CHRISTCHURCH CITY COUNCIL
AGENDA

EXTRAORDINARY MEETING

FRIDAY 10 SEPTEMBER 2010

10AM

IN THE BOARDROOM
BECKENHAM SERVICE CENTRE
66 COLOMBO STREET

AGENDA - OPEN EXTRAORDINARY MEETING

Christchurch City Council

CHRISTCHURCH CITY COUNCIL

Friday 10 September 2010 at 10am
in the Boardroom, Beckenham Service Centre

Council: The Mayor, Bob Parker (Chairperson).
Councillors Helen Broughton, Sally Buck, Ngaire Button, Barry Corbett, David Cox, Yani Johanson, Claudia Reid, Bob Shearing, Gail Sheriff, Mike Wall, Sue Wells, Chrissie Williams and Norm Withers.

ITEM NO	DESCRIPTION
1.	APOLOGIES
2.	REVISED EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY

1. APOLOGIES

2. REVISED EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY

General Manager responsible:	General Manager Strategy and Planning, DDI 941-8281
Officer responsible:	Manager
Author:	Ingrid Gunby

PURPOSE OF REPORT

1. The purpose of this report is to advise the Council on levels of strengthening that can be required for buildings damaged in the 4 September 2010 earthquake, and to recommend a revised Earthquake-Prone, Dangerous and Insanitary Buildings Policy for adoption by the Council **(Attachment 1)**. A revised Policy was due to be considered by the Council on 9 September 2010, but questions have been raised about whether that Policy would ensure that buildings are strengthened to an appropriate standard following this week's earthquake. After reviewing legal advice and the experience from Gisborne District following the 2007 earthquake, staff recommend that the revised Policy be amended to clarify the Council's approach to determining appropriate levels of strengthening. This matter needs to be addressed urgently so that as building consent applications for repairs to buildings are considered, an appropriate level of strengthening can be sought.

EXECUTIVE SUMMARY

2. When the Council adopted its orignal Earthquake-Prone, Dangerous and Insanitary Buildings Policy in May 2006, it resolved to review the Policy in 2010. An amended Policy was released for consultation, using the Special Consultative Procedure, on 30 March 2010. 26 submissions were received by the closing date of 7 May, and a hearing was called on 14 June to hear submissions. The Panel reconvened on 22 June, 30 July and 5 August to consider submissions and agree changes to the Policy. These changes and the Panel's reasons for making them are discussed in the attached report **(Attachment 2)**.

3. Following this week's earthquake, questions have been raised about:

   i. whether the level of strengthening in the amended Policy is adequate to reduce the risks posed by earthquake-prone buildings to an acceptable level; and
   ii. whether the timeframes for strengthening in the amended Policy are too generous.

   In particular, there is concern about whether the amended Policy specifies an adequate level of strengthening for buildings that have been damaged in this week's earthquake.

Levels of strengthening that can be required under the Building Act 2004

4. The Council's current Policy **(Attachment 4)** contains no specific provisions for dealing with buildings damaged in an earthquake; the Council is currently reliant on the general provisions of the Building Act to issue notices under section 124 requiring work to be done to reduce or remove the danger posed by damaged buildings. The amended Policy as released for consultation therefore included a new section on taking action on buildings damaged by an earthquake. This section states that where a building is damaged in an earthquake, any application for a building consent for repairs must include work to restore the structural strength of the building to the level it was before the earthquake or to 33% of the current building code, whichever is the greater. It also states that the Council may issue a notice under section 124 of the Building Act 2004 requiring work to be carried out if a building consent application for repairs is not made and/or the repair work is not completed within a timeframe that the Council considers reasonable. This section was retained (as Section 2.3.6) in the Policy as recommended by the Panel for adoption (see **Attachment 3**).

5. Concerns have been expressed that strengthening to 33% is not sufficient to prevent buildings from failing in an earthquake of a magnitude that can reasonably be expected in Christchurch. Strengthening to 67% of Full Code Levels is generally considered by the New Zealand Society of Earthquake Engineers (NZSEE) to be an acceptable level of upgrading for existing buildings: at 67% of Code, a building is twice as likely to fail as an equivalent new building, while at 33% of Code a building is ten times as likely to fail. It is recognised, however, that this level is a guide only and that the actual level of strengthening that is needed should to be determined on a case-by-case basis.

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Simpson Grierson Opinion

6. Although strengthening to 67% or higher of Full Code Levels is generally agreed to be desirable, the legal opinion obtained from Simpson Grierson by Local Government New Zealand in 2005 suggests that councils' earthquake-prone policies should not require a blanket strengthening to 67% of Code (other than where the building changes use, which then requires strengthening to as near as reasonably practicable to Full Code Levels - see paragraph 22 of the Panel's report), because councils could not directly enforce such a policy. The Simpson Grierson opinion states that councils can only seek that work be done which will mean that the building is no longer earthquake-prone as defined by the Building Act 2004: that is, it would not be likely to collapse in a moderate earthquake, which is defined as one that is of the same duration but one-third as strong as an earthquake that would be used to design a new building on that site. The Simpson Grierson opinion recommends that councils keep policy statements on the level of strengthening required reasonably general, concentrating on the detail of how they will go about deciding what level of strengthening is required in individual circumstances.

Brookfields Opinion

7. After the December 2007 earthquake, Gisborne District Council sought a legal opinion from Brookfields on whether it could require owners of earthquake-prone buildings, including buildings damaged in an earthquake, to be strengthened not just to 33% of Code, but to comply as nearly as reasonably practicable with the provisions of the Building Code. The Brookfields opinion is:

   - that the minimum one-third requirement is applicable only to what constitutes an earthquake prone building, and not to the standard of upgrading required once a building has been found to be earthquake prone; and

   - that once a building has been found to be earthquake prone, Councils are entitled under section 124 of the Building Act to specify the standard of building works to be met to reduce or remove the danger, and this standard is not open to debate or appeal except through application for a determination by the Chief Executive of the Department of Building and Housing.

Department of Building and Housing Policy Guidance

8. The Brookfields opinion also notes that Gisborne District Council's proposed requirement to strengthen a building that has been shown to be earthquake prone "to comply as nearly as is reasonably practicable with the provisions of the building code" is consistent with the Department of Building and Housing's policy guidance for territorial authorities on the earthquake prone buidling provisions of the Act. This policy guidance notes that:

> *in order to reduce or remove the danger, the building will have to be upgraded to a standard that is at least above that which would mean that the building is still earthquake prone. However a territorial authority will not be able to require a building to be upgraded to a standard significantly in excess of what would be earthquake prone, as this would require the building to be upgraded to a higher standard than buildings that are not earthquake prone. The actual level to which a building is upgraded will depend on the particular circumstances of the building and the nature and effect of the remedial work on the performance of the building. The policy should set out the territorial authority's reasoning for the approach it proposes to take.*
>
> *In establishing the appropriate level of strengthening, territorial authorities may wish to consider the view of the NZSEE that recommends strengthening to levels above the minimum requirements. It considers 67% of the new building standard as an appropriate level for the requirement to reduce or remove the danger.*

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Gisborne District Council Experience

9. On the basis of Brookfields' advice, Gisborne District Council's Earthquake Prone Buildings Policy requires buildings shown to be earthquake prone to be strengthened to comply as near as is reasonably practicable with the provisions of the Building Code. The Policy notes that "as near as is reasonably practicable" has traditionally been accepted by the Gisborne District Council to be ***at least*** two thirds of the current structural building standard, but that a lesser level of strengthening may be appropriate for heritage buildings where strengthening elements would destroy or mask the heritage characteristics of the building. The Policy also provides that, where buildings that were not originally earthquake prone, or had been identified as earthquake prone but had been given a number of years to be strengthened, are damaged in an earthquake, the Council reserves the right to reclassify these buildings and require strengthening in a much shorter timeframe: no less than two but no more than five years.

10. This Policy has been in place since April 2009 and has not been challenged. We note, however, that there have been no determinations from the Department of Building and Housing, or court decisions at all to date on this issue. It is also noted that neither the Simpson Grierson nor the Brookfields opinions were prepared specifically for the situation in which Christchurch City Council now finds itself.

Implications for Christchurch City Council Earthquake-Prone Buildings Policy

11. The Christchurch City Council has generally taken the approach recommended by Simpson Grierson in its current Policy: it does not specify what levels of strengthening will be required, but states that it will use the NZSEE recommendations as its preferred basis for defining technical requirements and criteria for earthquake-prone buildings. The exceptions are where there is a significant alteration to a building that is at less than 10% of Code, in which case the building must be strengthened to "at least 33% of Code as part of the consent", or where there is a change of use, in which case the building must be strengthened as nearly as is reasonably practicable to the strength of a new building. The current Policy is silent on the question of buildings that were earthquake-prone in terms of the Act and are damaged in an earthquake, which means that the Council is reliant on the general provisions of the Building Act to identify a damaged building as earthquake prone and issue a section 124 notice.[1]

12. The wording of the current Policy would appear to allow the Council to specify a higher level of strengthening than 33% of Code in almost all circumstances, which on the basis of the advice provided to the Council in December 2005 ***may*** have been the intent of the Policy, but is not how it has been applied by the Council. The Council has operated on the understanding that 33% of Code is all that can be required and ultimately enforced unless the building changes use.

13. The revised Policy as consulted on and as recommended for adoption by the Panel also does not specify what general levels of strengthening will be required, but states that the Council will use the NZSEE Recommendations as its preferred basis for defining technical requirements and criteria. It also states that:
    - where a building is significantly altered, it will be required to be upgraded to "at least 33%" of Code;
    - where a building changes use, it will be required to be strengthened to as near as is reasonably practicable to the strength of a new building; and
    - where a building is damaged in an earthquake, application for a building consent for repairs will be required to include strengthening work to restore the structural strength of the building to the level it was before the earthquake or to 33% of the current building code, whichever is the greater.

14. The revised Policy could therefore also be interpreted as allowing the Council to specify a higher level of strengthening than 33% of Code in almost all circumstances, ***except*** where a building that was at less than 33% of Code is damaged in an earthquake.

[1] The definition of a "dangerous" building under the Building Act specifically excludes buildings that are dangerous because of the occurrence of an earthquake.

2 Cont'd

15. The lack of clarity in the current and revised Policies about how the Council will determine what level of strengthening will be required, and the anomalous treatment of buildings damaged in an earthquake, need to be addressed. Amendments to the revised Policy are therefore proposed (see Attachment 1) which make clear that the Council will determine the level of strengthening required, including where a building is damaged in an earthquake, on a building-by-building basis, and will be guided by the NZSEE's recommendations that 67% of Full Code Levels is a reasonable level of strengthening to reduce the risk posed by existing buildings. This does not mean that the Council will require 67% in every circumstance, but that this is the level to which the Council aims to have all earthquake-prone buildings upgraded.

Timeframes for Strengthening

16. The revised policy introduces the following timeframes for future buildings strengthening:

Category A
- Buildings with special post-disaster functions as defined in AS/NZS 1170.0:2002—Importance Level 4.
- **Must be strengthened within 15 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category B
- Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0:2002—Importance Level 3. Note that "contents of high value to the community" does not include the fabric of the building itself.
- Buildings constructed of unreinforced masonry or unreinforced concrete.
- **Must be strengthened within 20 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category C
- Buildings with an importance level less than 3 as defined in AS/NZS 1170.0:2002.
- **Must be strengthened within 30 years from the date the owner is notified that their building is potentially earthquake-prone.**

Following the recent earthquake, the Council may wish to reconsider the categories and timeframes for strengthening provided for in the Panel's recommended Policy. It is considered that the current timeframes recommended be adopted as these are an improvement over what Council presently has, but noting that further review of these should be considered. This review should address possible changes to the policy and a package of incentives to support strengthening and should be reported back to the Council, along with a draft revised Policy for consultation if this is considered desirable in 2011

FINANCIAL IMPLICATIONS

17. There are no financial implications for the Council arising directly from this report, but the adoption of the amended Earthquake-Prone, Dangerous and Insanitary Buildings Policy would lead to additional costs for the Council (see **Attachment 2**).

18. Seeking a higher standard of upgrading will impose additional costs on building owners, and will lead to further calls for Council support with upgrading. It should be noted that the cost of strengthening buildings is not directly proportional to the strengthening level. As an indication, it was estimated in 2009 that upgrading Christchurch's earthqake-prone heritage buildings to 33% of Code would cost $169 million, but that upgrading them all to 67% would cost $421 million (Holmes Consulting Group, *Heritage Earthquake Prone Building Strengthening Cost Study*, June 2009).

Do the Recommendations of this Report Align with 2009-19 LTCCP budgets?

19. See above.

2 Cont'd

LEGAL CONSIDERATIONS

20. The key legal issue is whether the Council is able to require buildings to be strengthened to more than 33% of current Full Code Levels where there is no change of use. As discussed above, the Council cannot require a blanket strengthening of all earthquake-prone buildings to greater than 33% of Code, but it can require strengthening to greater than 33% of Code on a building-by-building basis, as discussed in the Department of Building and Housing's policy guidance. The proposed changes to the revised Policy (**Attachment 1**) are consistent with the Department's of policy guidance and with what is enforceable under the Building Act.

21. The second legal issue to be considered is whether the introduction of more stringent strengthening requirements would require further consultation. The tests discussed in paragraph 37 of the Panel's report regarding the need for further consultation also apply here:
    i. Do the changes arise out of submissions made on the consultation version of the policy, or from officers' advice on submissions and the proposed Policy as provided for in section 83(3) of the Local Government Act 2002?
    ii. Are the changes in line with the general approach the Council was taking with the consultation version of the Policy?
    iii. Are they so great that the result is a completely different policy, on which someone who had not made a submission would not want to submit?

22. Several submissions on the proposed amended Policy argued that some or all buildings should be strengthened to more than 33% of Full Code Levels (although others argued that requirements in the proposed Policy were too harsh). Furthermore, the proposed changes are in line with the general approach taken by the Council in the consultation version of the policy: they clarify the intent of the Policy and are consistent with what is enforceable under the Act. Therefore, staff do not consider that further consultation is required on the recommended Policy.

Have you considered the legal implications of the issue under consideration?

23. Yes.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

24. See attached report.

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

25. See attached report.

ALIGNMENT WITH STRATEGIES

26. See attached report.

Do the recommendations align with the Council's strategies?

27. See attached report.

CONSULTATION FULFILMENT

28. The requirements of the Building Act 2004 and Local Government Act 2002 regarding consultation on the proposed Policy have been met.

2 Cont'd

STAFF RECOMMENDATION

It is recommended that the Council:

(a) Adopt the revised Earthquake-Prone, Dangerous and Insanitary Buildings Policy attached as **Attachment 1**.

(b) Note that further analysis, in particular relating to the categories and timeframes for strengthening, will be undertaken for Council to consider whether to issue a further revised Policy for consultation in 2011.

EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY 2010

1 Introduction

1.1 Policy Context

The Council has noted that provisions of the Building Act in regard to earthquake-prone, dangerous and insanitary buildings reflect the government's broader concern with the health and safety of the public in buildings and, more particularly, the need to address life safety in earthquakes. The Council has also noted that the development of these policies is up to each territorial authority and has responded accordingly. This policy has been finalised after due consultation with Council ratepayers and stakeholders in accordance with section 83 of the Local Government Act 2002.

