MR MILLS:

I have prepared a slightly more formal opening for this hearing and I think you've got copies -

JUSTICE COOPER:

Already have, thank you.

MR MILLS:

This is the third of the hearings that the Royal Commission has held so far and it in turn addresses three related but different issues of great significance to what has occurred in the Canterbury earthquakes. The first of them is the performance of unreinforced masonry buildings in the Canterbury earthquakes. The second is the so-called earthquake prone policy that is established under the 2004 Building Act, what it means, how it's being implemented by territorial authorities throughout New Zealand and what the Canterbury earthquakes have taught us about the effectiveness of the earthquake prone policies as they're currently being applied and the third issues is buildings that are not currently classified as earthquake prone but are not built to the standards that are now required for new buildings. The issue there which is the Commission is asked to consider and we'll be hearing evidence on in this hearing is whether these buildings as well ought to be required to upgrade because they do not meet current legal and best practice requirements for the design, construction and maintenance of new buildings and although these come later in the hearing's process both the PGG building and the CTV building, in my view, illustrate the need for a careful consideration of this third issue.

Now as the Commissioners are aware there will be a separate hearing later this year on a number of individual unreinforced masonry buildings where as a result of their total or partial collapse a number of people died, 41 in total. Those hearings begin on 12 December. Unlike this hearing that commences today where the issues are really looking more broadly at the issue of

unreinforced masonry buildings, the more generic and systemic issues that they raise, those hearings are focussed quite specifically on what happened on each of those occasions where people died.

Again, as the Commissioner's certainly well aware in its interim report which was issued with a reference to unreinforced masonry buildings because of the urgent public safety issues that the Commissioners identified there have already been some preliminary recommendations made about unreinforced masonry buildings. The Commission recommended that every local authority urgently compile a register or URM buildings within its jurisdiction and that throughout New Zealand steps be taken to eliminate so-called falling hazards such as chimneys and parapets which are potentially so lethal, not simply to the people working in those buildings but to pedestrians.

The Commission also recommended in its interim report that in area of moderate to high seismicity around New Zealand the strengthening of masonry walls to prevent out-of-plane failures should also be attended to and when the Commission hears later in the course of this hearing from the various territorial authorities no doubt those will be issues that will want to be raised with these authorities about their response to those recommendations.

This hearing now provides the opportunity for wider and more intensive consideration of the lessons to be learned from the Canterbury earthquakes, what they tell us about the performance of retrofitted unreinforced masonry buildings and what can be done to reduce the life risk and the economic consequences of their collapse.

The Commission in the course of this hearing will also hearing that addresses the very difficult social and economic choices that are involved in the cost of upgrading earthquake resistance or the earthquake resistance of unreinforced masonry buildings.

I thought what I'd do next is simply to give some definition to these terms that are going to be used in the course of this hearing. No doubt the Commissioners are familiar with these but others will not be. The first one, of course, is this question of what is meant by an unreinforced masonry building and I'm aware that the first witness, Associate Professor Ingham, will deal with this in some detail so I just mention this briefly at this point; that that terminology is generally used to prefer to clay brick or natural stone units that are bound together using lime or cement mortar without any reinforcing elements. The greatest number of these, perhaps surprisingly, is in Auckland which no doubt simply reflects the total population base of Auckland but significantly they are also found in large numbers in each of the other major New Zealand cities, or perhaps more precisely, they were found in significant numbers in Christchurch before they suffered such devastating damage in the series of Canterbury earthquakes. In its interim report the Royal Commission estimated that prior to the Canterbury earthquakes there were about 4000 unreinforced masonry buildings around New Zealand.

One of the things that makes this issue a difficult one in my view is that these unreinforced masonry buildings are disproportionately represented in what most of us think of as heritage and character buildings and the tenants they often, the tenants that are often attracted to them frequently enliven many of our commercial centres. The current controversy in Wellington over the future of Cuba Street is a very good illustration of just that issue. As the Commission observed in its interim report, many unreinforced masonry buildings are treasured as valued records of our history and many others are used as small scale commercial premises much valued for their traditional character.

In New Zealand most of these unreinforced masonry buildings were built between 1921 and 1930, an issue that Professor Ingham will expand on although they weren't formally banned until 1976. As the Commissioners are aware the characteristic with the unreinforced masonry buildings that makes them such a concern in an earthquake is that they are brittle, they can

changed from acceptable performance to collapse with only a slightly more intense earthquake round motion.

The second term, terminology that I'll just develop a bit is this issue of earthquake-prone buildings and what that means. The term itself comes from the Building Act 2004 and I just note in passing that the earthquake-prone provisions in the Building Act have been widened since the September earthquake in respect of their application to Christchurch, Selwyn and Waimakariri. That was done first following the September earthquake and then after the February and June earthquakes and I've set out in that written submission the two orders that were made under the Building Act to achieve that and in broad terms the effect of those orders is to treat buildings in those three areas as earthquake prone when they would not be under the general provisions of the Building Act.

JUSTICE COOPER:

Q. You said those orders were made under the Building Act Mr Mills –

A. Yes.

Q. Or were they made under the –

A. Under CERA?

Q. Yes or the Earthquake Recovery Act.

A. Well they refer in the, I need to just double-check that for you sir. They are referred to as orders made under the Building Act but I think it is correct probably that in relation to both of them they, well in fact I know that they do refer do the powers under CERA and probably that is the source of them but they're done as orders that change the wording of the earthquake-prone provisions of the Building Act.

Q. I think that's right. We have them in our materials here. Yes the, the Canterbury Earthquake Building Act order 2010 states that it's made pursuant to section 6 of the Canterbury Earthquake Response and Recovery Act 2010 and then the 2011 order is made under the

1010

Canterbury Earthquake Recovery Act 2011 s 71 but they have effect in relation to provisions of the Building Act.

