 A. It's after the building's pretty much built.

Q. I'm talking about went in up to including the date the permit was issued?

A. Yeah, I'm only going by what's been sent to me since the Commission started.

20 Q. And you can't recall after the structural plans went in on the 5th of the document transfer form, you can't recall any discussions you may or may not have had with the council about the plans?

A. No.

Q. Of the building?

25 A. No. If I had, as I say, they were draughting queries. If there had been any engineering queries, if Mr Tapper had any problems there would have been another letter or some –

Q. Some discussions?

A. Well it wouldn't have been discussion, if he had had a problem he would have writ it in writing just like he has here.

30 Q. Okay, have you heard the evidence of Mr Nichols?

A. I believe I –

Q. Or have you read it?

A. – read it some time ago.

Q. Right, so are you aware of his evidence of speaking to Mr Bluck some time after –

A. Outside the building.

Q. – construction had commenced on the CTV building?

5 A. Yes.

Q. Are you aware of what I'm talking about?

A. I did see that evidence, yes.

Q. And his evidence was that Mr Bluck told him that he had done, Mr Bluck had done his due diligence about the building, this is when Mr Nichols raised concerns when he first saw the building, Mr Bluck said he'd done his due diligence and had been convinced by Alan Reay that the building was okay.

A. Yeah I read that.

1238

15 Q. Right, were you aware at the time, back in 1986, of Alan Reay becoming involved in –

A. No.

Q. – discussions with Mr Bluck or anyone else?

A. No.

20 Q. And is your evidence that once you did the document transfer form you don't think you had much else to do with it?

A. That's, that's my recollection. I didn't actually recall this form but I don't recall certainly no disagreement, no, no discussions with Graeme Tapper so I –

25 **JUSTICE COOPER:**

Q. When you said this form, do you mean that letter?

A. That letter Sir, yes.

Q. That you're referring to Mr Tapper's letter?

A. Yes.

30 Q. All right.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. You said in your evidence that you wouldn't have dealt with Bluck and in fact I think you said you don't recall dealing with Bluck on any project?

A. Yes.

5 Q. Is that correct?

A. Yes it is.

Q. Were you aware of Alan Reay dealing with Bluck on any projects? I'm not talking about this one in particular.

10 A. No I wouldn't, wouldn't be aware of that. That's not something that would have affected me.

Q. Why wouldn't you be aware of it? Is that something he wouldn't tell you or –

A. There would be no need to -

Q. – what makes you say that?

15 A. – really, I mean, it's, I'm just in the back room doing calculations so I mean there's no reason why he would talk to me about who he's talking to.

Q. Were you aware that he knew Mr Bluck and Mr Tapper?

A. I am sure he would have known them, yes.

20 Q. All right, but you're in the back room that didn't involve you. Is that what you're saying?

A. Pretty much.

25 Q. And the calculations don't appear to be the calculations for the whole building, the ones that are referred to in the document transfer form do they?

A. Ah –

Q. They're relating to the Hibond?

30 A. Yes, those are the ones which were sent with that document transfer form but as I've said I don't know whether or not the remainder would have been sent at some time. I have no way of knowing.

Q. And we've got no record of that now?

A. True.

Q. As to how they appear to have got to the Council but they, if that note's correct they would appear to have got there?

A. Well it's possible they were submitted with the preliminary, you know, with the first set of drawings but I don't know.

5 Q. Right, how's that possible when the 27 August letter says they're not there?

A. Well there you go, it wasn't then. You're quite right, not possible.

Q. So what I'm getting at is the calculations would appear to have gone to the Council at some stage after this 27 August letter but not with your document transfer form? Correct?

10

A. That's possible. I have no way of knowing that.

Q. And as you say if Mr Bluck had become involved it certainly didn't involve you and that doesn't surprise you?

A. That's correct.

15 Q. Just wanted to ask you a question about these answers to Commissioner Fenwick's questions and I'm not going to get into the technical matters but the building deflections – is that of the whole of the building?

A. Lateral deflections of the centre of mass of the building as I understand it from that program.

20

Q. And was that taking into account the southern coupled shear wall?

A. Yes. That was after we'd gone through however many iterations that that was the final design.

Q. When you say however many iterations, what are you referring to?

25 A. Well when you first pick the drawing up I do the hand analysis, the static equivalent static design based on the panels that are on the drawing when it comes to me in the first instance and that would have been without the southern coupled shear wall and I would have to determined from that that it was torsionally eccentric and that we didn't have enough
30 walls to resist torsion and it needed more so I would have then modelled it on the ETABS because having found it was torsionally eccentric we would have known we had to do that so being new to that program it took a wee while to get a reasonable result out of the computer and then

I tried to make it satisfy the lateral deflection requirements by making the walls we originally had thicker and heavier but that wasn't working so at that stage I spoke to Alan about the possibility of putting an additional wall on the south side which would help resist the torsion and so by the time we put that south wall in we were probably already up to the fourth or fifth computer run.

5

Q. And that's referring to your other evidence you gave where he went you presumed back to the client or the owner and came back to you?

A. Yes.

10

Q. All right, so when you first came up with the result of the ETags and realised that you had to put a south, a wall in in the south, did you have, what was your initial dimensions of it? Was it bigger than what it ended up?

A. I didn't have an original dimension, I was just basically trying to find out what my you know I would have made it as big as the one on the other side if I'd had my choice so it was symmetrical but obviously that wasn't going to be acceptable so the question we were posing was really how big are we able to make it? I was trying to make it as strong, big and strong as I could.

15

20 Q. Right and why would you have made it as big as the one on the other wall, the other side, the north?

A. Well that then makes the building symmetrical so you don't have that torsional situation.

Q. Okay, and –

25

A. Oh sorry, I'm not trying to say it should have had the wing walls on it. It would have, like the north wall was like about I don't know seven or eight metres long so –

Q. Are you talking about the width though?

A. I'm talking about the height along gridline 5, the length along gridline 5.

30

Q. Okay, so the length of the wall on the south side?

A. Yeah, I would have made the one on the south side as close to that length as I could.

Q. Right, and do you recall making that point?

A. Absolutely that was something which was understood. The bigger it could be the better.

Q. When you say understood, understood by who?

5 A. Well I think when we were discussing the fact that it was torsionally eccentric that by the bigger we made that wall the less torsionally eccentric it was so that was just inherent in the discussions I had with Alan when we were trying to put a number on how big we could make the southern coupled shear wall.

10 Q. Now just going back to this issue of the permit. I don't know if you're aware of the evidence of John Henry and similar evidence given by Terry Horn. They gave evidence of arguments between Mr Bluck and Mr Tapper over permitting issues and matters that Mr Tapper had come up with or problems that Mr Tapper had highlighted and of Dr Reay going over Mr Tapper's head to Mr Bluck? I appreciate you, this was
15 your first reasonable size job once you started it back at Alan Reay's, correct?

A. Well obviously I was also involved in the Westpark Tower doing some preliminary work on that as has been shown.

Q. Yes.

20 A. But yes this is the first one that I'd really modelled myself, yes.

Q. Were you aware of that from your observation or knowledge of what they said?

A. Oh I know that there were, there were arguments that were going on but I couldn't identify who they were with or what they were about or
25 whether they were Graeme Tapper or Bryan Bluck. I've got no, couldn't say that.

Q. Well what are you talking about when you say there were arguments?

A. Well I think like Terry says when Alan's voice starts being raised you can tell that there's somebody that he's having an argument with.

30 Q. So you're talking about Alan Reay arguing with someone what on the phone?

A. Typically, yes.

Q. All right, but what I was specifically wanting to know was did you have any knowledge of the Bluck/Tapper relationship if you like and of Dr Reay going over Mr Tapper's head to Mr Bluck?

A. No, that's news to me.

5 Q. And does it surprise that you didn't know about that?

A. No.

Q. Why is that?

A. Well there's no reason I would be. That's the part of the business that Alan looked after.

10 1248

Q. And when you say that what, when you say that part – what's the part?

A. Well if there was a dispute which was an insoluble problem or something that he was asking for which was unreasonable then normally Alan would take care of that. I don't see anything in this letter that would be worth arguing about if that's what you're asking.

15

Q. Well no I wasn't, I was just asking general and if it wasn't in that letter then it must have been something that arose separately, correct?

A. I believe that must be the case, I can't think what else, you know, there's nothing in here that would have caused Graeme Tapper to be as upset as he apparently was.

20

Q. Now just a couple of points finally. I just can't find the reference, but there's some evidence from Mr Scott who's going to give evidence, a quantity surveyor, which suggests that he recalls you telling him at one stage that there might have been a problem with the permit. Can you remember talking to him about that?

25

A. No.

Q. Might that have been, if that occurred, a reference to the Tapper letter or would that be something you'd discuss with him?

A. I wouldn't call this a problem. This is just routine.

30

Q. Well that's why I asked because you didn't seem to think it was. So might that be an indication that there might have been, here it is, paragraph 24 of his second brief, "It is possible that David Harding might have mentioned verbally to me that there was a bit of an issue over the

building permit. I do not recall any delay in the permit being issued and I had the impression that it was straightforward.” So he's a bit vague on that but that doesn't ring a bell with you?

5 A. No, I don't think I'd even probably met Tony at that stage so I think he made a mistake in as to who he was talking to.

Q. The other thing I wanted to ask you about, you talked about inspections at the site, and before a concrete pour.

A. Yes.

10 Q. In particular – Mr Jones who was the foreman at the CTV building has – is going to give evidence and his brief talks about the engineer which I presume he's talking about you, coming in and inspecting and he says, I'll just find it, sorry just bear with me – paragraph 49, “I would ring the engineer for every pour except the columns because the steel was there sticking out of the columns for them to see at their initial inspection.”

15 Presume you're talking about the vertical reinforcement. “Quite often in relation to the columns the engineer did not arrive at the site. They would say, ‘if you don't see us go ahead.’ This did not concern me.” In fairness I want to put that to you, have you got any comment about that?

20 A. I wouldn't have said that. That's one of my, yeah, no I wouldn't have said if I'm not there go ahead, on any element, I'm usually pretty particular. Sometimes columns can be difficult to see because you know you put the reinforcing in. What he might be referring to is that you have the reinforcing standing there and it can be inspected before you actually put the boxing around the outside of it, but there may be
25 situations when I've seen the reinforcing in place and all tied but they haven't actually enclosed it with boxing and I normally like to see it before they actually put the form work around it, because at that stage all you can do is peer down the top with a torch and you can't see very much. So if it was a situation whereby I'd seen the reinforcement, but I
30 hadn't actually inspected after the boxing was in and ready to pour concrete, that may well be what he's talking about.

CROSS-EXAMINATION: MR ELLIOTT

Q. Mr Harding, am I correct that you just described the matter set out in a letter from Mr Tapper as routine in your view?

5 A. No, I – perhaps the wrong word, there's nothing there that is worth arguing about. There's nothing there that involves you know, it's just something once the drawings had been completed then I expected that all of the things on there would have been satisfied.

10 Q. I see, so when there's a reference in that letter to floor connections to shear wall system and general connection between a floor slab and walls, you would accept that as something which should have been addressed?

15 A. It hadn't been completed at the time when he had the drawings, that – certainly those details are details which you'd want to see on the drawing before you approved it. So that's really what he's saying, they hadn't been done yet.

Q. And you accept they are things which should have been addressed?

20 A. Yeah, I would have – if the drawings had been completed those things would have been on there, but the drawings were incomplete at the time that they were put in. This is my reading of it, with all of the things on that list all point at that being the case.

RE-EXAMINATION: MR KIRKLAND

25 Q. One question, Mr Harding if I could have BUI.MAD249.041.15 brought up please. The handwriting half way down to the right, the printing, do you recognise that handwriting?

A. Well I believed it was Wayne Strachan's.

Q. And the – I assume they're ticks on the left-hand side?

A. I can't really tell but usually what Wayne would do is each time he had done one of those things on that list he would tick it off.

30 Q. As a final check?

- 5 A. Yeah, and when you look at the one where it's number 17, it says Thioflex and PEP backing strip not fire rated, well that's not a drafting item, therefore he hasn't ticked that one. That's not something that requires his – anything he can do on the drawing so that sort of reinforces that they were done by the draftsmen.

QUESTIONS FROM COMMISSIONER FENWICK AND COMMISSIONER CARTER – NIL

QUESTIONS FROM JUSTICE COOPER:

- 10 Q. If we can see BUI.MAD249.0284.16 please. Now on the basis of the Tapper letter of the 27th of August, you are I think inferring in your evidence that you've given to Mr Zarifeh and Mr Elliott, that this plan must have been incomplete when Mr Tapper was reviewing the plans prior to sending his 27 August letter. Is that right?
- 15 A. Yes, the things which are in his request have been added on the drawing which we have in front of us.
- Q. And one of the missing items was the connections between the floor slab and the north core. Is that right?
- A. Sorry Sir, say –
- 20 Q. One of the missing items were the connections between the floor slab and the north core?
- A. Yes well that plan doesn't show that, that I think that as I mentioned later those connections are shown on sheet 16 so ...
- 1258
- 25 Q. So let's go to sheet 16 which is the next number, 84.17. Do you say that this would have been available to Mr Tapper but he just hadn't read it when he wrote those comments beside sheet 16?
- A. Yeah he has also noted that they weren't complete on sheet 16 so I am suggesting that sheet 16 was incomplete at that time also.
- Q. Well what do you suggest was added to it subsequently?
- 30 A. Sorry?
- Q. What do you suggest would have been missing?

