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Royal Commission on the Canterbury Earthquakes  
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Dear Justine

**Submission on the Royal Commission Discussion Paper Building Management After Earthquakes**

I attach a copy of the Ministry of Business, Innovation and Employment submission on the Royal Commission's Discussion Paper: Building Management after Earthquakes.

The Ministry has discussed the submission with the Ministry of Civil Defence and Emergency Management who support the approach outlined, CERA who have no issues with the submission and IPENZ.

We are happy to discuss the submission with the Commission and supply any other information if that would be helpful.

Yours sincerely

David Kelly  
Deputy Chief Executive Building Quality

Copy to: Dean Burke Director Earthquake Recovery Programme

## **Ministry of Business, Innovation and Employment Submission on the Discussion Paper: Building Management after Earthquakes.**

### **1. Purpose**

1.1. The Royal Commission has requested submissions on the above Discussion Paper. This submission has been subject of full discussion with the Ministry of Civil Defence and Emergency Management who are in support of the suggestions made and CERA who contributed to the submission and support the approach outlined here.

### **2. Background**

2.1. The Ministry of Business, Innovation and Employment, Building and Housing Group (formerly the Department of Building and Housing) was one of seven submitters to the Royal Commission on the topic of Building Assessments after Earthquakes. This commented on the issues that have arisen in Christchurch with the building assessment process, suggested ways that the building assessment process could be improved and advised what the, then, Department was proposing to do to address the issues.

2.2. The Ministry of Business, Innovation and Employment (the Ministry) advised in that submission that the Ministry has a role in:

- 2.2.1. providing guidance and input for the preparation of tools prior to an emergency event
- 2.2.2. providing assistance, leadership and guidance during the state of emergency especially on engineering matters
- 2.2.3. developing and administering the regulatory tools available to address long term building safety once the state of emergency is lifted
- 2.2.4. administering the Building Act 2004 which is the appropriate vehicle to deal with all buildings irrespective of the level of damage or the reason it was incurred.

2.3. Since its last submission the Ministry (in some cases while still the Department) has:

- 2.3.1. developed guidance through its Engineering Advisory Group for undertaking the detailed engineering evaluation of non residential and multi-unit residential buildings. This guidance is being used by CERA when requiring owners of buildings that have been subject of earthquake shaking to assess their building. It is intended to formally publish this as Guidance under section 175 of the Building Act 2004



to become part of the Building Management after Earthquake framework

- 2.3.2. published "Guidance for engineers assessing the seismic performance of non-residential and multi-unit residential buildings in greater Christchurch". It introduces an "Interim use evaluation" as a process that can be used in the interim until a more detailed evaluation can be undertaken
- 2.3.3. published "Advice for Canterbury building owners: Assessing the seismic performance of non-residential and multi-unit residential buildings in greater Christchurch".

### **3. Summary of suggested future approach and policy work underway**

- 3.1. The Building Act 2004 addresses design, construction, alteration and demolition of buildings, including the provisions for managing dangerous and insanitary buildings and dams. The Act currently has inadequate provision for the emergency risk management of buildings where emergency means the need to act above the business as usual arrangements. Also inadequate provision for advice on risk and safe occupation thresholds. There is a need for additional authority and powers enabling building collapse investigations, directives, emergency procedures to aid quicker responses, drawing on additional resources and addressing matters such as access, restrictions (including land around buildings at risk), actions and the liability for these.
- 3.2. The use of new emergency risk management provisions in an amended Building Act should be able to be used with or without the need for reference to the Civil Defence and Emergency Management Act 2002 (CDEM Act) and specifically a State of Emergency being declared. The amended Building Act should provide its own triggers for when emergency management provisions start and cease. This is so that building emergency management procedures could be needed and used without an emergency being declared e.g. an aftershock or post a state of emergency event.
- 3.3. Any provisions under an amended Building Act to manage building risk/impact aspects of an emergency will still come under the overarching direction of a Controller in a declared state of emergency. This would apply to setting priorities for the management of an emergency event as a whole, such as directing use of limited resources, restricting access for the safety of response staff and logistics. So the emergency management building system would be mandated under the Building Act and the response as a whole remains co-ordinated through the CDEM Act.
- 3.4. Business as usual emergency planning at the national, regional and local level is aimed at having pre-established understanding and agreement



