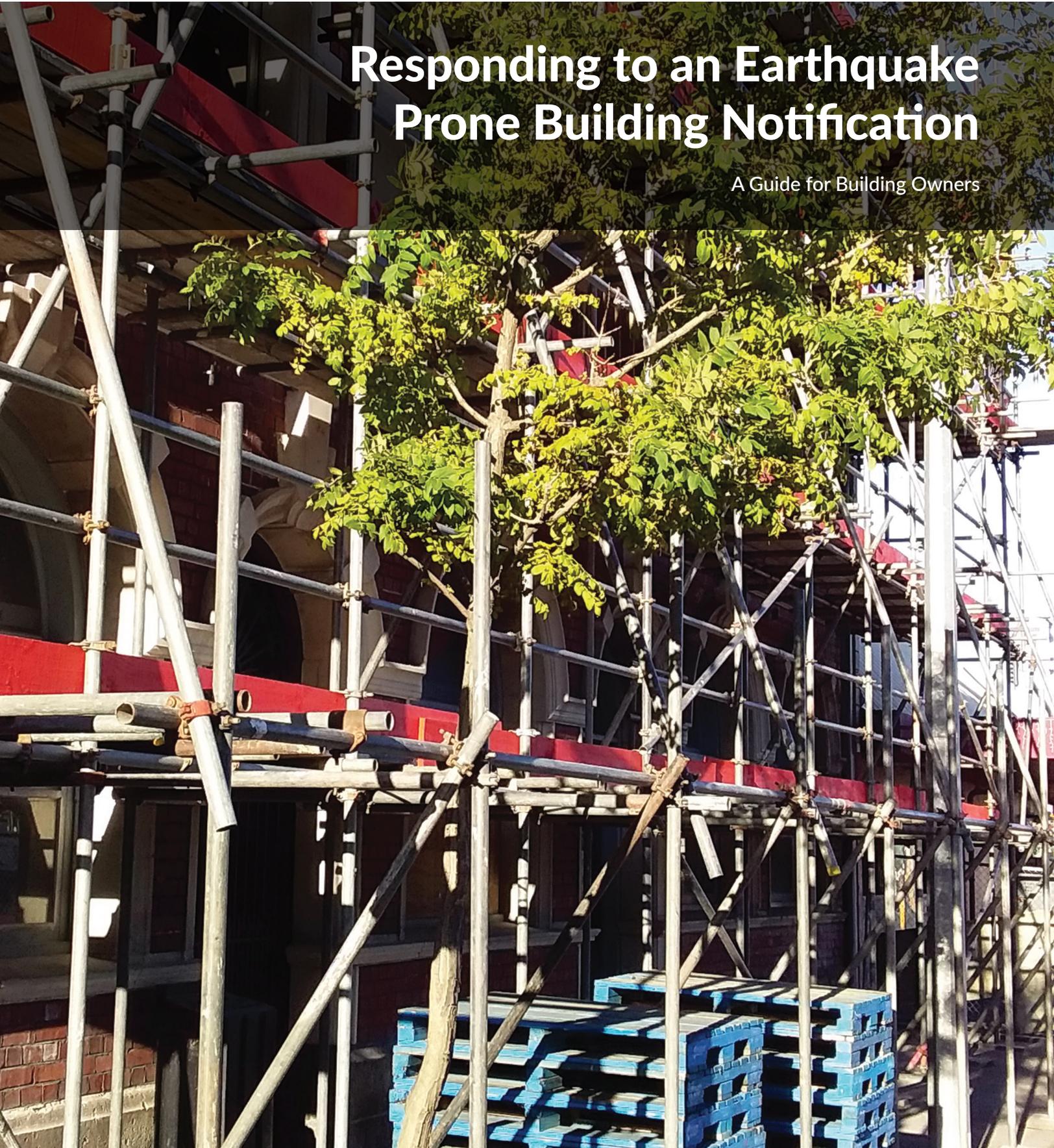


Responding to an Earthquake Prone Building Notification

A Guide for Building Owners



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Responding to an Earthquake Prone Building Notification

A Guide for Building Owners

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1 Introduction

This document is intended to act as a guide for building owners and to provide a pathway through the process of responding to notification that your building has either been:

- identified as potentially earthquake prone (following receipt of a letter from your local Territorial Authority [TA]), or
- determined to be earthquake prone (following receipt of an earthquake-prone building [EPB] Notice) by the TA following their review of an engineering assessment report on your building which they have previously received.



Figure 1: National factors considered in the framework for managing earthquake-prone buildings

The revised earthquake-prone provisions of the Building Act have been in effect since 1 July 2017, and place obligations on the owners of certain types of older buildings to have their buildings assessed and upgraded within defined timeframes.

The primary objective of the earthquake-prone provisions of the Building Act is to protect people. They focus on the most vulnerable buildings in terms of people safety and aim to strike the right balance between life safety risk and other factors.