A. Well it looks like all the reinforcing and the floor slab details, I mean...

Q. Just indicate with the mouse?

A. It is pure speculation, I don't know to what extent the drawing was completed at the time it was submitted, I mean the...

5 Q. So there is nothing in particular to which you would draw attention it would be speculative to do so?

A. Yes absolutely. I think it is whatever stage the drawings were at when they were sent originally, but totally speculative.

QUESTIONS FROM COMMISSIONER FENWICK:

10 Q. I have just been looking at your drawings, the calculations you have given me we don't have these obviously on the system so we can't put them up but I do notice that you've – the bending moment you are referring to is not the one I referred to. You have indicated the force in line 5 on the wall is 300 kilonewtons in your calculations and therefore
15 the bending moment is 300 kilonewtons times the distance to the beam which is 4.350 metres so you have got a bending moment. That is a bending moment in the horizontal plane and your calculation takes that bending moment out in the vertical plane –

A. No.

20 Q. – two very different things as you are taking –

A. – no Sir it is all in the horizontal plane. I am just treating the flanges –

Q. You have drawn the sketch, you have taken, you have assumed there are six, H16 bars which run vertically –

A. No horizontally.

25

MR ELLIOTT:

(inaudible 13:00:23) system, if you would like to refer to it –

JUSTICE COOPER:

30 Well this is the calculations that we have been, we were given this morning and the questions are on page 2 of those calculations, the diagram there...

QUESTIONS FROM COMMISSIONER FENWICK CONTINUE:

- A. Yes it actually shows the diagram -
- Q. The diagram shows the six 16 bars running vertically?
- 5 A. Yeah the ones that I am referring to Sir, if you look at page 1 perhaps on detail one –
- Q. And they run vertically in that as well?
- A. I have got two H16 horizontally then two below them and two below them again so they are running horizontally. And there are two bars, the walls, the bars continue up the wall as well as down. There are pairs of
- 10 H16 horizontally at every 350 millimetres up the wall.
- Q. We are talking about the bending moment just beyond the wall, the wall on the outside of beam 4 –
- A. This is to take the bending moment from line 5 back to line 4.
- Q. Right, well I am interested in the bending moment at line 4 on the –
- 15 A. Which is what –
- Q. – left-hand side of line 4, the south side of line 4 and the steel you have got shown is running vertically not horizontally?
- A. No on the plan, even on the plan on sheet 1 I have pointed at H16 at 350 on the plan. Those are the horizontal bars I am referring to.
- 20 Q. You have got H16 at 350 running along the wall?
- A. Horizontally along the wall.
- Q. Yes sure, I agree, but the bending moment we are looking at, the section, is beyond the wall. Now are you saying that those H16s through the wall at 350 run into the slab?
- 25 A. No Sir they engage around those vertical bars and then engage with the beam so that bending moment is transferred into the beam.
- Q. Oh, so you haven't checked the strength of the beam for that bending moment?
- A. Well, you were asking me about the wall, I mean I can't –
- 30 Q. No I was asking you about the flexural strength on the left-hand side of line 4?
- A. Oh, well now we are talking different things. That is not what I was calculating, I see...

- Q. It is not what your calculations you have done, thank you. I accept that you have not answered the question I intended to put about the horizontal bending moment. You have taken something different. Is that correct?
- 5 A. Well I was talking about a horizontal bending moment in the plane of the area between gridline 4 and gridline 5. You are saying you wanted it to the left of gridline 4?
- Q. Which is the moment you have calculated because you have calculated the moment to that distance?
- 10 A. That is what I have calculated here, the distance to gridline 4.
- Q. Right, well thank you because we are not going to get any further with this discussion at the moment anyway, thank you.

QUESTIONS ARISING - NIL

HEARING ADJOURNS: 1.03 PM

15

HEARING RESUMES: 2.14 PM

MR RENNIE CALLS

ALAN MICHAEL REAY (SWORN)

5

MR RENNIE:

Sir, my intention is that Dr Reay read his brief and there are a couple of matters reserved from earlier points in the hearing. One related to matter not put to him about Professor Paulay and the other a request for a response that counsel put to him and I intend to deal with those at the end of his reading his brief.

10

JUSTICE COOPER:

Thank you.

15 **EXAMINATION: MR RENNIE**

Q. Dr Reay, you are Alan Michael Reay, you reside in Christchurch and you are a chartered professional engineer and a company director?

A. Yes.

Q. Dr Reay you have a composite statement in respect of permit issues.

20 Would you read from paragraph 38 please?

WITNESS READS STATEMENT FROM PARAGRAPH 38

A. "In those days it was the contractor who applied for a building permit and to whom the permit was issued. However, in this case it appears that the permit application was submitted by the architect Alun Wilkie Associates on behalf of the contractor. Mr Harding handled the permit process from ARCE's perspective. I was not involved with the council permit application process. I expect that Williams would have submitted the structural drawings to the Council.

25

30

I note that ARCE received a letter dated 27th August 1986 from Mr Tapper at the Council. Mr Harding would have dealt with the letter. I do not recall having anything to do with the letter or its response. I do not know who wrote the notation on the letter received a day or two after

letter sent, the ticks in the left-hand margin or the notations next to items S26, S28, S29 and S30 on the second page of the letter. I am unable to say how the items raised in Mr Tapper's letter were addressed or dealt with by Mr Harding or ARCE, as I do not recall any involvement.

5 Mr Harding appears to have responded at least in part with the document transfer form that enclosed certain documents. The calculations referred to (Bondek structure after fire, pages G60, G78 and G79) would not have been the complete set of calculations and I am unable to say when or how the full set of calculations was provided
10 to the Council.

Engineers and Council staff would sometimes meet or speak on the phone during the building permit application process. I note for example a letter dated 19th of August 1987 from ARCE to Williams. The fourth paragraph of the letter refers to detailed discussions between ARCE
15 and the Council at the time of building permit application. Those discussions would have been between Mr Harding and Council engineers.

Council engineers would do a full engineering review of some buildings and other times they would appear not to. Bryan Bluck knew all the
20 engineers around Christchurch. He knew the strengths and weaknesses of the Christchurch structural engineers. He would have weighed up the complexity of the proposed building with those qualities of the design engineer in determining the extent of a structural review. Usually the Council engineers would do the review themselves and sometimes they
25 would arrange an independent external review.

Mr Bluck and Mr Tapper were both dedicated and competent engineers. Mr Bluck had been at the council for many years. I am unsure of Mr Tapper's background, but his role at the Council was secondary to that of Mr Bluck. I had a professional relationship with Mr Bluck and I
30 respected him.

If the Council engineers were not sufficiently satisfied with their interpretation of compliance they would not issue the permit. That was my experience.

It was evident that the Council engineers reviewed this building closely themselves. The Council engineers must have believed that the building complied with the relevant code or they would not have issued a permit.

5 I do not recall any discussions with Council engineers about the building. I was not involved in the design, so would not have been in a position to discuss the details of it with Council engineers. I deny any suggestion that I pressured Council engineers to process or grant the permit. I do not recall any discussion with either Mr Bluck or Mr Tapper about the project.

10 A building permit was granted subject to conditions. There was no formal sign-off of a building required at the time. There was no equivalent to today's code compliance certificate under the Building Act 2004. The consent conditions sometimes required the building's designer to sign a form of construction completion certificate.

15 However, often the Council did not request the completion certificate at the end of the job. ARCL's file does not disclose whether any such sign-off was given in this case. If it had been given it would have been Mr Harding as the engineer responsible.

20 I do recall a design certificate was in use at the time and sometimes given as a form of design sign-off. A design certificate was similar to today's PS1 and it stated that the engineer believed, based on the information available to him or her, that the building complied with the code. There is no record of a design certificate being requested for the CTV building.

25

Third statement of evidence.

Peter Nichols.

I do not recall any dealings with Mr Nichols at any time while he was at the Christchurch City Council. I recall only dealing with Mr Bluck at the
30 relevant time, 1981-84.

I recall dealing personally with Mr Nichols once when he was at Riccarton Borough Council in which I answered his question and he subsequently approved the building permit.

At paragraph 26 of his evidence Mr Nichols refers to a conversation he had with Mr Bluck in which Mr Bluck said he'd been convinced by Alan Reay that his reservations about the design of the building were unfounded. I do not recall any such conversation with Mr Bluck. As I

5 I have said in my first statement I was not involved in the building permit process and would have no reason to speak with Mr Bluck.

I also note that Mr Nichols refers, at paragraph 29, to Mr Bluck requiring a design certificate as opposed to a verbal undertaking. I have no recollection of a design certificate being issued for the CTV project.

10 At paragraph 36 Mr Nichols states that I would go over the head of the ordinary engineer to speak to Mr Bluck. I entirely reject the evidence in this paragraph. I always appreciated the assistance and direction Mr Bluck provided and simply preferred to continue dealing with him."

Q. Now Dr Reay when Mr Henry gave evidence after you last gave
15 evidence I think you're aware that Mr Henry supplemented his brief with some oral evidence about a discussion between you and Mr Henry and the possible use of Professor Paulay in respect of calculations to the Landsborough House building. Do you recall that?

A. Yes.

20 1424

Q. And Mr Henry's evidence was that you were dismissive of the use of Professor Paulay for that purpose and he quoted you as saying, "What would he know about it." You are aware that he gave that evidence?

A. Yes.

25 Q. And your position on that is?

A. I reject that entirely, there would be no more suitable person than Professor Paulay to have reviewed that work. I had the utmost respect for Professor Paulay and he was in my mind my mentor in terms of engineering.

30 Q. In your professional career did you have occasion to seek similar guidance from Professor Paulay?

A. Yes on several occasions I approached Professor Paulay and he assisted with various issues.

Q. And was that before or after 1986?

A. It – certainly after and possibly before.

Q. Now separately when you last gave evidence Mr Elliott for Counsel, asked you to look at expert evidence which you had not to that point
5 looked at and also to consider what you might say to the Commission and families in the light of that. Do you recall that?

A. Yes.

Q. And have you done that and is there something you wish to say?

A. Yes, I do.

10 Q. Can you say it please?

A. This is a terrible tragedy and I really feel for those who have lost their loved ones. To the extent that I can I have tried to provide the Commission with assistance to understand the cause of this tragedy. I have spent my life working in engineering and have always tried to
15 maintain the highest standards of the profession. I apologise to all the families affected as this building did not meet my standards.

CROSS-EXAMINATION: MR KIRKLAND

Q. May I please have slide BUI.MAD249.0141.8 please. Dr Reay this is the permit application form. Is that correct?

20 A. Yes I think so.

Q. Yes, and it was filed with the – at the Council by Alun Wilkie’s firm. Is that correct?

A. Yes.

Q. Would a copy of this document have been sent by Mr Wilkie’s firm to
25 your firm in the ordinary course?

A. No and I wouldn’t expect it to.

Q. And down the bottom of the form it has got, “Structural drawings to come.” You can see that?

A. Yes, yes.

30 Q. In the early 80s was the practice of your firm to be involved and also to send directly from your firm documents to the Council or permit applications that were incomplete?

5 A. It wasn't the practice of the firm to send incomplete drawings to the Council. In the case of a design-build project such as this where the application is made in this case with the architect we would have expected that the architect or perhaps the builder would have provided the structural drawings that were initially sent. We would have – I would have expected that the builder would have had a preliminary set of structural drawings which he would use for forward planning. He would use them – provided the foundations were complete – he would use them for commencing ordering material for foundations so that he could
10 commence the work at the earliest stage. It is quite likely that the builder provided the structural drawings to the Council.

Q. Mr Harding's evidence Dr Reay is that your office had a lot of deadlines to meet during this time. Is that correct?

A. That's been the case for 40 years.

15 Q. And therefore the practice grew that documents in a, now I understand in breach of a bylaw would be sent off to the Council incomplete and in particular in this case, the structural drawings?

A. Well we are not in control of the drawings that the builder has and chooses to send, if it was the builder who sent them.

20 Q. At the bottom of this permit it has got the words it is, "Received 26/8." So I am assuming that means the Council has received the structural drawings on that day?

A. I presume so.

25 Q. Yes, and Mr Tapper appears to have responded remarkably quickly because the next day his requisition letter if I can call it that came out. Can you recall that?

A. Yes.

30 Q. Yes. Can I have slide please BUI.MAD249.0141.14. This letter appears to be in play a lot in this hearing Dr Reay so you probably know it reasonably well by now, the content of the letter?