A. They do yes. Yes and I think the way they work is that instead and I will come to this in a moment in relation to the Building Act itself instead of the trigger for earthquake prone being this reference for moderate earthquake they are triggered at a level below that.

Q. Right.

MR MILLS CONTINUES:

The earthquake prone provisions of the Building Act do not apply exclusively to unreinforced masonry buildings although the nature of unreinforced masonry buildings is such that unless they have been retrofitted, in other words have had their structural performance improved they will invariably be classified as earthquake prone. In fact prior to the 2004 Building Act unreinforced masonry buildings were the only building type that was described in this way and I think the Commissioners will be aware under the 1991 Act they were described as earthquake risk buildings but essentially the same concept. However as the result of the 2004 Act the earthquake prone provisions are no longer tied specifically to one reinforced masonry building rather any building that does not meet the definition of earthquake prone is treated as an earthquake prone building irrespective of the building type.

Turning then to some of the difficulties that I think have emerged from some of the submissions we've received about the operation of the Building Act provisions first of all s 122 which is the principal definition of what is an earthquake prone building. That section says that a building is earthquake prone if in a moderate earthquake the building is likely to collapse causing injury or death or damage to another property. The focus is on the performance of the building if what I've learned myself during the course of this Commission is referred to by structural engineers as the ultimate limit state. In other words the focus of the concern with s 122 is life safety. Preventing damage to the building is a secondary consideration. The New Zealand Society of Earthquake Engineers in an important report it issued

in 2006 entitled "Assessment and Improvement of the Structural Performance of Buildings in an Earthquake" interpreted the words "likely to collapse" in s 122 as meaning that collapse could well occur. That's of interest I think not because it's necessarily the correct interpretation of those words from a lawyer's perspective but from the perspective of earthquake engineers that's how they have approached that term.

I also noted with interest when I was looking again at that report that the society preferred to read s 122 as a reference to an overall expectation of performance in an earthquake not just a moderate earthquake and supported an amendment to s 122 to clarify this. Now my understanding of why the society took that view is that they thought that it was too difficult to be as precise about when would a building be likely to collapse by reference with quite descriptive language of moderate earthquake and so on and we're looking to recognise what I understand as seen as a more complex issue little end itself with quite such precise lines but nonetheless the section stays as it is but I do just note in passing that the question of how clear cut it is in determining whether any particular building is earthquake prone is an issue that will emerge on the evidence. It will emerge later I think as well in some of the hearings into a couple of the principal buildings the Commission will be dealing with and it's an issue that the Commissioners may want to question the territorial authority representatives about when they appear later in this hearing.

The next issue about the effect of s 122 which I want to just pause on because I think it does have some real significance to a number of the issues that the Commission will be dealing with is the use of the words "the building" in s 122. Now there have been submissions from several of the territorial authorities that this does not give them authority to require the strengthening of parts of the building such as chimneys and parapets which of course have been identified in the interim report as being a particular concern unless it can be show shown that the building as a whole is likely to collapse in a moderate earthquake. There are the legal arguments about this are canvassed at least

impart in the submissions from the Department of Building and Housing that the Commission has and at some point if you haven't looked at it already you will see an appendix there with these arguments around this issue is set out but it is certainly an issue if there is uncertainty about this and I'm going to say in a moment I think there is because if the building as a whole has to be earthquake prone before the territorial authorities can exercise their powers under the Act and it is not enough that only parts of the building can be shown to collapse then the local authorities are thrown back under their powers under s 121 which is the power to deal with dangerous buildings but the difficulty with that it seems to me is that s 121 specifically excludes a danger arising as a result of an earthquake. The section says the danger must arise in the ordinary course of events. And I note that the difficulty that appears to be there with the use of the language "The building", the definition section of the Building Act doesn't help did not exist under the forerunner to the two Building Acts and I have referred in my written submission to the Local Government Act 1974 which defined a building to include any part of a building which seems to be a simple answer to any difficulty that's arising with the effects of s 122 and it may be a matter that the Commission will feel it needs to give some further attention to.

JUSTICE COOPER:

Supposing the building, the part of the building in question was a parapet would it be logical to talk about the parapet having its ultimate capacity exceeded.

MR MILLS CONTINUES:

Well I think that clearly there is diversions of view on how this will work for most of those authorities, Wellington in particular has raised this concern in its submission. I've looked at it reasonably closely. I think that I am forced to the view that there is room for a legal argument around this. It's a complexity that one would not want to have to engage with. It does seem to be there is a simple answer to this to have, to reinstate the language building or a part of

the building but I think there is a concern and you'll hear it in the course of hearing –

JUSTICE COOPER:

Well that may be right but I suppose some wider change might be necessary if one was going to retain in their reference to ultimate capacity.

MR MILLS CONTINUES:

I don't know one would, would one could but the ultimate capacity of a parapet. I suppose the, just really immediate reaction to that it works to some extent doesn't it because you'd be saying is a building or a part of a building likely to collapse in a moderate earthquake and so it's the ultimate limit state question I suppose which might require a bit of reconsideration but the core issue of building or part of the building being likely to collapse would seem to me attend to the concern that seems to have been identified and of course it may be that as the pressure comes on more than it has in the past from the territorial authorities because of the wakeup call from the Canterbury earthquake this issue of testing the powers of the territorial authority might become more of an issue.