Section 2 of this policy primarily targets buildings constructed prior to 1976. Buildings constructed after this date are unlikely to be earthquake-prone, although it is recognised that some buildings constructed after 1976 will be, or could become, earthquake-prone.

1.2 Definitions

1.2.1 Earthquake-prone buildings

Under section 122 of the Building Act, the meaning of earthquake-prone building is

> "(1) A building is earthquake-prone for the purposes of this Act if, having regard to its condition and to the ground on which it is built, and because of its construction, the building—
>
> (a) will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations); and
>
> (b) would be likely to collapse causing—
>
> (i) injury or death to persons in the building or to persons on any other property; or
>
> (ii) damage to any other property.
>
> (2) Subsection (1) does not apply to a building that is used wholly or mainly for residential purposes unless the building—
>
> (a) comprises 2 or more storeys; and
>
> (b) contains 3 or more household units."

Note: "Ultimate capacity" means seismic load capacity.

1.2.2 Moderate earthquake

Moderate earthquake is defined in regulation 7 in the Building (Specified Systems, Change the Use and Earthquake-Prone Buildings) Regulations 2005 where—

> "moderate earthquake means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one-third as strong as the earthquake shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at that site."

Buildings will need to be assessed to determine whether they are earthquake-prone (see Section 2.3.1). As a general guide, **an earthquake-prone building will have a strength that is less than 33% of the seismic loading standard in NZS1170.5:2004.**

1.2.3 Significant alteration

Significant alteration, for the purpose of the Policy, is:

(a) any building work that affects the structural performance of the building; or

(b) building work that has a value of more than $50,000 or 25% of the rateable value of the building, whichever is the higher, in any twelve month period.

Notes:

(i) "building work" in (a) and (b) means building work as defined by the Building Act 2004;

(ii) the calculations in (b) are based on the value of the building, not the value of the land;

(iii) the twelve month period in (b) starts from the date of issue of the building consent;

(iv) where there is more than one building consent in a twelve-month period, the "significant alteration" is the alteration that takes the total value of building work over $50,000 or 25% of the rateable value of the building.

1.2.4 Dangerous buildings

Under section 121 of the Building Act, a building is dangerous if:

(a) in the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause—

  (i) injury or death (whether by collapse or otherwise) to any persons in it or to persons on other property; or

  (ii) damage to other property; or

(b) in the event of fire, injury or death to any persons in the building or to persons on other property is likely because of fire hazard or the occupancy of the building.

1.2.5 Insanitary buildings

Under section 123 of the Building Act, a building is dangerous if it:

(a) is offensive or likely to be injurious to health because—

  (i) of how it is situated or constructed; or

  (ii) it is in a state of disrepair; or

(b) has insufficient or defective provisions against moisture penetration so as to cause dampness in the building or in any adjoining building; or

(c) does not have a supply of potable water that is adequate for its intended use; or

(d) does not have sanitary facilities that are adequate for its intended use.

2 Earthquake-Prone Buildings

2.1 Background and overall approach

Christchurch City lies in an intermediate seismicity zone some distance from a zone of high activity associated with the Alpine Fault. However, known earthquake sources—in particular the Ashley, Springbank and Pegasus and the new 'Darfield' fault zone—exist within the region and are large and close enough to Christchurch to cause significant damage throughout the city.

The following information was prepared before the September 2010 earthquake and will require revision.

The city's buildings comprise a range of types reflecting steady development over more than 100 years and range from wood, unreinforced masonry, and brick buildings to modern multi-storey steel and reinforced concrete buildings. It is estimated that there are

potentially 7600 buildings in Christchurch that are “earthquake prone” as defined in the Building Act 2004. These are commercial buildings constructed before 1976.

Those at highest risk of collapse are the approximately 960 unreinforced masonry buildings, which are likely to fail in a moderate earthquake, although refurbishment and redevelopment for new uses has meant some of the unreinforced masonry and brick buildings have undergone some level of strengthening.

There are around 490 heritage buildings that are earthquake-prone as defined by the Building Act. The majority (295) are unreinforced masonry, and there are 29 reinforced concrete and 163 timber-frame and other types.

In the Council’s first policy, the Council had reviewed the 2002 report “Strengthening Existing New Zealand Buildings for Earthquake: An Analysis of Cost Benefit Using Annual Probabilities” prepared for the Department of Internal Affairs. For Christchurch, this report estimated the net benefit to the city of strengthening the applicable buildings to 33% of current code to be $97.2 million (in 2002 dollars). The Council has continued to rely on this study in reviewing the Policy.

The cost of strengthening all the earthquake-prone listed or scheduled heritage buildings to 33% of current code has been estimated at $169 million (plus or minus 25%) (Holmes Consulting Group, “Heritage Earthquake Prone Building Strengthening Cost Study”, June 2009).

This Policy reflects the Council’s determination to reduce the risk to the public in an earthquake over time in a way that is acceptable in social, cultural and economic terms to its ratepayers. The Council recognises that this Policy will mean additional costs for building owners, but notes the benefits of strengthening: not only improved safety, but also greater resilience and a quicker recovery after an earthquake, both for individual businesses and for the city’s economy as a whole.

This Policy does not serve as a guarantee that when an earthquake occurs, buildings will not be destroyed or damaged, possibly causing injuries to people in or around the building, but it does aim to minimise some of the risk for, and arising from, buildings in an earthquake.

The Council will continue to use a mix of regulatory and non-regulatory tools to encourage the seismic strengthening of the city’s buildings.

2.2 Categories and Timeframes

The Council proposes to establish timeframes for earthquake strengthening of certain buildings that do not meet 33% of the current Building Code requirements. The timeframes have been set in accordance with the Department of Building and Housing’s guidelines and range from 15 to 30 years, depending on the importance of the building. They will be introduced from 1 July 2012, by which time consideration will have been given by the Council to the introduction of a package of non-regulatory tools and incentives.

The Council will categorise and prioritise earthquake-prone buildings as follows:

Category A

- Buildings with special post-disaster functions as defined in AS/NZS 1170.0:2002—Importance Level 4.
- **Must be strengthened within 15 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category B

- Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0:2002—Importance Level 3. Note that "contents of high value to the community" does not include the fabric of the building itself.
- Buildings constructed of unreinforced masonry or unreinforced concrete.
- **Must be strengthened within 20 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category C

- Buildings with an importance level less than 3 as defined in AS/NZS 1170.0:2002.
- **Must be strengthened within 30 years from the date the owner is notified that their building is potentially earthquake-prone.**

Any building that falls within more than one category will be assigned to the highest category level.

Attached to this Policy is the current version of table 3.2 of AS/NZS 1170.0:2002 which lists the importance levels and shows the above categories overlaid.

Heritage buildings will be categorised and assessed in the same way as other buildings, and subject to the same timeframes for strengthening. (See section 4 of this Policy.)

2.3 Implementation

2.3.1 Identifying and recording the status of earthquake-prone buildings

From 1 July 2012, the Council will begin reviewing Council files to identify buildings that could be earthquake-prone, beginning with Category A and progressing through to Category C.

Buildings that will not require further assessment include those that are:

- designed or strengthened to the 1976 NZS 4203 and subsequent codes, unless they have a critical structural weakness;
- isolated structures unlikely to collapse causing injury or death to persons or damage to other property (refer section 122(1)(b) of the Building Act 2004);
- used wholly or mainly for residential purposes, unless the building comprises 2 or more storeys and contains 3 or more household units (refer section 122(2) of the Building Act 2004); or
- infrastructure assets covered by an Asset Management Plan such as infrastructure assets owned or controlled by the Council (including any Council Controlled Organisation, Council Controlled Trading Organisation, or local government organisation), Transit New Zealand, or the owner of "works" as defined in the Electricity Act 1992.

The Council will use the New Zealand Society of Earthquake Engineers' (NZSEE's) Recommendations as its preferred basis for defining technical requirements and criteria, including the level of strengthening required to reduce or remove the danger posed by each building. These Recommendations state that strengthening existing buildings to

67% of current Building Code requirements for structural performance is considered to reduce the risk posed by these buildings to a reasonable level, taking into account the economic feasibility of strengthening. The Recommendations are designed to be used in conjunction with AS/NZS 1170 Loadings Standard, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structures Standard and other materials Standards.

The establishment and recording of a building's earthquake-prone status will take place in three stages.

Stage 1: Identification of Potentially Earthquake-Prone Buildings from review of Council files
The Council will use information in its files to identify buildings that could be earthquake-prone, and write to owners advising them that their building could be earthquake-prone and that further assessment will be needed. Owners will be advised that they have 60 days from the date of the letter to provide evidence that the building is not earthquake-prone. If satisfactory evidence is not provided within 60 days, it will be noted on the property file and in the GIS system that the building is **potentially earthquake-prone**. The Council will accept an initial assessment using NZSEE's Initial Evaluation Procedure, or an equivalent method, as satisfactory evidence that a building is not earthquake–prone.

Stage 2: Initial assessment
When an **initial assessment** using the NZSEE's Initial Evaluation Procedure, showing that a building does not meet 33% of the current Building Code requirements, has been received by the Council, it will be noted on the property file and in the GIS system that the building is **likely to be earthquake prone**. This assessment is the owner's responsibility, and its timing is at the owner's discretion, subject to sections 2.2 and 2.3.5 of this Policy. This does not prevent the Council from carrying out an initial assessment at any time. An initial assessment may provide sufficient evidence to justify the Council issuing a section 124 notice (see section 2.3.3 of this Policy).

Stage 3: Detailed assessment
When a **detailed assessment** using the NZSEE's detailed assessment method, showing that a building does not meet 33% of current Building Code requirements, has been received by the Council, it will be noted on the property file and in the GIS system that the building is **earthquake-prone**. This assessment is the owner's responsibility, and its timing is at the owner's discretion, subject to sections 2.2 and 2.3.5 of this Policy. This does not prevent the Council from carrying out a detailed assessment at any time. A detailed assessment that shows a building does not meet 33% of current Building Code requirements will result in the Council issuing a section 124 notice (see section 2.3.3 of this Policy).

The process is shown in the attached diagram. Note that not all buildings will go through all three stages of the identification and recording process. A building owner may, for example, elect to proceed straight to a detailed assessment if s/he believes the building is earthquake prone and wants more detailed advice on the issues to be addressed.

2.3.2 Access to information
The Council will keep a register of all earthquake-prone buildings, noting the status of requirements for improvement or the results of improvement, as applicable. Information

concerning the earthquake-prone status of a building will also be contained in the property file and GIS system.

The following information will be provided in the Land Information Memorandum (LIM) for each building:

- Address and legal description of land and building.
- Earthquake-prone status: potentially earthquake-prone, likely to be earthquake prone, or earthquake-prone (as above), and what these categories mean.
- Date by which strengthening or demolition is required (if known).
- A record of any notice issued under section 124 of the Building Act.
- Statement that further details are available from the Council property file.

In granting access to information concerning earthquake-prone buildings, the Council will comply with the requirements of the relevant legislation.

2.3.3 Taking action on earthquake-prone buildings

The Council encourages building owners to get independent assessments of the structural performance of their buildings. It will also use the powers given in section 124 of the Building Act 2004—including the power to give written notice requiring work to be carried out, and to erect a hoarding, fence or warning sign—to take action regarding earthquake-prone buildings.

As noted in section 2.3.1 of this Policy, the Council will determine the level of strengthening required to reduce or remove the danger on a building-by-building basis. It will be guided by the Recommendations of the New Zealand Society of Earthquake Engineers that 67% of Full Code Levels is a reasonable level of strengthening to reduce the risk posed by existing buildings.

Before exercising its powers under section 124, the Council will discuss options for action with owners, with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from the owner for strengthening or removal of the earthquake-prone building. In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

When setting a timeframe for action on an earthquake-prone building, the Council will take into account previous strengthening and/or any contractual or statutory obligations that the building owner may be subject to, as well as the timeframes in this Policy and any written notification of the timeframes the building owner has already received.

In determining an acceptable approach to strengthening, the Council will take into account the heritage values of listed heritage buildings as set out in section 4 of this Policy.

2.3.4 Extensions of time

Where a building owner is unable to meet the timeframes listed but has made substantial progress towards undertaking earthquake strengthening works, they may apply to the Council for an extension of time. Extensions of time will not exceed three years and will be subject to conditions set by the Council. Only one extension of time will be granted for each building.

2.3.5 Interaction between Earthquake-Prone Building Policy and other sections of the Building Act 2004

When an application for a consent for a Significant Alteration to a building is received and the building may be earthquake-prone as defined in the Building Act 2004, evidence must be provided that the building has a collapse strength of over 33% of the current Building Code, or the building will be required to be strengthened as part of the consent. The Council will follow sections 2.3.1 and 2.3.3 of this Policy in determining the level of strengthening required for each building. As a general rule, commercial buildings constructed after 1976 are unlikely to be earthquake-prone.

When an application for a consent involving a change of use is received, the requirements of section 115 of the Building Act 2004 for the building to be strengthened to as near as is reasonably practicable to the strength of a new building will be followed.

2.3.6 Buildings damaged by an earthquake

Buildings may suffer damage in a seismic event. Applications for a building consent for repairs will be required to include structural strengthening work. The Council will follow sections 2.3.1 and 2.3.3 of this Policy in determining the level of strengthening required for each building.

If a building consent application for repairs is not made and/or the repair work is not completed within a timeframe that the Council considers reasonable the Council reserves the right to serve notice under section 124(1) of the Building Act 2004 to require the work to be done.

2.4 Other methods to encourage seismic strengthening of buildings

The Council will continue its current provision of Heritage Incentive Grants and free advice to owners of heritage buildings. It will also review whether it should introduce other tools to encourage seismic strengthening in the process of developing the 2012-22 Long-Term Council Community Plan.

3 Dangerous and Insanitary buildings

3.1 Overall approach

The Christchurch City Council is committed to ensuring that Christchurch City is a safe and healthy place to live in. The Building Act 2004 provides the means to ensure that buildings that become dangerous or insanitary are improved to meet the Building Code standards, and the Council wishes to administer the Building Act in a fair and reasonable way.

Dangerous and insanitary buildings will be dealt with in much the same way as the Council already deals with those buildings—by responding to complaints received from the public and advice received from the New Zealand Fire Service.

3.2 Implementation

3.2.1 Identifying dangerous and insanitary buildings

Where a building complaint is received from the public and/or advice is received from the NZ Fire Service that a building is dangerous, the Council will investigate and assess the condition of the building to determine whether it is dangerous or insanitary in terms of sections 121 and 123 of the Building Act 2004.

3.2.2 Taking action on dangerous and insanitary buildings

On being satisfied that a building is dangerous or insanitary, the Council will advise and liaise with the owner to discuss action to be taken. If notification was received from the Fire Service that the building was dangerous, it will liaise with the Fire Service to discuss the proposed action. If the building is a listed heritage building, the Council will take into account its heritage values in determining a course of action, as set out in Section 4 of this Policy.

The Council will use the powers given in section 124 of the Building Act 2004—including the power to give written notice requiring work to be carried out, and to erect a hoarding, fence or warning sign—to take action on dangerous and insanitary buildings.