A. I seem to learn more every day.

- Q. Yes. Mr Harding's evidence is that the requisitions, other than one and I will come back to that, are mainly in the domain of the draughtsmen to attend to. Your response to that?
- A. If Mr Harding says that in respect of this letter he considered that it was a draughting matter then that would be how he saw it.
- 5 Q. Yep, how do you see it?
- A. It is a function of the drawings that were originally put in as to the extent to which they were complete. If they were visibly incomplete it would only take a short time for Mr Tapper to assess them and decide that further information or completed drawings were required.
- 10 Q. And at F17 on page 2 of that letter, Thioflex et cetera, that is the issue that Mr Harding's evidence is that that was more in the domain, in his domain. Do you agree with that?
- A. More in whose domain?
- 15 Q. In Mr Harding's domain, an engineer, a structural engineer's domain?
- A. F17?
- Q. Yes?
- A. I would have thought it was in the domain of the architect or fire engineer when you are talking about fire ratings.
- 20 Q. Yes. Mr Harding as I recall wrote to the Council, this is, I think when the project was finished and satisfied the Council as to the fire rating of the HiBonds, is that correct, the HiBond floor?
- A. Yes but this is a fire rating, this is a sealant issue. This is quite different.
- Q. Thank you. This letter is addressed to Alan M Reay, Consulting Engineers. I haven't read all the evidence but may be this has been addressed, who opened the mail when it came into your office in the morning?
- 25 A. There was a secretary who opened it.
- Q. And after that where did it go to?
- 30 A. It either came to me or if I had given direction that a specific job was through the mail or correspondence was to be dealt with by someone else then it would be delivered direct to that person.

Q. We've heard the evidence today that, to the number of requisitions in the Tapper letter are reasonably at the high end of the schedule – of the level. What do you say to that?

A. I don't understand the –

5 Q. The evidence this morning was that the requisitions, the number of requisitions in the Tapper letter are outside the normal number of requisitions that would be received. Your response to that?

A. I wouldn't consider the number exceptional given that it appears to have related to incomplete drawings.

10 1434

Q. So a letter with this many requisitions is in the ordinary course to you?

A. Based on what it appears the level of the drawings were that were provided.

15 Q. Your PA opens the mail. Is this not a letter that would have been given to you to peruse?

A. If that letter had been given to me I would have simply passed it on to David Harding.

Q. After reading it?

A. I may not have read it.

20 Q. Mr Harding's evidence, Dr Reay, is that he had nothing to do with the permit process. You obviously disagree with that?

25 A. Well in terms of handling this letter he said he did. In terms of fire rating issues, well that was really post burn that he said he did. I don't, I can't say absolutely whether he did or didn't in terms of whether he visited the Council.

Q. It seems to me Dr Reay the impression that you're giving this Commission is that you had very little to do with the CTV building and it was all on a stand-alone basis notwithstanding he was an employee of yours, Dr Harding's project. Your response to that?

30 A. Yes I had little to do with it and I relied on Mr Harding as a registered and 10 year experienced post registration engineer.

Q. We've been through that a number of times but surely Dr Reay I recall I think it's paragraph 81 of Mr Henry's evidence corroborated by

Mr Harding that you ran your office with an iron hand and a tight fist and knew exactly what was going on. Isn't this just one building out of many that you were not involved with?

- 5 A. I didn't run the office as you've described at all and my only, in terms of running the office it was from a business management point of view and I did not run other engineers', registered engineers', projects. They were responsible for them.

CROSS-EXAMINATION: MR MARSH – NIL

CROSS-EXAMINATION: MR LAING – NIL

10 **CROSS-EXAMINATION: MR ZARIFEH**

- Q. Dr Reay can I just deal with a couple of matters you've raised following the reading of your brief. Firstly, Mr Henry and his comment in his evidence about the comment that he said you made about Professor Paulay. Do you accept that John Henry was reluctant to go into detail about how you were dismissive in relation to Professor Paulay. Were you here when he gave his evidence?
- 15

A. Yes I was. I don't accept that.

Q. You don't?

A. No.

- 20 Q. I'm talking about from his manner and demeanour in the witness box. You don't agree with that?

A. That's what I've said.

Q. So do you say that he's mistaken then about you saying, "What would he know?" or words to that effect. You say you didn't say that?

- 25 A. I've said I did not say that.

Q. Do you think that he might have got the wrong impression of the words that you used?

A. I've no idea.

Q. Can you recall the conversation?

- 30 A. Not exactly because when you don't say something you don't say it.

- Q. Well how do you know if you said it if you can't recall it?
- A. Because I would not have said that.
- Q. Why would you not have said that?
- A. Because of exactly what I've already said. I held Professor Paulay in
5 the highest respect and if anyone was knowledgeable in the questions
that were there, he was the person.
- Q. Well John Henry's evidence was that he took from your comment, "What
would he know?" as a reference to his being an academic and not a
practising structural engineer. Is that not something that you might have
10 thought in the context of that conversation?
- A. No because he had been a practising engineer before he was an
academic.
- Q. So John Henry has got it completely wrong about that comment but he's
also, according to you, got it completely wrong that your attitude was
15 dismissive towards Professor Paulay?
- A. He has got it wrong.
- Q. And you wouldn't have done that even though you can't recall the
conversation because of the high regard you had for him?
- A. Exactly.
- 20 Q. You said that the builder, you think it's quite likely the builder would
have put the plans in, right?
- A. I think that's a strong possibility.
- Q. The builder though would have got them from your office wouldn't he?
- A. Yes.
- 25 Q. Because they had to be signed didn't they?
- A. Not if there was an initial preliminary set issued to the builder for him to
commence his planning and preparation work.
- Q. Okay so what plans are you talking about that the builder might have
taken to the Council?
- 30 A. A set of the plans that it may have been issued to him prior to the
drawings being completed. It's not uncommon for builders, particularly
back then, to get a preliminary set of drawings that aren't complete to
start to undertake their planning of the project.

- Q. Well wouldn't the drawings have to have things like the reinforcement on them if they are going to use them for costing?
- A. I didn't say costing. I said planning the project.
- Q. Right, what kind of planning. Surely it would be costing in the main
5 wouldn't it?
- A. No, the first stage in a project is to build the foundations and it appears the foundation information was probably complete and they may well have started ordering materials and planning for the actual excavation and construction of the foundations of the building.
- 10 Q. All right but you don't know, you're surmising that?
- A. I'm working on what tended to happen at that time.
- Q. In relation to the Tapper letter, you know what I'm talking about?
- A. Yes.
- Q. You said that it was a function of the drawings and if they were
15 incomplete then it wouldn't take Mr Tapper long to work that out, correct?
- A. That's correct.
- Q. And we know if the dates on the Council file are right that 26 August the structural drawings appears to go in to the Council and the next day
20 there's the Tapper letter?
- A. Yes.
- Q. What you're saying it wouldn't take him long to work out they were incomplete, correct?
- A. That's right.
- 25 Q. And do you agree with me that he would need those drawings to be complete, which they weren't, to be able to properly assess the building?
- A. Yes he would and he may well need the calculations as well.
- Q. Exactly, and only then might he have been in a position to properly
30 assess the lateral load for example given the type of structure the building was?

- A. Well he could have assessed the lateral load from the information that would have been on the original drawings but he wouldn't have been able to have determined whether the building complied or not.
- Q. To properly do it I mean, correct?
- 5 A. You could assess the lateral load with the drawings that were there.
- Q. You said a moment ago that the building did not meet your standard, that's right?
- A. Yes.
- Q. And you also said a moment ago to Mr Kirkland that you had very little to do with the CTV building. Firstly, when you say your standards are you saying you had high standards at that time?
- 10 A. I have said I had.
- Q. So were you talking about best practice, code compliance. What are you talking about?
- 15 A. I'm talking about my standards.
- Q. Which would incorporate those two matters?
- A. I'm not talking necessarily about code compliance. The building could well be code compliant or it may have some elements that aren't. I'm saying that by my standards, it didn't meet them.
- 20 1444
- Q. Well I thought you said last week that the building wasn't code compliant.
- A. May not be.
- Q. Said there was a problem with the beam column joints. You didn't think they were compliant you said to Mr Elliott, did you not?
- 25 A. I have said that there is aspects of the beam column joints where the transverse reinforcing may not comply with the code.
- Q. Right, well does that mean non-compliant?
- A. It – I am uncertain as to the degree or effect of the non-compliance.
- 30 Q. And I think you also comment about the floor slab connections to the north core didn't you?
- A. Yes and again I'm uncertain as – because I've never analysed it as to whether they did or didn't comply.

- Q. So if you have very little to do with it, and there are design issues or problems with the building, then it must be Mr Harding's fault. Is that what you're saying?
- 5 A. I've said already that in the end if Mr Harding's made an error that ultimately it is the responsibility of my company.
- Q. But in the first place it's if there are errors made it will be errors made by him?
- A. That is a possibility.
- 10 Q. What I'm talking about is if there are design errors or design deficiencies they will be at his door in the first instance?
- A. That is possible.
- 15 Q. I just want to briefly ask you about a couple of things that don't relate specifically to permitting but I suggest that they do and it's really is part of this theme that Mr Kirkland put to you about you having little to do with it. When you took on John Henry into your firm – trying to remember the date now but I think it was late 84 was it, John Henry?
- A. Yes it was around then.
- 20 Q. You took him on for the express purpose of multi-storey buildings, didn't you?
- A. Not for the express purpose.
- Q. Not?
- A. No, he would have been involved in other things, there was, as he said himself there was only a couple of those buildings in the pipeline at the time. It was not a full-time job.
- 25 Q. Okay, well was that the main reason then, was that the main reason you took him on?
- A. That was one of the reasons.
- Q. Well –
- A. And his experience.
- 30 Q. I'm just quoting from your own evidence in the first brief where you said, "In the late 1984 I employed John Henry to undertake primarily medium height multi-storey buildings." Okay.
- A. Yes.

- Q. And you said a moment ago that you took him on obviously for that purpose but because he had experience in that. Correct?
- A. Yes.
- 5 Q. And you recall John Henry's evidence about that. He said that he understood from discussions with you that you needed his experience for those jobs and that's true isn't it?
- A. If we were going to design them in the manner that he had previously designed buildings.
- Q. Is that what you said to him, is it?
- 10 A. No that's what I'm saying to you, in terms of this. I didn't – before he came I didn't know exactly the process that he had used to design multi-storey buildings.
- Q. Dr Reay, you took him on because you had multi-storey buildings in the pipeline and you wanted someone with experience to design them.
- 15 Correct?
- A. Yes.
- Q. And you recognised that experience was necessary, correct?
- A. It was essential to me that it was – that he was a registered experienced engineer.
- 20 Q. Experienced in multi-storey design, correct.
- A. Experienced in – yes, in doing, definitely at that time experienced in multi-storey, yes.
- Q. Experienced in ETABS as well?
- A. No, wouldn't have been discussed.
- 25 Q. So that didn't matter that he had experience in that?
- A. No, the fundamental question was ability to design buildings.
- Q. All right, so you agree with John Henry's evidence where he said that these kind of buildings required both experience and a relatively high level of expertise in design?
- 30 A. No I don't agree – I've already said in fact that the high level of expertise that he says is something that I didn't think was actually in that – at that level.

Q. But you did want him because he had experience and presumably expertise in it?

A. Yes.

5 Q. Well that's got to be right doesn't it. If you're going to have someone design a multi-storey building, you want to ensure that they've got some experience in that particular facet?

A. It depends on the extent to which I was able to work on the project as well and I didn't envisage that I would be working on that – on those projects to any great extent.

10 Q. So that's why you needed someone with that level of experience and expertise?

A. Mmm, at that time yes.

15 Q. Well you take on David Harding. You know he's got no experience in multi-level design or ETABS don't you, you knew that when you took him on?

A. I don't recall whether I actually discussed those particular items with him.

Q. Well I thought you agreed last week that you didn't, you knew he didn't have that type of experience?

20 A. I knew after he came, I certainly knew after he came that he didn't have ETABS experience.

Q. Right, so you knew that you couldn't leave him to it I suggest as you might have been able to with John Henry?

25 A. That's – he, for the first job he did he was following along from where John Henry had left off and it was – that was a job that I'd had some involvement in with John Henry because I actually chose what the structural form was for that particular building. He handled that building satisfactorily in my view and from there he undertook, he wanted to undertake the design of the next building and he was confident that he could do it, and I accepted that.

30

Q. But was that really the only test that you applied? He thought he could do it, he was confident so you let him?

A. Well I've – in terms of David Harding he was a very good engineer and I – with the work I'd done with him I had confidence that he understood what he was doing, he understood his limitations and in particular understood the building codes.

5 Q. Well you thought that. I think you said last week you might have had – you might have had cause for thought about that, second thoughts about that.

A. Subsequently but –

10 Q. Well John Henry gave evidence that in 2011 when he learnt that David Harding had designed the CTV building he immediately thought he shouldn't have been doing that, knowing what he knew about him and his previous experience. You remember him saying that?