about response arrangements and roles and it is critical the building sector is part of this planning. At the national level this would see the Ministry of Business, Innovation and Employment (the Ministry) being part of the DESC/ODESC arrangements and overseeing building sector engagement with National Civil Defence and Emergency Management planning. At the local and regional level Territorial Authority (TA) building officials need to be engaged in Territorial Authority emergency planning. The Ministry would have a critical role in issuing guidance, training and engaging with leading building sector groups such as the Institution of Professional Engineers (IPENZ), Building Officials Institute New Zealand (BOINZ), New Zealand Institute of Architects (NZIA), learned societies and the Property Council to ensure the successful and consistent application of their skills in an event. CERA endorses the approach that would see all building evaluations take place under the Building Act 2004.

- 3.5. The Ministry considers that the building assessment process was severely tested following the Canterbury Earthquakes of September 2010 and February 2011. This was the first large scale implementation of the rapid assessment process. It also needs to be emphasised that the scale and the impact of the February 2011 event was unprecedented. An aftershock very close to the central city with extreme intensity of shaking was outside of any scenarios that the building assessment process had been designed for. While there were a number of shortcomings and improvements needed for the future, the assessment process proved of real value, enabling a speedy response and protection of people's safety.
- 3.6. There were a number of developments and innovations that occurred between the September 2010 and February 2011 responses in the approach to building evaluation. In the 22 February event these assisted the rapid assessment process and led to more efficient use of resources. These need to be incorporated as part of the New Zealand Building Management after Earthquakes framework. They included the use of indicator buildings to provide benchmarks as to whether reassessment was necessary following aftershocks. Another important development was the approach taken to manage damaged and potentially unstable high rise buildings. This involved setting up a dedicated and appropriately skilled and qualified critical buildings team charged with stabilising or demolishing at risk buildings. This meant appropriate stabilisation decisions could be made. The media made a steady series of claims that the Grand Chancellor was leaning further and we had hard evidence it was not and the public could be reassured quickly. The former Department took a strong leadership role and this included the co-ordination and deployment of resources.
- 3.7. The Ministry thinks that there would be merit in institutionalising these initiatives. This could include giving the Ministry a mandate to lead in event of an emergency the building safety evaluation and set up a "just in case"



trained team of assessors (like the Territorial Army having a paid day job but released for training and critical events) to be called upon if need arise. The Ministry as a member of ODESC should be linked strongly into the emergency planning effort including safety evaluation and recovery particularly business and economic recovery. The need for a consistent approach to rapid assessment and consequent detailed engineering evaluations is a critical part of any change to the system design. This would support the development of trained resources with specified and known tools to apply in assessment. CERA endorses the concept of a trained core of inspectors and acknowledges the need for additional well trained volunteer resources for large scale events.

- 3.8. Additionally the Ministry considers that the Building Act 2004 be the primary means of managing the status of buildings pre incident, during incident and post incident irrespective of any State of Emergency being declared. This approach would resolve the issues that arose for events that were not declared as a State of Emergency and the transition between the State of Emergency and "business as usual". The status of buildings and the availability of that information remotely is a critical infrastructure development which needs to be addressed at national level and local level. This could build on systems already in place or planned to be in place such as a national geospatial database. CERA supports the concept of better data management and availability of a standardised, national system.
- 3.9. The Ministry, with the Ministry of Culture and Heritage, has work underway on the policy relating to earthquake prone buildings including heritage buildings and the Building Act. This has been shared with the Royal Commission. Mitigating the risks posed by existing buildings including heritage buildings in advance of an event are considered and addressed in that work. The Building Act already confers powers on Territorial Authorities to order the remediation of building features which could cause harm and this has been confirmed with a recent Chief Executive Determination under the Building Act 2004.
- 3.10. The submission is laid out following the structure of the questions posed in the Discussion Paper.

#### **4. New Zealand's Building Safety evaluation framework**

1. What objectives should the building safety evaluation framework target; should its main objective be ensuring public safety, or should it incorporate other aims? What would the process look like if other objectives are added? What are the risks associated with focussing on objective or another?

