
Submission to the Ministry of Business, Innovation and Employment

Re: Proposals for a Methodology to Identify Earthquake-Prone Buildings

10 FEBRUARY 2017

Introduction

The Institution of Professional Engineers New Zealand (IPENZ) is the lead national professional body representing the engineering profession in New Zealand. We have approximately 17,000 Members, including engineering students, practising engineers and senior Members in positions of responsibility in business. IPENZ is non-aligned and seeks to contribute to the community in matters of national interest, giving a learned view on important issues, independent of any commercial interest.

IPENZ has shared draft versions of this submission with the New Zealand Geotechnical Society, the New Zealand Society for Earthquake Engineering and the Structural Engineering Society. Our submission provides comments on behalf of the engineering profession as a whole.

Executive Summary

IPENZ supports a number of aspects of the proposals, however we have some key concerns as summarised below.

- The integrity of a territorial authority's earthquake-prone building register may be compromised if building owners are asked to *prove* their buildings should not be on the register. We believe building owners should instead be directed to seek *impartial* earthquake-prone building assessments to validate whether their building should remain on the register.
- We believe there are a number of potentially earthquake-prone buildings that may be earthquake-prone but won't be identified via profile categories. As currently proposed, these buildings will be assessed via an alternative process, for which there are no timeframes for assessment or remediation. We believe that without a well-defined timeframe there will be little incentive for territorial authorities or building owners to identify these buildings.
- We recommend that where territorial authorities become aware of characteristics related to a building's seismic performance which are associated with a particular construction type (outside those profile categories established in the regulations) they should advise the central regulator (MBIE). These issues could potentially be of national interest and the central regulator needs to be involved in problem identification and assessing the need for a national response
- We anticipate territorial authorities will need guidance and support as they apply the methodology and we recommend MBIE investigate establishing a body competent to provide detailed guidance and make determinations or direct disputes resolutions on earthquake-prone building status.
- We are concerned that the status of buildings adjoining earthquake-prone buildings are not dealt with adequately. We believe there are issues with how society defines a "building" compared with the definition of a building as related to a structure. We recommend the regulations address the risk imposed by an earthquake-prone building to those adjoining it, and how that risk is communicated to the building owner(s) and subsequently managed.
- We recommend the definition of engineers carrying out assessments be enhanced and that consistent descriptions relating to skills or competency or qualifications of engineers be used. We propose the definition of engineer be "As a minimum, the assessing engineer must be a structural engineer who is chartered under the Chartered Professional Engineers of New Zealand Act 2002 and who is currently competent in undertaking building assessments, and suitably trained and experienced"
- We believe that owners seeking guidance on how to identify an engineer to carry out assessments should approach IPENZ for this guidance. We do not believe territorial authorities are best placed to provide that guidance.

Submission

Our comments are provided below in response to the questions posed in the discussion document.

Identification of potentially earthquake-prone buildings via profile categories

1. Do you agree with the proposal to specify types of buildings that are potentially earthquake prone based on readily identifiable characteristics? If not, how should potentially earthquake-prone buildings be identified in the methodology?

We agree with the proposal as an initial screening process but have reservations as set out below in our response to Question 2.

2. Do you agree with the use of building age or era of construction, construction type, and number of storeys or height being the parameters used? If not, what parameters should be used?

Yes, as a means of easily identifying buildings likely to be earthquake-prone.

However, we believe there are a number of potentially earthquake-prone buildings, such as buildings with cladding that were constructed post-1976 that may be earthquake-prone but won't be identified via profile categories. As currently proposed, these buildings will be assessed via an alternative process, for which there are no timeframes for assessment or remediation. We believe that without a well-defined timeframe there will be little incentive for territorial authorities or building owners to identify these buildings.

3. What, if any, profile categories of buildings should be included that are not?

We believe consideration should also be given to identifying buildings with two or more storeys that are not identified in the above criteria that have the following characteristics:

- have had internal alterations to remove structure such that downstairs and upstairs structure are not compatible
- are corner buildings in a row of buildings.

4. What, if any, profile categories of buildings shouldn't be included that are?

We have no comment in response to this question.

5. Are the profile categories adequately defined to allow TAs to identify potentially earthquake-prone buildings? If not, what other information is needed?

We have no comment in response to this question.

6. Is the information required by a TA to identify a building as potentially earthquake prone adequate?

We have no comment in response to this question.

7. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

We anticipate that territorial authorities will need guidance and support as they apply the methodology to identify earthquake-prone buildings. We recommend MBIE investigate establishing a body competent to provide detailed guidance and make determinations or direct disputes resolutions on earthquake-prone building status.

8. Do you have any other comments on these proposals?

We believe that inviting building owners to prove their building is not earthquake-prone is the wrong approach. The integrity of a territorial authority's earthquake-prone building register may be compromised if building owners are asked to prove their buildings should not be on the register. We believe building owners should instead be directed to

seek impartial earthquake-prone building assessments. It is vital that engineers are able to act independently (primarily from building owners who are likely to be looking to have their buildings removed from the register).

Identification of potentially earthquake-prone buildings at any time

9. Do you agree with the TA's powers to identify a potentially earthquake-prone building at any time, being applied by drawing upon either existing knowledge or information received, or through activities such as the building consent process? If not, why not?

Yes.

10. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

We note the discussion document (page 23) identifies that territorial authorities may become aware of characteristics related to a building's seismic performance which are associated with a particular construction type (outside those profile categories established in the regulations). Where this situation occurs, and where other bodies (such as IPENZ) identify particular features of buildings of concern, it is vital that the territorial authority or other body be required to advise the central regulator (MBIE). These issues could potentially be of national interest and the central regulator needs to be involved in problem identification and assessing the need for a national response.