A. Yes.

Q. You don't agree with that obviously?

15 A. No I don't.

Q. So you don't accept that what you should have done in hindsight was to supervise, monitor, to review more closely than you did, or do you accept that now?

20 A. If Mr Harding had come to me and said that he was having issues and problems, I would have immediately stopped him doing the job and I wouldn't have proceeded with it.

Q. But because he didn't, or you say he didn't then you didn't need to, or you didn't feel like you needed to?

A. I had no reason to.

25 1454

30 Q. So is it your evidence then that effectively apart from giving him the job in the first place and then talking to him about the south shear wall on that occasion that you've talked about, apart from that you didn't have really anything further to do with the building and the design of it. It was all up to him. I think you said maybe to Mr Kirkland last week that he was flying solo effectively, is that right?

A. It was up to him, he wasn't solo. If he had a problem he could come and talk to me.

Q. Also apart from that south shear wall conversation there were no other discussions about the design?

A. I don't recall any.

Q. And no, "How's it going? What are you doing? Let's have a look?"

5 Nothing like that in all that time?

A. No.

Q. No chats at morning or afternoon tea with him, "How's it going and discussing –

A. Oh, he might've –

10 Q. – any problems?

A. – we could've had a chat about, as you do at morning tea, you know, "How are you going? Everything all right?" Something like that, but I wouldn't recall specifically.

Q. So you might've had discussions, is that what you're saying, might've had discussions about the design at morning and afternoon tea?

15

A. No I don't believe so.

Q. What makes you so sure about that?

A. Because if he'd started to raise concerns and questions I would've been alerted to an issue.

20 Q. Right, but –

MR RENNIE:

(inaudible 14:55:37) Commissioner of course, but this is largely a re-run of what we went through on design. I have taken care to confine this evidence to permitting which is the specified topic. I'm not making a formal objection but it does affect what I have to re-examine on Sir.

25

JUSTICE COOPER:

Yes, Mr Zarifeh?

30

MR ZARIFEH:

Well Sir, this is the only other issue. I was dealing with the south wall but I do submit that it's relative to credibility and that's really the issue I'm going to

come to in a moment, but that's why I'm dealing with it but I'll try and keep it as short as I can.

JUSTICE COOPER:

- 5 Yes well, I don't wish the questioning to be diverted Mr Rennie. Mr Zarifeh has explained its purpose. If it leads to re-examination well so be it.

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

- Q. You don't think that there would've been any discussions about the design in the morning and afternoon tea sessions?
- 10 A. Not that I recall.
- Q. And I think you said that you think you can say that because if he'd raised any issue that would've caused you to remember it, correct? That's what you said?
- A. It would've caused me to be concerned if there was significant issues raised.
- 15 Q. But if you had, in chatting to him, had input in the discussions you had with him about the design, you may not recall that specifically?
- A. In dealing with engineers of the calibre of either Mr Henry or Mr Harding it's important that if they're responsible for the job, they're doing the job. That I'm not directing them, that I'm not interfering in it. It's their job and their responsibility.
- 20 Q. So really we come back to, in all that time there's really only the one specific conversation about the south wall?
- A. That was, I was just making sure that overall there wasn't something, that he wasn't being, getting involved in something that was, that would be an undesirable outcome in terms of engineering.
- 25 Q. Right, so that's why you raised it?
- A. Well I asked him what the layout was, and he showed me and told me there was a south wall.
- 30 Q. And why, why did you have concerns when you raised that?
- A. I've probably remembered the design of the Landsborough House building which started as a shear wall system that wasn't closed and I

wanted to make sure that we weren't going to waste a lot of time on another one of those.

Q. Right?

5 A. So it required either a closed tube, or in my view preferably the south wall.

Q. Right, so you had some input into the south wall?

A. I made, I didn't necessarily have input into it. I only asked what the layout was.

Q. So you asked him what the shear wall layout was?

10 A. No, I asked him the overall layout and established that there was a south shear wall.

Q. And you knew there was a north shear wall?

A. Well the north shear wall was on the drawings.

Q. Yes, you'd seen the drawings?

15 A. I can recall being shown, I think, an architect's plan.

Q. But not the structural drawings?

A. No.

Q. Would you not have wanted to look at them?

A. They wouldn't have probably have existed at that time.

20 Q. Well, would he not have had to have done some of the ETABS analysis before you had this conversation with him?

A. I don't know.

Q. Well it makes sense doesn't it?

A. Well he may have, but I don't know.

25 Q. Well I suggest that his calculations show that initially he didn't have the south wall in. He put it in after the ETABS showed him that there was too much torsion without it. You don't recall that?

A. Well I don't recall that, no, not that.

30 Q. But you know his version of the conversation? You don't agree with that, that he came to you after the ETABS and said that there was going to have to be a south wall in and he said the day four runs, or something, computer runs, and there was resistance to having it too long?

- A. No I don't recall that at all.
- Q. But that could've happened?
- A. Given that I had to actually ask what the layout was I think it's unlikely.
- Q. Unlikely that he came to you, you mean?
- 5 A. Mmm.
- Q. What, so you think that this engineer who hadn't designed such a building before could work all that out and then you just happen along and ask and you're shown the end result. Is that what you think happened?
- 10 A. Well I don't know precisely what he did prior to him showing me the drawing of the south wall.
- Q. When do you think that conversation was?
- A. I don't know.
- Q. I suggest that would've been around June when the ETABS analysis was being done. Sound about right to you?
- 15 A. I don't know.
- Q. You remember there's one and a half hours on the timesheet for that, that job? Your timesheet?
- A. Around that time yes.
- 20 Q. In June yes. Would that be this conversation?
- A. It wouldn't have been in a one and a half hour conversation, it would've been 10 minutes.
- Q. Would it? So what would you have done for one and a half hours in June then?
- 25 A. It may well have been organising who was going to do the drawings, planning it. It could've been providing a fee. I'm uncertain.
- Q. Or it could've been, as he says, the discussion going through the plans, showing you what had happened with ETABS, you going back to the architect, discussing the length of the shear wall and then finally deciding on it, as he says?
- 30 A. I don't believe I did that.
- Q. You don't believe you did that?
- A. No.

Q. Have you always recalled this conversation about the shear wall or have you just recalled that recently?

A. No it's just something that I remember from the job. It just stays, stayed in my mind.

5 Q. Why I ask is because you didn't put it in your first or second briefs, in your reply brief to David Harding's evidence. Was there any reason for that?

A. No. No.

10 Q. Did you not think it was important to raise before he did, when you were outlining what happened?

A. Well I didn't put it in. I can't say whether I thought it was or wasn't important.

JUSTICE COOPER:

15 Q. Well you wouldn't have left it out because it was important would you?

A. No I wouldn't have deliberately left it out if I thought it was significant.

1504

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

20 Q. Well I thought you did think it was significant. I thought you were concerned because of what had happened in Landsborough House and the fact that it was so close to the line torsionally. Isn't that what you're saying?

A. Yes but in terms of remembering, you're going back whatever years it is and your memory on some aspects does come back a bit, once you see the pattern of how things are being, you know, and you think about it. I wouldn't have, when I did my first brief of evidence I wouldn't necessarily have been thinking about that.

25 Q. Right, what I'm putting to you is that it only appears in your third brief when you're actually replying to him, Harding raising it and saying this is what happened and you go, "No, that's not what happened, it was like this."

30 A. Well it must have jogged my memory.

Q. Now you were asked a moment ago about the – whether you had a tight control on the firm back in '86 and you said you didn't agree with that but you said that the control you would have had would be on running the business. Correct?

5 A. Yes.

Q. Because you were the sole principal, correct?

A. Yes.

Q. And as you were say you were running a business so it was important that you have systems in place – that jobs get pushed through at a reasonable pace. Correct?

10

A. Not pushed through at the expense of quality.

Q. Well I didn't say that, but it was important to keep the money flowing wasn't it, to pay everyone and hopefully make a profit?

A. My priority has been actually that the quality of the job, secondary has been the actual money flow as long as there's enough to pay the staff.

15

Q. But back then it was a different firm from what it is today. We heard from Mr Smith yesterday about how it's grown, correct, in size?

A. Oh, it's certainly larger today.

Q. Right, so it was easier back then to keep an eye on what was going on wasn't it, in terms of projects and who was doing what and where they were up to?

20

A. No I don't agree with that.

Q. Part of that keeping an eye on the business would be looking at the mail that came through wouldn't it? As I think you've acknowledged, that's what you did?

25

A. I didn't, I don't know that I looked at all the mail, that's – I've said that if I was satisfied that someone such as Mr Harding or someone else was handling certain aspects of a job, then I could well have directed the secretary to just deliver the mail, that section of the mail direct to them which is what happens today. I don't see all the mail.

30

Q. But the Tapper letter for example is addressed to you isn't it?

A. Yes but a lot of things are addressed to me that actually people know in the office that they belong to jobs that others are looking after.

- Q. But it didn't have a job number did it, it had the address and the permit number. Anyway, you're saying you don't recall it coming in anyway aren't you?
- A. No.
- 5 Q. But you're accepting that mail could well have come to you in the first instance?
- A. Oh, it's possible.
- Q. And all I'm suggesting is that's natural if you're a sole principal. Graeme Tapper, I'm going to ask you something about him. I think you
- 10 accept that you had a number of – I'll call them arguments with Mr Tapper over the years over engineering issues or permitting issues. Correct?
- A. I don't agree that I had arguments with Graeme Tapper.
- Q. What do you call them?
- 15 A. Well we used to debate certain items. It was not an argument.
- Q. All right, so you had a number of debates with Mr Tapper over the years?
- A. Very few but occasionally we would have disagreement over certain aspects and he would have one view and I would have another.
- 20 Q. And Mr Tapper's approach was such that unless you could convince him otherwise he would insist on doing it his way, correct?
- A. I don't think that's correct all the time.
- Q. Well that was the evidence you gave. I'm just putting it to you.
- A. No, he generally stood firm on what he thought but that – you couldn't
- 25 say that that was universal.
- Q. And you don't agree then that that led to frustration on your part with him and that attitude of his?
- A. No, I actually quite enjoyed dealing with Graeme Tapper. He was extremely knowledgeable in welding for example and I learnt quite a bit
- 30 from him in terms of welding.
- Q. So you don't agree with John Henry's evidence that you didn't like his close scrutiny of your firm's applications?

A. That's not correct. I was – I expected to have scrutiny of the firm's applications, I relied on it.

5 Q. So when he said at paragraph 151, "I found that Alan Reay and ARCL did not like Graeme Tapper's close scrutiny of their work", you don't agree with that?

A. No.

Q. You don't agree with Terry Horn's evidence then yesterday about on a similar theme?

A. No.

10 Q. That led to frustration on your part, that the Tapper attitude and his close scrutiny?

A. No that's not correct and Terry Horn wouldn't have been involved in it, in my dealing one to one with those Council people.

15 Q. Well he could well have become aware of it though couldn't he. Certainly if it happened more than once which is what I'm suggesting to you?

A. He wouldn't know who I was talking to if I was on the phone and he wouldn't know who I was going to see if I went out. I didn't report to Mr Horn.

20 Q. I'm not suggesting you did, and would John Henry not know either?

A. In the time of the CTV building I don't believe so, no, well he wasn't at the Council and he wasn't at ARCL.

Q. Well is he wrong then about that attitude at the time he knew you and was aware of your dealings with Mr Tapper?

25 A. What time was that that you're talking about?

Q. Is he wrong about that when he says that he observed that when he was at the Council, talking about Mr Henry?

30 A. I think that the dealings with Mr Tapper substantially diminished when John Henry was at the Council because I think it ended up that most of our dealings were actually with Mr Henry.

Q. All right, well do you agree though that there were these arguments or not as John Henry has said?

A. I don't believe there were arguments. There were differences of opinion that were discussed.

Q. Mr Tapper would be the first person back then who would check a permit application in terms of structural details as we've seen with the Tapper letter here?

A. In this case he was. I don't know that it was always the case.

Q. And it often would be?

A. Oh no, prior to Mr Tapper I think mostly we heard from Mr Bluck.

Q. Well are you seriously suggesting that John Henry and Terry Horn have got it completely wrong when they say there was this frustration at Mr Tapper's attitude and his scrutiny?

A. I don't think they're right.

Q. Don't you?

A. And I think you need to –

Q. Do you think it was harmonious?

A. Well I think you need to remember too that our dealings with the Council were not just limited to structural matters, they included many others that may have involved Mr Bluck as head of the building department. It may not have involved Mr Tapper. Items such as town planning, fire engineering and there would have been discussions between me and the Council, myself and the Council about those things as well.

Q. So they have both independently somehow got the wrong end of the stick completely?

A. I think they have. I think they've misjudged the situation.

Q. Right, and what about their evidence that when that occurred it wasn't uncommon for you to go over Mr Tapper's head to Mr Bluck. Do you agree with that?