1020

The next thing I just touch on is the point that in general the earthquake prone policies in the Building Act don't apply to residential buildings. Again this is an issue that is touched on in the submissions that have been received from the Wellington City Council. It is possible I think that in the wake of the Canterbury earthquakes there might be a mood to reconsider the fact that residential buildings are essentially totally exempt from the earthquake prone provisions, I'm not suggesting that those provisions would apply holus bolus to the residential buildings but as you'll hear in relation to the Wellington submission there are issues that are emerging around whether there are some key components of residential buildings that would make a very big difference to their earthquake resilience if they were done, and as I observe in the written submission the old adage of stitch in time may commend itself more than it has, particularly as is becoming very clear from Canterbury

earthquakes the costs that are incurred are not simply private costs, even with residential buildings. There are broader public costs that are inevitably incurred if residential buildings in significant numbers are brought to a state of serious damage or collapse in an earthquake.

I turn next to that limb of the definition of earthquake prone buildings which asks, well what is a moderate earthquake, section 122 says likely to collapse in a moderate earthquake, so what is a moderate earthquake, and the definition for that as the Commissioners will know is in regulation 7 of some regulations that were made in 2005, I've given you the reference there and it is breaking it down, one that would generate shaking at the site of the building which is an important element of this, it is at the same site as the building where the issue of whether it's earthquake prone or not is being considered, that is of the same duration but only a third as strong as the earthquake shaking that would be used to design a new building for that site. So to put that more simply, although possibly not entirely accurately, a building is regarded as earthquake prone if it has less than one-third of the capacity to withstand a moderate earthquake that a new building at the same site would have.

The appropriateness of the New Zealand approach to this, which is to use new building standards and then a percentage of new building standards as a way of determining the performance of existing buildings, often older and heritage or character buildings, is an issue that is raised by one of the peer reviewers the Commission will be hearing from, and the alternative of course would be to have a separate set of rules that would be designed specifically for existing buildings and again it's an issue that will be raised in the course of this hearing, but that's the New Zealand approach. Take the existing code, the new buildings and by reference book a percentage of it to determine whether existing buildings are earthquake prone.

One other point that I just note because it becomes relevant I think to the discussion as we go along, is that because the reference to the definition of

earthquake prone is related to the specific site, it is important to remember that the seismicity rating for sites differs around the country, this is the so-called Z factor that we heard about in the first hearing that we heard from GNS, so the strengthening required to bring a building above the earthquake prone standard in Dunedin for example will be different to what is required in Wellington, even though the same language is used, to describe what is required the actual steps required will differ.

Now again there seems to be some divergence of view from a legal perspective about the effect of the one-third of new building standard benchmark, and again I just touch on this so that the Commissioners are aware of it, if you're not already. The interpretation most Territorial Authorities seem to have accepted is that they have no power under s 124 to require a building owner to improve its seismic performance beyond the level of one-third of the new building standard. Once it gets to that that's the limit of the Territorial Authorities jurisdiction to demand strengthening. There is a contrary view and it seems to be a minority one, although again this is an issue the Commission may want to raise with Territorial Authorities when we hear from them, that if a building is below the one-third standard and it's accordingly earthquake prone that engages the jurisdiction of the Territorial Authority. The Territorial Authority then has power to require whatever steps it considers to be needed to prevent that building being dangerous but that does seem to be a view that has not generally been accepted, it is the first one, that the limit of the jurisdiction ends when you reach that one-third standard that in my understanding is the way in which the Territorial Authorities around New Zealand have generally seen their powers.

JUSTICE COOPER:

Q. Do you have the section 124 -

A. Yes I do.

Q. - with you?

A. Yes. The way that section is drafted, it relates to building's that are dangerous, the buildings that are earthquake prone –

Q. And buildings that are insanitary.

A. Yes.

Q. It seems to be directed against those three categories. And then there are powers that are listed that may be exercised in respect of the building in any of those three categories, so you can have a hoarding or a fence to prevent people from approaching the building nearer than is safe, secondly notice can be attached warning people not to approach the building and then thirdly written notice can be given requiring work to be carried out on the building within a specified time. Now then in paragraph C it is said what the notice – what the work can be and one is to reduce or remove the danger which obviously applies in a straightforward way to a dangerous building.

A. Yes.

Q. And the second option is to prevent the building from remaining insanitary, which again seems unclear, so that relates to the insanitary buildings, but there's no specific provision there which is directed to that category of building which is earthquake prone.

A. No.

Q. Well noticing that aspect of the drafting, I'm not sure that this helps resolve the interpretation issue but it seems to me that the words, “the danger,” must probably contextually relate to the status of the buildings earthquake prone, that's what’s making it dangerous in this –

A. Yes.

Q. In that particular case?

A. Yes. I think the –

Q. Which would mean that –

A. Yes.

1030

Q. – if the elements that made it earthquake prone were removed there wouldn't be any further power that could be exercised that council would have used up –

A. Yes.

Q. – its ability to police the section.

A. Yes I think that is the view that's generally been taken.

Q. That's what you described as the majority view isn't it?

A. Yes and I have to say I think that view is right and if you look in –

Q. Is there anything in the, in the legislative history which explains what, in terms of the general structure of the drafting of this section appears to be a gap because there is no, once you get into paragraph (c) there is no specific power which is directed to earthquake-prone buildings other than this removing the danger.

A. Well I think probably the history of it that I'm aware of and I'll come to some of it momentarily is, does indicate that the interpretation that you've just been outlining is the one that was intended and I think you can, the other section that helps on this, I think, is section 121 which gives the definition of a dangerous building and this is the one I mentioned before which specifically excludes in determining whether a building is dangerous, becoming dangerous for an earthquake, at least that's how I read s 121 and so it's got to be dangerous, as the section says, in the ordinary course of events.

Q. But then it says excluding the occurrence of an earthquake.

A. Yes.

Q. It seems odd to me that by the time you get to section 124, having specifically excluded dangers as a result of earthquakes you're now saying, well when you get to 124(1)(c) danger is applying to earthquake-prone buildings. It just seems very odd.