11. Do you have any other comments on these proposals?

We have no comment in response to this question.

Description of parts of buildings

12. Do you agree with how parts of buildings are described? If not, how do you think parts of buildings should be described?

Yes, we support the description provided.

13. Do you think further examples are needed of parts that may have the potential to create a significant life safety hazard?

We suggest chimneys, verandas and heavy decorative features be added as examples.

14. Do you think examples should be provided of parts that would be unlikely to have the potential to create a significant life safety hazard?

We have no comment in response to this question.

15. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

We have no comment in response to this question.

16. Do you have any other comments on these proposals?

We believe there needs to be further clarification as to how "parts" are defined when they are shared by adjoining buildings. This links into the need for clarification regarding the earthquake-prone status of structures comprised of multiple buildings.

We believe there are issues with how society defines a "building" compared with the definition of a building as related to a structure. We recommend the regulations address the risk imposed by an earthquake-prone building to those adjoining it, and how that risk is communicated to the building owner(s) and subsequently managed.

Type of engineering assessment required

17. Do you agree with incorporating the Engineering Assessment Guidelines by reference for the types of assessment required?

Yes, we believe this is appropriate.

18. Are there other assessment methods that you think should be recognised? If so, what are they?

We have no comment in response to this question.

19. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

We note the requirement that engineering assessments include review of original drawings. Given the age of some of New Zealand's buildings, the drawings or plans may not always be available. We recommend the wording in the regulations be drafted to read "where these documents are available".

20. Do you have any other comments on these proposals?

We are concerned the discussion document does not set out the need for engineering assessments to be independent and impartial. It is vital that engineers are able to act independently to give their impartial, informed assessment of buildings without fear or favour. This must be stated clearly throughout the methodology and regulations to ensure the process and assessments can be trusted.

Impartiality is particularly important where building ownership changes and business pressures result in businesses focussing on ensuring their buildings are not earthquake-prone.

The discussion document (page 27) suggests territorial authorities may help building owners understand what to look for when engaging an engineer. For reasons of independence it is important building owners themselves identify an engineer to undertake their building's assessment. We see IPENZ as being a useful source of advice for building owners when they are seeking the services of an engineer.

Criteria for accepting engineering assessments

21. Are the acceptance criteria adequate?

We support the specification that assessing engineers be structural engineers chartered under the Chartered Professional Engineers of New Zealand Act 2002. We recommend the wording be more specific and be amended to read "As a minimum, the assessing engineer must be a structural engineer who is chartered under the Chartered Professional Engineers of New Zealand Act 2002 and who is currently competent in undertaking building assessments, and suitably trained and experienced". This definition needs to be incorporated into Appendix 2 and interpreted as what is required wherever "engineer" is mentioned in the discussion document.

In addition, there may be situations where the input of a geotechnical engineer is needed, potentially with or without the input of a structural engineer. The input of geotechnical engineers must also be recognised so their assessments can be accepted where appropriate.

22. What, if any, acceptance criteria, should be included that aren't?

Please refer to our response to Question 21 above.

23. What, if any, acceptance criteria, shouldn't be included that are?

We have no comment in response to this question.

24. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

We note that in order for engineering assessments to be accepted by territorial authorities, engineers must complete an interior and exterior inspection of the building. Given the condition of some earthquake-prone buildings it may not always be safe for engineers to conduct internal assessments. We recommend the regulations be amended to: “The engineer must complete a rigorous and thorough interior and exterior inspection of the building, where it is safe to do so”.

25. Do you have any other comments on these proposals?

We have no comment in response to this question.

Determining if a building is earthquake prone

26. Do you agree with the description of how the section 133AB(1)(a) test will be applied? If not, why not?

Yes, we believe the description is appropriate.

27. Do you agree with the description of how the section 133AB(1)(b) test will be applied? If not, why not?

Yes, we believe the description is appropriate, provided the term “collapse” is interpreted to include the fall, failure and partial collapse of parts.

28. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

We believe a disputes resolution system is needed for earthquake-prone building decisions. According to the Note on page 33, disputes will be addressed through the determinations process set out in sections 176–190 of the Building Act 2004. We believe a disputes resolution process would be better to provide timely, less confrontational and lower cost resolutions of disagreements.

29. Do you have any other comments on these proposals?

As noted in response to Question 20, it is important building owners are directed to request independent and impartial advice so the system is robust and credible.

We note the bullet point list of engineer’s responsibilities on page 31. We believe this list is superfluous as these actions are business as usual for engineers. The responsibility of an engineer is to understand the limit of their competence, act only within their competence and ensure they comply with the regulations and guidance. If a competent engineer does this then a peer review is not required.

Assigning earthquake ratings

30. Do you agree with basing the rating on the %NBS outcome specified by the engineer in the engineering assessment report for those buildings confirmed as earthquake prone? If not, what method should be used?

Yes.

31. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

As noted in response to Question 28 we believe a disputes resolution system is needed for earthquake-prone building decisions. According to the Note on page 33, disputes will be addressed through the determinations process set out in sections 176–190 of the Building Act 2004. We believe a disputes resolution process would be better to provide more timely, less confrontational and lower cost resolutions of disagreements.

32. Do you have any other comments on this proposal?

We have no comment in response to this question.

Criteria for recognising previous assessments

33. Do you agree with the criteria specified for the recognition of previous assessments? If not, why not?

We have no comment in response to this question.

34. What, if any, criteria, should be included that aren't?

We have no comment in response to this question.

35. What, if any, criteria, shouldn't be included that are?

We have no comment in response to this question.

36. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

We have no comment in response to this question.

37. Do you have any other comments on these proposals?

We have no comment in response to this question.

Conclusion

We appreciate the opportunity to make this submission and are able to provide further clarification if required.

For more information, contact:

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