Before exercising its powers under section 124, the Council will seek, within a defined timeframe, to discuss options for action with owners with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from the owner for dealing with the dangerous or insanitary situation by alterations to the building, removal, or action being taken under the Health Act 1956 (see below). In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

In the case of a building that, due to its structural condition is considered to be dangerous because it is likely to collapse, in whole or in part, potentially causing injury to occupants or persons in areas adjacent to the building, immediate evacuation, the fencing off of the building, shoring up of structures and the preparation and implementation of a Temporary Protection Plan to ensure security (fire and vandalism) of any vacant buildings will be required.

Where it is considered measures are necessary to avoid immediate danger or to fix insanitary conditions, the Council will use the powers given in section 129 of the Building Act 2004.

Note: Provisions also exist in the Health Act 1956 to deal with nuisance conditions related to certain matters associated with housing (under section 29(f), overcrowding likely to be injurious to health, and under section 42, insanitary conditions likely to cause injury to the health of persons, or a dwelling that is otherwise unfit for human habitation).

4 Heritage Buildings

4.1 Special considerations and constraints

The Council believes it is important that heritage buildings, structures and objects identified in the Christchurch City Plan and Banks Peninsula District Plan are protected and appropriately upgraded to mitigate the risk of loss of life and loss of heritage fabric in the event of a major earthquake. For this reason, heritage buildings will be categorised and assessed in the same way as other potentially earthquake-prone buildings, and subject to the same timeframes for strengthening. When a heritage building must be strengthened, however, every effort will be made to protect the heritage values of the building, and to meet the Council's heritage objectives set out in this Policy, the Christchurch City and Banks Peninsula District Plan, and the Christchurch City Council Heritage Conservation Policy. As noted above, the Council intends to continue to support the upgrading of heritage buildings through its Heritage Incentive Grants and the provision of rates-funded advice.

When considering heritage buildings under this Policy, account will be taken of:

a. The importance of recognising any special traditional and cultural aspects of the intended use of the building;
b. The need to facilitate the preservation and ongoing use of buildings and areas of significant cultural, historical, or heritage value;
c. The circumstances of each owner and each building, including whether the building has undergone any previous strengthening work.

When considering what action to take on listed or scheduled heritage buildings that have become dangerous or insanitary, the Council will take into account the heritage values of the building in determining possible courses of action and seek to avoid demolition wherever possible. The skills of suitably qualified professionals with heritage expertise will be engaged where necessary to advise and recommend actions.

5 Disputes

If a building owner disputes Council's decision, or proposed decision, to classify their building as earthquake-prone, or any other matter relating to the exercise of the Council's powers under sections 124 and 129 of the Building Act 2004 relating to earthquake-prone, dangerous or insanitary buildings, they may apply for a determination from the Chief Executive of the Department of Building and Housing, as set out in the Building Act 2004. Such a determination is binding on the Council.

6 Monitoring and Review

The number of buildings strengthened and the level to which they are upgraded will be monitored. This Policy will be reviewed within five years of its adoption.

A2

TABLE 3.2

IMPORTANCE LEVELS FOR BUILDING TYPES—NEW ZEALAND STRUCTURES

Importance level	Comment	Examples
1	Structures presenting a low degree of hazard to life and other property	Structures with a total floor area of <30 m^2 Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
2	Normal structures and structures not in other importance levels	Buildings not included in Importance Levels 1, 3 or 4 Car parking buildings
3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity greater than 150 (c) Primary school or secondary school facilities with a capacity greater than 250 (d) Colleges or adult education facilities with a capacity greater than 500 (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities (f) Airport terminals, principal railway stations with a capacity greater than 250 (g) Correctional institutions (h) Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10 000 m^2 (i) Public assembly buildings, theatres and cinemas of greater than 1000 m^2 Emergency medical and other emergency facilities not designated as post-disaster Power-generating facilities, water treatment and waste water treatment facilities and other public utilities not designated as post-disaster Buildings and facilities not designated as post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries
4	Structures with special post-disaster functions	Buildings and facilities designated as essential facilities Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations and emergency vehicle garages Utilities or emergency supplies or installations required as backup for buildings and facilities of Importance Level 4 Designated emergency shelters, designated emergency centres and ancillary facilities Buildings and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries
5	Special structures (outside the scope of this Standard—acceptable probability of failure to be determined by special study)	Structures that have special functions or whose failure poses catastrophic risk to a large area (e.g. 100 km^2) or a large number of people (e.g., 100 000) Major dams, extreme hazard facilities

Category C

30 years to upgrade or demolish

Category B

20 years to upgrade or demolish

For this Policy, Category B also includes *all* earthquake-prone buildings constructed of unreinforced masonry or unreinforced concrete that are not in Category A.

Category A

15 years to upgrade or demolish

2. REVIEW OF EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY

General Manager responsible:	General Manager Regulation and Democracy Services, DDI 941-8462
Officer responsible:	Environmental Policy and Approvals Manager
Author:	Ingrid Gunby and John Buchan

PURPOSE OF REPORT

1. This report is to advise the Council of the deliberations of the Earthquake-Prone, Dangerous and Insanitary Buildings Policy Panel, and to recommend an amended Policy to be adopted by the Council (refer **Appendix 1**).

EXECUTIVE SUMMARY

2. When the Council adopted its original Earthquake-Prone, Dangerous and Insanitary Buildings Policy in May 2006, it resolved to review the Policy in 2010. An amended Policy was released for consultation, using the Special Consultative Procedure, on 30 March 2010 (**Attachment 2**). 26 submissions were received by the closing date of 7 May, and a hearing was called on 14 June to hear submissions. The Panel reconvened on 22 June, 30 July and 5 August to consider submissions and agree changes to the Policy.

3. The Panel confirms that Option 1 as proposed in the consultation document, involving the introduction of timeframes for the strengthening of earthquake-prone buildings, is the preferred approach. This is because unless timeframes are imposed, it is likely that a large number of the city's earthquake-prone buildings will remain unstrengthened for many years, posing an unacceptable risk to the public. The Panel also considers that the benefits of strengthening to the city - in terms of death and injury prevented and increased economic resilience in the event of an earthquake - outweigh the costs (see paragraphs 27-29).

4. The Panel does, however, recommend a number of changes to the Policy as released for consultation. These are primarily to make the Policy easier to understand or to clarify its intent, but also include the following substantive amendments in response to submissions:

   - The definition of significant alteration has been changed to allow older, lower-value buildings to undergo a moderate amount of non-structural upgrading without the requirement to strengthen being triggered.

   - All unreinforced masonry buildings that are not in Category A (buildings with post-disaster functions) have been placed in Category B, meaning that they will have a maximum of 20 years to upgrade. This is in response to submissions highlighting the danger posed by these buildings and the fact that they have been known to be an earthquake risk for some decades.

   - The 15, 20 and 30 year timeframes now run from the date that the building owner is notified that the Council considers their building to be potentially earthquake-prone, rather than from 1 July 2012. This is because it will take some time for staff to review the over 7000 property files and contact owners.

   - More detail has been provided on the process for identifying and recording the status of buildings in the Council's property files.

   The Panel sought legal advice on whether further consultation was required on the Policy as a result of these changes. It was advised that further consultation was not required, as the changes arise logically from submissions and are in line with the general approach that the Council was taking in the consultation version of the Policy.

FINANCIAL IMPLICATIONS

5. In order to ensure the effective implementation of the Policy, the Panel recognises that additional staff resources will be required to identify and record the status of earthquake-prone buildings, and work with owners to get strengthening work done within the timeframes. This is likely to cost approximately $100,000 per annum from 1 July 2012.

6. The Panel also notes that the introduction of timeframes for strengthening will place increased pressure on the city's historic building stock, and in particular could drive increased rates of demolition of unreinforced masonry buildings in the central city. It therefore recommends that in developing the 2012-22 Long-Term Plan, the Council consider the introduction of a package of incentives to support the upgrading of priority heritage and character buildings. Additional staff resources, again costing around $100,000 per annum, would be required to administer the incentives programme and provide advice to owners of heritage buildings.

7. The imposition of timeframes for strengthening will also impose costs on the Council as a building owner. The Council cannot consider these costs in deciding whether or not to adopt the Policy, however.

Do the Recommendations of this Report Align with 2009-19 LTCCP budgets?

8. The recommendations would see additional expenditure from 1 July 2012 onwards, which will need to be considered in the development of the 2012-22 Long-Term Plan.

LEGAL CONSIDERATIONS

9. The Council adopted its Earthquake-Prone, Dangerous and Insanitary Buildings Policy in May 2006 in accordance with the Building Act 2004. The Act requires that the Policy include:

   (a) The approach that the Council will take in performing its functions under the Act;

   (b) The Council's priorities in performing those functions; and

   (c) How the policy will apply to heritage buildings.

   The Act also stipulates that the Policy must be adopted and amended using a Special Consultative Procedure under section 83 of the Local Government Act 2002, and that it must be reviewed at intervals of not more than five years.

Have you considered the legal implications of the issue under consideration?

10. The proposed Policy has been reviewed by the Legal Services Team at each stage, to ensure the intent of proposed changes is suitably presented and that the Policy meets the requirements of the Building Act 2004.

11. A legal opinion has also been sought on whether the consultation requirements of the Local Government Act 2002 have been met. The legal opinion received confirms that these requirements have been met and that no further consultation is required before the Council adopts the revised Policy.

ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS

12. The Policy supports the achievement of the Safe City Community Outcome, in particular the management and mitigation of risks from hazards. It will guide aspects of the Council's Regulatory Approvals and Enforcement and Inspections activities and is consistent with the Council's objectives for City Planning and Development, and in particular for Heritage Protection.

Do the recommendations of this report support a level of service or project in the 2009-19 LTCCP?

13. The review of the Policy was provided for in the Regulatory Approvals Activity Management Plan in the 2009-2019 Long-Term Council Community Plan, although it is not noted as a specific level of service.

ALIGNMENT WITH STRATEGIES

14. The proposed Policy primarily responds to Building Act requirements and does not align directly with any current Council strategy. The treatment of heritage buildings in the Policy aligns with the Council's Heritage Conservation Policy and the heritage provisions of the Christchurch City and Banks Peninsula District Plan. The upgrading of historic buildings also supports Urban Development Strategy and Central City Revitalisation Strategy objectives of cultivating a distinct identity by retaining these buildings and enabling new uses to be found for them.

15. There is a risk, however, that imposing timeframes for strengthening will drive increased rates of demolition of these buildings. The Central City Revitalisation Strategy notes that "because of the potential costs associated with [seismic strengthening] work, owners of heritage buildings may decide it is more economic to simply demolish their building than to strengthen it. Unless the Council is proactive and provides some kind of assistance to heritage owners, the City is extremely vulnerable to losing tracts of its heritage resource and subsequent changes in its civic identity."

16. This issue cannot be resolved within the Earthquake-Prone, Dangerous and Insanitary Buildings Policy itself, however; it will need to be addressed through the provision of incentives and support for the upgrading of priority buildings and areas. As noted above, this will need to be considered in the process of developing the 2012-22 Long-Term Plan.

Do the recommendations align with the Council's strategies?

17. Yes. To address the risk of demolition of heritage and priority character buildings, the Panel recommends the introduction of incentives for the upgrading of these buildings.

CONSULTATION FULFILMENT

18. The requirements of the Building Act 2004 and Local Government Act 2002 regarding consultation on the proposed Policy have been met.

HEARINGS PANEL RECOMMENDATIONS:

The Panel recommends that the Council:

(a) Adopt the revised Earthquake-Prone, Dangerous and Insanitary Buildings Policy.

(b) Resolve that to effectively implement the revised Policy the Council will consider, as part of the 2012-22 Long-Term Plan:

  (i) establishing a package of incentives from 1 July 2012 to support the upgrading of priority heritage and character buildings and areas; and

  (ii) providing additional funding from 1 July 2012 for:

    (a) the review of property files, identification of buildings that may be earthquake-prone, and liaison with building owners; and

    (b) the administration of the incentives programme for heritage and character buildings, and the provision of specialist heritage advice on upgrading to building owners.

(c) Write to the Government requesting:

  (i) legislative clarification of owners' obligations to contribute to the cost of upgrading party walls; and

  (ii) clearer policy guidance on, and financial support for, seismic strengthening.

BACKGROUND (THE ISSUES)

Legislative framework: Building Act requirements

19. The Building Act 2004 (the Act) requires territorial authorities (TAs) to have a policy on dangerous, insanitary and earthquake-prone buildings. This policy must include:

    (a) The approach that the TA will take in performing its functions under the Act;

    (b) The TA's priorities in performing those functions; and

    (c) How the policy will apply to heritage buildings.

    The Policy must be adopted and amended using a Special Consultative Procedure under section 83 of the Local Government Act 2002.

20. The Building Act does not specify what approach a TA must take to the upgrading of these buildings, but the government's intention was that the risk to the public posed by earthquake-prone buildings should be reduced over time. A legal opinion sought by Local Government New Zealand from Simpson Grierson in 2005 advised that there may be an implied obligation under the Act for TAs to take more than a passive approach to the strengthening of earthquake-prone buildings - i.e., that they should do more than wait for buildings to be strengthened as owners choose to do so. In carrying out this and other functions under the Act, TAs must also take into account "the importance of recognising any special traditional and cultural aspects of the intended use of the building", and "the need to facilitate the preservation of buildings of significant cultural, historical, or heritage value" (Section 4(2)(d) and (l)).

21. Dangerous and insanitary buildings are defined in sections 121 and 123 of the Act respectively. An "earthquake-prone" building is defined in section 122 of the Act as one which:

    (a) will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations); and

    (b) would be likely to collapse causing –

        (i) injury or death to persons in the building or to persons on any other property; or

        (ii) damage to any other property.

    As a general rule, this means that a building that has a strength less than 33 per cent of the current seismic loading standard in NZS 1170.5: 2004 will be earthquake-prone. Residential buildings are excluded unless they comprise two or more storeys and contain three or more household units. Therefore, the primary focus of the earthquake-prone provisions of the Act (and of the Policy) is commercial buildings built before 1976 when the Design Loading Standard was substantially revised.

The Council's existing Policy

22. The Council's existing Policy, adopted in May 2006, essentially follows the provisions of the Act relating to dangerous and insanitary buildings. For earthquake-prone buildings, it follows the Act in requiring upgrading to "as near as is reasonably practicable" to Full Code Level (FCL) (i.e. the current seismic loading standard) where a building changes use, but adds a requirement to upgrade to 33 per cent of FCL where a building undergoes "significant alteration" (as defined in the Policy). The current Policy signals an intention to introduce timeframes by which *all* earthquake-prone buildings must be strengthened at the first review of the Policy in 2010.

23. The existing Policy divides earthquake-prone buildings into four categories, in order of priority for strengthening:

    - Category A: Buildings with special post-disaster functions as defined in AS/NZS 1170.0: 2002, Importance Level 4, and buildings constructed of unreinforced masonry or unreinforced concrete.

- Category B: Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0: 2002, Importance Level 3.

- Category C: Buildings with a heritage classification of 1 to 4 under the Council's register.

- Category D: Buildings with an importance level less than 3 as defined in AS/NZS 1170.0:2002.

Any building that falls within more than one category is assigned to the highest category: for example, a listed heritage building constructed of unreinforced masonry would be in Category A.