A. Well it's certainly the way I'd read that section and I'm not saying it isn't capable of some debate is that section 124 is dealing with three discrete powers –

Q. Yes.

A. Three discrete circumstances with powers related differently to each of those three circumstances.

Q. Yes.

A. And so they –

Q. You mean categories of building?

A. Yes.

Q. Dangerous, earthquake-prone or insanitary?

A. Yes and then you go back to 121 and it tells you what a dangerous building is.

Q. Yes.

A. And so under 124 to be a dangerous building you'd have to conclude that it was that, not, in the ordinary course of events not dangerous because it's earthquake prone.

Q. Mmm.

A. That's how I've read it any rate.

COMMISSIONER CARTER:

Q. You're reading Mr Mills that those three types, dangerous, earthquake-prone or insanitary are mutually exclusive.

A. That's how I've read them because of the structure of this part of the, of the Act. Now it's, it's not, it's open to I think some, some argument and there have been contrary views expressed on this. The issue really that I raised with the Commission is that the fact that there is room for argument over this, just as I think there is over the effect of using the language, the building, means that this is in a pretty unsatisfactory state because while it's nice for lawyers the last thing that's really needed from a public perspective is arguments going through the Courts about the powers of the local authorities to deal with these issues.

JUSTICE COOPER:

Q. Well have there been arguments in the Courts though?

A. Not that I'm aware of. It was really the Wellington City Council submission that made me focus on this, these issues, both of these issues more precisely because they've expressed a concern about it in relation to what I think they describe as push-back from building owners about the, what powers the council has got. So it's an issue really to be explored I think more with the territorial authorities but this is the background to it, that's leading to that.

Q. The enforcement of a notice issued under section 124 is something which is, ends up in the District Court isn't it –

A. Mmm.

Q. – under section 126.

A. Mmm.

Q. I'm just wondering whether this particular issue that you've brought to our attention now has been canvassed and any decisions in that -

A. I don't think there have been any.

Q. – in that Court.

A. But it's a matter that actually I can check. I imagine that Ms Jagose who's sitting behind me for the DBH she may –

Q. Well I'd be interested if it had, if this issue had been discussed in any Court decision.

A. My slightly jaundiced guess on this is that because the policies which the territorial authorities have generally adopted have been either passive or only mildly active that the bite on this hasn't really occurred yet but I think that's changing now which is why the focus on these issues has the potential to become rather more acute. I should just add that the contrary view on the powers that section 124 gives, I'm just being handed something which might help, the contrary view on this had another limb to it, at least the one that I've read which suggested that the, this would be a determination made by a local authority if they said, it's earthquake prone, we've got the power, you must now do the following things which go above the one-third of new building standard if that that would then only be able to be challenged through the determination process through the Department of Building and Housing. That's my understanding of at least one of the views that has been expressed in legal advice that's been given. I haven't followed that through. I haven't really formed a view myself on whether that would be so but again it's an illustration of uncertainty about how this all works.

COMMISSIONER CARTER:

Q. Mr Mills did, did sub-clause (2) have any significance for you in this regard?

A. "It doesn't limit the powers of a territorial authority under this part." Well it, it wouldn't if there were another provision that gave the powers that are being dealt with here but I'm not aware of any other general power which this is a catch-all for saving that they could turn to. I think their powers here in relation to earthquake-prone buildings and/or dangerous buildings, they're set-out here and that's where they're set-out. Now just let me have a look at what I've just been handed. I've just been given a copy of, or a page from the 1991 Building Act.

Q. Yes.

A. And section 65 and 66 have been highlighted. Yes I can see why this has been handed to me. The 1991 Act separated the dangerous or insanitary building powers which are section 65 quite distinctly from those that were deemed to be earthquake prone which was section 66.

JUSTICE COOPER:

Q. We've got this Act, the 1991 Act is at tab 5 of these materials and you're referring us to section 65 are you?

A. 65 and 66 and you'll see that –

Q. That's interesting. What is the point that you're wanting to make here?

A. Well I'm just trying to absorb it myself. You'll see under section 66 –

Q. Yes.

1040

A. – buildings which are deemed to be earthquake prone it goes on, this is the relevant link, s 66 ss 3 "A territorial authority on being satisfied that any building is a building deemed to be earthquake prone" this part is based on the section we were just looking at under parapet "Put up a boarding or fence and then accept as provided in s 74(1)(b) give notice requiring work to be done on a building to reduce or remove any danger within a time specified" which just looking at that now would rather suggest wouldn't it that the power to require a danger to be removed is triggered by being earthquake prone but not tied to it

ceasing to be but I just need to look at that more carefully and if the Commission want –

Q. That is in that Act.

A. It is in that Act but this would be a matter of again now going back more forcefully to 2004 Act and just seeing with that combined effect whether it was intended to do anything different and the other section which I think has some possible bearing on this is s 129 of the current act which measures to avoid immediate danger, it's the immediate danger that I'm interested in and you'll see that ss 1A includes a reference to s 122 which is the earthquake prone definition section and it says "This section applies because of the state of the building et cetera immediate danger to the safety of people is likely in terms of s 122" in other words the earthquake provision. "The Chief Executive of the territorial authority may by warrant issued under his or her signature cause any action to be taken that is necessary in his or her judgement to remove that danger" so there is an issue here.

Q. Well I mean that just adds to the complexity as far as I can see because we are in a part of the Act which as we have said before notwithstanding the reference to s 122 again all posture of these provisions is that one is not interested in danger as a result of the occurrence of an earthquake.