The earthquake-prone buildings provisions apply to non-residential buildings, but include some residential buildings if they are:

- two storeys or more and have three or more household units, or
- two storeys or more and are used as a hostel, boarding house or other specialised accommodation.

Specific exclusions include farm buildings, retaining walls, fences, certain monuments, wharves, bridges, tunnels and storage tanks.

The Building Act now explicitly requires consideration of ‘parts of buildings’ that may be earthquake prone using the same criteria as a building. The Act also includes the definition of Priority Buildings – buildings that have shorter timeframes for assessment and mitigation due to either being constructed of unreinforced masonry or the nature of their occupancy, function or location.

This document sets out a simple step-by-step process you will need to work through as the owner of a potentially earthquake-prone building in order to comply with the requirements of the Building Act and associated regulations. Answers to some key questions you may have are also provided.

It clarifies the new requirements and the considerable body of information that exists around them and outlines a logical progression to help you navigate through the process. We recommend you read the entire document before diving into the website links provided for further detail on specific topics.

The Ministry for Business and Innovation (MBIE) has provided an online resource specifically for building owners.



<https://www.building.govt.nz/managing-buildings/managing-earthquake-prone-buildings/what-earthquake-prone-buildings-system-means-for-you/owners-of-earthquake-prone-buildings/>

2 Definitions and key information

2.1 Earthquake-prone building

The definition of an EPB (or part of a building) is found in Clause 133AB of the Building Act 2004. To be earthquake prone, the building must have an assessed earthquake rating of less than 34% of the New Building Standard (<34%NBS) **AND** the relevant Territorial Authority must determine that at least part of the building has the potential to cause death or injury and/or damage to other property.

Section 133 of the Building Act primarily deals with EPBs.



http://www.legislation.govt.nz/act/public/2004/0072/latest/DLM306036.html?search=terms_act%40bill%40regulation%40deemedreg_Building+Act_resel_25_a&p=1

2.2 Importance Level

The Importance Level (IL) of a building is defined in the NZ Loading Standard NZS 1170. It is relevant to the building's earthquake rating because it defines the full earthquake design demand that the building's capacity is compared with to establish the %NBS. Most office, commercial and residential buildings are IL2, but buildings with crowd loadings (like halls and schools) and post-disaster functions (like surgical operating theatres and important infrastructure buildings) are IL3 or IL4 respectively, with higher seismic load requirements. Typically, this means that a building assessed as IL3 will have a lower assessed earthquake rating by about 25% than if it were assessed as IL2. For this reason, the rating of a building is often noted with the IL, e.g., 45%NBS (IL2).

2.3 Seismic zones

For Earthquake-Prone Buildings purposes, New Zealand has been divided into three seismic risk zones (Low, Medium and High). Clause 133AD of the Building Act defines these zones. The seismic risk factor (Z) for an area defines which zone your building falls into. A map of the seismic zones is shown in Appendix 1 and the zone details are available online.



<https://www.building.govt.nz/managing-buildings/managing-earthquake-prone-buildings/how-the-system-works/z-values-seismic-risk/??>

2.4 Priority buildings

TAs in Medium and High seismic zones will identify and define Priority buildings. They include unreinforced masonry (URM) buildings where any part could fall onto a road or other thoroughfare in areas designated by the TA. Building use is also relevant to a Priority rating (e.g., emergency buildings, classrooms and hospitals), as is the likelihood that collapse would impede a transport route of strategic importance. Clauses 133AE and 133AF of the Building Act define the TA's responsibilities should enact this requirement. If your EPB is identified as a Priority building, this shortens the timeframes for having it assessed and remediated to lift it out of EPB status, or demolished.

2.5 EPB methodology

This is the process to identify, assess and determine earthquake-prone buildings which has been developed by MBIE as part of the new regulatory requirements. It contains three sections:

Section 1: Territorial Authorities identify potentially earthquake-prone buildings.

Section 2: Engineers carry out assessments of potentially earthquake-prone buildings.

Section 3: Territorial Authorities decide on earthquake-prone buildings.

An overview of these sections is available online.



<https://www.building.govt.nz/assets/Uploads/building-code-compliance/b-stability/b1-structure/epb-methodology.pdf>

The EPB methodology also covers reporting requirements, including the standards engineers must meet when submitting their assessments. Section 2 describes the assessment requirements for engineers. It is important for building owners to understand this because they will engage the engineer. Specifically, engineers must utilise and follow *The Seismic Assessment of Existing Buildings – Technical Guidelines for Seismic Assessments – July 2017*. They cover Initial Seismic Assessments (ISAs), Detailed Seismic Assessments (DSAs) and the appropriate seismic assessment analysis techniques/calculations required for the various types of structure and building materials. When you engage an engineer, you will need to discuss what level of assessment is appropriate for your particular case, and you will need to be satisfied the engineer has the required experience and knowledge to carry out the work.