24. The Council deferred the introduction of timeframes for strengthening buildings until the first review of the Policy. This has meant that since 2006, buildings have been strengthened as owners have elected to change their use or undertake renovations.

Extent of earthquake hazard and numbers of earthquake-prone buildings in Christchurch

25. A study prepared in 2005 by the Institute of Geological and Nuclear Sciences found that Christchurch lies in an intermediate seismicity zone some distance from a zone of high seismic activity (J. Cousins, "Estimated Damage and Casualties from Earthquakes Affecting Christchurch", Institute of Geological and Nuclear Sciences Ltd, Client Report 2005/057, May 2005). However, known earthquake sources, in particular the Ashley, Springbank and Pegasus fault zones, are large enough and close enough to cause significant damage throughout the city. It should also be noted that the intent of the Building Act 2004 and associated regulations and standards is to reduce the risk to the public from building failure evenly across the country: accordingly, seismic loading standards vary depending on the level of hazard, with higher standards set for Wellington than for Christchurch, for example.

26. On the basis of studies carried out since 2006, Christchurch has 7,600 buildings built before 1976 which might be "earthquake-prone" as defined in the Act. This number includes around 490 listed heritage buildings, and 960 unreinforced masonry and unreinforced concrete buildings (295 of them listed), built from the 1860s to the mid-1940s, which are at significant risk of collapse in a moderate earthquake. Around 220 buildings have been strengthened to some extent, but few would reach the 33 per cent of the current Code now required. Since the introduction of the current Policy in 2006, 26 buildings have been strengthened to 33 per cent or more of the current Code.

Costs and benefits of seismic strengthening

27. The cost of strengthening a building varies considerably depending on its size, construction type and other factors. A study of strengthening costs for Christchurch's 490 listed heritage buildings has estimated that the cost of strengthening these to 33 per cent of FCL would be $169 million, plus or minus 25 per cent. The 295 unreinforced masonry buildings alone would require $137 million, with the generally larger Group 1 buildings accounting for a disproportionate amount of that cost (Holmes Consulting Group, "Heritage Earthquake Prone Building Strengthening Cost Study", June 2009).

28. The cost of seismic strengthening itself is only one element of the cost. Strengthening works also trigger the Building Act requirement to comply with the provisions of the Building Code relating to means of escape from fire and disabled access (if the building is one to which members of the public are admitted), adding a further 20-100 per cent to the cost. The income foregone for the period that the building is being upgraded can also be a significant consideration.

29. However, upgrading can lead to a substantial rise in rental income, and experience from the 2007 Gisborne earthquake has shown that businesses in newer or strengthened buildings recovered much more quickly than those in buildings that had not been upgraded. The Council has continued to rely, in this review of the Policy, on a study undertaken in 2002 for the Department of Internal Affairs, which estimated the net benefit of strengthening the city's earthquake-prone buildings to be $97.2 million (in 2002 dollars) ("Strengthening Existing New Zealand Buildings for Earthquake: An Analysis of Cost Benefit Using Annual Probabilities").

CONTENTS OF DRAFT POLICY RELEASED FOR CONSULTATION

30. The key issue considered in the review of the Policy was the introduction of timeframes within which different categories of building would need to be upgraded to meet minimum seismic standards, or demolished. The preferred option included in the draft Policy involved simplifying the categories to which buildings are assigned, and the introduction of timeframes ranging from 15 to 30 years for their strengthening (or demolition), as follows:

    - Category A: Buildings with special post-disaster functions as defined in AS/NZS1170.0:2002 - Importance Level 4. **Must be strengthened within 15 years from 1 July 2012.**

    - Category B: Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS1170.0:2002 - Importance Level 3. **Must be strengthened within 20 years from 1 July 2012.**

    - Category C: Buildings with an importance level less than 3 as defined in AS/NZS1170.0:2002. **Must be strengthened within 30 years from 1 July 2012.**

    The reason for this change to the categories was to bring them into line with the Importance Levels set out in the Standard, which concentrate on the function of the building and the numbers of people likely to be in or near them in an earthquake. The change did have the effect, however, of moving almost all unreinforced masonry buildings from the current Category A to the new Categories B and C, depending on their function. Heritage buildings also no longer had their own category, but were included in the general categories.

31. The timeframes were proposed to commence from 1 July 2012 to give the Council time to consider, as part of the development of the 2012-22 Long-Term Plan, the provision of incentives to support the upgrading of priority heritage buildings, and the allocation of staff resources to support the implementation of the Policy itself and of any incentive scheme.

32. Other, more minor, amendments were made to:
    - clarify the definition of “significant alteration”, and to tighten strengthening requirements when a significant alteration is undertaken;

    - require owners to take action if a building is damaged in an earthquake; and

    - update contextual information included in the Policy.

33. No amendments were proposed to the sections of the Policy relating to dangerous or insanitary buildings, except to note that where these buildings are heritage buildings their heritage values will be taken into account in determining possible courses of action.

OVERVIEW OF SUBMISSIONS

34. Twenty-six submissions were received; copies have been circulated separately. The majority of these were from building owners or agents of building owners; heritage organisations and structural engineers were also represented amongst submitters. Of those who indicated whether or not they supported the proposed Policy, seven were in favour and seven were opposed; most of those who were opposed preferred the Council to retain the current “passive” approach rather than introduce strengthening timeframes. As in 2006, the most frequently mentioned concern was the cost of seismic strengthening works.

35. The submissions, both for and against the proposed Policy, raised a number of issues besides the desirability of introducing timeframes for strengthening and the cost of upgrading. These include:

    - the process used to determine and record the earthquake-prone status of buildings;

    - incentives that should be offered;

    - special considerations relating to heritage buildings—both financial issues and the level of strengthening needed to protect heritage fabric;

- the appropriateness of the timeframes proposed, especially for post-disaster function and unreinforced masonry buildings;
- what level of alteration should be deemed "significant" and so trigger the requirement to strengthen the building;
- the level of compliance with the Building Code that should be required;
- the problems posed by shared walls and multiple ownership; and
- the place of the Policy in the Council's wider strategic framework, especially in relation to central city revitalisation and urban consolidation.

CONSIDERATION OF SUBMISSIONS

36. The Hearings Panel met on 14 June 2010 to hear oral submissions from 12 submitters. It reconvened on 22 June, 30 July and 5 August to consider the matters raised by submitters and further advice from staff, and agree amendments to the Policy.

37. Changes recommended to the Policy as released for consultation are outlined below. Because of the extent of the changes made, and in particular the decision to set more onerous timeframes for unreinforced masonry buildings (see paragraphs 45-48, below), the Panel sought a legal opinion on whether further consultation was required before the Policy is adopted by the Council. The opinion states that there is no need to consult further, because "the changes proposed to the policy, including the changes regarding unreinforced masonry buildings and the implementation section, have arisen out of submissions made on the consultation version of the policy", or from officers' advice on submissions and the proposed Policy as provided for in section 83(3) of the Local Government Act 2002. The changes are in line with the general approach the Council was taking with the consultation version of the Policy. They are not so great that the result is a completely different policy, on which someone who had not made a submission would now want to submit.

Structure of Policy

38. The Policy has been reorganised to make it easier to understand, reduce repetition and clarify the treatment of earthquake-prone buildings on the one hand, and that of dangerous and insanitary buildings on the other. Specific sections on implementation, disputes, and monitoring and review of the Policy have been added, although most of the material in these sections comes either from the consultation version of the Policy or from the Act.

Section 1.1: Policy Context

39. A paragraph has been added clarifying that the Earthquake-Prone section of the Policy is primarily targeted at buildings constructed before 1976.

Section 1.2: Definitions

40. To avoid confusion, a footnote has been added explaining that "capacity", as used in the Building Act's definition of an earthquake-prone building, means seismic load-bearing capacity.

41. The definition of "significant alteration" - a trigger for requiring upgrading to 33 per cent of Code - has also been amended. The proposed definition was "work on the structural support of the building, or building work that has a value of more than 25 per cent of the rateable value of the building (not land)". Some submitters argued that, where a building has a low rateable value, the proposed definition would capture alterations of a very minor nature, and therefore discourage the ongoing use of these buildings with a detrimental effect on building occupancy in the central city in particular. They argued that a dollar threshold (eg $100,000 of building work) should be used instead. The Panel also noted that "work on the structural support of the building" could capture very minor work such as installing an extractor fan through a load-bearing wall.

42. The Panel was concerned to strike a balance between the need for strengthening to occur and the desirability of enabling the ongoing use of older buildings, especially heritage and character buildings in the central city. "Significant alteration" is now defined in the Policy as:

(a) any building work that affects the *structural performance* of the building, or

(b) building work that has a value of *more than $50,000 or 25 per cent of the rateable value of the building, whichever is the higher, in any twelve month period*.

This will allow older, lower-value buildings to undergo a moderate amount of non-structural upgrading without the requirement to strengthen being triggered.

43. For consistency, the Policy now includes the Building Act's definitions of "dangerous" and "insanitary" buildings.

Earthquake-Prone Buildings

Section 2.1: Background and Overall Approach

44. This section has been amended to:

- consolidate background information on the earthquake hazard and the city's building stock;
- note that the Policy will impose costs on owners, but that strengthening will also make both individual businesses and the city's economy as a whole more resilient in the event of an earthquake; and
- clarify that the Council will continue to use a range of methods, including incentives, to encourage seismic strengthening.

Section 2.2: Categories and Timeframes

45. Submitters' views on the appropriateness of the timeframes imposed for the three categories of building varied widely, with some arguing they are too generous, especially for unreinforced masonry buildings, and others that no timeframes should be imposed. Heritage organisations were generally supportive of heritage buildings not having their own category, but being included in the general categories.

46. The Panel considers that an active approach involving timeframes for strengthening is necessary to reduce the risk to the public in an earthquake, and that the proposed categories and timeframes are largely appropriate. It is concerned, however, about the level of hazard posed by unreinforced masonry buildings, many of which have been known to be an earthquake risk since the late 1960s or early 1970s. This is the type of building that failed with catastrophic effects, including for people in the streets, in the Napier earthquake of 1931 (see attached images provided by a submitter).

47. The Panel notes that unreinforced masonry buildings pose a significant challenge, because of:

- the large number of these buildings in the city (around 960),
- their high risk of failure in a moderate earthquake,
- the fact that nearly 300 of them are heritage listed and a good number of the remainder are significant "character" buildings that many in the community would wish to retain and that contribute substantially to the historic identity of the city,[1] and
- the high cost of upgrading these buildings.

[1] The total number of such buildings is not known, but their significance can be estimated using the 2005 Commercial Urban Conservation Areas study (Opus International Consultants Ltd, *Commercial Urban Conservation Areas Study for Christchurch City Council*, 2005). This study found that, in the central city and Sydenham, there were 127 unlisted buildings that were of primary significance to the character of their areas, and a further 40 that were of contributory significance; the vast majority of these buildings are constructed of unreinforced masonry and will be earthquake-prone. The study only considered streetscapes and areas that were considered to be sufficiently cohesive and intact to be realistic prospects for listing as conservation areas: there will, therefore, be many other character unreinforced masonry buildings in the central city and elsewhere that are not included in these numbers.

Given that the focus of the earthquake-prone provisions of the Building Act is public safety, the Panel considers that this should be the primary concern of the Council's Earthquake-Prone, Dangerous and Insanitary Buildings Policy. It notes, however, that if the Council wishes to see heritage and character unreinforced masonry buildings retained rather than demolished, it will need to ensure that support is available to upgrade them (see paragraphs 52-55).

48. This section has been amended to:

- include all unreinforced masonry and unreinforced concrete buildings that are not in Category A because of their function, in Category B;
- state that timeframes for strengthening (15, 20 or 30 years) will commence from when the building owner is first notified that their building is potentially earthquake prone, rather than from 1 July 2012, as it could take some time for all buildings to be identified and their owners contacted;
- remove reference to specific non-regulatory initiatives that the Council may consider in the development of the 2012 Long-Term Plan; and
- add a note, following a query from a submitter, that "contents of high value to the community" do not include the fabric of the building itself.

49. Material on the three-year extension of time has been moved to the Implementation section. It is also recommended, following a query from a submitter, that the table attached to the Policy (adapted from table 3.2 of AS/NZS 1170.0:2002) be amended to remove single family dwellings as an example of Importance Level 2 buildings, as these are explicitly excluded from the definition of earthquake-prone building in the Building Act 2004.

Section 2.3: Implementation

50. A new section has been added, replacing the current sections 1.4-1.11, to consolidate information on how the Policy will be implemented and make the Policy easier to understand. It contains subsections dealing with:

- identifying and recording the status of earthquake-prone buildings;
- access to information;
- taking action on earthquake-prone buildings;
- extensions of time;
- the interaction between the Earthquake-Prone Building Policy and other sections of the Building Act 2004; and
- buildings damaged by an earthquake.

51. Most of the content of this section was included in the consultation version of the Policy. Some changes have been made, however. These are:

- The insertion of material explaining the process of identifying earthquake-prone buildings and recording their status in Council property files, following submissions on how owners can get their buildings removed from the list of earthquake-prone buildings and when a building will be noted as earthquake-prone on the property file. The three stages - potentially earthquake-prone, likely to be earthquake-prone, and earthquake-prone - were noted in the consultation version but the process was not clearly outlined.
- Clarification that only one three-year extension of time will be granted for each building.
- Clarification of the process that the Council follows in determining whether a building needs to be upgraded as part of a significant alteration.

Section 2.4: Other Methods to Encourage Seismic Strengthening of Buildings

52. A new section has been added, stating that the Council will continue its current provision of Heritage Incentive Grants and rates-funded advice to owners of heritage buildings, and will review whether it should introduce other tools to encourage seismic strengthening in the process of developing the 2012-22 Long-Term Plan.

53. The Panel considers that seismic strengthening is a shared responsibility between building owners and the wider community. Owners have a responsibility to ensure that their buildings meet minimum statutory health and safety standards. Because the Council has other, overlapping, strategic objectives, however - in particular, the retention of heritage buildings and some character buildings as part of the revitalisation of the central city and the development of other centres - the provision of appropriate incentives will be fundamental to the successful implementation of the Policy.

54. The Panel notes that, although decisions on incentives and other support for building owners fall outside the scope of the Policy itself and are to be considered at a later date, if the Council wishes to see the retention rather than the demolition of earthquake-prone heritage and significant character buildings, it will need to consider the introduction of a package of incentives as part of the 2012-22 Long-Term Plan process. Submitters suggested a range of incentives that could be used alongside or instead of grants to support the upgrading of buildings, including:

- low- or no-interest loans;
- funding for assessments of structural performance;
- tradeable development rights; and
- rates-based schemes, eg a targeted rate to fund the upgrading of central city precincts.

Submitters also argued that funding might be sought from other sources such as the New Zealand Historic Places Trust, the Earthquake Commission, insurance companies and the government, perhaps via tax relief.

55. The Panel also notes that effective and consistent communication of the responsibilities of owners and of the Council, and adequate staff support for building owners, will be crucial in the effective implementation of the Policy.

Section 3: Dangerous and Insanitary Buildings

56. Material on the overall approach to dangerous and insanitary buildings, and implementation of the Policy, has been consolidated in one section.