A. Well no I don't.

Q. Okay.

A. Mr Bluck may have occasionally rung me to ask me certain things but I didn't – I didn't believe in doing that and the same was true when John Henry was writing to us. We never went over his head to go to Mr Bluck. We dealt with Mr Henry.

Q. So Henry's wrong about that in terms of what he observed and -

A. His interpretation is definitely wrong.

1514

A. His interpretation is definitely wrong.

5 Q. So was it as you said in one of your briefs that you preferred to deal with Bluck?

A. I dealt with Bluck for many many years and I respected him and his views and I'd got used to dealing with him. That was about it. I had no objection to dealing also with Graeme Tapper or with John Henry if it came to it.

10

Q. Why did you say you preferred to deal with Bluck?

A. Only out of the fact that I respected his judgement and ability.

Q. And that's why you preferred to deal with Bluck?

A. That was all. There was nothing more than that in it.

15 Q. What I'm putting to you is that you did prefer to deal with Bluck?

A. On some matters. I wouldn't say everything.

Q. Right well if you prefer it, it usually indicates a preference over something else which is what we're talking about, dealing with Tapper rather than Bluck but that was your preference because of your relationship with him, correct?

20

A. Well because of the benefit I'd gained from being involved with him over the years. I recognised that and welcomed it.

Q. And that relationship was established before Mr Tapper came along wasn't it?

25

A. Oh long before.

Q. Right, and Mr Tapper comes along and I presume you don't have any real dispute with the descriptions of his character, even from his wife. You heard that?

A. Yes I have but I didn't think he was quite like that. I quite enjoyed dealing with him.

30

Q. Why didn't you deal with him? Why did you prefer to go to Bluck then?

- A. Well only if I had a choice. If there was some circumstance that I wanted to check I would have rung Bryan Bluck first, but if the question were initiated by Tapper then we would talk to Graeme Tapper.
- Q. And Mr Bluck was the manager, the boss, wasn't he?
- 5 A. He was head of the building department, yes.
- Q. And again you preferred to deal with him because he was in that position?
- A. No, it was his knowledge and also he handled other matters besides structural and other matters sometimes it was necessary for us to deal
- 10 with them.
- Q. So there wasn't any perception on your part that you should be dealing with the manager rather than Mr Tapper?
- A. No not at all.
- Q. So perhaps that is another impression Mr Nichols has got wrong. He
- 15 talked about his perception 'cos you had a Doctorate you wanted to deal with Bluck or –
- A. Oh that's ridiculous.
- Q. That's ridiculous?
- A. Yes.
- 20 Q. So again all these false impressions people have picked up. Is that what you're saying?
- A. I don't agree with them and I don't agree with their interpretation.
- Q. So you wouldn't call it going over Mr Tapper's head just in preference to deal with Mr Bluck?
- 25 A. That's correct I didn't go over Mr Tapper's head to Mr Bluck. I resolved my issues and problems or whatever they were, design differences, with the people involved.
- Q. Well is that right though? I mean if Mr Tapper's the one raising these issues and you prefer to deal with Bluck and you go to Bluck and
- 30 Tapper gets overruled that's effectively going over his head isn't it?
- A. Yes but I don't believe that happened. I don't believe that Mr Tapper would have done something he didn't actually believe was right. He wouldn't accept being overruled I don't believe.

- Q. And if he did or felt pressured to do that, it might well be something that he bitterly regretted wouldn't it?
- A. It was what?
- Q. If he did do something that he wouldn't normally do, it might well be something that he bitterly regretted?
- 5
- A. I don't believe he would have done that.
- Q. Because of the character of the man as you knew him?
- A. Yes.
- Q. So you don't agree with John Henry when he says it was not uncommon for Alan Reay to go directly to Bryan Bluck to obtain the release of a building consent when he could not get approval from Graeme Tapper?
- 10
- A. I don't believe that's correct. If Bryan Bluck overruled Tapper it wasn't because of me. There was a lot of pressure from other people, more so from me, on getting building consents. The builders would go into the Council and they would push for building consents to be issued or building permits to be processed.
- 15
- Q. And would they go to Mr Bluck too or...?
- A. I've no idea who they would go to.
- Q. How many occasions do you think you went to Bluck, over a permitting issue I'm talking about, when the objections had been raised by Mr Tapper?
- 20
- A. I don't believe I went to him at all over objections by Mr Tapper. I would have had my dealings with Mr Tapper. He may well then have discussed the issues with Bryan Bluck.
- 25
- Q. Right, and then you may have gone to Bluck?
- A. No. I don't agree with that.
- Q. Well I understand what you're saying that maybe people like Mr Henry, Mr Horn had got the wrong impression and that might be the case if it had happened once but when someone says it was not uncommon for you to do that, that's more than once. You say it didn't happen even once?
- 30

- A. Well I don't recall it happening. Mr Horn was not involved in any part of that. He merely sat in the office and claimed to have overheard my conversations.
- Q. You knew that Mr Bluck would be more receptive to a consulting engineer and a consulting engineer's view on the structure?
- 5 A. No I wouldn't agree with that. Mr Bluck was a very competent engineer.
- Q. I'm not suggesting otherwise.
- A. And he wouldn't agree with something that he thought was wrong.
- Q. Well he might if he was talked into it, thought about it, mightn't he? It might be part of his process of testing it to discuss it with an engineer?
- 10 A. He didn't. In my experience with Mr Bluck he didn't work like that. As Mr Nichols said he would spend time working through a list of issues and sorting out whether they were relevant, how they were going to be fixed or whether they were significant or whatever.
- 15 Q. As Mr Nichols also said, and he produced that memorandum you will recall, that indicated that you can rely, ultimately rely, on the design engineer?
- A. I've never seen that in memorandum before.
- Q. And that's all news to you?
- 20 A. That was news to me.
- Q. Well even John Henry spoke of that, that Mr Bluck was ready to accept an assurance from a consulting engineer effectively. You say that's not right?
- A. Well it may have been right with some engineers he dealt with. As I've said Bryan Bluck to my knowledge dealt differently with different engineers as to how he viewed the company and the resources within the company et cetera.
- 25 Q. Do you agree that Mr Bluck would have had a specific interest in the CTV building?
- 30 A. Would have what?
- Q. Would have had a specific interest in the CTV building?
- A. I don't know.

Q. Well your DBH reply of 22 December 2011 you said at the, reference .6. I'll just read it to you. It doesn't need to be brought up unless you want it. "At the time of construction the CTV building would have been of specific interest to the Council and Mr Bluck." You go on to say,
 5 "Mr Bluck would challenge engineers over designs et cetera...." So why were you saying there that it would be of specific interest to Mr Bluck and the Council?

A. I can't recall why I said that then –

Q. Well wouldn't it be – sorry.

10 A. – I'd have to look at the context of why I was making that comment.

Q. Shall we just bring it up then. BUI.MAD249.0195.6. Fourth paragraph down. The particular sentence is the first one.

1524

JUSTICE COOPER:

15 Q. I suppose if context is everything we shouldn't just be looking at one paragraph should we?

CROSS-EXAMINATION CONTINUES: MR ZARIFEH

Q. Perhaps we can highlight the one before as well?

A. I think the words at the time of design or permit rather than construction
 20 are probably more relevant and buildings like that, anything of scale, would have been of interest to the Council and Bluck and I talk in the context of him challenging engineers over the designs and occasionally overrule engineers.

Q. Right, but you said that it would have been a specific interest to him and
 25 to the Council?

A. That in any building like it, not that specific building, I was referring to building, multi-storey buildings.

Q. (inaudible 15:25:01) You say in your evidence that you do not recall the conversation that Mr Bluck told Peter Nichols about in relation to the
 30 CTV building, right?

A. No I don't.

Q. I suggest to you that as you said a moment ago with your memory you can remember some things and not others, right?

A. I don't remember everything from those days.

5 Q. No, and I don't suggest you do, but I think Mr Mills might have put it to you last week that something that might stand out at the time will be something remembered. Something that doesn't stand out that is more in the ordinary course might well not be remembered. Do you agree with that as a general principle?

A. As a general principle.

10 Q. You see I know you don't accept that you went over Mr Bluck, Mr Tapper's head to Mr Bluck. I think you're saying you don't recall doing that even once, but you did seem to have a preference for dealing with Mr Bluck, so you must have had a lot of dealings with him over various issues, permitting issues and other things, correct?

15 A. I don't think that in fact back then there were that many permits being processed in terms of our company that that would have been something that would happen daily or that sort of thing, might have been once a week.

20 Q. But it wasn't unusual for you to speak with Bluck was it? Well it can't have been?

A. Well I certainly spoke to him but whether, what the frequency was –

Q. Well I suggest –

A. – and what it was about is I can't remember exactly.

25 Q. Right, what I'm suggesting is that perhaps you can't remember it because it happened on a number of occasions in similar circumstances where you're talking about similar kinds of issues? Permitting issues, engineering issues?

A. No I don't agree with that.

Q. You don't?

30 A. No.

Q. So it must be just something you've forgotten completely?

A. No I don't think it happened.

Q. Don't you?

A. No.

Q. Well that was not suggested to Mr Nichols that he's got it wrong but what are you saying? That –

5 A. We need to be clear what we're talking about here because I could be talking about something different to you so.

Q. Well what are you talking about?

A. Well you tell me what you're asking?

Q. I'm asking, you said, "I do not recall the conversation that Mr Nichols has reported as relayed to him by Mr Bluck," right?

10 A. Okay.

Q. And you said, as I understood it just now, that you don't think it occurred?

15 A. I don't believe that occurred. I would have remembered that because if Mr Bluck was going to have a conversation with me about that building I would have involved David Harding.

Q. Well would you though if there is this rush or seeming rush to get the permit through. We heard that the plans are put in, they're not signed, maybe not complete, there's the Tapper letter fired back pretty quickly. That's indicative of a rushed job?

20 A. No, it's just an indicative of Mr Tapper being efficient.

Q. Right, and keen, but why do you say you would necessarily have involved Mr Harding. You would have had your talk with him about the layout of the shear wall by then, correct?

25 A. Yes but he did the detailed design and if there were questions about the design I would not have answered them. I would have involved David Harding or alternatively asked David Harding to go and discuss it with Mr Bluck or Mr Tapper, whoever it was that was asking the questions.

30 Q. Okay, Mr Nichols said when he gave evidence that Mr Bluck told him that it was a novel technological approach, okay, and I think he was asked by your own counsel what he understood he was talking about and he said that it was how this shear wall gravity protection system

was used in that building, right? Do you remember? Were you here then?

A. I think that's what Mr Nichols said, yes.

Q. Yes. Well isn't that exactly what you had talked to David Harding about?

5 A. No I –

Q. You satisfied yourself about it?

A. No I'd only, I'd only talked to him about the southern shear wall not the fact that it was a gravity protected system.

Q. You asked him about the shear wall layout ,didn't you?

10 A. Yes.

Q. That's what you said last week? That was your, they were your words?

A. Mmm.

Q. So you're looking at the building as a whole weren't you?

A. I was looking at the shear walls.

15 Q. Right.

A. I didn't discuss the frame system, the gravity frame system.

Q. But you knew that it was a shear wall protected system, if that's the right word?

A. I anticipated that it would be, I didn't know it was at that stage.

20 Q. Well you sure did once you talked to David Harding didn't you?

A. He didn't, we didn't discuss the gravity protected part of it from my recollection. I simply asked about the southern shear wall.

Q. What, so you look at the architectural plans and they must have come in after he'd modified it and you say, "Oh, what is there another shear wall?" Is that what happened?

25

A. I have said that I asked him where the shear wall, where the, what was the shear wall system relative to in my mind the Landsborough building and he said it has a southern shear wall, and I would have said that, and I said I'm sure well that's good, fine, I'd established the, that, I had no reason to discuss gravity frames.

30

Q. Dr Reay are you seriously asking the Commission to believe that when you're dealing with someone who has never designed a multi-rise building before, not really used ETABS, certainly not on his own before,

you go to him concerned to ensure that the shear wall layout is okay, certainly given Landsborough, he says there's a southern shear wall and you go oh that's good and you walk away. Is that what you're saying?

5 A. That is what I'm saying, that is what I checked to make sure of.

Q. How did you check it?

A. I saw it, he showed me the wall on the drawing.

Q. Did you think to yourself I wonder if that's long enough?

10 A. No because that was his role to do the detailed calculations to establish that.

Q. You're the sole principal, you're liable for any errors he makes, you've accepted that?

A. Yes.

15 Q. Did you not give any thought to potential liability you might have had if he did make a mistake?

A. No because I trusted him to undertake the work.

Q. Knowing he had no experience?

A. Well he didn't have no experience.

Q. Knowing he'd never really done ETABS before?

20 A. Well he had. He'd done it on that the Westpark Towers building.

Q. You heard Mr Nichols. He talked about the problem with the relatively large north core and this slender south shear wall? Do you remember that yesterday?