- 4.1. The Ministry and CERA consider that public safety should remain the immediate objective of the building safety evaluation framework and that

once the immediate response time has passed other objectives should be taken into account and in particular economic and business recovery followed by residential recovery, especially central city. If this approach was taken then it may be appropriate to review the Purpose and Principles of the Building Act 2004. An underlying objective should be to support territorial authorities in their preparation for and effective management of a process of structural safety evaluations of damaged buildings after reconnaissance and up to the lifting of the state of emergency. This support could include the deployment of a trained team of assessors led by the Ministry.

- 4.2. The risk of having multiple objectives in the immediate aftermath of the disaster is that there are added layers of complexity and the associated requirements for skills and training which may not be available in that timeframe. The rapid assessment enables triaging of what will potentially be large numbers of damaged premises with uses which range in importance eg hospital versus office block and support the effective allocation of skilled and scarce resources for more detailed engineering evaluations once the rapid safety assessment is complete. CERA observed that a relatively small group of experienced, well-trained engineers could be more effective in completing a rapid safety assessment over a number of buildings than a larger group of engineers without sufficient training or experience.
- 4.3. The level one and level two rapid assessment process identifies levels of structural damage, notes the hazards, assesses building safety and decides what, if any, occupancy and recommends security and shoring actions. It will often only be an exterior inspection. It will result in placarding, identification of sites needing further inspection and cordoning off and urgent work recommendations but the rapid assessment process is no substitute for detailed engineering evaluations. CERA noted that although a quantitative process that evaluates the capacity of buildings may be desirable it is not possible to complete this in a short timeframe. The detailed engineering evaluations to date have not shown correlation between assessed capacity and damage.
- 4.4. In the Ministry's view the building safety evaluation framework should be extended so that after the lifting of the State of Emergency owners of non residential and multi-unit residential buildings are required to obtain a detailed engineering evaluation which includes the assessment of capacity of buildings. The objectives of this framework could be broader than just public safety, and encompass business and economic recovery followed by residential recovery especially in the central city.



2. How did the building safety evaluation operation after the Canterbury earthquakes highlight any weaknesses and failures in the current system? Can these failures be addressed or should we move to a different building safety evaluation model? What are the advantages and disadvantages of these models and approaches and how do they compare with our current framework?

- 4.5. CERA noted that the public and some building owners were not well informed or even confused regarding building status during the evaluation process. The Christchurch events highlighted the difficulty of dealing with single structures with multiple owners and tenants. There were subsequently delays in both consistency of placarding and remediation/decision making.
- 4.6. The building safety evaluation operation after the Canterbury Earthquakes has highlighted the need for building owners of non residential and multi unit residential buildings to be required to obtain detailed engineering evaluations which also consider the residual strength of the building as soon as is practicable. The event also highlighted the need for guidance on what this detailed engineering evaluation should include which has now been issued. This guidance needs to be kept in review as other types of disaster occur to ensure its relevance is maintained.
- 4.7. The Ministry sees no merit in changing the current approach to building safety evaluation at this point including placarding. However improvements can be made by applying what we've learnt. This would include; clarification of procedures and accountabilities; transition from State of Emergency to the application of dangerous building powers under the Building Act (if current policy settings remain in place); and ensure that building owners and the public understand the limits of the placarding system. There will also be times when building safety evaluation including placarding is required where a State of Emergency is not declared. The Ministry's preferred approach would obviate the need for transition to dangerous buildings notices and also provide for the management of buildings for events such as aftershocks when a state of emergency was not declared. (see 3.1 and 3.2 above and 4.11 below). The media coverage of the Royal Commission hearings has already started the process of clarification. Placarding is based on an international model and it is likely, as with the Christchurch event, that international support will be needed for any event of a similar scale similarity of approach will be important. The contents of placards could be prescribed by regulation and as CERA suggests incorporate the identity and contact details of assessors.
- 4.8. Placarding of residential dwellings in both the September 2010 and February 2011 earthquakes may have contributed to some confusion.