You can find the Technical Guidelines and information about them online.

	http://www.eq-assess.org.nz/
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2.6 EPB timeframes to act

TAs have a specified timeframe to identify earthquake prone buildings with a start date of 1 July 2017. If the TA identifies a building as a Priority building (in Medium and High seismic zones only), this timeframe may be reduced. Building owners also have a specified timeframe to either strengthen or demolish an earthquake-prone building once the TA has issued an EPB Notice. The key timeframes are described in Figure 2 and Figure 3.

You can find a full breakdown of the required timeframes for assessment and work on EPBs online.

	https://www.building.govt.nz/assets/Uploads/managing-buildings/earthquake-prone-buildings/epb-priority-buildings.pdf
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Seismic risk area	Priority buildings	All other building
High	2.5 years	5 years
Medium	5 years	10 years

Figure 2: Timeframes for Territorial Authorities to identify potentially earthquake-prone buildings

Seismic risk area	Priority buildings	All other building
High	7.5 years	15 years
Medium	12.5 years	25 years

Figure 3: Timeframes for owners to do seismic work on earthquake-prone buildings

Note: Priority buildings don't have to be identified in low seismic risk areas. In these low seismic risk areas, the timeframes for all buildings are 15 years and 35 years to remediate.

An extension of time for obtaining an assessment may be granted if you are finding it difficult to engage an engineer. An extension may also be obtained for the remediation strengthening works if you own a Heritage Building (as defined by Heritage NZ or as specified in the TA's District Plan Heritage Building List). You will need to request an extension of time from the TA well in advance of the expiry of the normal timeframes.

2.7 Structural Weakness (SW) and Critical Structural Weakness (CSW)

You may hear about or read in an assessment report the terms SW and CSW with reference to your building. A SW is any weakness in the building structure that could influence its performance at any level of earthquake shaking up to its Ultimate Limit State (ULS). That means any element which is less than 100%NBS for the IL appropriate for the building. A CSW is the lowest scoring or weakest of the SWs. One of the outcomes of an Initial Seismic Assessment (ISA) in accordance with Part B of the *Technical Guidelines for Seismic Assessments* (referred to in Section 2.5 of the EPB methodology above) is to identify potential SWs for the particular building structure. These may be scored as insignificant, significant or severe. The governing CSW is typically determined from a Detailed Seismic Assessment (DSA) that meets the requirements of Part C of the *Technical Guidelines for Seismic Assessments* (also referred to in Section 2.5 of the EPB methodology above).

2.8 EPB exemptions

In some circumstances, if an earthquake-prone building is sufficiently 'low use' and 'low occupancy', the building owner can apply to the TA for an exemption from carrying out earthquake strengthening work. Examples of this may include a small, rural, public building that has very intermittent use. This exemption is based on the much lower exposure to 'life safety' issues in the event of a significant earthquake, and is detailed in the *Buildings (Specified Systems, Change the Use, Earthquake Prone Buildings) Regulations 2005*. Relatively few earthquake-prone buildings are likely to be eligible for an exemption.

Details of this exemption are available online.



<https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/exemptions-carrying-out-seismic-work/owners-earthquake-prone-buildings-apply-exemption/>

3 Step-by-step guide to managing your (potentially) EPB

The following steps are set out to help you move through the process of managing your EPB within the requirements of the Building Act, and to minimise any surprises or unnecessary work or cost.

We have identified key decisions that need to be made by you as the building owner as early as possible. However, sometimes options need to be explored before this can be done. This is where an experienced engineer can provide advice to help you reach the best possible decision in the circumstances.

Step 1 – Notification that your building is potentially earthquake prone

As a building owner, you may receive a letter from the TA titled 'Potentially Earthquake-Prone Building'. Read the contents of the letter to confirm that all key information about your building is correct.

The Building Act (Clause 133AI) requires you to do one of three things:

1. Provide an engineering assessment within one year of receiving the notification letter (or request an extension as above), or
2. Explain why the TA is incorrect in its assessment of the building as potentially earthquake prone, or
3. State that no engineering assessment is going to be provided (but if you do this the TA has powers to take action - see Step 5).

If there are any errors or you have any queries concerning the letter, you will need to notify the contact person identified in the letter in writing (email is best to create a 'paper trail'). If the TA accepts there are factual errors in the letter (e.g., the date of construction of the building) which could have led to an incorrect categorisation, you may not need to provide an engineering assessment. However, this will need to be confirmed in writing by the TA.

The TA may allow you an extension of time to provide the engineering assessment if you are having difficulty getting an engineer to complete within the normal timeframe, but you will need to notify the TA in writing in advance to apply for an extension.

The process the TA has used to determine that your building is potentially earthquake prone is described online.



[https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/methodology-identify-earthquake-prone-buildings/section1/.](https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/methodology-identify-earthquake-prone-buildings/section1/)

Essentially, the TA uses profile categories that relate to the age and number of storeys or height of the building, and its construction material to determine whether it is potentially earthquake prone. In addition, the TA can identify your building as potentially earthquake prone at any time for any reason that is observed or brought to its attention.