A. Oh he spoke about it, yes.

25 Q. John Henry spoke about it, didn't he? The imbalance. Did you not give any thought to that?

A. It was an imbalance in the Landsborough House shear wall system as well.

30 Q. And that's why you raised it or one of the reasons wasn't it? You were concerned about an imbalance?

A. Not the imbalance, it's, it's, you can have eccentric buildings. It's acceptable just as Landsborough House was eccentric.

- Q. But you had concerns over Landsborough, that's one of the reasons you were raising this issue with –
- A. I didn't have specific concerns over Landsborough. I was satisfied that in that particular building the system was fine that had been used.
- 5 Q. But you wanted to check on this one?
- A. Yes it was bigger floor plates so I was more concerned about the effects of using a tube type structure in a building like this.
- Q. Right, so did you not go into any detail. Is that what you're saying?
- A. No, the prin – I established that the principle that was being worked on in my view was satisfactory so I was satisfied that at that end he could
- 10 carry on, as he did, and complete the design.
- Q. And you didn't talk to him about the ETABS and what that had shown and whether he'd –
- A. No the onus was on him to come to me if he had a problem.
- 15 Q. Yeah, but I understand what you're saying there, but this is you going to him raising a specific issue because you clearly had a concern, potential concern, and it sounds like you didn't even look into it? You didn't go into any kind of detail at all? That's your evidence?
- A. He came to me I think and said, "I've got the drawings," and I asked him
- 20 the question about the shear wall. I didn't go to him necessarily but –
- Q. I thought you went to him because you were wanting to find out?
- A. No he was, no he came, he said, I believe he had the drawings. Where they came from I don't, I wouldn't recall now and I just asked him that one question.
- 25 Q. Right, but you went to him with the question didn't you?
- A. I asked the question.
- Q. Right, because you had a concern?
- A. Well I asked it because I wanted to know.

HEARING ADJOURNS: 3.35 PM

HEARING RESUMES: 3.52 PM**CROSS-EXAMINATION CONTINUES: MR ZARIFEH**

5 Q. Dr Reay, can I suggest to you that the Tapper letter as we're describing it would have been seen by you at the time it came in. You would have been therefore made aware that Mr Tapper was raising issues with the building, the permit application rather and as you've said you would have no doubt got David Harding or whoever else on to trying to answer some of these questions that Mr Tapper was raising? It is clear that letter was an original, do you accept that? Have you seen it? The original? Would you like to have a look at it?

10 A. Yes.

Q. Do you see in the top right Mr Harding's notation. Can you see it?

A. Yes.

Q. And it refers to the ARCE job number for CTV doesn't it? 2503?

15 A. Yes.

1554

Q. What I suggest is that that letter is clearly come into your firm sometime between the 27th of August and the 1st of September '86, you've seen it, it's been looked at, issues on it have been, some of the issues on it have been dealt with by Mr Harding, maybe others, but the letter, that letter appears to have got back to the Council because that's where it came from. The Council provided that letter to the Royal Commission. You can't recall being involved in that letter going back to the Council?

20 A. Well I don't recall the letter coming into the office and I don't recall it going back to the Council.

25 Q. Do you agree with me that if that had happened, you'd seen the letter, been made aware of it, you would have been concerned to ensure that things were progressed in relation to this project?

30 A. The letter either went to, direct to David Harding or if it came to me I would have passed it on to him. I wouldn't, read it, I would have said, "There's a letter here. Can you handle this please?"

- Q. And if as a result of the matters in that letter or other matters that were raised once the other information was provided, perhaps the more complete structural drawings as you said, Mr Tapper was still objecting. Do you not agree that you could well have gone direct and dealt with Mr Bluck as was your preference?
- 5
- A. No I don't.
- Q. Okay.
- A. I think Mr Tapper, I've learnt today, signed it off on the 10th of September and the permit wasn't actually issued until the end of September.
- 10
- Q. It's dated the 30th isn't it?
- A. 30th, so it appears that he didn't spend long considering it. Maybe five, 10 days or whatever and then the document sat there. There must have been other issues holding it up.
- Q. But what I'm suggesting to you is that you had this conversation. I know you can't remember it, with Mr Bluck, and it was over the permit for the CTV building and so it's happened soon after those structural drawings have gone in and the issues that Mr Tapper raised and maybe further issues those issues have transpired, that's when that conversation would have taken place?
- 15
- A. Well it didn't take place and –
- Q. Well you don't remember it taking it place?
- A. I don't believe it did and I've said why, because I would have involved David Harding if there was questions.
- Q. All right, and we've covered that. I don't want to go over that but I suggest to you that you wouldn't have had to because you'd already satisfied yourself about the shear wall protection system that appears to have been the concern?
- 25
- A. That's, that's at the beginning of the job. That's not when it's designed. If Mr Bluck or Mr Tapper had design issues then I would have involved David Harding.
- 30
- Q. What do you mean that's at the beginning of the job?
- A. Well at the start of the job was when I asked about the shear wall, not at the end.

- Q. Oh was it? What when you first gave it to him?
- A. When he had some drawings I asked him the question about it as I have explained.
- Q. Right, but we already established didn't we that the southern shear wall
5 didn't go in until after he'd done some ETABS analysis?
- A. Well I can't guarantee that. He may have assessed that it needed it without the ETABS analysis. I don't know, he says he needed to do it, I don't actually know.
- Q. But you do accept it wasn't there originally?
- 10 A. I don't know.
- Q. What, because you can't recall now?
- A. No because I don't, I don't know whether there was, when he actually put the wall in, I only know that when he showed me the drawing the wall was there.
- 15 Q. All right, but look you went to him, asked him about the shear wall layout, whatever the nature of the conversation you presumably satisfied yourself, moving aside what enquiries you made or didn't make, satisfied yourself about that issue?
- A. My recollection is that he had a drawing of the building and I asked him
20 about the wall, he opened the drawing and I made my comment to him.
- Q. So if Mr Bluck raised with you issues about the shear wall protection system you could have said to him, "Look it's got the north core and it's got an additional south shear wall there. That's the system."
- A. What I've said is if he raised questions about the structure with me I
25 would have involved David Harding.
- Q. But you wouldn't have needed to because you'd already (overtalking 15:59:28)
- A. I would have involved him irrespective because he was the engineer who did all the work on it.
- 30 Q. And you were the principal of the firm keen to push this through and get around Mr Tapper who is raising his head again with his scrutiny and you went to Bluck to get around that and that's what happened? And it's happened before.

A. It is not what happened.

Q. Well you can't remember it?

A. I know that I did not have that conversation with Mr Bluck about that job because I would have involved David Harding.

5 Q. Well that's what you're saying now, you would have done that but you can't actually recall whether it happened or not?

A. I would have. That was my, the way I worked.

Q. What that you always involved the design engineer?

10 A. A senior, if there was a senior engineer who'd done the work I would involve them in any discussion.

Q. So any occasions if we, if the evidence of say John Henry is accepted on any occasions that you might have gone around or over Mr Tapper's head to Bluck you wouldn't have gone alone, is that what you're saying?

A. Well I've already said I didn't go over Mr Tapper's head to Bluck.

15 Q. But wasn't that part of your mindset certainly back then? You didn't appreciate Mr Tapper raising these things and that's why you preferred to deal with Mr Bluck?

A. No I've said the reverse. I did, I was quite happy to deal with Mr Tapper.

20 Q. Wasn't that mindset shown in that, in the example I think John Henry talked about with the tilt slab and not enough recess for the, it was the walls, the floors into the walls, do you remember that issue?

A. That was a particular detail that Mr Tapper had a different view on from me.

25 Q. Well it sounded like it led to quite a long debate and a stand-off? It wasn't settled till they went to Professor Paulay wasn't it?

A. No. I don't think Professor Paulay was involved. He mentioned Professor Park.

Q. Sorry –

30 A. But what he mentioned was there was an outstanding issue in their mind on floor seating details and it wasn't only our company, Mr Henry mentioned that it was others, and the issue was raised further after Mr Henry decided that he would get involved in it.

Q. Dr Reay, I suggest to you that if the Royal Commission accepts the evidence of the Tapper letter and the requisitions, if you like, that were raised by Mr Tapper, if it accepts the evidence of that we've heard of Mr Tapper being dogged about objections he had to building permits and in particular to your firm's in relation to permits you'd put in, if it accepts the evidence of that relationship between Tapper and Bluck that we've heard about, and the evidence we've heard about you dealing with Bluck in those circumstances, evidence of Mrs Tapper, do you recall that, that her husband told her he was, he felt pressured. Do you remember that evidence?

A. Oh yes.

Q. He thought that the building could come down in an earthquake. I suggest a direct reference to this very system we're talking about in the structure of the building, accepts that evidence, accepts the evidence of Mr Nichols about the conversation that Mr Bluck told him he had with you where you convinced him that it was okay, if the Royal Commission accepts all of that evidence do you not agree that the inescapable conclusion is that you were effectively responsible for that permit being issued?

A. I don't agree with what you're saying. Mr Tapper if he actually believed what is now being said he would have done something about it. He wouldn't have, if he really thought that that building was at risk he would have taken steps to make it known.

1604

Q. And if he had been pressured against that natural inclination to act like that, which I accept from what we've heard, he'd felt pressured and given in to that, as I said before, he would regret that as he clearly indicated to his wife?

A. Yes but he – if he was concerned about his job, as was suggested, and I find that difficult to believe because he was a man of principle, he would – having left the Council he would have done something. He was that sort of person, he was dedicated.

Q. He'd been pressured by Mr Bluck he said to her. Mr Bluck told Mr Nichols that he had been convinced by you that it was okay and I suggest you're acting on your evidence, if that's correct about what you say happened between you and Harding on his assurances or his explanation to you about the shear wall layout.

5

A. No, if Mr Bluck had any concerns I would have involved Mr Harding.

Q. See if that conversation did happen, the one that you can't remember, if that did happen, that would effectively mean that if what you say is right, you were giving an assurance to Mr Bluck about the building when essentially you knew very little about the structural detail?

10

A. Well that's exactly why I wouldn't have given such an assurance.

Q. But sounds like you never knew much about it if you're to be believed.

A. Well I've told you what my views are and what my recollection is.

CROSS-EXAMINATION: MR ELLIOTT

15 Q. Dr Reay, this is the third time you've given evidence and you've answered many questions. I don't have many more for you today. I'm just going to refer you firstly to the letter from Mr Tapper, BUI.MAD249.0141.14. The left-hand side of that page in front of you at the bottom says, "Please attend to the following matters." Do you see that?

20

A. Yes.

Q. And then if we can highlight the top right-hand part of the document please where it says, "SH15." You see this is one of the matters which Mr Tapper was asking be attended to and it's in relation to sheet 15. Do you agree?

25

A. Yes.

Q. Now the Royal Commission will need to give some consideration I think to what Mr Tapper may have been referring to in that section and I'm just going to give you the opportunity to comment on what that might have been. Now do you see there in those last three lines there are – it looks like two components, firstly also floor connections to shear wall

30

system, and secondly general connection between floor slab and walls.
So you agree they're two separate things?

A. Yes.

5 Q. Yes, now if we go to sheet 15, BUI.MAD249.0284.16. Now just note
doctor that this is the version that has the Council's stamp on it and you
recall that Mr Harding has given evidence about how there may have
been a previous version, but I'm just questioning you about the version
that has the Council's stamp and you agree this is sheet 15 we're
looking at?

10 A. Yes.

Q. And if I can ask for the northern shear core to be enlarged please. Do
you agree that's the northern core?

A. Yes.

15 Q. And the three bays there, the top one being the toilet area, do you
agree?

A. Yes.

Q. The middle one being the stair landing or the stair section. Is that right?

A. Yes.

Q. And the bottom is the lift shaft area. Is that right?

20 A. Yes.

Q. Just starting with the toilet area up the top. In terms of where there
would have been a connection between the floor slab and the northern
walls, firstly if we take that top horizontal wall there would have been a
connection along there. Is that right?

25 A. Well it's not shown on there but there would be one.

Q. Yes, and there'd be a connection on the right-hand side of that bay
running down to the next horizontal wall. Is that right?

A. Well it's not shown on there.

Q. Would you like to see the next sheet to confirm that?

30 A. Beg your pardon.

Q. Would you like to see the next sheet, sheet 16?

A. Well if we're going to talk about the connections.

Q. All right, well let's look at the next document which is number 17?

JUSTICE COOPER:

Document 17, sheet 17.

5 MR ELLIOTT:

Yes, Your Honour.

CROSS-EXAMINATION CONTINUES: MR ELLIOTT

Q. Would this assist you doctor if we enlarge the left-hand drawing, would that assist in answering these questions?

10 A. Well yes the connections are shown there.

Q. So there are connections between the floor and the wall horizontally at the top there?

A. Yes.

15 Q. There is a connection on the right-hand side of that same bay running down to the next horizontal wall. Is that right, apart from a void in the bottom right-hand corner?

A. Yes.

20 Q. And then once again allowing for that void, in the bottom right-hand corner there is a connection running along the bottom section of that bay, correct?