A. Yes, yes. I don't, I am not suggesting that this is clear by any means and the fact that it isn't is the cause of concern I think that immediately identifies itself. If I was arguing the case one way or the other as I am not in the context of the Commission I no doubt would be pressing one side or the other harder. At the moment -

Q. Well it is pretty hard. I mean the argument that is hardest to round is the more expensive one.

A. Yes but that much seems clear.

Q. There is no doubt that our terms of reference oblige us to express a view on the adequacy of these statutory provisions doesn't it?

A. It does.

Q. One is not functioning as a Court of course so –

A. No I would have thought it could be any part of the Commission's jurisdiction.

Q. So we will be very interested in what other parties including the Department of Building and Housing thinks these provisions mean.

A. Yes.

Q. As well as the territorial authority.

A. Yes.

MR MILLS CONTINUES:

All right moving on to the next point. The next issue that I just touch on and it's an issue that will be made very clear in Professor Ingham's evidence in terms of the factual aspect of this I simply note at this point that significant issues about the adequacy of the one third of new building standard have emerged from the way retrofitted buildings have performed in the Canterbury earthquakes. The evidence as I apprehended is that at least in the ground notion effects at Christchurch experience strengthening only to that one third standard offered few gains over not strengthening at all and that's a matter that you'll hear Associate Professor Ingham on. I think that's where the evidence heads.

The next thing I just touch on is a comment about the origins of the one third of new building standard which I've taken from the submission from the Department of Building and Housing so you'll hear more about from them but I thought it might be useful to just touch on it at this stage.

The submission from the department acknowledges that the definition was intended to target the buildings that were least safe in an earthquake. I think it's important that the public understand as well as the Commission that that's the way the department describe the intent of the earthquake prone provisions, to target the least safe buildings and the decision to peg the standard at one third involved a decision on what is an acceptable life safety risk. In the end that's what lies behind these sorts of decision. They may appear to be dry, statutory language or technical terms but they aren't making

an assessment about acceptable life safety risks. I just observe that it's not clear how the conclusion that this represented a risk acceptable to New Zealand society was arrived at. It's an issue the Commission maybe interested in enquiring about.

JUSTICE COOPER:

Q. Now does that submission are you satisfied that you looked at the Parliamentary record adequately?

A. No I can't say that. This is drawn from the DBH submission and on the basis that the department will know all the nuances of this. I simply convey that to the Commission at the moment but we can certainly look at it ourselves in more detail. The department of course would have been involved in this so whether that appears anywhere.

Q. Well perhaps they will tell us some more about that hopefully.

A. That's right.

Q. Because one of the concerns I have is I would like to understand how that was thought to be an acceptable level of risk and what process historically we have gone through to arrive at that point.

A. Yes I think you're probably not alone in that. The department I think will be the best to talk about that.

Q. Yes.

MR MILLS CONTINUES:

I then just again make reference to the New Zealand Society of Earthquake Engineers report in 2006 that I mentioned previously. Their view as the Commission is well aware was that all buildings that are at less than 67 percent, two thirds essentially of the new building standards should be seriously considered for improvement in their structural performance and that any earthquake prone building, namely the one third of new building standard should be brought to a standard that is as near as is reasonably practicable for that of a new building so a much more demanding view of what was needed by the Earthquake Engineers Society than the Act currently reflects.

The next point I want to make about this again I know the Commissioners are well aware of this but it more widely may not be appreciated is the point that again is made in the Department of Building and Housing submission that the earthquake risk from the structural performance is not linear and they give some figures which are to a layperson like myself quite surprising.

1050

They say that the risk from a building that is expected to perform at two-thirds of the new building standard is three times that of a building constructed to the new building standards. So you get two-thirds, three times the risk of a building constructed to the new building standard. However, a building that is at one-third of the new building standard is 20 times more likely to collapse than a building constructed to the new building standard. So it's not a linear progression according to the Department of Building and Housing. There's a very, very significant collapse risk moving from the one-third to two-thirds and I expect that that will be evidenced by what you will hear from Professor Ingham.

The other way that the department puts it in its submission is they describe the risk with a building strengthened to one-third as a significant risk but even at two-thirds they describe the risk as a considerable risk. I think again it's important that it's part of the public debate that's a part of this process that that's understood.

I turn then to some of the, to flesh out a little bit the earthquake-prone policy issues and again as the Commission knows the Building Act requires all territorial authorities to have an earthquake-prone policy. They must have one. They had to have it within five years. They're in the process of reviewing it now which, again, is a statutory requirement. However, what the territorial authority chooses to have as it's earthquake-prone policy is almost entirely a matter for it and this is an issue that, undoubtedly, will receive quite a bit of attention in this hearing.

I have set out at page 10 in my written submission what it is that the Act says a territorial authority must include within its earthquake-prone policy and as you will see it's minimal. The first is it has to set-out the approach it is taking. Generally that has meant, are we taking an active approach or a passive approach, points which I'll come back to. Secondly, the policy has to state what the territorial authority's priorities are in its earthquake-prone policy and then finally it has to say how that policy is going to apply to heritage buildings. So that's all it has to do. Beyond that it can essentially choose its own course in what goes into its earthquake-prone policy.

Now my own observation and from reading various reports, some of them from the Department of Building and Housing, some from the direct responses we've had from territorial authorities is that at least prior to the Canterbury earthquakes and the wake-up call that it may have delivered for the rest of the country a significant number of territorial authorities did virtually nothing to advance seismic strengthening of earthquake-prone buildings. As I mentioned a moment ago, many of them adopted what is referred to as a passive policy where no steps were required to improve the earthquake performance unless there is an alteration to the building or a change of use of that building and you'll be aware that that triggers specific powers under the Building Act and the passive policies generally would say, don't have to do anything on seismic strengthening until there's an alteration or there is a change of use and really, when one looks at those sections, it's essentially the change of use provision that gives the local authority powers.

JUSTICE COOPER:

Q. If, and I'm not sure whether any local authority took this view but would it be possible for councils to say, well, our policy is just to do nothing?