If you have previously obtained an engineering assessment and it was carried out prior to 1 July 2017, you may need to go back to the original engineer and ask them whether their report will meet the requirements of the EPB methodology. The TA will review the report and may request further information which the original report engineer will likely be best placed to supply.

Step 2 – Deciding what level of assessment is appropriate for your building

This step is an important part of the process because it requires the building owner to carefully consider the medium- to long-term future of the building while they have ownership. It will often be obvious whether the building is likely to be earthquake prone (based on its age, construction and condition). Similarly, the likely return on any investment into the future of the building will also often be known based on current rental, location and anticipated future demand. This enables some early decisions on options to be considered, for example selling the building, strengthening the building if this can be achieved at reasonable cost, or demolishing the building for rebuild as the land and location may be valuable. The decision on which options are to be pursued will influence the level of assessment and any additional information that you may require from an engineering assessment.

There may be other issues to consider for your particular building. For example, it may be part of a row development where there are adjoining properties with common intertenancy walls such that your building is actually part of a larger structure. In this situation, with other building owners involved, it may be in everyone's best interest to co-ordinate and collaborate, as the total building structure will need to be assessed.

These issues can be discussed in more detail with a suitably experienced and qualified engineer.

There are two broad types of seismic assessment - an Initial Seismic Assessment (ISA) and a Detailed Seismic Assessment (DSA). However, it is important to appreciate that these lie on a continuum, which is described in Figure 4: ISA / DSA Continuum.

You can find a breakdown of the ISA/DSA assessment principles and objectives online.

	<p>https://www.building.govt.nz/assets/Uploads/building-code-compliance/b-stability/b1-structure/seismic-assessment/a-assessment-objectives-principles.pdf</p>
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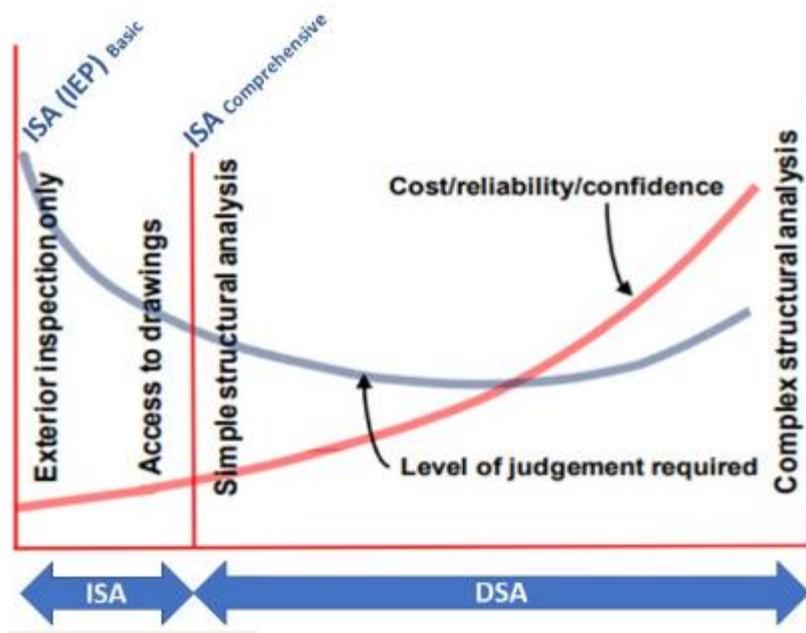


Figure 4: ISA / DSA Continuum

If determining a seismic rating is the primary purpose, internal and external inspection of the building will be required for both an ISA and a DSA. (In some circumstances an ISA may not need an inspection.) The more information you as building owner can supply, the better equipped the engineer will be to assess your building effectively and efficiently. Building drawings are a significant advantage, and the more detail the better.

An ISA can include some form of simple structural analysis and calculations along with minor intrusive investigation work and consideration of likely geotechnical conditions based on soils maps from the TA. This can provide more confidence and the best possible seismic rating for that level of assessment.

The ISA process at the simplest level is generally conservative and will usually provide a lower rating than the building can achieve from the more comprehensive quantitative assessment carried out under a DSA. If an ISA determines the building is rating close to but under 34%NBS, further analysis may well show that the building is above 34%NBS. Equally, if an ISA determines the building is rating just above 34%NBS, the TA is unlikely to accept this result. In both these situations, a DSA upgrade of the ISA work can provide more definitive and useful information to you as building owner.

If you are contemplating upgrading the building, you will want to know early on whether this is a viable option from a cost perspective. Therefore, you will want to know 'rough order' cost information for the potential strengthening work. In most situations strengthening will require that a Building Consent application be lodged. The potential additional work and cost that this might trigger are detailed in Section 4.3.

If you are potentially selling the building, it can be an advantage to have an assessment report, concept strengthening and rough order costing to help you negotiate the best sale price. The accuracy of this concept design will of course be dependent on the level of assessment and design that has gone into the project. A DSA will likely yield a more reliable concept design than one based on an ISA.