Many of these placards were issued by building officials. There needs to be a consistent approach to placarding residential dwellings against consistent criteria and more clarity of what this means for the home owners. The Ministry has a role in ensuring that guidance is developed and appropriate communications after an event for the placarding of residential dwellings.

- 4.9. The Ministry recognises that one of the deficiencies of the Christchurch response was the lack of sufficient trained resources to undertake both rapid assessments and detailed engineering evaluations. To remediate this, the Ministry considers that there is a need for a cohort of trained assessors to be established nationwide under the Ministry's leadership. The training of this resource could be shared between central and local government. Suitably trained assessors could have this recorded as part of their IPENZ (Institution of Professional Engineers New Zealand) Membership or CPEng (Chartered Professional Engineer) registration. This would require discussion with IPENZ but preliminary discussions suggest they would not be averse to this approach. The Ministry (in conjunction with the Controller where a State of Emergency has been declared) would decide on the deployment of trained assessors and that would flow through to the liability protection for such trained and deployed volunteers sitting under the Building Act powers as agents of the Ministry.
- 4.10. In relation to non complex residential construction a trained cohort of building officials with recorded competence in each Territorial Authority (TA) should be essential as part of the TA Emergency planning. Building officials trained to a consistent level of competency undertaking rapid assessments to a consistent standard backed up standardised systems could then be deployed across TA boundaries as needed. The Ministry has a role in guidance and ensuring training to an appropriate standard.

<p>3. Who should be responsible for setting up and implementing any new framework? Should the roles and responsibilities in the building evaluation system be set at national or local level?</p>
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- 4.11. The Ministry considers that the system design should be specified nationally and the execution planned at Territorial Authority level with national oversight. The Building Act 2004 is the best legislative vehicle for ongoing response. The Ministry considers that all notices determining the status of buildings (including residential) and other construction issued during the emergency should be under the Building Act 2004 obviating the need for transition from the Civil Defence and Emergency Management Act 2002. This will need some legislative change and may need regulation to support implementation and specification of content. Guidance issued under section 175 of the Building Act would be used to set requirements for assessment at both the rapid assessment and detailed engineering evaluation level although this may need to be reinforced by way of



regulation. The proposals for all notices to be issued under the Building Act 2004 would require some amendment to the Act and potentially the powers under section 124 for dangerous, earthquake prone and insanitary buildings.

4. What are the risks, costs, and benefits of using a building safety evaluation system that uses volunteer engineers who have a liability waiver? Are there any options that address the risks associated with using volunteer engineers that do not discourage them from volunteering?

- 4.12. CERA identifies a number of risks in using a volunteer resource, including availability, limits on availability, rotating rosters and loss of knowledge, the controlling authority not being aware of resources available, skills required may not be available in the volunteer base, time may be lost with redoing work or supervising unskilled volunteers and potential for inconsistency of following procedures. These risks and issues would be mitigated by the proposals in paragraphs 4.8, 4.9 and 4.10. Volunteers to be effective need to be appropriately trained.
- 4.13. The Ministry considers that the protection from liability in the Civil Defence and Emergency Management Act 2002 is appropriate, and notes that there is a similar protection for the Ministry's employees and agents under section 390 of the Building Act, where they are carrying out functions under the Building Act 2004. Therefore if the provisions of the Building Act were extended as contemplated in this submission, employees and agents (including volunteer building safety assessors) of the Ministry carrying out those functions could be afforded this protection.
- 4.14. As suggested in paragraph 4.4 above, changes should be made so that owners may be required to obtain detailed engineering evaluations, in the same way that this power has been given to CERA for the greater Christchurch region under section 51 of the Canterbury Earthquake Recovery Act 2011. This change may also need Building Act changes and associated regulatory support to implement. A detailed engineering evaluation should be carried out by a CPEng and subject to standard contracting terms and conditions with the CPEng including indemnity insurance. The provisions of the IPENZ Code of Ethics/Ethical Conduct would apply and in particular not working beyond competence. The detailed engineering evaluation purchased should meet the requirements of the section 175 guidance. (It is planned that the guidance referred to in paragraph 2.2.1 be issued under section 175)
- 4.15. The availability of a volunteer resource is critical to a rapid response and consequently, issues such as liability and its mitigation need to be clearly identified and addressed up front before a disaster.