A. Well -

Q. And leave it up that – well they'd say, they'd say leave it up to the owners of the buildings because to say that the approach that the territorial authority will take in performing its functions under the, this part of the Act –

A. Yes.

Q. – which is the language of section 131(2) and –

A. Yes.

Q. – takes one to the point where one's interested in what the functions are and the relevant function for our purposes I suppose is to be derived from section 124 which says if a territorial authority is satisfied that a building is earthquake prone.

A. Yes.

Q. So that actually requires some positive step that the council needs to take –

A. Yes.

Q. – to inform itself that a building is earthquake prone but if it doesn't take any such step can it sidestep the Act altogether?

A. Well I wouldn't have thought so. I would have thought there is a sufficiently clear statutory purpose that just saying, overtly, our policy is to have no policy would not comply with the requirements of the Act and, of course, the policies don't say that overtly. The concern is that in reality with very, very extended timeframes or with the need for any seismic strengthening to be tied to alterations, change of use, that it comes quite close to that, even though it doesn't overtly state that. But I think if, if, I think the Act on, on general principles of statutory interpretation, which Your Honour will be well aware of, I would have thought that there, if it were as blatant as we, our policy is not to have a policy on this, that that would be open to challenge.

Q. Well I suppose if you were propounding that view you would say, well we comply with this part of the Act by having a policy on dangerous building and insanitary buildings but earthquake-prone buildings we leave to the good sense of the, of the owner because it's under this part of the Act isn't it?

A. Yes.

Q. But you would say well the function extends to earthquake-prone buildings so the inference is that you will have a policy on such buildings as well.

A. I would, I, I would say that section 131 is saying that the territorial authority must within 18 months after the commencement of this section adopt a policy on each of the following –

Q. Where are you reading from?

A. Well at 131(1). It doesn't say each of the following but that's how I certainly would interpret that. Each of the following, dangerous, earthquake-prone and insanitary and of course the first step to that as you observed is to have a list of the earthquake-prone buildings within the territorial authority's jurisdiction and I don't think that's happened in a lot of cases but, again, questions can be asked about that when the territorial authorities are heard later this week.

Q. Yes, all right, thank you.

MR MILLS CONTINUES:

I then just note that even where the earthquake-prone policies say they're adopting an active approach there've been very long time periods that have been specified, in some cases as much as 50 years for buildings to be brought up to the one-third of new building standard. The reason for this extensive delegation to local authorities appears to have been to allow local communities to make their own decisions on how they weighed and valued the different issues involved here, preservation of old buildings that give character to their communities versus life safety, versus the allocation of scarce resources to other functions and I think that, I think DBH, Department of Building and Housing, will confirm that that was what was behind this but at least as far as I'm aware, again a matter to be explored in more detail later in this hearing, but as far as I'm aware there are very few examples of local

1100

authorities using that delegation to really actively engage with the affected communities in an informed way. Now they do have to use the consultative procedure under the Local Government Act which Your Honour will be very familiar with but nonetheless there do not seem to be many examples of engagement with the wider community, of course its engagement with building owners but with the wider community in an informed way which would enable

them to make these difficulty choices at the community level. Now whether the extended delegation that's involved here is acceptable or whether there's a need for a greater level of national standards here are undoubtedly important issues that the commission will need to address, will wish to address.

Another issue which is emerging in some of the discussion that's been going on since the Canterbury earthquakes is whether there is a case for a higher standard of earthquake performance for the four major CBD's simply because they are the major CBDs and as we've seen with Christchurch the impact on the, not only on Christchurch but on the wider national economy is particularly significant when we're talking about the major urban areas.

JUSTICE COOPER:

Q. What are the four major CBDs Mr Mills and be careful.

A. Auckland, Wellington, Christchurch, Dunedin.

Q. So what about Hamilton and Tauranga and Lower Hutt.

A. Well a case might be made for them but my own, as I use it here I'm saying that there is because, I think there are four major CBDs in the country and there are, they raise issues that are distinct about the impact that it has on the national economy if they suffer the kind of devastation that we've seen in Christchurch and without expressing a view on this at all I simply identify the fact that there does seem to be a view emerging in some quarters which says we need to think about whether simply because of the role they play within New Zealand that there is a case for quite specifically thinking not just about life safety issues with those cities but with resilience and the ability of those cities to pick up and keep going without the kind of massive destruction that has occurred sadly in Christchurch.

Q. Well I think without wanting to disagree with what you have said I think you would find it hard to limit that argument to four.

A. It maybe.

Q. But anyway they are focal points of commercial investment and community activity in which characteristically public and private interests have extended a great deal of money.

A. Yes.

Q. And to which many people are attracted on a daily basis.

A. Yes. Well it may have been more politics to not name other CBDs. It's a good way I suggest of just sharpening the base even though ultimately it might expand to include more than the four that I've identified.

MR MILLS CONTINUES:

I turn then fairly briefly to the third of the three issues that the Commission is dealing with in this hearing and that is these buildings that are not earthquake prone but do not need current legal and best practice requirements and I can deal with this fairly briefly. The short point is that there's essentially no ability to require a building that is not earthquake prone to have its structural performance improved. If the building is not dangerous or insanitary or earthquake prone the owner can only be required to improve its performance if it is altered or if there is a change of use and on my reading of the Building Act it is really the change of use provision that is the only one that is read as structural performance of the building so as to the change of use a building that is not earthquake prone there is no power for the territorial authority to address the structural performance of that building and as Your Honour will see if you look at s 115 of that 2004 Building Act where there is a change of use the territorial authority can require the building to comply as nearly as is reasonably practical with the current building code.