Section 4: Heritage Buildings

57. Only minor changes have been made to this section. These are to:

- clarify that the Council intends to continue its support for the upgrading of heritage buildings through the Heritage Incentives Grants Scheme and the provision of rates-funded advice, and
- recognise, in response to submissions, the significance of *areas* as well as individual buildings of significant cultural, historical or heritage value.

58. The Panel accepts the arguments of submitters that strengthening to 33 per cent of Code is unlikely to be sufficient to protect the fabric of heritage buildings in an earthquake. It considers, however, that issues relating to the levels of strengthening required to protect heritage fabric are best dealt with through incentives schemes rather than in this Policy, which deals with public safety. What level of strengthening is technically and economically feasible needs to be determined on a case-by-case basis.

Sections 5 and 6: Disputes, and Monitoring and Review of the Policy

59. Two new sections have been added dealing with these matters. They essentially outline what the Act provides regarding review of the Policy, and owners' rights to apply for a determination from the Chief Executive of the Department of Building and Housing where there is a dispute.

OTHER MATTERS

Additional Resources for Implementation of Policy

60. Implementing the Policy will require additional staff resources, to review property files, identify buildings that may be earthquake-prone, and work with owners to get strengthening work done within the timeframes. The cost of this is estimated at $100,000 per annum from 1 July 2012.

61. As noted above, the Panel recommends the development of an incentives package to support the strengthening of heritage and priority character buildings as part of the 2012-22 Long-Term Plan. If such a package were introduced, however, additional staff resources - again, costing around $100,000 per annum from 1 July 2012 - would be required to administer the scheme and provide specialist advice to building owners.

Party Walls

62. Several submissions noted that shared or party walls present practical challenges for owners wishing to strengthen their buildings. Where a common party wall exists, the respective owners have an obligation in civil law to give the adjacent party "the right of support", and sometimes there is a party wall agreement or arrangement registered on the property title. Although the effect of this is that all parties must contribute towards the strengthening of the party wall, in practice it may be difficult for an owner to enforce this. The Panel considers that the Council should write to the government requesting clarification of owners' responsibility to contribute to the cost of upgrading party walls.

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EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY 2010

1 Introduction

1.1 Policy Context

The Council has noted that provisions of the Building Act in regard to earthquake-prone, dangerous and insanitary buildings reflect the government's broader concern with the health and safety of the public in buildings and, more particularly, the need to address life safety in earthquakes. The Council has also noted that the development of these policies is up to each territorial authority and has responded accordingly. This policy has been finalised after due consultation with Council ratepayers and stakeholders in accordance with section 83 of the Local Government Act 2002.

Section 2 of this policy primarily targets buildings constructed prior to 1976. Buildings constructed after this date are unlikely to be earthquake-prone, although it is recognised that some buildings constructed after 1976 will be, or could become, earthquake-prone.

1.2 Definitions

1.2.1 Earthquake-prone buildings

Under section 122 of the Building Act, the meaning of earthquake-prone building is

> "(1) A building is earthquake-prone for the purposes of this Act if, having regard to its condition and to the ground on which it is built, and because of its construction, the building—
>
> (a) will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations); and
>
> (b) would be likely to collapse causing—
>
> (i) injury or death to persons in the building or to persons on any other property; or
>
> (ii) damage to any other property.
>
> (2) Subsection (1) does not apply to a building that is used wholly or mainly for residential purposes unless the building—
>
> (a) comprises 2 or more storeys; and
>
> (b) contains 3 or more household units."

Note: "Ultimate capacity" means seismic load capacity.

1.2.2 Moderate earthquake

Moderate earthquake is defined in regulation 7 in the Building (Specified Systems, Change the Use and Earthquake-Prone Buildings) Regulations 2005 where—

> "moderate earthquake means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one-third as strong as the earthquake

shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at that site."

Buildings will need to be assessed to determine whether they are earthquake-prone (see Section 2.3.1). As a general guide, **an earthquake-prone building will have a strength that is less than 33% of the seismic loading standard in NZS1170.5:2004.**

1.2.3 Significant alteration

Significant alteration, for the purpose of the Policy, is:

(a) any building work that affects the structural performance of the building; or

(b) building work that has a value of more than $50,000 or 25% of the rateable value of the building, whichever is the higher, in any twelve month period.

Notes:

(i) "building work" in (a) and (b) means building work as defined by the Building Act 2004;

(ii) the calculations in (b) are based on the value of the building, not the value of the land;

(iii) the twelve month period in (b) starts from the date of issue of the building consent;

(iv) where there is more than one building consent in a twelve-month period, the "significant alteration" is the alteration that takes the total value of building work over $50,000 or 25% of the rateable value of the building.

1.2.4 Dangerous buildings

Under section 121 of the Building Act, a building is dangerous if:

(a) in the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause—

  (i) injury or death (whether by collapse or otherwise) to any persons in it or to persons on other property; or

  (ii) damage to other property; or

(b) in the event of fire, injury or death to any persons in the building or to persons on other property is likely because of fire hazard or the occupancy of the building.

1.2.5 Insanitary buildings

Under section 123 of the Building Act, a building is dangerous if it:

(a) is offensive or likely to be injurious to health because—

  (i) of how it is situated or constructed; or

  (ii) it is in a state of disrepair; or

(b) has insufficient or defective provisions against moisture penetration so as to cause dampness in the building or in any adjoining building; or

(c) does not have a supply of potable water that is adequate for its intended use; or

(d) does not have sanitary facilities that are adequate for its intended use.

2 Earthquake-Prone Buildings

2.1 Background and overall approach

Christchurch City lies in an intermediate seismicity zone some distance from a zone of high activity associated with the Alpine Fault. However, known earthquake sources—in particular the Ashley, Springbank and Pegasus fault zone—exist within the region and are large and close enough to cause significant damage throughout the city.

The city's buildings comprise a range of types reflecting steady development over more than 100 years and range from wood, unreinforced masonry, and brick buildings to modern multi-storey steel and reinforced concrete buildings. It is estimated that there are potentially 7600 buildings in Christchurch that are "earthquake prone" as defined in the Building Act 2004. These are commercial buildings constructed before 1976.

Those at highest risk of collapse are the approximately 960 unreinforced masonry buildings, which are likely to fail in a moderate earthquake, although refurbishment and redevelopment for new uses has meant some of the unreinforced masonry and brick buildings have undergone some level of strengthening.

There are around 490 heritage buildings that are earthquake-prone as defined by the Building Act. The majority (295) are unreinforced masonry, and there are 29 reinforced concrete and 163 timber-frame and other types.

In the Council's first policy, the Council had reviewed the 2002 report "Strengthening Existing New Zealand Buildings for Earthquake: An Analysis of Cost Benefit Using Annual Probabilities" prepared for the Department of Internal Affairs. For Christchurch, this report estimated the net benefit to the city of strengthening the applicable buildings to 33% of current code to be $97.2 million (in 2002 dollars). The Council has continued to rely on this study in reviewing the Policy.

The cost of strengthening all the earthquake-prone listed or scheduled heritage buildings to 33% of current code has been estimated at $169 million (plus or minus 25%) (Holmes Consulting Group, "Heritage Earthquake Prone Building Strengthening Cost Study", June 2009).

This Policy reflects the Council's determination to reduce the risk to the public in an earthquake over time in a way that is acceptable in social, cultural and economic terms to its ratepayers. The Council recognises that this Policy will mean additional costs for building owners, but notes the benefits of strengthening: not only improved safety, but also greater resilience and a quicker recovery after an earthquake, both for individual businesses and for the city's economy as a whole.

This Policy does not serve as a guarantee that when an earthquake occurs, buildings will not be destroyed or damaged, possibly causing injuries to people in or around the building, but it does aim to minimise some of the risk for, and arising from, buildings in an earthquake.

The Council will continue to use a mix of regulatory and non-regulatory tools to encourage the seismic strengthening of the city's buildings.

2.2 Categories and Timeframes

The Council proposes to establish timeframes for earthquake strengthening of certain buildings that do not meet 33% of the current Building Code requirements. The timeframes have been set in accordance with the Department of Building and Housing's guidelines and range from 15 to 30 years, depending on the importance of the building. They will be introduced from 1 July 2012, by which time consideration will have been given by the Council to the introduction of a package of non-regulatory tools and incentives.

The Council will categorise and prioritise earthquake-prone buildings as follows:

Category A

- Buildings with special post-disaster functions as defined in AS/NZS 1170.0:2002—Importance Level 4.
- **Must be strengthened within 15 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category B

- Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0:2002—Importance Level 3. Note that "contents of high value to the community" does not include the fabric of the building itself.
- Buildings constructed of unreinforced masonry or unreinforced concrete.
- **Must be strengthened within 20 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category C

- Buildings with an importance level less than 3 as defined in AS/NZS 1170.0:2002.
- **Must be strengthened within 30 years from the date the owner is notified that their building is potentially earthquake-prone.**

Any building that falls within more than one category will be assigned to the highest category level.

Attached to this Policy is the current version of table 3.2 of AS/NZS 1170.0:2002 which lists the importance levels and shows the above categories overlaid.

Heritage buildings will be categorised and assessed in the same way as other buildings, and subject to the same timeframes for strengthening. (See section 4 of this Policy.)

2.3 Implementation

2.3.1 Identifying and recording the status of earthquake-prone buildings

From 1 July 2012, the Council will begin reviewing Council files to identify buildings that could be earthquake-prone, beginning with Category A and progressing through to Category C.

Buildings that will not require further assessment include those that are:

- designed or strengthened to the 1976 NZS 4203 and subsequent codes, unless they have a critical structural weakness;
- isolated structures unlikely to collapse causing injury or death to persons or damage to other property (refer section 122(1)(b) of the Building Act 2004);
- used wholly or mainly for residential purposes, unless the building comprises 2 or more storeys and contains 3 or more household units (refer section 122(2) of the Building Act 2004); or
- infrastructure assets covered by an Asset Management Plan such as infrastructure assets owned or controlled by the Council (including any Council Controlled Organisation, Council Controlled Trading Organisation, or local government organisation), Transit New Zealand, or the owner of "works" as defined in the Electricity Act 1992.

The Council will use the New Zealand Society of Earthquake Engineers' (NZSEE's) Recommendations as its preferred basis for defining technical requirements and criteria. These Recommendations are designed to be used in conjunction with AS/NZS 1170 Loadings Standard, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structures Standard and other materials Standards.

The establishment and recording of a building's earthquake-prone status will take place in three stages.

Stage 1: Identification of Potentially Earthquake-Prone Buildings from review of Council files

The Council will use information in its files to identify buildings that could be earthquake-prone, and write to owners advising them that their building could be earthquake-prone and that further assessment will be needed. Owners will be advised that they have 60 days from the date of the letter to provide evidence that the building is not earthquake-prone. If satisfactory evidence is not provided within 60 days, it will be noted on the property file and in the GIS system that the building is **potentially earthquake-prone**. The Council will accept an initial assessment using NZSEE's Initial Evaluation Procedure, or an

equivalent method, as satisfactory evidence that a building is not earthquake–prone.

Stage 2: Initial assessment
When an **initial assessment** using the NZSEE's Initial Evaluation Procedure, showing that a building does not meet 33% of the current Building Code requirements, has been received by the Council, it will be noted on the property file and in the GIS system that the building is **likely to be earthquake prone**. This assessment is the owner's responsibility, and its timing is at the owner's discretion, subject to sections 2.2 and 2.3.5 of this Policy. This does not prevent the Council from carrying out an initial assessment at any time. An initial assessment may provide sufficient evidence to justify the Council issuing a section 124 notice (see section 2.3.3 of this Policy).

Stage 3: Detailed assessment
When a **detailed assessment** using the NZSEE's detailed assessment method, showing that a building does not meet 33% of current Building Code requirements, has been received by the Council, it will be noted on the property file and in the GIS system that the building is **earthquake-prone**. This assessment is the owner's responsibility, and its timing is at the owner's discretion, subject to sections 2.2 and 2.3.5 of this Policy. This does not prevent the Council from carrying out a detailed assessment at any time. A detailed assessment that shows a building does not meet 33% of current Building Code requirements will result in the Council issuing a section 124 notice (see section 2.3.3 of this Policy).

The process is shown in the attached diagram (**Table A**). Note that not all buildings will go through all three stages of the identification and recording process. A building owner may, for example, elect to proceed straight to a detailed assessment if s/he believes the building is earthquake prone and wants more detailed advice on the issues to be addressed.

2.3.2 Access to information
The Council will keep a register of all earthquake-prone buildings, noting the status of requirements for improvement or the results of improvement, as applicable. Information concerning the earthquake-prone status of a building will also be contained in the property file and GIS system.

The following information will be provided in the Land Information Memorandum (LIM) for each building:

- Address and legal description of land and building.
- Earthquake-prone status: potentially earthquake-prone, likely to be earthquake prone, or earthquake-prone (as above), and what these categories mean.
- Date by which strengthening or demolition is required (if known).
- A record of any notice issued under section 124 of the Building Act.
- Statement that further details are available from the Council property file.

In granting access to information concerning earthquake-prone buildings, the Council will comply with the requirements of the relevant legislation.

2.3.3 Taking action on earthquake-prone buildings

The Council encourages building owners to get independent assessments of the structural performance of their buildings. It will also use the powers given in section 124 of the Building Act 2004—including the power to give written notice requiring work to be carried out, and to erect a hoarding, fence or warning sign—to take action regarding earthquake-prone buildings.

Before exercising its powers under section 124, the Council will discuss options for action with owners, with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from the owner for strengthening or removal of the earthquake-prone building. In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

When setting a timeframe for action on an earthquake-prone building, the Council will take into account previous strengthening and/or any contractual or statutory obligations that the building owner may be subject to, as well as the timeframes in this Policy and any written notification of the timeframes the building owner has already received.

In determining an acceptable approach to strengthening, the Council will take into account the heritage values of listed heritage buildings as set out in section 4 of this Policy.

2.3.4 Extensions of time

Where a building owner is unable to meet the timeframes listed but has made substantial progress towards undertaking earthquake strengthening works, they may apply to the Council for an extension of time. Extensions of time will not exceed three years and will be subject to conditions set by the Council. Only one extension of time will be granted for each building.

2.3.5 Interaction between Earthquake-Prone Building Policy and other sections of the Building Act 2004

When an application for a consent for a Significant Alteration to a building is received and the building may be earthquake-prone as defined in the Building Act 2004, evidence must be provided that the building has a collapse strength of over 33% of the current Building Code, or the building will be required to be strengthened to at least 33% of Code as part of the consent. As a general rule, commercial buildings constructed after 1976 are unlikely to be earthquake-prone.

When an application for a consent involving a change of use is received, the requirements of section 115 of the Building Act 2004 for the building to be strengthened to as near as is reasonably practicable to the strength of a new building will be followed.

2.3.6 Buildings damaged by an earthquake

Buildings may suffer damage in a seismic event. Applications for a building consent for repairs will be required to include structural strengthening work to restore the structural strength of the building to the level it was before the earthquake or to 33% of the current Building Code, whichever is the greater.

If a building consent application for repairs is not made and/or the repair work is not completed within a timeframe that the Council considers reasonable the Council reserves the right to serve notice under section 124(1) of the Building Act 2004 to require the work to be done.