Please note all the information here regarding your options is provided purely as useful commentary rather than requirements based on legislation.

Step 3 – Obtaining and engaging an engineer

You will need to do some research to find a suitable Chartered Professional Engineer who could carry out the assessment work. Relevant experience and availability are the key issues.

This online resource will help you find an engineer. It also provides information to assist you in the selection process.



<https://heritageequip.govt.nz/finding-project-professionals/find-an-engineer>

Prior to contacting an engineer, it will help if you have considered your options, done some research and/or obtained the following information:

- A copy of the letter from the TA stating that your building is potentially earthquake prone (or other relevant information). This will provide the scope of the assessment and the maximum timeframe for the assessment to be completed for submission to the TA.
- The TA Property File for your building from your local Council offices (or search online if the TA has electronic files). This provides relevant information on the building including any previous condition or seismic reports, original or subsequent plans of the building, and any past alterations or previous structural design work. Having drawings of the building will greatly assist the engineer with their assessment.

Note: If there are no drawings available for the building, your engineer may wish to prepare layout plans, or you may be able to get a local draughting technician to provide you with a price to complete suitable drawings. There are some new technologies/software that can generate simple plans and elevations of your building at relatively low cost.

- A set of photographs that clearly show the scope and nature of your building.

This information will assist you in discussions with an engineer and you will save some money if you have the time to do the research yourself. You will need to come to an understanding with your engineer as to what level of assessment is appropriate, what additional information you might want or need from the report, and the fee estimate and delivery date for the engineering assessment report. It is often desirable to have a staged approach, so you can decide to move forward with more fee expenditure based on information as it progresses. This approach could, for example, involve a fixed fee for the information gathering phase and ISA, with an indicative fee for a full DSA, and concept design component if required or requested. The fee for the DSA and other components can then be refined and confirmed following the ISA and/or any other prior stages.

You will need to get the engineer to provide you with a formal Short Form Agreement (SFA) contract of engagement that will outline the staged assessment and concept strengthening work that is appropriate for your building, and you will need to consider this and sign as appropriate. Most engineers will use the Association for Consulting and Engineering Professionals (ACENZ) and Engineering New Zealand two-page SFA (latest version Feb 2019) for this type of work.

Further advice on the subsequent steps involved in developing the strengthening design through to Building Consent submission is given in Section 4.6.

Step 4 – Seismic assessment report review and lodgement with the TA

Keep in touch with your engineer to avoid miscommunication and to ensure any timeline or fee budget issues are resolved early on. The engineer will be endeavouring to do the same.

Discuss with your engineer the need for you to see the final draft of the report prior to it being formally issued so that you can ensure there are no surprises, or issues with the interpretation, wording etc. If you have any queries or don't understand aspects of the report, ask your engineer to discuss these questions with you.

Ensure the completed Assessment Summary Report is included in the engineering report. These are both required by the TA whether the assessment is an ISA or a DSA.

You can find more information about the Assessment Summary Report online.



<http://www.eq-assess.org.nz/knowledge-base/templates/>

Once you have the assessment report formally issued you will have a choice as to when you lodge the assessment report with the TA (providing this is prior to the deadline date). When you do lodge the report, the TA will review it for compliance with the EPB methodology, and either confirm the rating of the building or request further information.

The TA review workflow and the criteria it will use to recognise, accept and process any previous assessment report they may have on file are available online.



<https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/methodology-identify-earthquake-prone-buildings/section3/>

If the rating is assessed and accepted by the TA to be above 34%NBS, the TA will confirm in writing that the building is not deemed to be earthquake prone. It may be considered to be an 'earthquake risk' (a term used by the NZ Society for Earthquake Engineering [NZSEE]) which means the building is <67%NBS. If the building is >34%NBS but <67%NBS there is no legal or statutory requirement for any further action, but your tenants and/or insurer may still require action which you will have to address with them separately.

If the rating is confirmed to be below 34%NBS, the TA will issue an EPB Notice.

The TA follows a different process for buildings with multiple tenancies or where only part of the building is earthquake prone (e.g., a chimney).



<https://www.building.govt.nz/assets/Uploads/managing-buildings/earthquake-prone-buildings/ta-issue-epb-notice.pdf>

Step 5 – Receiving an EPB Notice for your building

An EPB notice creates a legal obligation to undertake necessary seismic work so that the building is no longer earthquake prone. An EPB Notice can only be generated once the TA confirms the building is earthquake prone. The clock will start ticking from the date the Notice is issued on the time you have available to strengthen or demolish the building.

A full description of the content of EPB Notices can be found online.



<https://www.building.govt.nz/assets/Uploads/managing-buildings/earthquake-prone-buildings/epb-notice.pdf>

As part of the EPB Notice process the TA will:

- Issue an EPB Notice. Note the TA may also issue the EPB Notice to Mortgagors or others who have an interest stated on your building/land Title.
- Create an entry on the National EPB Register (<https://epbr.building.govt.nz/>) for your building.