JUSTICE COOPER:

Q. That stops a bit short does it not it because it is only in relation to, it includes structural performance.

A. Yes. Where as you will see if you look at 112 which is the alteration provision it refers only to means of escape from fire and disability access. Another one of the provisions in the Act which strike me as

better with issues other than earthquake issues than it does with earthquake issues themselves.

Q. When one looks at s 115(d) and one, and it seems to envisage complying with the current standards in relation to escape from fire, the section of neighbouring properties, sanitary facilities, fire rating performance, access to the disabled and then you throw in structural performance what is left out?

A. Well not much I don't think but of course by contrast much is left out of s 112.

Q. Yes well I think that point is well made but I just, I suppose I am really wanting to know what paragraph (b) (2) with its reference to others provisions of the Building Code.

A. So is there any room left over. Yes I don't know the answer to that but I agree that that first part that you read out is very broad and it would be a matter of overlaying one over the other to see if there is anything left and there might not be. It might be a typical lazy catch all that goes into legislation from time to time just in case.

Q. I suppose we do not have the Building Code before us we do?

A. I don't think you do.

MR MILLS CONTINUES:

So that's the position then and the one other point I just mention in passing because it comes up in three of the submissions is the fact that the change of use provision and also the alteration provision which of course will be triggered when changes are made to an earthquake prone building then requires this compliance. I'm just looking at s 112 for the moment. When we've got an earthquake prone building alterations are to be made to it to bring it up to one third of new building standards s 112 is triggered and then there's got to be compliance as early as is reasonably practicable with the provisions of the Building Code in relation to escape from fire and access and facilities for persons of, with disabilities. Now there is, I think you will hear

1110

from some of the Territorial Authorities that the fact that the strengthening of a building against earthquake issues is then triggering along with it upgrading of both fire escape issues and disability access, is proving an obstacle, in some cases, to owners getting on with the seismic strengthening, and all I say is that there is I think, it is clearly sensitive issues but there is an issue about if that is the case, about the equating and its specifically the disability access issue of a life safety issue with an amenity issue, so I simply note that as it will come up in some of the evidence that you will hear. The Commission may or may not think it's an issue that warrants any attention.

Then on the third issue that the Commission is dealing with, again the DBH submission has some interesting comments on this in its written submission. They suggest that at the time that the Building Act was enacted it was intended that one of the consequences of delegation to the local communities was that it would generate a greater understanding of earthquake risks and that would ripple through to encourage people who had these buildings that are not earthquake prone to want to upgrade their buildings as well, in other words even though it didn't by law reach through to non-earthquake prone buildings, that by raising sensitivity about earthquake risks, it would encourage voluntary compliance with building or voluntary upgrading of buildings that were not technically earthquake prone. I think it's clear that if that was the hope it hasn't been realised and I think you will certainly hear that from the Territorial Authorities.

Now of course whether that will change in light of the Canterbury earthquakes remains to be seen, it's also possible that what we're seeing is a shift in the insurance market which might mean that long after, but the immediate memory of what's happened here has begun to fade around the country, that the insurance market will push some of these issues.

The final point I make on this third issue is this, the reports that have been received by the Department of Building and Housing on the PGC building, which of course is the subject of a later hearing, do seem to me to carry the

important message that although the Canterbury earthquakes provide lessons that can improve new buildings there may be greater risk reductions in taking an active approach for the screening of existing buildings. To try identify whether they have any structural weaknesses and ensuring appropriate retrofitting takes place, that in my submission would require legislative change. It is also an issue being raised about whether the local authorities should have power to require regular maintenance checks. Again that would require legislative change but I think there is an important message here from the Canterbury earthquakes that the lessons might not just be about the building better new buildings but greater advances might be raised in terms of life safety, particularly by attention to existing buildings.

JUSTICE COOPER:

Q. The comment about the need for legislative change, you were talking about buildings which, although they may not be satisfactory for some reason –

A. Yes.

Q. - are nevertheless that add to a 34% of the new building standards?

A. Yes, yes, and we may, I suspect we're going to be seeing some examples of that as we move into other phases of the enquiry.

MR MILLS CONTINUES:

Well that's all I have to say by way of the issues that we'll be dealing with, I just want now to cover the structure of the hearing, and then get Professor Ingham to start off the evidence. So the hearing that we're starting today essentially has two parts to it and I think I foreshadowed that in what I've said already. The first one, the first part is the focus on the unreinforced masonry buildings and what has been learned about their performance and what works and what doesn't etc in the Canterbury earthquakes. The second is the issue around the earthquake prone policies, so on the first phase of this hearing, the unreinforced masonry buildings, how they performed, what lessons we've learned, they will be addressed principally by Associate Professor Jason Ingham, he's the first witness who's about to be called.

Professor Ingham together with Professor Michael Griffith of the University of Adelaide was commissioned by the Royal Commission to prepare a report on unreinforced masonry buildings. That report itself is divided into two parts, the first is dated August 2011 and it focussed on the performance of unreinforced masonry buildings in the Canterbury earthquakes, the second which is just recently come to hand dated October of this year, focuses on the performance of earthquake strengthened buildings in particular in the February earthquake and both of those reports are available of course on the Royal Commission's website.

The first of the reports was available to the Commission before it wrote its interim report, the second was not. Jason Ingham is an Associate Professor in the School of Civil and Earthquake Engineering at the University of Auckland. He is the deputy head of research, in addition to a Masters in Engineering with Distinction from the University of Auckland, he has a PhD in structural engineering from the University of California at Santiago. He also has an MBA from the University of Auckland. He has, I have to say from looking at his curriculum vitae, an astonishing list of achievements. It's far too long to justice to do them here but his curriculum vitae is on the Commission's website, they include the John B Scalzi Research Award from the United States Masonry Society and invited conference addresses in very wide range of countries including Australia, United States, Korea, Chile, Italy, Greece, China, Brazil, several of which have dealt with issues arising out of the Canterbury earthquakes. He has also published extensively in both New Zealand and international journals. He will speak of the reports he and Professor Griffith prepared by reference to a series of power points.

