



bccg

EQ Seminar 5


Proposed changes to Building Act Regulations and Methodology

Welcome

22 Nov 2016




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Programme Outline


- Proposed regulations
- Proposed methodology for identifying EQBs
- How to make submissions
- General discussion forum on all things EQ



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This was a revised programme as MBIE and WCC staff were unable to attend due to commitments imposed by the recent earthquake.



Proposed Regulations

- **Earthquake rating categories and EPB notices**
 - Currently A to E in Engineering Assessment Guidelines
 - Proposal for just the lowest two: less than 20% and 20-33% NBS
 - 3 notices for the 2 ratings, plus old section 124 equivalent (orange/black striped border, black/white striped border, solid orange border)
 - Ratings will be shown on the notice
- **Questions:**
 - Should these be prescribed in the regulations?
 - Should there be two bands?
 - Should the two bands be less than 20% and 20-33% NBS?
 - Should there be different notices for different ratings and is 3 enough?
 - Do you agree with the colours and wording of the notices?



The proposal suggests that we should have two rating categories relating to the two lowest categories in the Engineering Assessment Guidelines, with a category for under 20% and one for between 20 and 33%. Buildings will then have different notices depending on their category, with an extra complication for replacements for s124 notices. The notices will use a striped border to show the category, either black/orange or black/white.

It seems overly complex and potentially confusing.


MBIE say part of the intention is to encourage those below 20% to strengthen sooner, but the market place is already driving that incentive.

Is their evidence that the public do make a decision on what buildings to enter based on whether it's <20% or >20%? MBIE states they are both 'high risk' so why bother making a distinction if this is the case? If the notice prominently shows the rating, why is anything else necessary?

Given that the % of NBS is not exact, splitting above and below 20% with accuracy will be difficult. Plus it seems to contradict the guidelines which using rounding: an assessed rating of 29% is deemed as 30% for reporting purposes, and so is a 32% assessed rating.


There may also be a greater stigma placed on buildings under 20%: the proposal has the potential to significantly impact on businesses/rentals which could impact turnover and have a flow-on effect on ability to raise the necessary money to do the strengthening.

Note: The general view of seminar attendees was that the notices should be clear, simple, easy to read with the % of NBS prominent. Only a small number thought the two categories for <20% or >20% were a good idea. The BCCG will recommend a single style of notice for all EQBs, with large lettering (minimal or no fine print), simple wording and the EQB rating (% of NBS) or the words "Not Yet Rated" clearly identifiable.



Proposed Regulations

- **Criteria for substantial alterations**
 - Building Act now forces seismic upgrades when undertaking other work to promote progressive upgrades of earthquake-prone buildings
 - Proposed definition of "substantial": 25% of value of building over previous 24 months
 - seismic work for EQB not included
- **Questions**
 - Should there be criteria in the regulations?
 - Consistent across the country?
 - Based on 25% of the value of the building?
 - Based on a fixed amount stipulated in the regulations?
 - Any implications for multi-use or heritage buildings?




In the same way a consent for seismic strengthening triggers the need for Fire Safety Systems and Accessibility requirements to be met, the Act now forces seismic strengthening whenever substantial alterations are done, the aim being to ensure that buildings are strengthened sooner rather than later, and not overlooked in favour of other "enhancements".

The Regulations will define what substantial means and currently proposes it be 25% of the rateable value of the building, taking into account all work done within a 24 month window, other than seismic strengthening for an EQB.


The discussion document says "Phased remediation work (under an earthquake-prone building notice) should not trigger the 'substantial alterations' requirement".

BCCG submission will recommend excluding building works related to Fire Safety Systems and Accessibility from the determination of "substantial alterations" over the preceding 24 months to better allow for a phased approach to strengthening. This is because consent for strengthening work requires Fire Safety Systems and Accessibility to meet an current code (as much as is reasonable) and some BCs may choose to resolve the fire protection and accessibility issues prior to the main strengthening work.



Proposed Regulations

- **Criteria for exemptions**
 - Recognises that consequences of failure may be low
 - TAs will get to decide on a case by case basis
 - Based on categories: frequency of use, number of people, other risk factors
 - Examples: small rural churches and town halls
- **Questions:**
 - Should there be prescribed categories in the Regulations?
 - Do you agree with: low - 0-50 people, med - 51-300, high - more than 300?
 - Do you agree with: low - <25 times per year, occasional -25-100 times per year, frequent - more than 100 times per year?
 - Should building use be considered: eg children and people with disabilities?



There will be an option for owners of EQBs to apply for an exemption to demolish or strengthen, in recognition that in some cases the consequence of a failure is low. TAs will operate on a case by case basis, guided by categories in the regulations, such as frequency of use, number of people, other risk factor. Examples might be small rural churches and rural town halls.