5. What framework should be used to evaluate buildings when a state of emergency is not declared but buildings are damaged (eg after an aftershock)?

4.16. It is the Ministry's view that the same framework should be used both for earthquakes including aftershocks and other events that lead to property damage such as floods, and slips. The trigger for the assessment process may be a State of Emergency, or it may simply be a decision of the Local Controller or the Chief Executive of the Ministry based on criteria such as cumulative impact on a community and lack of ability to resource locally. The Ministry supplied resources to Nelson and Tasman District Councils for their flooding event which exceeded their capacity and local volunteer capacity and it also supplied resources in Christchurch after the initial State of Emergency had been lifted for both September 2010 and February 2011 earthquakes.

## 5. Specific Issues with the Placard system used in Christchurch

1. What were the issues with how people placed, maintained, and removed the placards? How did understanding or misunderstanding of the placard's meaning affect people's behaviour; think about whether the wording and /or the colour of the placards contributed to any problems. What was the extent of these problems, and could they occur in other parts of the country?

5.1. CERA identified that some consultants devised their own placards and some did not communicate to the Territorial Authority their knowledge about particular buildings and the damage. In some cases property owners were attempting to convey information about their building to the public rather than the TA. There is according to CERA anecdotal evidence that people removed placards that they did not agree with. The Ministry is of the view that the colour coding placard system should be retained but reinforced with a regulatory framework to determine the content, authority to place, process to change remove placards and with an appropriate penalty regime for unauthorised removal. There also needs to be clarification of the use of colour placards for other types of assessment such as where a building is considered dangerous, earthquake-prone or insanitary under the Building Act 2004 and issued a notice under section 124. The clarification is to ensure that there is alignment and a common process for placard administration including recording to minimise public confusion.

5.2. CERA now has a publicly available database for its notices under section 45 of the Canterbury Earthquake Recovery Act 2011, this allows the public to confirm the official status of any building and this initiative could be added to the requirements for a national geospatial database.



- 5.3. The Ministry acknowledges there was initially considerable confusion about the placards and their status and the authority to change them. There has been significant discussion about the placards, colours and their limitations including through the Royal Commission hearings. CERA considers that there is a need for a national education programme on placarding. This would need to cover communication to increase public and building owner knowledge of the limitations and requirements of the placarding and ensure the origin of the placard is clear, under the dangerous building provisions of the Building Act or post earthquake rapid assessment in a State of Emergency. The preferred position is that all placards are issued under amended powers under the Building Act supported by an appropriate regulatory framework.
- 5.4. The placards system was applied in the Gisborne earthquake and was applied in the Nelson and Tasman District floods. Application of the placards needs to be accompanied by general public information and building owner information setting out clearly the obligations and the expectations for a placarded building. These actions should be, as a matter of best practice, included in the Local or Regional Emergency Management Plan for completeness. It may be appropriate to standardise procedures and plans. There will be opportunities for Territorial Authorities to communicate the status and role of placards from time to time to keep knowledge and awareness current.
- 5.5. Any detailed engineering evaluation commissioned by a building owner should have the status of recommending a change in placard status only. Any change in placard status would need to be confirmed by the Territorial Authority and recorded on the property file. This would provide an opportunity to assure that the detailed engineering evaluation is carried out by a CPEng and the records of the property status are up to date.
2. Do you know of situations where building owners brought in engineers to assess a building and they used a different placard system? If so, can you give reasons why this approach was taken? What did building owners and/or engineers do to inform officials of results? How should we address any issues?
- 5.6. The Ministry is aware that one or two engineering practices issued their own placards, not under direction of the Controller but similar in nature to the official placards. CERA also advises that there were differing placarding systems in use through different consultancies. There were differing interpretations of what even the official placards meant. There were a number of examples where building owners commissioned assessments (similar to detailed engineering evaluation but before the content guidance was issued) post rapid assessment and placarding following which owners purported to change the status of the building.

Most of these were notified to the Territorial Authority and the placard changed or removed.