After you've heard from Professor Ingham the Commission will hear later this afternoon from the New Zealand Historic Places Trust, their chief executive Bruce Chapman will present that submission. The Trust lodged a written submission and asked specifically to be heard by the Royal Commission.

Tomorrow morning and tomorrow we commence at 9.30, the first of the two expert peer reviewers that the Commission retained will be heard. The first of those is a Mr Brett Lizundia, he is a consulting engineer and a principal in the firm of Rutherford and Chekene in San Francisco. Again his peer review paper is on the Royal Commission website. He has over 23 years of experience in the structural design of new laboratories, museums, academic centres, libraries, aquariums and office buildings and the seismic evaluation and rehabilitation of existing buildings. He has had a particular focus on unreinforced masonry buildings including earthquake reconnaissance, loss estimation and technology transfer of advice to practising engineers. His recent portfolio of work includes the seismic rehabilitation of the Frank Lloyd Wright Hanna House, a national landmark structure that is at Stanford University, he was the project manager for some very significant reports from the Federal Earthquake Management Agency in the United States, and I've set up the details in the submission written submissions but I won't deal

1120

with them here. He is the recipient of the Earthquake Engineering Research Institute prestigious Shah family innovation prize at the ATA Brunei awards from the Structural Engineers Association of Northern California so he's the first person you'll hear from tomorrow morning. He's then followed by the second of the two peer reviewers that the Commission retained a Mr Fred Turner. He's also from California which shares many commonalities with New Zealand in both its seismicity and the use of unreinforced masonry buildings. He is a structural and civil engineer and is on the staff of the California seismic safety commission, a public policy in state Government. In that role he advised the Commission and other state and local agencies on policies for earthquake risk management. He helps co-ordinate California's earthquake loss reduction plan and multi-hazard mitigation plan and monitors earthquake related efforts by state, local and private parties. He also manages California's unreinforced masonry building programme that encompasses 26, 000 brick, stone and adobe buildings in California in their active seismic regions. He chairs the American Society of civil engineers masonry issue team that is developing an international standard to the seismic evaluation

and retrofitting of existing unreinforced masonry buildings. He has a long history of involvement in historic preservation and is the former chairman of the City of Sacramento design review and preservation board. He has visited Christchurch on several occasions since the September earthquake.

After the Commission has heard from both Messrs Lizundia and Turner they will be joined by Professor Ingham for a panel discussion during which they'll be available for questions from the Commission. In the final session on Tuesday the Commission will hear from a body called ICOMOS New Zealand which is an international non Governmental organisation of heritage professionals dedicated to the conservation of the world's historic monuments and sites. It was founded in 1965 as a result of the international adoption in Venice of the charter for the conservation and reservation of monuments and sites and as UNESCO's principal advisor in matters concerning the conservation and protection of historic monuments and sites.

ICOMOS will be represented at the hearing by Jeremy Salmond who's an architect, Ian Bowman another architect, Bruce Petry also an architect and David Reynolds who's a heritage consultant.

On Wednesday morning the Commission will hear from Doctor David Hopkins who will be well known to the Commissioners. He is a consultant for the Department of Buildings and Housing but he's presenting this submission in his own capacity. Following Doctor Hopkins on Wednesday the Commission will hear from the Property Council of New Zealand. They filed a written submission that comments specifically on issues raised in the Ingham/Griffiths paper and have asked to be heard. Following that the Commission will hear from Adam Thorton of Dunning Thornton Consultants, a firm of structural engineers. That will be done via video link. After the Commission has heard from Mr Thorton it will hear from Mr Joe Arts a well known Christchurch property owner whose family own part of the Duncan building, a 1905 building on High Street and he wishes to address the commission on his experience as a property owner in dealing with the council on problems of earthquake

strengthening. Finally on the Wednesday the Commission will hear from Suzanne Townsend, the deputy Chief Executive of the Department of Buildings and Housing. Now Thursday is expected to be a lay day although it may involve some carry over if we run short of time on other days and I just explain why that is. First the Commission is going to hear from the major cities if I can continue to use that terminology.

JUSTICE COOPER:

At your own risk Mr Mills.

MR MILLS CONTINUES:

I appreciate that. It is also going to hear from the Gisborne District Council and the Napier City Council and also from Local Government New Zealand. Just by way of explanation as to why counsel specifically asked Gisborne and Napier to appear the reason is this Gisborne has been very activity focussed on its earthquake prone policy since the 2007 Gisborne earthquake and it is of interest for that reason and Napier has been asked to appear in part because it's the custodian of the unique part of New Zealand built environment. Now in addition and again at the request of counsel 18 territorial authorities have provided written advice about their current policies and they will be put, I don't know whether they are there yet but they will be put on the Commission's website and copies will be available to the Commissioners.

Now the second aspect of that and the reason for having this next week rather than this week is because that will be followed by a panel discussion in which each of the territorial authorities will participate along with the Department of Buildings and Housing and the Local Government Association and because that runs over two days we needed to have those two days consecutively which we couldn't get by holding it on Thursday of this week, the Friday being a holiday in Canterbury.

So that's the structure of the hearing I will have more to say about the individual witnesses when they're called but unless there's nothing further I

will ask well we might well want to take a brief adjournment then get Professor Ingham in.

JUSTICE COOPER:

I think we will. Not at all Mr Mills thank you that has been very helpful and has focussed for me and I am sure my colleagues the main issues that we are going to be concerned about so I thank you for that and we will take the morning adjournment now thank you.