It seems unlikely to apply as much to Wellington, and certainly not the inner city. Also unlikely to apply to most Bodies Corporate because of the frequency criterion.

Proposed Regulations

- **Definition of Ultimate Capacity**
 - This is a technical element, hard for non-engineers to comment on
 - Relates to the “probable load-resisting ability of a building to withstand actions caused by a moderate earthquake, and to maintain vertical load-carrying capacity”
 - Definition: “*Ultimate capacity means the building's probable capacity to withstand earthquake actions and maintain gravity load support calculated by reference to the building as a whole and its individual elements or parts.*”
- Questions:
 - Do you agree this needs to be defined in the regulations?
 - Do you agree with the definition?




This requires an engineering background in order to make informed comment.



Proposed Methodology


- Methodology = process to identify if a building is EQ prone
- Uses profile categories based on age/size/type of building and seismic hazard area (within NZ) for initial identification by TA
- Covers types of assessments EQB owners will then need to undertake – ISA and DSA – and the criteria by which these will be accepted
- Clarifies “parts of buildings” that engineers must assess
- Defines how TAs will assign earthquake ratings - % of NBS
- Includes some transitional elements for accepting past assessments



In addition to the proposed regulations, there is also a proposal for a methodology for identifying if a building is EQ Prone. The need for a methodology is already in the Act. The aim is to get greater consistency across the country, and also to incorporate the revised Engineering Assessment Guidelines (red book).

The key points to note are:

- the methodology is really more of an administrative process (the technical aspects of assessing a building are in the Guidelines).
- It uses profile categories for the initial assessment by a Territorial Authority to identify potentially EQ prone buildings – fairly simple, based on age, size and type of construction, with different categories for the low risk areas of the country
- It describes the assessments that owners need to then get if the TA notifies them that they are potentially EQ prone
- Clarifies the new term “parts of buildings” in the Act, that engineers must assess
- Defines how TAs will assign ratings, which is still the % of NBS (New Building Standard – does everyone know what this means?)
- It also has some transitional elements, important for those who will be part way through the process at the commencement date of the legislation



Proposed Methodology


- **Identification of potentially EQBs based on profile categories**
 - Based on readily identifiable characteristics:

High seismic risk areas and medium seismic risk areas

- A. Unreinforced masonry (URM) buildings
- B. Pre 1976 buildings, three or more storeys or 12 metres or greater in height above the lowest ground level, other than URM buildings
- C. Pre 1935 buildings, one or two storeys, other than URM buildings


Low seismic risk areas

- A. URM buildings
- B. Pre 1976 buildings, three or more storeys or 12 metres or greater in height above the lowest ground level, other than URM buildings




This is about the use profile categories to assess if a building is potentially EQB, with the emphasis on **potentially**. These will be based on easily identifiable characteristics which are a combination of age, size and construction type.

Note: the above only applies to buildings covered by the Act. For residential buildings, it only include those that comprises 2 or more storeys; and is a hostel, boardinghouse, or other specialised accommodation; or contains 3 or more household units.



Proposed Methodology

- **Identification of potentially EQBs based on profiles cont.**
 - Exclusions as per Act (bridges, farm buildings etc)
 - Exclusions for timber buildings without URM components
 - Exclusions for buildings already assessed as not EQ prone or already strengthened to at least 34%
- Questions:
 - Do you agree on using building age, type of construction and number of storeys as criteria?
 - Are the proposed categories enough to identify **potentially** EQ prone buildings?



The process will have some exclusions: bridges, farm buildings etc as per the Act, and the good news, it will also exclude buildings already assessed as not EQ prone or already strengthened


This seems very simplistic and implies TAs will identify buildings as potentially EQ prone with nothing but the barest of information. The onus is then presumably on the owner to prove otherwise, via an engineering assessment. It's not clear whether WCC did deeper investigation in their assessment process, but this will potentially move more assessment costs from the TA to owners.

If the initial TA identification process is a paper exercise based purely on the profile category, then owners should be able to pretty much guess the outcome themselves!

Notes from seminar:


About half of the audience thought the simple criteria were adequate for a first pass assessment by the authority, but concern was expressed that this may be broader than in the past, identifying more buildings in Wellington not previously identified.

Iona Pannett (WCC Councillor commented that the regulatory impact assessment of the financial impact of the earthquake strengthening requirements has been inadequate.



Proposed Methodology

- **Identification of potentially EQBs at any time**
 - As a result of information received
 - As a result of “becoming aware of issues”
- Questions:
 - Do you agree that TAs should be able to do this?