As building owner, once you receive the EPB Notice you are required to:

- Advise your tenants and ensure your EPB notice is attached in a prominent place on or adjacent to the building (if it is laminated it may be more robust to weather fading etc).
- Inform your TA if the EPB notice ceases to be attached or is illegible.
- Comply with any instructions from your TA about attaching or removing EPB notices.

Deadline requirements for either strengthening or demolition will be stated on the EPB Notice. If building owners DO NOT display an EPB notice, provide an engineering assessment or undertake seismic work by the timeframes required, the TA has powers to take action at your cost.

The TA's powers to act if a building owner fails to take the required action are explained online.



<https://www.building.govt.nz/managing-buildings/managing-earthquake-prone-buildings/how-the-system-works/applying-outcome-of-decision/#jumpto-territorial-powers-where-no-action-is-taken>

Step 6 – Continued occupation of your EPB

Building owners are responsible for deciding on continued occupation/tenancy of an EPB unless the TA intervenes for some other reason, e.g., the building is deemed to be 'Dangerous or Insanitary'. Note that earthquake considerations are not a factor in defining whether or not a building is a Dangerous or Insanitary.

The definition of a Dangerous or Insanitary building is found in the Building Act 2004.



<http://www.legislation.govt.nz/act/public/2004/0072/latest/DLM306896.html>

Clearly, building owners will be guided by their engineer with regard to continued occupancy. In general terms, providing there is a plan in place to deal with the building (strengthen or demolish) within the specified timeframes, continued full occupancy is likely to be appropriate. Refer also to Section 4.4.

Step 7 – Ongoing management of your EPB

This will be dependent on which course of action you have decided to pursue. Clearly, developing a plan of action to deal with the requirement to have the building strengthened or demolished within the specified timeframe is a responsibility of the building owner.

Strengthening works can take considerable time to complete, as they involve engaging an engineer, developing detailed documentation, obtaining Building Consent, and tendering the work, as well as the actual construction period. Any tenant/s may need to move out during construction. All of these elements need to be planned and executed prior to the deadline dates specified by the TA.

If your building has a heritage classification (either with Heritage NZ or by local TA designation), your timelines for assessment and strengthening may be extended more easily. In addition, there are specific funding arrangements that may influence how you deal with your building going forward (see Section 4).

Ongoing issues including retaining or obtaining new building insurance, potentially increased insurance premiums, building maintenance on areas that may be redundant after strengthening works, and tenant concerns will require building owner input while the building remains in EPB status.



4 Frequently asked questions

4.1 What if my building is part of a larger building or multi-unit building?

Simply assessing your section of the building is unlikely to be accepted by the TA since it may contain only part of the total structural system that resists lateral earthquake loads. In this circumstance, the entire building needs to be assessed and the cost of that assessment will ideally be shared with the other owners of the overall building. The TA should have sent a letter advising the other building owners that their building is also potentially earthquake prone. You will need to confirm this and to progress the matter you will need to coordinate with the other building owners, through the body corporate if there is one in place.

In some circumstances only part of the building will be found to be earthquake prone (e.g., a chimney) and the part of the building threatened by this weakness may be under a separate building owner. The separately owned part of the building further away would not be at risk and thus that ownership part of the building is not earthquake prone.

You can find details of these types of scenario, including separate ownership and unit titles online.



<https://www.building.govt.nz/assets/Uploads/managing-buildings/earthquake-prone-buildings/ta-issue-epb-notice.pdf>

4.2 What if my building is threatened by an adjacent EPB?

This is an issue that the adjacent building owner will be required to deal with through this process (assuming the TA has also identified it as an EPB).

It does not affect the earthquake rating (*%NBS*) of your building nor does it render it an 'affected building' in relation to the Building Act's definition of a Dangerous building.

4.3 What if I want to upgrade or change the layout of my EPB?

If at any time you want to alter the building, you may need to apply for a Building Consent.

Applying for a Building Consent for and EPB is a complex process. MBIE guidance is available online.



<https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/altering-existing-building/>

The relevant clauses of the Building Act are 112 and 133AT. They require:

1. The building's overall compliance with the Building Code must not be less than what it was prior to the alteration taking place, including other applicable clauses in addition to fire and accessibility, such as structure.
2. The whole building needs to be upgraded so that it complies as nearly as is reasonably practicable with the current Building Code clauses for fire and accessibility (if applicable under section 118 of the Building Act).

If Building Consent application is required for an alteration, full detailed design and construction documentation will need to be supplied with the submission. It is likely additional documentation will also be required for fire and accessibility compliance. In this case, an as built Gap Analysis for fire and accessibility along with the proposed upgrades fully documented and specified are likely to be required. If any fire and accessibility (and other) specified system aspects are not fully compliant with the current Building Code, the reasons why this is not practicable will need to be argued. Section 112 does provide the TA with the ability to exercise discretion to approve a building consent in certain circumstances when these requirements are not met (Refer to item 2. directly above for guidance).