A. Yes.

25 Q. And we then get to the left-hand section. Well just pausing there at those connections that I've talked to you about so far. Would you agree that when Mr Tapper referred to floor connections to shear wall system that it's likely that the areas I've just described were the areas that he was referring to and the areas which Mr Harding gave evidence about having detailed for connections earlier on?

A. That would be one of them.

30 Q. Well if we look at the stair area, the large cross there indicates a void doesn't it?

A. Yes.

- Q. So there is no connection between the floor and the wall along the upper section, the horizontal wall of that second middle bay is there, is that right?
- A. The floor doesn't extend through to the back of that system.
- 5 Q. No, so there's no connection there.
- A. There's a connection but it's a landing further down and some stairs.
- Q. And there's no connection, apart from the landing there's no connection down the right-hand side of that interior wall is there?
- A. That's correct.
- 10 Q. Or along the lower section of that interior stair landing wall, is that right, because that's a void as well?
- A. Which part are you referring to now?
- Q. I'm referring to the stairwell area which is the middle bay. I'm referring to the bottom wall, the horizontal wall running along the bottom section of that middle bay. That's it.
- 15 A. Along there.
- Q. No connection along there?
- A. No.
- Q. There would have been a connection though on the left-hand point of that wall wouldn't there, to the floor slab?
- 20 A. Around here.
- Q. Yes that's the left-hand section. Is that right, connection there?
- A. Yeah, I'm not sure that there's one directly shown but –
- Q. And that's line D isn't it?
- 25 A. Line –
- Q. That's line D, that horizontal wall we've just discussed, is it line D, do you agree?
- A. I'm not sure if it's D, it's not marked on.
- Q. And then turning now to the lift shaft area, again the cross indicates a void doesn't it?
- 30 A. Yes.
- 1614

Q. So in the section of the bay where there is a cross, there is no connection along the top down the right or along the bottom of that wall between the floor slab and the wall, is there?

A. No.

5 Q. So would you agree that when Mr Tapper refers to general connection between floor slab and walls it is likely that those areas we have just described are what he was concerned about?

A. Well I don't know whether he was concerned about the connections as we see them there on that drawing or whether there were no
10 connections on the drawing that he had.

Q. You have concerns about the inadequacy of the connections at line D and DE don't you –

A. Well –

Q. – and for the purpose of answering that you may want to see what line
15 D and DE was because you said that you don't know so could we go to the enlarged version of that diagram please or perhaps if we need to go back to the previous, number 16 which is plan 15 and do you see on the left-hand side there where we have the figure D and E indicated. Do you see Doctor? I am just asking you to confirm that those two walls, the
20 bottom two horizontal walls are lines D and below that DE?

A. Well D is actually centreline of a column. It is very close to the wall but it may not actually be the centreline of the wall.

Q. Now you are aware aren't you that this connection between those
25 bottom two walls is the area that Holmes Consulting identified as a vital area of non-compliance?

A. Yes that is what they said.

Q. And that is the area in which drag bars were eventually placed, is that
right?

A. Yes.

30 Q. And that is the area about which you have concerns, isn't it?

A. Ah, yes I have said that that is an area that is potentially non-compliant.

- Q. So it would not be a surprise if Mr Tapper had also been concerned about that particular area, do you agree? It would be consistent with your concerns and with Holmes Consulting's concerns, wouldn't it?
- 5 A. Yes it is hard to tell whether he was concerned about a lack of connections on a drawing that was incomplete or whether he was actually concerned about the connections that we are looking at today.
- Q. I accept that we can't know what he thought but my proposition was that it wouldn't be surprising if this area we have discussed was the area that he was concerned about, and that is right, isn't it?
- 10 A. Well he is concerned about the area but I can't say why.
- Q. Let's assume for present purposes this was his concern, this connection around line D and DE. I appreciate that you have given an answer that it may not have been but assuming that it was, you would agree that that concern does not appear to have been addressed in the permitted drawings in front of us has it?
- 15 A. If that was his concern I would agree that it wasn't addressed.
- Q. And if that was his concern based upon your dealings with him, is there any reason why a careful conscientious experienced man like him would sign a permit despite concerns about that?
- 20 A. Well I don't think he would have and that is why I think that it's more likely to be that the information wasn't on the drawing.
- Q. We are looking at the signed version aren't we?
- A. Yes.
- Q. So what was your last answer, that it wasn't on the drawings?
- 25 A. Mr Tapper wasn't reviewing this drawing.
- Q. No?
- A. He was reviewing another drawing that we don't have.
- Q. My point was that if that was his concern it does not seem to have been addressed because this is the final version we are looking at it?
- 30 A. If his concern was a design concern, yes. If it was a detailing concern that he noticed that there was no reinforcing shown then he, that would be different.

- Q. You agree that Mr Bluck had the authority to, in effect override Mr Tapper's concerns if any and to require him to sign a permit over objection from Mr Tapper, just whether he had authority? You accept that don't you?
- 5 A. Well I don't because a registered engineer shouldn't be compelled to sign something that he disagrees with. It just doesn't make sense.
- Q. No. This issue of the connection or lack thereof at lines D and DE was of direct consequence of the placement of the northern core outside of the envelope of the building, wasn't it?
- 10 A. The connection – the retrofit was not a direct consequence of that. There was no reason why the reinforcing and strength couldn't have been provided within that system that is there, if in fact it was needed.
- Q. Or it may have required that the shear core be moved to within the building envelope to address that type of concern?
- 15 A. Not necessarily.
- Q. Secondly and finally, you said some words earlier on to the families of those who died and I acknowledge those words on their behalf.
- A. Thank you.
- Q. Obviously one of their main points of interest is that we learn from what has happened and you said that the building did not meet your standards. When you next give evidence during the code compliance section could you list please for us the ways in which you say the building did not meet your standards?
- 20 A. I certainly will do my best.
- 25 Q. Thank you and just so that we can attach some meaning to what you said, your reference to, "My standards," your standards I take it require compliance with the code. Is that right?
- A. It is not really a code issue in that sense, things can comply with the code but, or be marginal but not be the cause of issues. I am talking about something a little different and I'd be happy to address that in the code compliance if that is what you wish.
- 30 Q. I see but just so we can understand for present purposes when you say your standards, you are not saying that equals compliance or non-

compliance you are just saying you have standards which are at some different level to which compliance actually is, is that right?

A. Yeah there is aspects in the way one may design buildings or whatever.

Q. So are your standards higher or lower than code compliance levels?

5 A. It's – I have said it is not directly related to code compliance. It is related more to the way in which buildings are designed and built.

Q. Do your standards relate in some way to best practice?

A. No I don't – I am not going to use the word best practice 'cos to me that is undefined.

10 Q. Are your standards capable of definition?

A. It is not.

Q. I am sorry?

A. It is not capable of definitions.

Q. It is not capable of definitions?

15 A. Every engineer –

JUSTICE COOPER:

Q. I don't think he heard you Mr Elliott, the question Mr Elliott put to you was whether your standards are capable of definition?

20 A. Oh, I am sorry.

CROSS-EXAMINATION CONTINUES: MR ELLIOTT

Q. Are your standards capable of definition?

A. Well in a general sense they will be.

RE-EXAMINATION: MR RENNIE

25 Q. Dr Reay, Mr Zarifeh took you through quite a long series of propositions about the design process and then the permitting process. Can we have first please 141.8. Now this is just up for reference Dr Reay we have seen it so often. It appears from that that the first set of structural plans reached the Council on the 26th of August 1986. That is what it says, isn't it?

30

A. Yes.

1624

Q. And my understanding is that you don't know of any reason to doubt or challenge that date?

A. That's right.

5 Q. I will if necessary file a calendar but I can tell you that that is a Tuesday or was a Tuesday in 1986. Now we next know that on the 27th, the Wednesday, Mr Tapper wrote back to your firm and that letter, .14, is addressed to your firm's post office box. It appears to be an inference at least that it was therefore posted to your firm at some point on the
10 Wednesday. Do you see that?

A. Yes.

Q. Now Mr Harding has told us that he wrote in the top right-hand corner, "Received on the 1st of September". Do you see that?

A. Yes.

15 Q. And I can tell you that that was the Monday of the following week. Now while that was going on it would appear that the plans on the 26th came to Mr Tapper's attention as witness the note on the left received a day or two after the letter was sent. Do you see that?

A. Yes although it seems to relate to the calculations, the foundation,
20 because the note and there's underlining that I've seen today in red under those two items that it looks like the note refers to.

Q. Right so you'd be more inclined to read it that way?

A. Now that I've seen that, yes.

Q. In all events it would seem that the date on which Mr Harding came to
25 give attention to Mr Tapper's questions begins on Monday the 1st of September. Now we know that Mr Harding responded to those questions by the document transfer form for which the reference is .1 on the 5th of September. Do you recall that?

A. Yes.

30 Q. Could we have that document please, .1. Now that is a document which shows in the box, bottom left, that it travelled by hand rather than by post. Do you see that?

A. Yes.

Q. And is that a practice that occurred in your office at the time with documents of bulk such as plans, specifications and so forth?

5 A. Yes it would have, particularly with plans because the effort of sending them by post was not worthwhile and one of the perhaps junior trainee staff would have taken them to the Council if Mr Harding didn't and he says he didn't so it would have been a junior staff member.

Q. Is it a reasonable inference from that, that that would have either reached the Council at some point in the latter part of Friday the 5th or, alternatively, at some part on the commencement of Monday the 8th?

10 A. Yes, one or the other.

Q. Do you now know which?

A. Do I know whether it's Friday or Monday?

Q. Yes.

15 A. I think the Council shut earlier than we did so it would depend on the time of day as to when it went.

Q. I wondered if you had a single time at which this unfortunate junior had to run all over Christchurch or whether they went at the immediate instruction of an engineer?

20 A. Ah, they would have gone within half an hour or an hour if they could have.

Q. Now if we go back to 0.8.8 in the same document we know from the STR section of the sign offs that the structural sign off was given on Wednesday the 10th. Do you see that?

A. Yes.

25 Q. Now my friend Mr Zarifeh asked you about Mr Nichols' evidence in relation to the conversation he had with Mr Bluck. Can you recall that?

A. Yes.

30 Q. I'm not going to get the paragraph put up at paragraph 26 of his first brief of evidence Mr Nichols first said, "Bryan's response was that when he first saw the concept depicted on the plans he had shared my concerns." Do you recall that?

A. Not precisely but that's fine.

- Q. Well now the two points in time it would seem when Mr Bluck could have seen those plans in a form where he could analyse the concept would be between 1 and 5 September while Mr Harding was working on the response or between 8 and 10 September when the structural sign off occurred. Can you suggest any other time at which the concept would have been apparent and could have been evaluated?
- 5
- A. We're discussing the signed drawings?
- Q. Well we're discussing Mr Bluck's evaluation of the concept as described second-hand by Mr Nichols. Do you see that?
- 10
- A. Yeah.
- Q. So on the face of it the time periods where that concept could be identified from the plans and evaluated by Mr Bluck would be the five days 1 to 5 September and the three days in the following week?
- A. Yes that's if he evaluated it before Graeme Tapper signed it off. If that is
- 15
- Graeme Tapper's signature, I wouldn't know.
- Q. The initial under 10/9?
- A. Yes.
- Q. Well we'll come to that. Now the next thing that Mr Nichols told us was that "Bryan assured me that he had carried out due diligence." Do you
- 20
- see that, hear that?
- A. Yes.
- Q. And due diligence would involve, in an engineer with Mr Bluck's experience, a review of the drawings and the calculations, would it not?
- A. Yes it would.
- 25
- Q. And Mr Nichols' indication was that it was Mr Bluck who carried out that due diligence, not some other person?
- A. Yes.
- Q. And would that be consistent with your experience of Mr Bluck that he would look at a matter to that level if he was interested in it?
- 30
- A. Yes, certainly in the '80s, yes.
- Q. And Mr Nichols went on to tell us that Mr Bluck told him that "He had been convinced by Alan Reay that his reservations were unfounded", a matter where I know you have some issue as to exactly what happened,

but Mr Nichols doesn't tell us whether Mr Bluck contacted you or whether you contacted Mr Bluck, does he?

A. No.

5 Q. Now Mrs Tapper told us that there was a day on which her husband went to work making a cryptic comment as he left to the effect that he might not still have a job in the evening. Do you recall that?

A. Yes.

Q. And on the face of the structural consent sign off it would seem that that must have been on or before the 10th of September?

10 A. If he was referring to this job, yes.

Q. Assuming for the moment that he was referring to that job, is there any indication that the structural sign off on the sheet we were looking at was done by Mr Bluck rather than Mr Tapper? We can have it back if you would like it back.

15 A. Yes please.

Q. Point 8.

A. So we're talking about the sign off structural 10th of the 9th under that?

Q. Yes the STR 10/9 and a set of initials.

A. Yes, no, well it's not a Bryan Bluck signature.

20 Q. Now if you stay on that but look down to the right, "Received 26/8" and it looks as if part of the document is lost at that point. Does it appear that there is the first part of the same initials below the "received" statement?