- 5.7. The Ministry's view is that the procurement of a detailed engineering evaluation is the accountability of the building owner. The results need to be communicated to the Territorial Authority (TA) (if need be enforced by regulation) and recorded on the property file. Any change in the status of the placard should be agreed with either the Civil Defence Controller or the TA before removal or alteration so that records can be updated and the TA can assure themselves the engineering evaluation has been carried out by a CPEng. A level two rapid assessment would not normally grounds for removal of a placard.

3. How well did individuals, organisations, agencies and the wider public communicate and share information with each other after the Canterbury earthquakes; identify any gaps, failures and good performance. What could have improved how people communicated and shared information?

- 5.8. The damage to record keeping systems and the lack of critical records has been well traversed by the Royal Commission. People on the ground did their best, and there is evidence that the September 2010 experience resulted in improvements which applied for the Boxing Day 2010 and the February 2011 events. Emergency management planning needs a records component, not only of what and where records are stored and the facility for remote access but also creating effective nationally standardised records systems for use in an emergency situation.
- 5.9. Remotely accessible comprehensive property files would support a more effective assessment and detailed engineering evaluation process. CERA suggests this should include capacity for mobile use, a central database of basic building information, including earthquake prone status, and a consistent way of recording addresses and the building status. Costs however may outweigh the benefits and there would need to be detailed evaluation of this in the context of the Ministry's proposals for a geospatial property database.
- 5.10. One further improvement would be having information ready to go on matters of public interest such as the placarding and building assessment process. There was a daily TV briefing which was more or less picked up by media but this could have been benefitted from supporting communications activity such as authoritative written adverts.



4. What skill sets do engineers need to accurately or adequately evaluate a building following an earthquake or aftershock? Are different skills needed to assess buildings of different ages and for different purposes? What are the advantages and disadvantages of requiring engineers to possess certain expertise/capability before they can become building safety evaluators?

5.11. There is a need for a consistent approach to rapid assessment and subsequently detailed engineering evaluation. A basic skill set such as CPEng along with the appropriate competency areas such as geotechnical skills, structural engineering skills and the background of design and construction of complex buildings is required. This would be supported by specific training in the rapid assessment and the requirements for an detailed engineering evaluation. This latter competency would be recorded through IPENZ. The advantages of this approach are consistency and quality, the disadvantage is supply of appropriately qualified people in a major disaster. Overseas engineers could be quickly trained in the rapid assessment of buildings. Engineers from comparable jurisdictions could undertake detailed engineering evaluations as long as they understood our requirements.

5.12. There were examples of rapid assessments being undertaken by engineers beyond their scope of competency or indeed non engineers. This is a matter to be managed through the emergency management response and the allocation of resources. However should the idea of a national team with appropriate competence be established to undertake rapid assessments this would mitigate this problem.

5.13. Residential property (other than multi storey multi-unit property) could be assessed by building officials as long as they are suitably trained, are applying a consistent approach aligned with national guidance and have the capacity to refer complex issues to CPEng trained assessors.

5. What are the relative advantage, disadvantages, costs, benefits, and risks of adopting a damage based assessment, or other assessment methodology? Do fundamental changes need to be made to how people assess whether, how and when a building is at risk from aftershocks; for example, when it is appropriate to work out the residual seismic capacity of a damaged building?

5.14. The focus of the rapid assessment is damage based and should remain as such. The detailed engineering evaluation needs to include the residual seismic capacity of the building. The Ministry Building and Housing Group through its Engineering Advisory Group has developed and issued draft guidance on the detailed engineering evaluation process which is being applied in Christchurch. It is intended that this be issued as Guidance

under section 175 of the Building Act, along with an update to the November 2009 NZSEE Building Safety Evaluation Guidelines.

5.15. The issues with damage based rapid assessment in September were as a result of the very unusual situation where buildings experienced a much higher shaking intensity from the aftershock and the fact that there was no follow-up standardised detailed evaluation process in place for engineers to use. However, the damage based assessment after the February 2011 earthquake served us well. There were no instances of injury or death from aftershocks where buildings had been assessed and categorised. Subsequent detailed engineering evaluations led to buildings being vacated and many being demolished as they were uneconomic to repair.