Also, if the only work proposed to be undertaken on your EPB is seismic strengthening to raise the building above 34%NBS, section 133AT(3) enables the TA to exercise discretion with respect to compliance with means of escape from fire and disabled access. This is important given that, for older buildings, the upgrading to meet an acceptable level of fire compliance can sometimes exceed the cost of strengthening and/or the alterations themselves. A full Gap Analysis report on the extent to which the building complies with those requirements is now nearly always required.

If you wish to alter your EPB but do not wish to address seismic strengthening at the same time, the cost of the alterations will need to be less than the threshold for substantial alterations defined in the building regulations, as follows:

An alteration, other than seismic work, is substantial if it needs a building consent and together with other work consented in the last two years has an estimated value of at least 25% of the building's value, but only if the value of the building work is **greater than \$150,000.**

The underlined addition is a change that was introduced in July 2019. You can find background information to the change online.

	https://www.building.govt.nz/managing-buildings/managing-earthquake-prone-buildings/what-earthquake-prone-buildings-system-means-for-you/owners-of-earthquake-prone-buildings/#jumpto-substantial-alterations-to-an-earthquake_002dprone-building
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	https://www.building.govt.nz/assets/Uploads/managing-buildings/earthquake-prone-buildings/epb-substantial-alterations.pdf
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4.4 What about the Health & Safety at Work Act 2015 (HSWA) and EPBs?

Worksafe NZ is the regulator that implements the HSWA. The key point they have stated on this issue is “... [I]f you’re a person who owns or occupies an earthquake-prone building and you’re meeting the earthquake requirements of the Building Act 2004 *[in other words the requirements outlined in this document]*, we are not going to enforce to a higher standard under the HSWA”.

This statement and further information on this issue can be found on their website.

	http://www.worksafe.govt.nz/worksafe/information-guidance/all-guidance-items/position-statements/position-statement-dealing-with-earthquake-related-hazards.
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4.5 Is funding available for assessment and/or strengthening works?

There are potential sources of funding, but they can be difficult to access. The following funding sources have been identified by the authors of this document. Of course, these funds are in demand and are limited, so you will need to follow up with each potential funder directly to establish whether your building will qualify.

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- If your building is designated a heritage building (either by Heritage NZ or listed by your TA) and the building is privately owned, the government upgrade and incentive programme may provide funding. This source specifically includes costs associated with assessment and design. Check their website for more information.
<https://heritageequip.govt.nz/funding-your-project>
 - The National Heritage Preservation Incentive Fund provides another potential source for heritage buildings. Details are available from Heritage NZ.
<http://www.heritage.org.nz/protecting-heritage/national-heritage-preservation-incentive-fund>
 - Other potential funding sources, including options for non-heritage buildings, are the Regional Culture and Heritage Fund, the Provincial Growth Fund, and Lottery grants, as well as local council grants and incentives. Information and contacts for these funds are available online. <https://heritageequip.govt.nz/funding-your-project/other-funding-sources>

This list is not exhaustive and there may be potential funding sources in your local area which will require further research by you.

4.6 What are the steps involved in undertaking strengthening?

There are many steps involved in the seismic strengthening of a building, and the applicability of each will depend on the circumstances of the owner.

It is important that you choose an engineer who has considerable experience with this type of work and who is up to date with the latest research, techniques and systems. Designing an effective strengthening scheme is usually more complex than designing a new building.

The key steps can be summarised as follows:

- Understanding the target level of strengthening to be achieved usually requires estimating the cost of achieving it. Determining a concept strengthening design for both 34 and 67%NBS in sufficient detail to enable QS 'rough order' costing for each is desirable. It may be that the cost of achieving >67%NBS is not that much more than achieving >34%NBS.
- Detailed intrusive investigation work to confirm the concept strengthening design(s) and provide specific site measurements to enable detailed design of connections etc. is an important step.
- Once it has been determined that strengthening is to proceed, the production of as-built drawings where there is little or sketchy drawing information available, may be important in order to clearly articulate the proposed works unless the works are of a minor nature. The 'devil' (and cost) is in the detail.

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- Site specific geotechnical investigation may be required if this was not undertaken as part of the seismic assessment, noting that a desk-top study may be sufficient.
 - Detailed design and drawings of strengthening works may be required for Building Consent submission.

Remember that a Building Consent is usually required for strengthening works and the TA will request further information when this is lodged. This may include:

- Gap Analysis fire and accessibility report
- Compliance Schedule for any proposed upgrades (relating to Building Warrant of Fitness documentation and process)
- Architectural information if there are any external penetrations or window/door alterations.

Again, please note that in some cases, particularly in relation to resolving outdated fire compliance issues, these can be expensive to resolve.