As well as undertaking assessments based on the profile categories, a TA can identify a building as potentially EQ prone at any time, based on information they receive or by “becoming aware of issues”. This seems a necessary requirement given that otherwise no post 1976 building could ever be declared potentially EQ prone and yet such buildings exist. However it does raise some concerns. It is very broad, and possibly allows for information to be “discovered” after a previous detailed assessment (DSA) has already identified the building as having a rating higher than 33%. No doubt the burden of proof will fall on owners, which may be unfair if the “information received” turns out to be incorrect. How will the TA determine whether information received from a 3rd party is accurate before acting on it? What recourse will an owner have if the information received by a TA that has triggered the process proves to be false?

Notes from seminar:

A seminar attendee described their recent experience where the TA had relied on hearsay from a neighbour and has issued a leaky building notice reliant solely on that information (without first checking with the owner who could have shown the information was incorrect). This raised the issue of due process and burden of proof.

The due process that TAs must go through to verify the information has to be included in the methodology to protect owners from malicious or unreliable informants.


Who bears the cost if the information is incorrect but the owner has to seek further engineering advice to prove this? Iona Pannett was quite clear that she felt the burden of proof should lie with the TA.



Proposed Methodology

- **Types of Engineering Assessment**
 - Initial Seismic Assessment (ISA) – within 12 months
 - Detailed Seismic Assessment (DSA)
 - Do ISA first, then if required do DSA
 - For ISA only, have to have a good understanding of the building and confident no aspects of the structure needs further investigation
 - Must meet requirements of Engineering Assessment Guidelines document

- Questions:
 - Do you agree with referring to Assessment Guidelines in the Regulations?
 - Are there other methods that should be recognised?




Some elements of the Engineering Assessments are already specified in the Act, such as the 12 month time frame for the initial assessment, so there is no point debating them here tonight. Once again commenting on this proposal may be something that is hard for laypersons to do, but on the surface it seems sensible.

The assessments must adhere to the Engineering Assessment Guidelines (more on this later)

Notes from the seminar:


There should be an option of going straight to a DSA if it is clear that the building is very likely/certain to be EQ prone

Is the 12-month time limit practical or, indeed, feasible with the current engineering work force and recent earthquakes? Answer: There is an allowance in the regulations to allow owners to get an extension if for example, because of a shortage of people qualified to conduct engineering assessments. The request must be within 2 months of the 12 month deadline.



Proposed Methodology

- **Criteria for accepting Engineering Assessments**
 - How TAs will determine if a submitted assessment is acceptable
 - Details requirements for ISA and DSA as per Engineering Assessment Guidelines, including format
 - Engineer must have certain qualifications
 - Engineer must make site inspection (inside and out)
 - Must specify a rating as % of NBS
 - If less than 34%, must specify expected mode of failure
- **Questions:**
 - Are the acceptance criteria adequate?
 - Anything wrong or missing?



This defines the criteria that a TA will use to decide whether or not an engineering assessment report is acceptable.

The primary criteria includes some of the format/content of the ISA/DSA, referring back to the Engineering Assessment Guidelines. This also includes justification of assumptions.

The ISA must provide a result that the engineer is confident reflects the building's expected behaviour, given that this assessment is more qualitative and less detailed than a DSA.

Other secondary criteria include:

- The engineer must be suitably qualified with relevant skills in structural and earthquake engineering and assessments of existing buildings
- There must be evidence that an interior and exterior inspection was undertaken as part of the assessment
- it clearly states the assessment outcome, reported as a %NBS.
- If less than 34%, it must comment on the expected mode of failure of the building or part of building

Once again, non-engineers probably can't make informed comment on some of this, but in general, provided the revised Engineering Assessment Guidelines are adequate, then these criteria seem reasonable.


We all know however that there have been huge variations in ratings to date. It would be interesting to know confident is MBIE that the new Engineering Assessment Guidelines will eliminate the wide variations. It would also be interesting to know what support MBIE would provide for owners and TAs if there is disagreement over the accuracy of an assessment that was initiated by either party. Also, will Engineer's be required to receive training in the new guidelines?

Notes from Seminar:

Geraldine Murphy (Inner City Association) noted that engineers are being encouraged to use the new guidelines even though they are not yet finalised and there is no requirement to adhere to them (until the legislation takes effect next year).


These questions were raised, which BCCG will raise with MBIE/WCC:

- Site inspection – how much of internal or external must be inspected?
- Will the TA still have right to challenge the ISA/DSA assuming it has followed the process and the guidelines? I.e. will it be possible for the TA to reject an assessment when it meets the criteria (in the opinion of others)?
- Can a TA require the owners to get a peer review?