2.4 Other methods to encourage seismic strengthening of buildings

The Council will continue its current provision of Heritage Incentive Grants and free advice to owners of heritage buildings. It will also review whether it should introduce other tools to encourage seismic strengthening in the process of developing the 2012-22 Long-Term Council Community Plan.

3 Dangerous and Insanitary buildings

3.1 Overall approach

The Christchurch City Council is committed to ensuring that Christchurch City is a safe and healthy place to live in. The Building Act 2004 provides the means to ensure that buildings that become dangerous or insanitary are improved to meet the Building Code standards, and the Council wishes to administer the Building Act in a fair and reasonable way.

Dangerous and insanitary buildings will be dealt with in much the same way as the Council already deals with those buildings—by responding to complaints received from the public and advice received from the New Zealand Fire Service.

3.2 Implementation

3.2.1 Identifying dangerous and insanitary buildings

Where a building complaint is received from the public and/or advice is received from the NZ Fire Service that a building is dangerous, the Council will investigate and assess the condition of the building to determine whether it is dangerous or insanitary in terms of sections 121 and 123 of the Building Act 2004.

3.2.2 Taking action on dangerous and insanitary buildings

On being satisfied that a building is dangerous or insanitary, the Council will advise and liaise with the owner to discuss action to be taken. If notification was received from the Fire Service that the building was dangerous, it will liaise with the Fire Service to discuss the proposed action. If the building is a listed heritage building, the Council will take into account its heritage values in determining a course of action, as set out in Section 4 of this Policy.

The Council will use the powers given in section 124 of the Building Act 2004—including the power to give written notice requiring work to be carried out, and to erect a hoarding, fence or warning sign—to take action on dangerous and insanitary buildings.

Before exercising its powers under section 124, the Council will seek, within a defined timeframe, to discuss options for action with owners with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from the owner for dealing with the dangerous or insanitary situation by alterations to the building, removal, or action being taken under the Health Act 1956 (see below). In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

In the case of a building that, due to its structural condition is considered to be dangerous because it is likely to collapse, in whole or in part, potentially causing injury to occupants or persons in areas adjacent to the building, immediate evacuation, the fencing off of the building, shoring up of structures and the preparation and implementation of a Temporary Protection Plan to ensure security (fire and vandalism) of any vacant buildings will be required.

Where it is considered measures are necessary to avoid immediate danger or to fix insanitary conditions, the Council will use the powers given in section 129 of the Building Act 2004.

Note: Provisions also exist in the Health Act 1956 to deal with nuisance conditions related to certain matters associated with housing (under section 29(f), overcrowding likely to be injurious to health, and under section 42, insanitary conditions likely to cause injury to the health of persons, or a dwelling that is otherwise unfit for human habitation).

4 Heritage Buildings

4.1 Special considerations and constraints

The Council believes it is important that heritage buildings, structures and objects identified in the Christchurch City Plan and Banks Peninsula District Plan are protected and appropriately upgraded to mitigate the risk of loss of life and loss of heritage fabric in the event of a major earthquake. For this reason, heritage buildings will be categorised and assessed in the same way as other potentially earthquake-prone buildings, and subject to the same timeframes for strengthening. When a heritage building must be strengthened, however, every effort will be made to protect the heritage values of the building, and to meet the Council's heritage objectives set out in this Policy, the Christchurch City and Banks Peninsula District Plan, and the Christchurch City Council Heritage Conservation Policy. As noted above, the Council intends to continue to support the upgrading of heritage buildings

through its Heritage Incentive Grants and the provision of rates-funded advice.

When considering heritage buildings under this Policy, account will be taken of:

a. The importance of recognising any special traditional and cultural aspects of the intended use of the building;
b. The need to facilitate the preservation and ongoing use of buildings and areas of significant cultural, historical, or heritage value;
c. The circumstances of each owner and each building, including whether the building has undergone any previous strengthening work.

When considering what action to take on listed or scheduled heritage buildings that have become dangerous or insanitary, the Council will take into account the heritage values of the building in determining possible courses of action and seek to avoid demolition wherever possible. The skills of suitably qualified professionals with heritage expertise will be engaged where necessary to advise and recommend actions.

5 Disputes

If a building owner disputes Council's decision, or proposed decision, to classify their building as earthquake-prone, or any other matter relating to the exercise of the Council's powers under sections 124 and 129 of the Building Act 2004 relating to earthquake-prone, dangerous or insanitary buildings, they may apply for a determination from the Chief Executive of the Department of Building and Housing, as set out in the Building Act 2004. Such a determination is binding on the Council.

6 Monitoring and Review

The number of buildings strengthened and the level to which they are upgraded will be monitored. This Policy will be reviewed within five years of its adoption.

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TABLE 3.2

IMPORTANCE LEVELS FOR BUILDING TYPES—NEW ZEALAND STRUCTURES

Importance level	Comment	Examples
1	Structures presenting a low degree of hazard to life and other property	Structures with a total floor area of <30 m^2 Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
2	Normal structures and structures not in other importance levels	Buildings not included in Importance Levels 1, 3 or 4 Car parking buildings
3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity greater than 150 (c) Primary school or secondary school facilities with a capacity greater than 250 (d) Colleges or adult education facilities with a capacity greater than 500 (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities (f) Airport terminals, principal railway stations with a capacity greater than 250 (g) Correctional institutions (h) Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10 000 m^2 (i) Public assembly buildings, theatres and cinemas of greater than 1000 m^2 Emergency medical and other emergency facilities not designated as post-disaster Power-generating facilities, water treatment and waste water treatment facilities and other public utilities not designated as post-disaster Buildings and facilities not designated as post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries
4	Structures with special post-disaster functions	Buildings and facilities designated as essential facilities Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations and emergency vehicle garages Utilities or emergency supplies or installations required as backup for buildings and facilities of Importance Level 4 Designated emergency shelters, designated emergency centres and ancillary facilities Buildings and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries
5	Special structures (outside the scope of this Standard—acceptable probability of failure to be determined by special study)	Structures that have special functions or whose failure poses catastrophic risk to a large area (e.g. 100 km^2) or a large number of people (e.g., 100 000) Major dams, extreme hazard facilities

Category C

30 years to upgrade or demolish

Category B

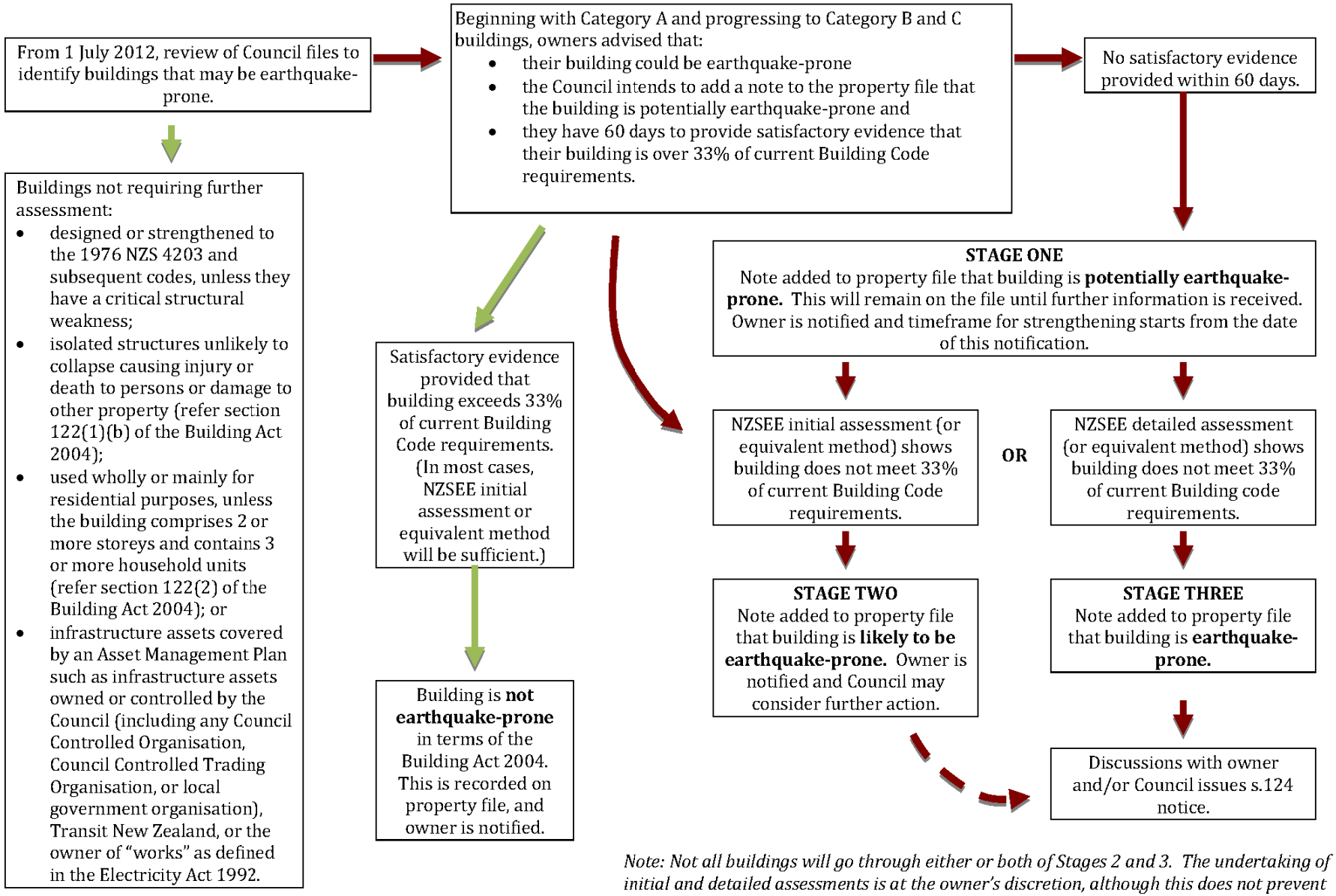
20 years to upgrade or demolish

For this Policy, Category B also includes *all* earthquake-prone buildings constructed of unreinforced masonry or unreinforced concrete that are not in Category A.

Category A

15 years to upgrade or demolish

Identifying and Recording the Status of Earthquake-Prone Buildings



Note: Not all buildings will go through either or both of Stages 2 and 3. The undertaking of initial and detailed assessments is at the owner's discretion, although this does not prevent the Council from carrying out an assessment at any time.

TABLE A

Proposed Christchurch City Council Earthquake-prone, Dangerous and Insanitary Buildings Policy 2010

haveyoursay
www.ccc.govt.nz/haveyoursay

Christchurch City Council

SUMMARY OF INFORMATION ON THE PROPOSED AMENDMENTS TO THE 2006 EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY

(This statement is made for the purposes of Sections 87 and 89 of the Local Government Act 2002)

Nature of Proposal

This is a proposal by the Christchurch City Council (the Council) to make amendments to its Earthquake-prone, Dangerous and Insanitary Buildings Policy 2006, pursuant to Section 131 and 132 of the Building Act 2004 (the Act). Amendments are suggested to various parts of the earthquake-prone buildings part of the policy but not in respect of the Council's approach in relation to dangerous or insanitary buildings in its district.

Reasons for this Proposal

The Council is required by the Act to review its policy within five (5) years of its adoption. The amendments proposed in this consultation have arisen out of that review.

In making these amendments the Council has considered the policy requirements set out in section 131 of the Act: the approach that the Council will take in performing its functions under the Act, its priorities in performing those functions, and how the policy will apply to heritage buildings. The Council has also considered the principles contained in Section 4 of the Act.

The Government's policy objective in regard to earthquake-prone buildings seeks to reduce the earthquake risk to the public over time and targets the most vulnerable buildings.

Earthquake Risk and Earthquake-Prone Buildings in Christchurch City

The seismic hazard in Christchurch was reviewed in Institute of Geological and Nuclear Sciences Limited reports in 2003 and 2005. Those reports stated that Christchurch had a somewhat lower level of hazard than areas such as Wellington. Since the Council's first policy was adopted in 2006, the Council has carried out four studies on the buildings in its district.

From these it has been determined that there are potentially 7600 earthquake prone buildings in Christchurch. These are commercial buildings constructed before 1976. The highest risk amongst these buildings are the 958 unreinforced masonry buildings which are likely to fail in a moderate earthquake. There are around 490 heritage buildings which are earthquake-prone. The majority (295) are unreinforced masonry, there are 29 reinforced concrete and 163 timber frame and other types.

Proposed Amendments to the Policy

The major change proposed is that the timeframes for earthquake strengthening of earthquake-prone buildings will be introduced on 1 July 2012, and will be in line with Department of Building and Housing guidelines and categorisations in accordance with Australia and New Zealand Standards (AS/NZS) 1170:2002:

- Buildings with special post-disaster functions as defined in AS/NZ 1170.0:2002, importance level 4, 15 years.
- Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZ 1170.2:2002, importance level 3, 20 years.
- Buildings with an importance level of less than 3 as defined in AS/NZS 1170.0:2002, 30 years.

An amendment is also suggested to establish a process for granting an extension of timeframes for up to three years for building owners who have made significant progress in preparing for strengthening works to commence.

Other minor modifications that are proposed, to take effect on adoption of the amended policy, are:

- To clarify the definition of a significant alteration - which triggers an upgrade of a building under the current Policy if the building is less then 10 percent of current code standard,
  - provided the building work is on the structural support of the building or
  - has a value of more than 25 percent of the rateable value of the building. The amendment clarifies that value is assessed against the rateable value of the building only, not the land on which the building is on.
- To require owners to take action if a building is damaged in an earthquake.
- Updates the economic impact figure in the Policy.
- Deletes out of date comments and includes discussion of the latest studies by Council.

Options Considered for Adoption

Three options were considered, as follows, with Option 1 being the preferred option:

Option 1

The priorities/timeframe proposed for the strengthening of identified earthquake-prone buildings are in accordance with the guidance provided by the Department of Building and Housing (DBH). Buildings will be categorised in accordance with AS/NZS 1170.2002 and there will be different timeframes for different categories of building. For example, it is proposed that buildings in the lowest risk/least important category will have 30 years to take action to strengthen or demolish the building, while buildings in the highest risk/most important category will have 15 years. There is provision for an extension of up to three years, where owners have made substantial progress, to apply to the Regulatory and Planning Committee of Council for an extension.

The timeframes will be introduced on 1 July 2012 by which time provision will have been made for a Council officer to liaise with building owners and consideration will have been given to the establishment of a seismic fund to support owners of priority Heritage and Character buildings.

In the meantime, and in addition to the above:

- When an application for a consent for a significant alteration to a building is received, the building owner would be required to provide a report on the strength of the building and if the building strength was less than 33 percent of current Code the building would be required to be strengthened to at least 33 percent of Code as part of the building consent.

- When an application for a consent involving a change of use is received the requirements of the Building Act for the building to be strengthened to as near as is reasonably practicable the strength of a new building would be followed.

Option 2

Retain the Policy in its present form. In effect this is a "passive approach" where only owners wishing to upgrade their buildings or undertake building works which trigger upgrades under Section 115 of the Building Act 2004 would strengthen their buildings, as identified by the two bullet points above in Option 1.