## 6. Barriers to action, particularly in the recovery phase

1. What mechanisms and tools could be used to transition the building safety evaluation process from an emergency situation to normal business as usual? What do other countries do? How should buildings be followed up on after a State of Emergency?

- 6.1. The Ministry considers that the appropriate vehicle for building safety evaluation post a State of Emergency is the Building Act through the provisions that provide for the management of dangerous, earthquake prone and insanitary building, or similar provisions. However the preferred position is to obviate the need for transition by ensuring that pre, during and post event building assessments and associated notices are issued under the Building Act 2004. This would include events where a state of emergency was not declared such as aftershocks. This would require amendment to the Building Act.
- 6.2. The power under the dangerous building provisions resides with Territorial Authorities. Their powers include barricading buildings to prevent access, requiring the owner to carry out work to reduce or remove the danger, carrying out work where the owner does not and recovering the cost of the work from the owner. An amendment to the Building Act 2004 will be required to ensure that the legal framework is clear and enforceable. Specifically should the current system remain in place there needs to be a legal framework for the transition of CDEM Notices (placards) to dangerous building notices. The Ministry's preferred position supported by CERA and the Ministry of Civil Defence and Emergency Management is outlined in paragraph 6.1 above. The transition in the Christchurch events was effected through an Order in Council modifying the Building Act.
- 6.3. All buildings which are subject of such notices will require follow up depending on the issues they present and the options for remediation or demolition. In the meantime the Building Act provides powers for the



Territorial Authority to require the dangerous, earthquake prone and insanitary buildings to be secured and access denied.

2. How do we manage trade offs between closing buildings until the safety of the public can be ensured in the long term, managing impacts (such as heritage concerns) when making decisions about the repair and demolition of a building, and acting quickly to promote recovery? What are the risks of trading one goal off against another, and who bears any costs or benefits directly or indirectly?

6.4. Trade offs will be made erring on the side of caution as the focus needs to be safety and effective management of scarce resources. The preliminary damage assessment allowed the prioritisation by type of use of the building and level of damage in order to target resources for the detailed engineering evaluations. Clearly heritage issues and concerns were a major issue in Christchurch after the September 2010 event and ultimately some of the issues around the treatment of heritage buildings resulted in a direct cost of injury and death in the February 2011 event. Hard decisions were needed and need to be made and the establishment of CERA enabled that focus.

6.5. CERA has the mandate to manage trade offs and promote recovery. The CBD has lost a considerable number of buildings which survived the earthquake but were uneconomic to repair. This applied to both heritage and non heritage buildings. Recovery needs to be driven through a planned approach which gives investors and insurers certainty as far as is practicable.

3. What administrative issues caused barriers to repairing, re-opening or demolishing damaged buildings? Were any solutions developed in response to the Canterbury earthquakes that could improve New Zealand's building safety evaluation process? What are the advantages or disadvantages of adopting any of these solutions?

6.6. There were a number of issues which arose from the September 2010 earthquake such as the need for resource consent to demolish heritage buildings. Some of these buildings collapsed in the February 2011 event. After the September 2010 event the Ministry exempted demolition of detached buildings up to three storeys for Christchurch from Schedule One of the Building Act through an Order in Council. This amendment is now addressed in Building Amendment Bill No 4. The interface between the Building Act, Resource Management Act and the Heritage New Zealand legislation needs some rationalising and there is work underway to consider the interface of these pieces of legislation with a view to providing advice to government on streamlining building controls and

actions in event of a disaster. Advice is also being provided on the earthquake prone buildings policy settings including heritage buildings.

- 6.7. CERA notes that the requirements in the Building Act which on application for a building consent trigger a requirement for an upgrade is an issue that needs to be explored further. A fast track building consenting system such as is being piloted in Christchurch is also important for recovery.

4. What should central and local government, engineer, insurers, and building owners be responsible for when changing or removing placards; following up on engineering recommendations for further evaluations or work; and making sure that building owners comply with their obligations? What roles does each of these groups play in making sure that damaged buildings are safe for long term occupation? How do we improve the system?