Proposed Methodology

- **Criteria for recognising previous assessments**
 - Previous = not led to EQ prone building notice under current Act
 - Doesn't apply for buildings with s124 notices already – don't need to be revisited
 - Doesn't apply to buildings where the TA has already provided written notification that it is not EQ prone – don't need to be revisited
 - Criteria 1: undertaken by qualified engineer, evidence of internal/external inspection, references relevant standards/guidelines, % of NBS stated
 - Or Criteria 2: has been subjected to moderation process
 - Or Criteria 3: evidence of independent review
- **Questions:**
 - Do you agree with criteria?
 - Any wrong/missing?



This is another important proposal, especially for those currently part way through the assessment process, but also for those who have already invested in assessments or even strengthening.

A previous assessment is one that has not resulted in an EQ Prone building notice being issued under the current Act (before the recent changes).

The important thing to note is that where you have already had written notice that your building is not EQ prone, it will not be reassessed using the new methodology and assessment guidelines.


If you already have a Section 124 notice, you also don't need to get another assessment just because of the legislative changes.

The methodology will document the criteria on which the TA will accept an Engineering Assessment report written prior to the legislative changes. In other words, if you have already commissioned a DSA or are in the process of doing so, your DSA will still be accepted provided it meets these transitional criteria (which are a subset of the new criteria for acceptance that we've just looked at):

- it was undertaken by a suitably qualified engineer with relevant skills in structural and earthquake engineering and assessments of existing buildings
- it contains evidence that an interior and exterior inspection was undertaken as part of the assessment
- it references the relevant standard or guidelines for acceptable engineering methods in effect at the time, for example the *Assessment and Improvement of the Structural Performance of Buildings in Earthquakes* guidelines produced by the New Zealand Society for Earthquake Engineering
- it clearly states the assessment outcome, reported as a %NBS.


If it doesn't meet those criteria, it would still be acceptable if it has been reviewed (by a chartered professional engineer) or was part of a programme of assessments that has gone through a moderation process (with oversight from suitably qualified engineers)

All of the above applies regardless as to whether it was the TA or the owner who commissioned the report.




Proposed Methodology

- **Description of Parts of Buildings**
 - Defines scope of what engineers need to assess
 - An individual structural element or critical non-structural element that could be a significant life safety hazard (from loss of gravity support)
 - Examples: parapets, cladding, heavy equipment, heavy partition walls
- **Questions:**
 - Do you agree with how the parts are described?
 - Do you think further examples are needed as to what is likely to be a hazard?
 - Do you think further examples are needed as to what is unlikely to be a hazard?




This is another slightly technical subject in which the regulations will attempt to define what “parts of buildings” mean, now that it is in the Act. It focuses only on structural elements or heavy non-structural elements.

MBIE ask if it needs more examples, it does, especially in light of the recent quakes e.g. do false office ceilings represent a “life threatening hazard that can’t be mitigated”, especially given comments by office workers in Christchurch that they were unable to get to shelter (the floor was shaking too hard to allow movement). What about infrastructure such as plumbing and wiring conduits collapsing to make a possible electrocution hazard?



Proposed Methodology

- **Determining if a building is EQ prone**
 - How TAs will determine if a building is EQ prone
 - 133AB(1)(a) met if assessment report meets criteria and rating less than 34%
 - 133AB(1)(b) met if collapse of building likely to cause death or injury, based on occupancy, accessibility, proximity of other buildings,
- Questions:
 - Do you agree with how the test for 133AB(1)(a) will be applied?
 - Do you agree with the test for 133AB(1)(b) will be applied?



This spells out the the how TA will classify the building as EQ Prone as defined by the ACT which is:

- (a)** the building or part will have its ultimate capacity exceeded in a moderate earthquake; and
(b) if the building or part were to collapse, the collapse would be likely to cause—
 (i) injury or death to persons in or near the building or on any other property; or
 (ii) damage to any other property.

So the TA will classify a building as EQ prone if

- The assessment report meets the acceptance criteria and the rating is less than 34%
- The collapse of the building is likely to cause death or injury, based on occupancy, how easy it is for people to access the building, proximity of other buildings etc.

Although they ask if we agree with how the tests will be applied, the 34% limit is not up for debate – that is not being changed by the proposed regulations.

It does mention that TAs may commission engineering advice to help them decide. It is a concern if that cost is to be passed on to owners – perhaps there should be criteria defining when this is acceptable.