A. Yes it is, yes.

1634

25 Q. So coming back to the proposition that there was some due diligence and discussion with Mr Bluck, could that have occurred before Mr Harding sent back the amended plans on the 5th of September?

30 A. I would imagine that Mr Bluck would want the calculations so, and they appear to have been received perhaps before the final plans. And after that it would depend on whether the drawings were either incomplete or whether there were structural queries. So if the drawings were relatively complete, and he had the calculations, he could do due diligence. But if

the drawings were incomplete, he would actually need the completed drawing.

Q. So on the assumption that he did his due diligence before the structural signoff, that would've occurred in the period 8, 9, 10 September on the face of that?

5

A. Yes.

Q. Yes. Now Mrs Tapper told us in evidence that this high level of concern on the part of her husband lasted about a week and wasn't really mentioned after that again. Does that time period fit with the period that we've just been looking at?

10

A. Approximately, yes.

Q. Can you reconcile what we've just been through with Mr Zarifeh's contention of a long bitter contest to force through the plans?

A. Well it doesn't fit.

15

Q. No. In relation to the due diligence process, do you recall any other occasion on which Mr Bluck carried out a similar process before approving plans?

A. Well prior to Mr Tapper's arrival I believe he did do a lot of the checking himself. He appeared to in any discussion he had with me, that he had actually reviewed it himself. But at that particular time in '86 I wouldn't be able to say if he'd done due diligence on any other jobs.

20

Q. In the earlier period you've referred to did you have experience of Mr Bluck calling you or was it always you calling Mr Bluck?

A. No occasionally he would've called me to say, "I want to talk to you about something," or whatever. It may be structural, it could've been some other matter.

25

Q. If there had been a confrontation as to whether the plan should be approved at all between your firm on the one hand and the Council on the other, would you expect it to be resolved within three days of the dispatch of the final plans?

30

A. Not a building like this, no.

Q. No. Now my friend Mr Zarifeh also asked you about some of the arrangements in respect of the way that jobs were handled and you made a reference to assigning draughting staff to a particular job?

A. Yes.

5 Q. Was that something that was solely within your authority, or was it also a matter where Mr Harding could select who he worked with?

A. Oh, I always took account of the views of both the draughtsman and, and an engineer as to their preferences in allocating staff.

10 Q. And do you have any recollection at all as to assigning staff in respect of this particular project?

A. No.

Q. In terms of the requirements of this particular project, were there some staff who were more suited to it than others?

15 A. Well yes, Terry Horn who had experience of multi-storey buildings from Holmes was, would've been the preferred draughtsman.

Q. My friend also put it to you that your firm did not like close scrutiny of their work. Do you recall – by the Council, do you recall that proposition?

A. Yes I do.

20 Q. In your earlier evidence you referred to your firm relying on review by the Council as one of the checks on the design project, do you recall that?

A. Yes.

25 Q. Can you explain how you could make that reliance unless the Council gave close scrutiny to your work?

A. Well I couldn't, unless they did actually scrutinise it carefully.

Q. And you may have answered my next question which is what was your experience in the '85/'86 period as to the level of scrutiny applied to your work by the Council?

30 A. Well the scrutiny was there when we, definitely when we got queries, but if there were no queries we wouldn't know the extent to which the scrutiny was done.

Q. Now we know that on this occasion Mr Tapper, on 27 August sent a set of queries – they've been called requisitions but I think they were more in the nature of commentary – on plans that had come in the previous day. Do you attach any significance to that as being unusual or important?

5

A. Well it showed that he was reviewing the documents and looking for calculations that indicated that he was going to check the structural design.

Q. In terms of the matters actually raised in his letter of the 27th of August, are those matters which could be identified with time of the maximum order of a day to do it?

10

A. No I don't think, what he would pick is obvious omissions or obvious incompleteness in the drawings. In a day he wouldn't, I don't believe he would've analysed the building.

15

Q. No, no I wasn't suggesting that. I'm suggesting, or asking more accurately, whether the matters he did pick in the letter of the 27th of August were matters he could've found within a day? I can have the letter put up if that?

A. No it's all right. Oh, yes, he could do that within a day.

20 **QUESTIONS FROM COMMISSIONER FENWICK – NIL**

QUESTIONS FROM COMMISSIONER CARTER:

Q. Yes Doctor Reay, we understand that, from the evidence given that you'd been in practice for about 12 years when this circumstance of CTV developed and that you had developed a reputation in this city and beyond perhaps for work with precast concrete, new ways to build structures using that medium, and also with your work with steel fabrication and new applications of cold rolled steel and so forth. So you had, as a young firm, a growing reputation for doing some newer things, perhaps, in construction. So I presume that the clients that were coming to you were wishing to take advantage of those sorts of ideas that you were starting to become known for, would you agree with that?

25

30

A. Yes, it was more like 15 years but yes, but well particularly in relation to tilt up or precast buildings.

1644

Q. Right.

5 A. And as you say the cold form steel.

Q. Thank you, this development of new owners of buildings and the developer market was also growing at about that time. I think you've referred to that in your evidence, and that some of our – the consulting engineers' clients then were either developers or contractors. Is that correct?

10

A. Yes.

Q. In this instance I understand it was Williams who were the builders of this building. They were probably also your client. Is that correct?

A. That's correct.

15 Q. So they would have chosen you because they wanted to take advantage of some of these things that they'd seen demonstrated on other buildings in which you've been involved and I think we were referred to one or two of those that you'd had been the designer for?

A. I had met Williams through them building the Aged People's Welfare building. Prior to that I don't believe I'd met them, so that was my introduction to them, they – one would like to think they chose us for the reasons you say. It could have also been that Holmes Consulting who had done a lot of work for them may have been too busy.

20

Q. Well then. With respect to then the relationship that develops between a client and a consulting engineer you would be I suppose in contact in developing that relationship with your client?

25

A. Well originally it developed through that one building that –

Q. What sort of contact would you have maintained with Williams as you were developing the work that we've been discussing here?

30 A. Well I think they were still building the Aged People's building and I think the contact was through that. It wasn't something that I was actually out there positively developing in the sense of developing them as a client.

Q. So if in fact you had very little to do with this building, as its design was developed, do you think that was satisfactory to the contractor who'd chosen you, and I think you were the named principal and probably the – would have been the person that was developing the designs, would
5 have been happy with the limited amount of contact you had with them on this job?

A. Well the work that I was known for was not relevant to this building. The systems that I'd developed weren't present in this building at all and my understanding is that from the evidence of Tony Scott that he actually
10 worked with and got the information he needed in the preliminary phase from David Harding and I don't – I don't think he saw me as the key to the design of the building.

QUESTIONS FROM JUSTICE COOPER:

Q. Dr Reay you've said today that this was a building which did not meet
15 your standards.

A. Yes.

Q. And I understand you're going to, in response to Mr Elliott's request, let us know the respects in which that was so, later in these hearings, but my question really is how was it that a building was designed and put
20 through the permitting process on plans which bore your firm's name which did not meet your standards? How did that occur?

A. It occurred because I relied on David Harding to do the work and I didn't review it.

Q. Now do you say that you were wrong in relying on Mr Harding?

25 A. Well I certainly didn't consider that so at the time, but I do recognise that there's an issue with that now.

Q. So do you think now that you were wrong to rely on Mr Harding?

A. In hindsight, yes.

Q. And does it follow or is it a separate point that you think now that you
30 should have reviewed the plans?

A. I'm uncertain as what I ought to have done in the sense that I look back in time and wonder how all this happened.

Q. Well leaving, I suppose the question I really want you to answer is whether you think you did everything, you did anything wrong other than relying on Mr Harding?

5 A. Well the difficulty is I believe I was right to rely on him at the time, but it was clearly the wrong decision.

Q. And am I right, you thought that you were right to rely on him at the time, because of his years' standing as a registered engineer and because of work that he had done for you on the Westpark Tower. Are they the main reasons?

10 A. Oh, and the other buildings that he had designed, small, albeit smaller ones, they had – they all have features that require code analysis and – or compliance with the code. I – and he'd been through the same education and training system that I had and I guess I expected, well I would have anticipated that he would have had a similar level of
15 knowledge to myself, or in fact in terms of concrete design he was more au fait with the codes and with the latest, later thinking than I was in terms of buildings of this type.

QUESTIONS ARISING – ALL COUNSEL – NIL

WITNESS EXCUSED

20

JUSTICE COOPER:

Does any lawyer want to move onto the next subject?

MR RENNIE:

5 No Sir, but I can fill in 30 seconds by asking if you want me to file a calendar for 1986?

JUSTICE COOPER:

No, but you will no doubt be returning to some of these matters when you
10 address in closing Mr Rennie. I can rely on senior counsel to tell me what day it is presumably, or was, but can I say I've seen an advance copy of Mr Fairmaid's brief, Mr Rennie which came to me with a note saying that counsel assisting the Commission would not be objecting to any of its contents but my eyebrows have been raised by aspects of it including in
15 particular paragraphs 20 to 29 which seem to me to be pure submission Mr Rennie and I should say I'm quite old-fashioned about these things although I have, there have been other instances in this hearing I know, but it seems to me quite a bad example.

20 MR RENNIE:

Sir, I acknowledge that I will have the matter looked at overnight. I can tell you
Sir that those paragraphs were provided by the witness, drafted by himself with a certain fire in his belly, as it were, about wanting to say them and counsels' muting of that still left more than growing embers Sir so I shall see
25 what might be achievable overnight.

JUSTICE COOPER:

Well Mr Rennie I am sure you agree with me that it is for counsel to control the parameters of the evidence that is given in people, otherwise we have
30 people coming in off the street giving us commentary about what they think about people's evidence and one really needs to draw a line and distinguish between what is evidence of fact and what is submission because in those

paragraphs this gentleman is telling us what he thinks of the evidence that's given, without any proper basis as I see it.

MR RENNIE:

- 5 I think he was particularly responding to the proposition that he was a junior draughtsman Sir. In that sense I think his concern is factual rather than commentary but if Your Honour –

JUSTICE COOPER:

- 10 Well I suppose that paragraph, that is fine, one could have no cavil with that, but for later on I would like to have your assurance that the evidence is going to be responsibly called, if I might put it that way?

MR RENNIE:

- 15 I think Your Honour's comments may be more persuasive than mine were Sir.

JUSTICE COOPER:

Right, well there you are.

HEARING ADJOURNS: 4.56 PM

20

INDEX

STEPHEN MCCARTHY (RE-SWORN)	1
CROSS-EXAMINATION: MR RENNIE	9
CROSS-EXAMINATION: MR KIRKLAND – NIL	17
CROSS-EXAMINATION: MR ZARIFEH	17
CROSS-EXAMINATION: MR ELLIOTT	22
RE-EXAMINATION: MR LAING	25
QUESTIONS FROM THE COMMISSION - NIL	25
LEO FRANCIS O’LOUGHLIN (SWORN)	26
CROSS-EXAMINATION: MR RENNIE	35
CROSS-EXAMINATION: MR KIRKLAND – NIL	39
CROSS-EXAMINATION: MR ZARIFEH	39
CROSS-EXAMINATION: MR ELLIOTT – NIL	44
RE-EXAMINATION: MR LAING – NIL	44
QUESTIONS FROM JUSTICE COOPER:	44
QUESTIONS ARISING: MR RENNIE	47
CROSS-EXAMINATION: MR KIRKLAND, MR LAING AND MR ZARIFEH – NIL	47
QUESTIONS FROM JUSTICE COOPER – NIL	48
QUESTIONS FROM COMMISSIONERS CARTER AND FENWICK – NIL	48
HEARING RESUMES: 11.48 AM	49
DAVID HARDING (SWORN)	49
MR KIRKLAND:	49
EXAMINATION: MR KIRKLAND	51
CROSS-EXAMINATION: MR RENNIE	52
CROSS-EXAMINATION: MR LAING	56
CROSS-EXAMINATION: MR ZARIFEH	58
CROSS-EXAMINATION: MR ELLIOTT	77
RE-EXAMINATION: MR KIRKLAND	77
QUESTIONS FROM COMMISSIONER FENWICK AND COMMISSIONER CARTER – NIL	78
QUESTIONS FROM JUSTICE COOPER:	78
QUESTIONS FROM COMMISSIONER FENWICK:	79
QUESTIONS ARISING - NIL	81
ALAN MICHAEL REAY (SWORN)	82
EXAMINATION: MR RENNIE	82
CROSS-EXAMINATION: MR KIRKLAND	86
CROSS-EXAMINATION: MR MARSH – NIL	90
CROSS-EXAMINATION: MR LAING – NIL	90
CROSS-EXAMINATION: MR ZARIFEH	90
CROSS-EXAMINATION: MR ELLIOTT	122
RE-EXAMINATION: MR RENNIE	129
QUESTIONS FROM COMMISSIONER FENWICK – NIL	136
QUESTIONS FROM COMMISSIONER CARTER:	136
QUESTIONS FROM JUSTICE COOPER:	138
QUESTIONS ARISING – ALL COUNSEL – NIL	139