- 6.8. It seems that roles and responsibilities were not well understood after the Canterbury earthquake sequence meaning it was unclear who was accountable for detailed engineering evaluations, the required standards for detailed engineering evaluations, the communication of the results of these and the ensuing actions. The local Emergency Management Plan would be the appropriate place to define the roles and responsibilities and the transition from the State of Emergency and those powers to what is needed in recovery. The management of all building assessments pre, during and post earthquake or other disaster resulting property damage through the powers under the Building Act 2004 for any future event would remove the potential for gaps. There would be a range of assessments depending on the complexity of the structure but the overall system of placarding would remain, as there is now public understanding of its limitations and it can be easily understood by international resources if required for any future event.
- 6.9. It would require some modification to the Building Act so that all notices on the status of buildings issued during an emergency are Building Act notices or similar. These would remain in place after the State of Emergency is lifted. The Ministry would have an ongoing role in determining the requirements for detailed engineering evaluations and the subsequent removal or alteration to a notice. Detailed engineering evaluations need to be performed by CPEng qualified engineers who have the requisite competence to undertake these. A transparent scope of practice on the IPENZ register would assist in the selection and deployment of engineers with this expertise. (Refer the Ministry submissions on the training and education of engineers and organisation of the profession, note CERA are not making a submission on the training and education of engineers and organisation of the profession rather their comments on the role of engineers are incorporated in this submission)



- 6.10. The Ministry and CERA consider that the roles and responsibilities of the various players needs to be transparent and the accountability clear. The Ministry and the Ministry of Civil Defence and Emergency Management will work together to ensure that there is clarity. The Ministry would have a role in developing a national team to manage building assessments and evaluations and establishing a pool of trained resources which can be deployed as required to assist with rapid assessment and more detailed engineering evaluations. A system would need to be developed to effectively select, train and deploy these engineering professionals.
- 6.11. The Ministry has a role in setting out the requirements for assessments both rapid assessment and detailed engineering evaluations. The role and content of placards should be addressed as part of this work. The Ministry will ensure that the Ministry of Civil Defence and Emergency Management is involved with this work to ensure that there is consistent understanding and this is promulgated to Territorial Authorities. If the suggestion is adopted to have all building management pre, during and post event under the Building Act then there would be no requirement for transition from the State of Emergency to business as usual. The changed approach would require some amendment to the Building Act 2004 along the lines of the dangerous buildings provisions including section 124 notices which would enable Territorial Authorities to manage the issue of damaged buildings at local level. Central government, through the Ministry, would then monitor Territorial Authority performance to ensure that building owners meet their obligations.

## **7. Other issues**

- 7.1. The Ministry identified a further issue which ties in to the management of buildings post earthquake which has been the subject of the Commission's discussions. This relates to the fact that, as with the Southland Stadium, some of the evidence relating to collapsed buildings under investigation was removed before the investigators could visit the site. The Ministry recognises that rescue and recovery takes precedence but once that has concluded there needs to be a statutory means for the Ministry to secure the site. The Ministry will progress the possibility of greater legislative powers to assist the Ministry to carry out building investigations, secure forensic evidence, restrict removal of debris, unless required to support search and rescue efforts and to require documentation of and photographic records of any debris removed and have the right of access to relevant information to inform an investigation. This would require an amendment to the Building Act 2004. The Ministry intends to progress this.
- 7.2. The Royal Commission in this discussion paper has referred to building safety and this is well understood and is a core role of government. The role of the Building Act is predicated on risk management and managing

risk in a business as usual setting. The Building Act does have tools to manage hazards but they are insufficient to manage the response to scale events. An emergency means additional risks will need to be managed and may require additional risk management. When extreme forces are applied then no building is safe. The debate needs to move to the level of risk we are as a community prepared to tolerate and build for that. For example the expectations for construction in Wellington have always been higher than Christchurch as the risk of seismic activity is higher but the outcome should be the same.

## **8. Discussion**

- 8.1. Putting in place the suggestions in this submission will require careful policy development and drafting of provisions to amend the Building Act and make consequential amendments where required to other legislation such as the Civil Defence and Emergency Management Act, Resource Management Act and Heritage New Zealand legislation.
- 8.2. The Ministry and CERA would be pleased to discuss this submission with the Royal Commission.