4.7 What if there are two engineering assessments with significantly different results?

Sometimes there are significant differences and it is unlikely there will be total agreement between two independent reports. If one report is an ISA (with or without calculations) and the other a DSA, then the DSA is likely to be more rigorous. If one dates from before 2015 report and the other is more recent, then the most recent is likely to use the latest Technical Guideline documents which have changed some outcomes for some types of buildings. It may be appropriate to set up a meeting with the respective engineers with the goal of at least achieving agreement on why there are differences. This may lead to a consensus. Involving a third-party expert to guide that process may be effective.

If you are unable to resolve the situation yourself, you might want to consider Engineering New Zealand's Seismic Assessment Reconciliation process. There are costs involved.



<https://www.engineeringnz.org/news-insights/our-new-seismic-assessment-reconciliation-service/>

5 Further queries

This document has been put together to assist building owners to comply with national legislation with respect to earthquake-prone buildings.

If you have any specific queries that are not covered here, or you require further clarification, please forward your query to greg.preston@canterbury.ac.nz.



Appendix 1 – Seismic risk area map of NZ

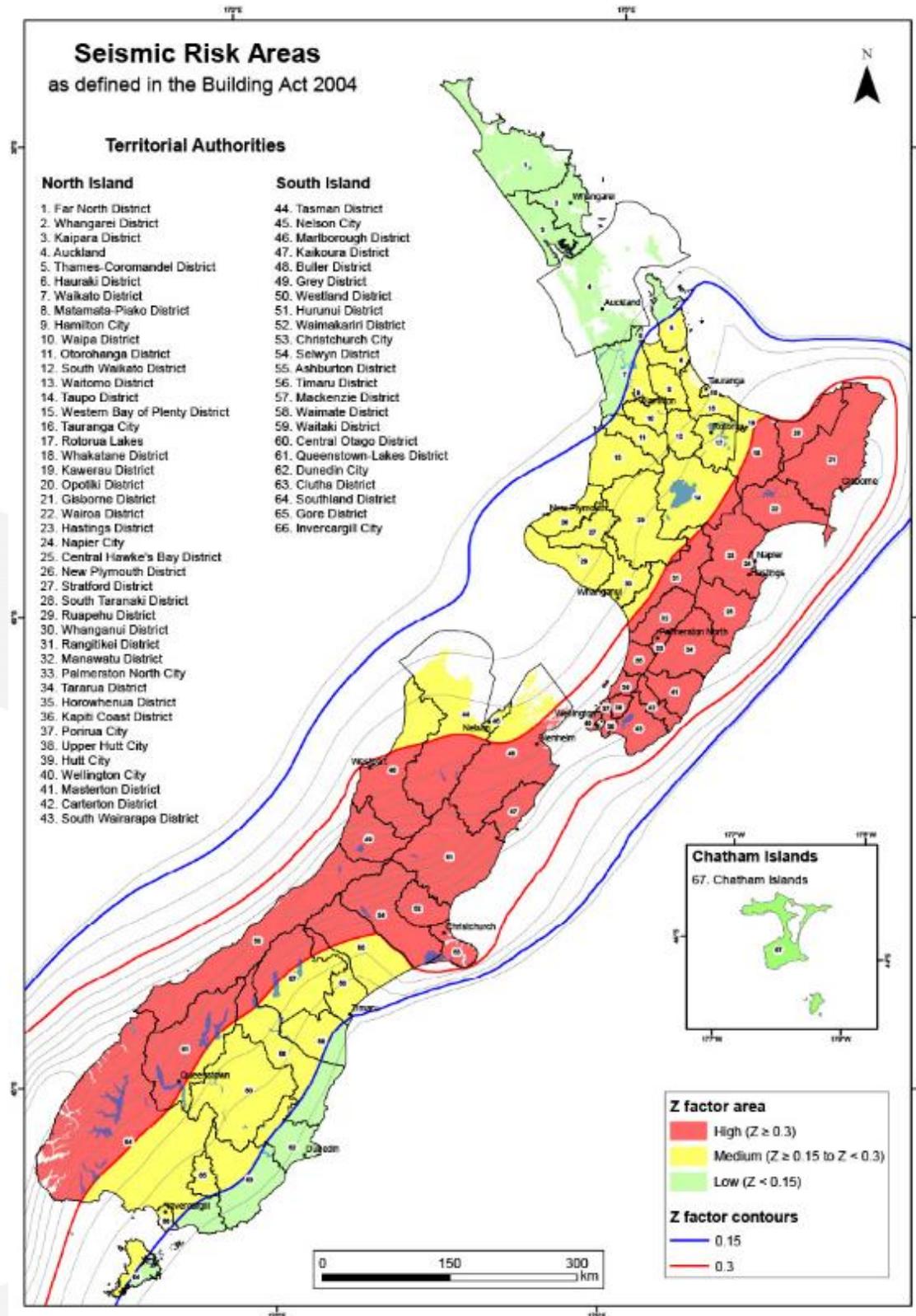


Figure 5: Seismic risk area map of NZ.

Source: <https://www.building.govt.nz/managing-buildings/managing-earthquake-prone-buildings/how-the-system-works/>





Responding to an Earthquake Prone Building Notification

A Guide for Building Owners

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