NOTE:


133AB Meaning of earthquake-prone building

(1) A building or a part of a building is *earthquake prone* if, having regard to the condition of the building or part and to the ground on which the building is built, and because of the construction of the building or part, —

- (a)** the building or part will have its ultimate capacity exceeded in a moderate earthquake; and
(b) if the building or part were to collapse, the collapse would be likely to cause—
 (i) injury or death to persons in or near the building or on any other property; or
 (ii) damage to any other property.


Question raised at the seminar:

If Building A is not an EQB but building B could fall or sway against it, does Building A become an EQB too?
 BCGG/ICA will clarify with MBIE.



Proposed Methodology

- **Assigning earthquake ratings**
 - Rating will be based on % of NBS specified in the assessment
 - Rating categories for <20% or 20% to 33% (as per regulation proposal)
- **Questions:**
 - Do you agree that the rating should be based on % of NBS?



The proposal suggests that the earthquake rating should be the % of NBS stipulated in the assessment. As already discussed, it also proposes two categories under 34%

It should be noted that this will relate to the NBS as at the time of “commencement date” of the legislation, so in theory is immune to changes in the building standard. Of course, the legislation could be changed in the future, but this at least indicates recognition that owners need to have certainty when faced with strengthening, and that once a building is strengthened, it isn’t going to suddenly become EQ prone again.

This seems to be our chance to say whether we think a % of NBS is a good way of rating a building. Past concerns for me have been that the goal post will shift whenever the Building Code is changed, but the “at commencement date” helps. There isn’t a sunset clause though, so there is still a possibility of the goal post moving. I’ve heard that other countries don’t use a % of NBS, so there are presumably other ways.

Again, this may need an engineering background, but perhaps we should reiterate the need for certainty and even stronger clarity that once a building has been strengthened or assessed as non-EQ prone, that’s it. Or should we acknowledge that as technology and understanding changes, some buildings we thought were ok are not and need to be addressed?

NOTE: 33AC Meaning of earthquake rating

(1) In this Act, earthquake rating, in relation to a building or a part of a building that a territorial authority has determined is earthquake prone, means the degree to which the building or part meets the requirements of the building code—

- (a) that relate to how a building is likely to perform in an earthquake; and
- (b) that would be used to design a new building on the same site; and
- (c) as they apply on the day on which this section comes into force.

(2) The earthquake rating of a building or a part of a building—

- (a) is determined by a territorial authority in accordance with the EPB methodology (see section 133AK); and
- (b) is specified on the EPB notice issued for the building or part and recorded in the EPB register; and
- (c) determines the form of the EPB notice issued for the building or part (see section 401C(a)).

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Wrap up

- Anything else relating to the Proposed Regulations and Methodology?



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How to make submissions

- Submission process is described in discussion documents
- Can be short email on a single topic
- Can use form, download from:
 - <http://www.mbie.govt.nz/about/our-work/have-your-say>
- Can post, but must also send electronic copy (Word or pdf)
 - EPBconsultation@mbie.govt.nz
- Closing date: 5pm Thursday 15 Dec 2016




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How to make submissions

- BCCG and ICA will be making submissions
 - Consider submitting yourself
 - Or email us with any comments asap
 - National.president@bccg.org.nz
 - innercityassociation@gmail.com






General Forum

- How did you and your building cope in the earthquake?
- Was the BCCG advice useful? What would you like the BCCG to do differently next time?
- Do you think the media coverage has been good or bad?
- How did your body corporate or landlord deal with it – what was good or bad?
- What would you do differently next time?
- Are you still facing unresolved issues?



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Points raised at the Seminar:

- Time frames for strengthening have already been changed in the Building Act. Some buildings will have been given 20 years, which is now cut to 15, so lost 5 years. It may not have been possible to strengthen earlier – BC decision making, lack of funds, saving plan to accumulate funds.
- Clarification is needed as to when the 7.5 years starts for a building identified as a priority building (as defined in the Act), especially where Section 124 certificates were issued several years ago – the WCC has been ahead of the game, so some Owners may already be 4 to 5 years into the timeframe allowed.
- There appears to be a move towards requiring private building owners to notify TA once the rapid assessment has been completed following an earthquake. Currently this can't be required.
- It would be helpful for the ICA and BCCG to distribute key points that they will make in their submissions so others can also submit on the items they are also concerned about

Thanks also goes to Peter Johnstone who gave a quick presentation to show why the short, stiff buildings (even those that are EQBs) in Wellington didn't have the same problems as the taller, newer buildings. Although very technical, his graphs clearly showed the relationship between the type/distance of earthquake, the type of land and the size of building. A similar explanation can be found at:

<http://www.stuff.co.nz/national/nz-earthquake/86936599/geoff-thomas-why-buildings-respond-to-quakes-differently>