In addition to the above:

- When an application for a consent for a significant alteration to a building is received, the building owner would be required to provide a report on the strength of the building and if the building strength was less than 33 percent of current Code the building would be required to be strengthened to at least 33 percent of Code as part of the building consent.

- When an application for a consent involving a change of use is received the requirements of the Building Act for the building to be strengthened to as near as is reasonably practicable the strength of a new building would be followed.

Option 3

Adopt the amended policy without timeframes. This option is similar to Option 2, but incorporates all of the changes proposed including:

- When an application for a consent for a significant alteration to a building is received, the building owner would be required to provide a report on the strength of the building and if the building strength was less than 33 percent of current Code the building would be required to be strengthened to at least 33 percent of Code as part of the building consent.

- When an application for a consent involving a change of use is received the requirements of the Building Act for the building to be strengthened to as near as is reasonably practicable the strength of a new building would be followed.

There would be no timeframes provided for in this option.

Consultation Process, Period for Consultation and Copies of Documents

The consultation process will be as follows:

(a) The Council has approved the draft amended policy and this summary of information, which will be publicised, and has appointed a hearings panel to hear any submissions;
(b) The special consultative procedure will be from 30 March to 7 May 2010.
(c) If any submitters wish to be heard, then the hearing of submissions will take place during the week of Monday 14 to Friday 18 June 2010.
(d) The Council will receive a report from the hearings panel, will consider the recommendations of the panel and make a final determination on the amendments to the policy.

A copy of the draft amended policy, the committee report to the Council and this summary of information are available as follows:

- Through the 'Have your Say' web page www.ccc.govt.nz/HaveYourSay, or
- From selected Council Service Centres and Libraries, or
- By phoning the Council on 941 8999 or for Banks Peninsula Residents 0800 800 169.

Written submissions should be submitted either through:

- The Council's website (www.ccc.govt.nz/HaveYourSay), or
- By email to EarthquakeProneBuildingsPolicy@ccc.govt.nz, or
- By completing the submission form or any other written form and posting to:

  Freepost 178,
  Earthquake Prone Buildings Policy,
  Christchurch City Council,
  PO Box 237,
  Christchurch 8140.

PROPOSED EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY 2010

1 Policy Approach

1.1 Policy principles

The Council has noted that provisions of the Building Act in regard to earthquake-prone, dangerous and insanitary buildings reflect the government's broader concern with the health and safety of the public in buildings and, more particularly, the need to address life safety in earthquakes. The Council has also noted that the development of these policies is up to each TA and has responded accordingly. This policy has been finalised after due consultation with Council ratepayers and stakeholders in accordance with section 83 of the Local Government Act 2002.

1.2 Definitions:

Earthquake-prone buildings
Under Section 122 of the Building Act, the meaning of earthquake-prone building is

"(1) A building is earthquake-prone for the purposes of this Act if, having regard to its condition and to the ground on which it is built, and because of its construction, the building –
  (a) will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations); and
  (b) would be likely to collapse causing –
    (i) injury or death to persons in the building or to persons on any other property; or
    (ii) damage to any other property.

(2) Subsection (1) does not apply to a building that is used wholly or mainly for residential purposes unless the building –
  (a) comprises 2 or more storeys; and
  (b) contains 3 or more household units."

Moderate earthquake
Moderate earthquake is defined in regulation 7 in the Building (Specified Systems, Change the Use and Earthquake-prone Buildings) Regulations 2005 where –

'...moderate earthquake means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one-third as strong as the earthquake shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at that site."

Buildings will need to be assessed to determine whether they are earthquake-prone. As a general guide, **an earthquake-prone building will have strength that is less than 33% of the seismic loading standard in NZS 1170.5: 2004.**

Significant alteration
Significant Alteration, for the purpose of the Policy, is building work on the structural support of the building or building work that has a value of more than 25% of the rateable value of the building (not land).

1.3 Overall approach

Earthquake-prone buildings
Christchurch City lies in an intermediate seismicity zone some distance from a zone of high activity associated with the Alpine fault. However, known earthquake sources - in particular the Ashley, Springbank and Pegasus fault zone - exist within the region and are large and close enough to cause significant damage throughout the city.

The city buildings comprise a range of types reflecting steady development over more than 100 years and range from wood, unreinforced masonry, and brick buildings to modern multi-storey steel and reinforced concrete buildings. Refurbishment and redevelopment for new uses has meant some of the unreinforced masonry and brick buildings have undergone some levels of strengthening.

This policy reflects the Council's determination to reduce earthquake risk over time in a way that is acceptable in social and economic terms to its ratepayers. This policy does not serve as a guarantee that when an earthquake occurs buildings will not be destroyed or damaged, possibly causing injuries to people in or around the building, but this policy does aim to minimise some of the risk for, and arising from buildings in an earthquake.

Categories and timeframes
The Council proposes to establish timeframes for earthquake strengthening of buildings which do not meet 33% of the building code requirements. The timeframes will be introduced on 1 July 2012 by which time provision will have been made for a Council officer to liaise with building owners and consideration will have been given to the establishment of a seismic fund to support owners of priority Heritage and Character buildings.

The buildings will be categorised depending on the importance of the building and this data will be used to review the policy and set times for implementation of the strengthening programme. The timeframes have been set in accordance with the Department of Building and Housing's guidelines and range from 15 to 30 years, depending on the importance of the building.

The Council will categorise earthquake-prone buildings as follows:

Category A:	Buildings with special post-disaster functions as defined in AS/NZ1170.0:2002 - importance level 4. **Must be strengthened within 15 years from 1 July 2012.**
Category B:	Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0:2002 - importance Level 3. **Must be strengthened within 20 years from 1 July 2012.**
Category C:	Buildings with an Importance Level less than 3 as defined in AS/NZS 1170.0:2002. **Must be strengthened within 30 years from 1 July 2012.**

Any building that falls within more than one category will be assigned to the highest category level.

Attached to this policy is the current version of table 3.2 of AS/NZS 1170.0:2002 which lists the importance levels and shows the above categories overlayed.

Heritage buildings will be categorised and assessed in the same way as other buildings, and subject to the same timeframes for strengthening. In determining an acceptable approach to strengthening, however, the Council will take into account the heritage values of these buildings as set out in Section 3.0 of this Policy.

Where a building owner is unable to meet the timeframes listed but has made substantial progress towards undertaking earthquake strengthening works, they may apply to the Regulatory and Planning Committee of Council for an extension of time. Extensions of time will not exceed three years and will be subject to conditions set by the Committee.

Dangerous and insanitary buildings
The Christchurch City Council is committed to ensuring that Christchurch City is a safe and healthy place to live in. The Building Act 2004 provides the means to ensure that buildings which become dangerous or insanitary are improved to meet the Building Code standards, and the Council wishes to administer the Building Act in a fair and reasonable way.

Dangerous and insanitary buildings will be dealt with in much the same way as the Council already deals with those buildings – by responding to complaints received from the public and advice received from the New Zealand Fire Service.

Where heritage buildings become dangerous or insanitary, the Council will take into account their heritage values in determining possible courses of action.

1.4 Identification process

Earthquake-Prone Buildings
Council will undertake a review of council files, commencing on 1 July 2012, to assess which buildings could be earthquake-prone and follow this up with letters to the owners with a brief inspection of each building, where necessary.

Buildings that will not require further assessment include those:

- designed or strengthened to the 1976 NZS 4203 and subsequent codes, unless they have a critical structural weakness
- isolated structures unlikely to collapse causing injury, or death to persons or damage to other property (refer Section 122 (1)(b) of the Building Act 2004)
- used wholly or mainly for residential purposes, unless the building comprises 2 or more storeys and contains 3 or more household units (refer Section 122(2) of the Building Act 2004)
- that are infrastructure assets covered by an Asset Management Plan such as infrastructure assets owned or controlled by the Council (including any CCO, CCTO, or local government organisation) Transit New Zealand or the owner of "works" as defined in the Electricity Act 1992)

Dangerous and Insanitary Buildings
The Council will respond to building complaints received from the public and to advice received from the NZ Fire Service and then investigate and assess the condition of the building.

1.5 Assessment criteria

Earthquake-prone buildings
The definition of Earthquake Prone Buildings is given in Section 122 of the Building Act 2004 and the definition of moderate earthquake is given in the Building (Specified Systems, Change the Use and Earthquake-prone Buildings) Regulations 2005.

The Council will use the NZSEE Recommendations as its preferred basis for defining technical requirements and criteria. These Recommendations are designed to be used in conjunction with AS/NZS 1170 Loadings Standard, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structures Standard and other materials Standards.

Dangerous and insanitary buildings
The Council will assess dangerous buildings in accordance with Section 121(1) of the Building Act 2004.

The Council will assess insanitary buildings in accordance with Section 123 of the Building Act 2004.

1.6 Taking action on earthquake-prone, dangerous and insanitary buildings

The Council, on being satisfied that a building is earthquake-prone, dangerous or insanitary, will:

- Advise and liaise with owners of buildings identified as earthquake-prone, dangerous or insanitary to discuss action to be taken.
- Encourage owners of buildings identified as earthquake-prone to carry out an independent assessment of the structural performance of those buildings.
- The Council will liaise with the Fire Service to discuss the proposed action when notification has been received from the Fire Service of a dangerous building.
- Use the powers given in Section 124 of the Building Act 2004 to take action regarding dangerous, earthquake-prone or insanitary buildings to serve formal notice in accordance with the Building Act 2004, and consider whether it should also erect a hoarding, fence or warning sign.
- When setting a timeframe for earthquake-prone building action, the Council will also take into account previous strengthening and/or any contractual or statutory obligations which the building owner may be subject to.
- Where it is considered measures are necessary to avoid immediate danger or to fix insanitary conditions, the Council will use the powers given in Section 129 of the Building Act 2004.
- In the case of a building that, due to its structural condition is considered to be dangerous because it is likely to collapse, in whole or in part, potentially causing injury to occupants or persons in areas adjacent to the building, immediate evacuation, the fencing off of the building, shoring up of structures and the preparation and implementation of a Temporary Protection Plan to ensure security (fire and vandalism) of any vacant buildings will be required.
- On being advised of conditions that are alleged to be insanitary within the provisions of section 123 of The Building Act, the buildings will be inspected and a determination made as to whether action is required under sections 124 or 129 of the Act. [Note: Provisions exist in the Health Act 1956 to deal with nuisance conditions related to certain matters associated with housing under section 29(f) overcrowding likely to be injurious to health or section 42 because of insanitary conditions likely to cause injury to the health of persons or are dwellings unfit for human habitation.]

1.6.1 Taking action on buildings damaged by an earthquake that are considered to be earthquake-prone after an earthquake has occurred.

Buildings may suffer damage in a seismic event. Applications for a building consent for repairs will be required to include structural strengthening work to restore the structural strength of the building to the level it was before the earthquake or to 33% of the current building code, whichever is the greater.

If a building consent application for repairs is not made and/or the repair work is not completed within a timeframe the Council considers reasonable the Council reserves the right to serve notice under section 124(1)(c) of the Building Act 2004 to require the work to be done.

1.7 Interaction between Earthquake-Prone Building Policy and related sections of the Building Act 2004

When an application for a consent for a Significant Alteration to a building is received and the building is earthquake-prone, the building will be required to be strengthened to at least 33% of Code as part of the consent.

When an application for a consent involving a change of use is received, the requirements of the Building Act, section 115, for the building to be strengthened to as near as is reasonably practicable to the strength of a new building will be followed.

1.8 Dealing with building owners

Before exercising its powers under section 124, the Council will seek, within a defined time-frame, to discuss options for action with owners with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from owners for strengthening or removal of earthquake-prone buildings, or otherwise dealing with the dangerous or insanitary situation by alterations to the building, removal, or action being taken under the Health Act 1956.

In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

1.9 Recording a building's EPB status

The Council will keep a register of all earthquake-prone buildings noting the status of requirements for improvement or the results of improvement, as applicable. In addition, the following information will be provided in the LIM for each earthquake-prone building:

- Address and legal description of land and building
- Buildings identified by the desktop study that have not had a detailed engineering assessment which shows they have a greater than 33% collapse strength will be noted as potentially earthquake-prone
- Buildings identified as having less than 33% collapse strength by the initial assessment method of NZSEE will be noted as likely to be earthquake-prone
- Buildings assessed as having less than 33% collapse strength using the detailed assessment method of NZSEE and about which the Council is satisfied are earthquake-prone under Section 124 of the Building Act 2004 will be noted as earthquake-prone
- Date by which strengthening or demolition is required (if known)
- Statement that further details are available from the Council property file.

1.10 Economic impact of policy

In the Council's first policy, the Council had reviewed the 2002 report 'Strengthening Existing New Zealand Buildings for Earthquake: An analysis of cost benefit using annual probabilities' prepared for the Department of Internal Affairs. For Christchurch, this report estimated the Net Present Value (NPV) of the cost of strengthening the applicable listed heritage buildings to 33% of current code to be $97.2 million.

The cost of strengthening all the earthquake-prone listed or scheduled heritage buildings to 33% of current code has been estimated at $169 million (plus or minus 25%) (Holmes Consulting Group, Heritage Earthquake Prone Building Strengthening Cost Study, June 2009).

1.11 Access to information

Information concerning the earthquake status of a building will be contained in the property file and GIS system. If a notice under section 124 is issued in respect of any earthquake-prone, dangerous or insanitary building then a record of that will also be available on the relevant property file and be included in the relevant LIM.

In granting access to information concerning these buildings, the Council will conform to the requirements of the relevant legislation.

2. *Priorities*

Earthquake-Prone Buildings
The Council has prioritised both the identification and the requirement to strengthen or demolish buildings. The identification process is now complete, following four studies carried out for the Council since 2006. From these it has been determined that there are 7600 earthquake prone buildings in Christchurch. These are commercial buildings constructed before 1976. The highest risk amongst these buildings are the 958 unreinforced masonry buildings which are likely to fail in a moderate earthquake. There are around 490 heritage buildings which are earthquake-prone. The majority (295) are unreinforced masonry, there are 29 reinforced concrete and 163 timber frame and other types.

The Council prioritises these earth quake prone buildings as noted in section 1.3.

3. *Heritage buildings*

3.1 Special considerations and constraints

The Council believes it is important that heritage buildings, structures and objects identified in the Christchurch City Plan and Banks Peninsula District Plan are protected and appropriately upgraded to mitigate the risk of loss of life and loss of heritage fabric in the event of a major earthquake. For this reason, heritage buildings will be categorised and assessed in the same way as other buildings, and subject to the same timeframes for strengthening. When a heritage building must be strengthened, however, every effort will be made to protect the heritage values of the building, and to meet the Council's heritage objectives set out in this policy, the Christchurch City and Banks Peninsula District Plan, and the Christchurch City Council Heritage Conservation Policy.

When considering heritage buildings under the Earthquake-Prone, Dangerous and Insanitary Buildings Policy, account will be taken of:

(a) The importance of recognising any special traditional and cultural aspects of the intended use of a building
(b) The need to facilitate the preservation of buildings of significant cultural, historical, or heritage value.
(c) The circumstances of each owner and each building, including whether the building has undergone any previous strengthening work.

When considering what action to take on listed or scheduled heritage buildings that have become dangerous or insanitary, the Council will take into account the heritage values of the building in determining possible courses of action and seek to avoid demolition wherever possible. The skills of suitably qualified professionals with heritage expertise will be engaged where necessary to advise and recommend actions.

TABLE 3.1
IMPORTANCE LEVELS FOR BUILDING TYPES – NEW ZEALAND STRUCTURES

Category	Importance Level	Comment	Examples
C 30 Years	1	Structures presenting a low degree of hazard to life and other property	Structures with a total floor area of <30m² Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
	2	Normal structures and structures not in other importance levels	Buildings not included in Importance Levels 1, 3 or 4 Single family dwellings Car parking buildings
B 20 Years	3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity greater than 150. (c) Primary school or secondary school facilities with a capacity greater than 250. (d) Colleges or adult education facilities with a capacity greater than 500. (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities. (f) Airport terminals, principal railway stations with a capacity greater than 250. (g) Correctional institutions. (h) Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10,000 m². (i) Public assembly buildings, theatres and cinemas of greater than 1000 m². Emergency medical and other emergency facilities not designated as post-disaster. Power generating facilities, water treatment and waste treatment facilities and other public utilities not designated as post-disaster. Buildings and facilities not designated as post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries.
A 15 Years	4	Structures with special post-disaster functions	Buildings and facilities designated as essential facilities. Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations and emergency vehicle garages. Utilities or emergency supplies or installations required as backup for buildings and facilities of Importance Level 4. Designated emergency shelters, designated emergency centres and ancillary facilities. Building and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries.
	5	Special structures (outside the scope of this Standard-acceptable probability of failure to be determined by special study)	Structures that have special functions or whose failure poses catastrophic risk to a large area (e.g. 100 km²) or a large number of people (e.g. 100,000). Major dams, extreme hazard facilities.

Proposed Amendments to the Christchurch City Council 2006 Earthquake-prone, Dangerous and Insanitary Buildings Policy

Submission Form

PLEASE READ BEFORE COMPLETING YOUR SUBMISSION

The public consultation period is from Tuesday 30 March 2010 to Friday 7 May 2010. A public hearings process will follow.

It will help us if in your submission you:

- refer to the specific page(s); clause and section of the proposed policy.
- type or use black ink for your submission.

Please note: We are legally required to make all written or electronic submissions available to the public and to Councillors, this includes the name and address of the submitter. (Information will be available to the public subject to the provisions of the Local Government Official Information and Meetings Act 1987). If you consider these compelling reasons why your contact details and/or submission should be kept confidential, you should contact the Council Support Team, telephone 941-8999.

You may send us your submission:

On the internet

You may enter your submission using the form provided on the Council's website at www.ccc.govt.nz/HaveYourSay
Please follow all the instructions on the website.

By email

Please email your submission to EarthquakeProneBuildingsPolicy@ccc.govt.nz
Please make sure that your full name and address is included with your submission.

By mail

(no stamp is required) to:
Freepost 178
Earthquake Prone Buildings Policy
Christchurch City Council
PO Box 237
Christchurch 8140

No anonymous submissions will be accepted. Whether you use this form or not, you must provide your full name, address and telephone number. If you are submitting on behalf of an organisation, please state this and your role within that organisation.

Submissions must be received (NOT postmarked) at the Tuam Street Civic Offices no later than 5pm on Friday 7 May 2010. To ensure receipt, hand deliver last-minute submissions to the Civic Offices, 163-173 Tuam Street.

Your submission

If you wish, you can present your submission at a hearing. If that is the case, please tick the appropriate box below. The hearings will be held during the week of Monday 14 June 2010. Five to ten minutes will be allocated for speaking to your submission, including time for questions from the Councillors. The Council will confirm the date and time of your hearing in writing, by email or by telephone call.

Tick one

☐ I do NOT wish to discuss my submission at the hearing, and ask that this written submission be considered
OR
☐ I wish to discuss the main points in my written submission at the hearings to be held during the week of Monday 14 June 2010.

Are you completing this submission: ☐ For yourself ☐ On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? _____

My submission refers to: Page No(s) _____ Clause(s) and section(s) _____

Your Name _____

Organisation name (if applicable) _____

Organisation role (if applicable) _____

Contact Address _____

_____

Phone No (day) _____ Phone No (evening) _____

Email (if applicable) _____

Signature _____ Date _____

Christchurch City Council

Proposed Amendments to the Christchurch City Council 2006 Earthquake-prone, Dangerous and Insanitary Buildings Policy

Proposed Amendments to the Christchurch City Council 2006 Earthquake-prone, Dangerous and Insanitary Buildings Policy

Submission Form

Please be as specific as possible to help us understand your views. It is helpful if you refer to specific pages, clauses and sections of the Proposed Amendments to the Christchurch City Council 2006 Earthquake-prone, Dangerous and Insanitary Buildings Policy.

Clause and Section No.	

You may add more pages if you wish. Thank you for your submission.

Christchurch City Council

EARTHQUAKE-PRONE, DANGEROUS AND INSANITARY BUILDINGS POLICY 2010

1 Introduction

1.1 Policy Context

The Council has noted that provisions of the Building Act in regard to earthquake-prone, dangerous and insanitary buildings reflect the government's broader concern with the health and safety of the public in buildings and, more particularly, the need to address life safety in earthquakes. The Council has also noted that the development of these policies is up to each territorial authority and has responded accordingly. This policy has been finalised after due consultation with Council ratepayers and stakeholders in accordance with section 83 of the Local Government Act 2002.

Section 2 of this policy primarily targets buildings constructed prior to 1976. Buildings constructed after this date are unlikely to be earthquake-prone, although it is recognised that some buildings constructed after 1976 will be, or could become, earthquake-prone.

1.2 Definitions

1.2.1 Earthquake-prone buildings

Under section 122 of the Building Act, the meaning of earthquake-prone building is

> "(1) A building is earthquake-prone for the purposes of this Act if, having regard to its condition and to the ground on which it is built, and because of its construction, the building—
>
> (a) will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations); and
>
> (b) would be likely to collapse causing—
>
> (i) injury or death to persons in the building or to persons on any other property; or
>
> (ii) damage to any other property.
>
> (2) Subsection (1) does not apply to a building that is used wholly or mainly for residential purposes unless the building—
>
> (a) comprises 2 or more storeys; and
>
> (b) contains 3 or more household units."

Note: "Ultimate capacity" means seismic load capacity.

1.2.2 Moderate earthquake

Moderate earthquake is defined in regulation 7 in the Building (Specified Systems, Change the Use and Earthquake-Prone Buildings) Regulations 2005 where—

> "moderate earthquake means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one-third as strong as the earthquake

shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at that site."

Buildings will need to be assessed to determine whether they are earthquake-prone (see Section 2.3.1). As a general guide, **an earthquake-prone building will have a strength that is less than 33% of the seismic loading standard in NZS1170.5:2004.**

1.2.3 Significant alteration

Significant alteration, for the purpose of the Policy, is:

(a) any building work that affects the structural performance of the building; or

(b) building work that has a value of more than $50,000 or 25% of the rateable value of the building, whichever is the higher, in any twelve month period.

Notes:

(i) "building work" in (a) and (b) means building work as defined by the Building Act 2004;

(ii) the calculations in (b) are based on the value of the building, not the value of the land;

(iii) the twelve month period in (b) starts from the date of issue of the building consent;

(iv) where there is more than one building consent in a twelve-month period, the "significant alteration" is the alteration that takes the total value of building work over $50,000 or 25% of the rateable value of the building.

1.2.4 Dangerous buildings

Under section 121 of the Building Act, a building is dangerous if:

(a) in the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause—

  (i) injury or death (whether by collapse or otherwise) to any persons in it or to persons on other property; or

  (ii) damage to other property; or

(b) in the event of fire, injury or death to any persons in the building or to persons on other property is likely because of fire hazard or the occupancy of the building.

1.2.5 Insanitary buildings

Under section 123 of the Building Act, a building is dangerous if it:

(a) is offensive or likely to be injurious to health because—

  (i) of how it is situated or constructed; or

  (ii) it is in a state of disrepair; or

(b) has insufficient or defective provisions against moisture penetration so as to cause dampness in the building or in any adjoining building; or

(c) does not have a supply of potable water that is adequate for its intended use; or

(d) does not have sanitary facilities that are adequate for its intended use.

2 Earthquake-Prone Buildings

2.1 Background and overall approach

Christchurch City lies in an intermediate seismicity zone some distance from a zone of high activity associated with the Alpine Fault. However, known earthquake sources—in particular the Ashley, Springbank and Pegasus fault zone—exist within the region and are large and close enough to cause significant damage throughout the city.

The city's buildings comprise a range of types reflecting steady development over more than 100 years and range from wood, unreinforced masonry, and brick buildings to modern multi-storey steel and reinforced concrete buildings. It is estimated that there are potentially 7600 buildings in Christchurch that are "earthquake prone" as defined in the Building Act 2004. These are commercial buildings constructed before 1976.

Those at highest risk of collapse are the approximately 960 unreinforced masonry buildings, which are likely to fail in a moderate earthquake, although refurbishment and redevelopment for new uses has meant some of the unreinforced masonry and brick buildings have undergone some level of strengthening.

There are around 490 heritage buildings that are earthquake-prone as defined by the Building Act. The majority (295) are unreinforced masonry, and there are 29 reinforced concrete and 163 timber-frame and other types.

In the Council's first policy, the Council had reviewed the 2002 report "Strengthening Existing New Zealand Buildings for Earthquake: An Analysis of Cost Benefit Using Annual Probabilities" prepared for the Department of Internal Affairs. For Christchurch, this report estimated the net benefit to the city of strengthening the applicable buildings to 33% of current code to be $97.2 million (in 2002 dollars). The Council has continued to rely on this study in reviewing the Policy.

The cost of strengthening all the earthquake-prone listed or scheduled heritage buildings to 33% of current code has been estimated at $169 million (plus or minus 25%) (Holmes Consulting Group, "Heritage Earthquake Prone Building Strengthening Cost Study", June 2009).

This Policy reflects the Council's determination to reduce the risk to the public in an earthquake over time in a way that is acceptable in social, cultural and economic terms to its ratepayers. The Council recognises that this Policy will mean additional costs for building owners, but notes the benefits of strengthening: not only improved safety, but also greater resilience and a quicker recovery after an earthquake, both for individual businesses and for the city's economy as a whole.

This Policy does not serve as a guarantee that when an earthquake occurs, buildings will not be destroyed or damaged, possibly causing injuries to people in or around the building, but it does aim to minimise some of the risk for, and arising from, buildings in an earthquake.

The Council will continue to use a mix of regulatory and non-regulatory tools to encourage the seismic strengthening of the city's buildings.

2.2 Categories and Timeframes

The Council proposes to establish timeframes for earthquake strengthening of certain buildings that do not meet 33% of the current Building Code requirements. The timeframes have been set in accordance with the Department of Building and Housing's guidelines and range from 15 to 30 years, depending on the importance of the building. They will be introduced from 1 July 2012, by which time consideration will have been given by the Council to the introduction of a package of non-regulatory tools and incentives.

The Council will categorise and prioritise earthquake-prone buildings as follows:

Category A

- Buildings with special post-disaster functions as defined in AS/NZS 1170.0:2002—Importance Level 4.
- **Must be strengthened within 15 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category B

- Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170.0:2002—Importance Level 3. Note that "contents of high value to the community" does not include the fabric of the building itself.
- Buildings constructed of unreinforced masonry or unreinforced concrete.
- **Must be strengthened within 20 years from the date the owner is notified that their building is potentially earthquake-prone.**

Category C

- Buildings with an importance level less than 3 as defined in AS/NZS 1170.0:2002.
- **Must be strengthened within 30 years from the date the owner is notified that their building is potentially earthquake-prone.**

Any building that falls within more than one category will be assigned to the highest category level.

Attached to this Policy is the current version of table 3.2 of AS/NZS 1170.0:2002 which lists the importance levels and shows the above categories overlaid.

Heritage buildings will be categorised and assessed in the same way as other buildings, and subject to the same timeframes for strengthening. (See section 4 of this Policy.)

2.3 Implementation

2.3.1 Identifying and recording the status of earthquake-prone buildings

From 1 July 2012, the Council will begin reviewing Council files to identify buildings that could be earthquake-prone, beginning with Category A and progressing through to Category C.

Buildings that will not require further assessment include those that are:

- designed or strengthened to the 1976 NZS 4203 and subsequent codes, unless they have a critical structural weakness;
- isolated structures unlikely to collapse causing injury or death to persons or damage to other property (refer section 122(1)(b) of the Building Act 2004);
- used wholly or mainly for residential purposes, unless the building comprises 2 or more storeys and contains 3 or more household units (refer section 122(2) of the Building Act 2004); or
- infrastructure assets covered by an Asset Management Plan such as infrastructure assets owned or controlled by the Council (including any Council Controlled Organisation, Council Controlled Trading Organisation, or local government organisation), Transit New Zealand, or the owner of "works" as defined in the Electricity Act 1992.

The Council will use the New Zealand Society of Earthquake Engineers' (NZSEE's) Recommendations as its preferred basis for defining technical requirements and criteria. These Recommendations are designed to be used in conjunction with AS/NZS 1170 Loadings Standard, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structures Standard and other materials Standards.

The establishment and recording of a building's earthquake-prone status will take place in three stages.

Stage 1: Identification of Potentially Earthquake-Prone Buildings from review of Council files

The Council will use information in its files to identify buildings that could be earthquake-prone, and write to owners advising them that their building could be earthquake-prone and that further assessment will be needed. Owners will be advised that they have 60 days from the date of the letter to provide evidence that the building is not earthquake-prone. If satisfactory evidence is not provided within 60 days, it will be noted on the property file and in the GIS system that the building is **potentially earthquake-prone**. The Council will accept an initial assessment using NZSEE's Initial Evaluation Procedure, or an

equivalent method, as satisfactory evidence that a building is not earthquake–prone.

Stage 2: Initial assessment
When an **initial assessment** using the NZSEE's Initial Evaluation Procedure, showing that a building does not meet 33% of the current Building Code requirements, has been received by the Council, it will be noted on the property file and in the GIS system that the building is **likely to be earthquake prone**. This assessment is the owner's responsibility, and its timing is at the owner's discretion, subject to sections 2.2 and 2.3.5 of this Policy. This does not prevent the Council from carrying out an initial assessment at any time. An initial assessment may provide sufficient evidence to justify the Council issuing a section 124 notice (see section 2.3.3 of this Policy).

Stage 3: Detailed assessment
When a **detailed assessment** using the NZSEE's detailed assessment method, showing that a building does not meet 33% of current Building Code requirements, has been received by the Council, it will be noted on the property file and in the GIS system that the building is **earthquake-prone**. This assessment is the owner's responsibility, and its timing is at the owner's discretion, subject to sections 2.2 and 2.3.5 of this Policy. This does not prevent the Council from carrying out a detailed assessment at any time. A detailed assessment that shows a building does not meet 33% of current Building Code requirements will result in the Council issuing a section 124 notice (see section 2.3.3 of this Policy).

The process is shown in the attached diagram (**Table A**). Note that not all buildings will go through all three stages of the identification and recording process. A building owner may, for example, elect to proceed straight to a detailed assessment if s/he believes the building is earthquake prone and wants more detailed advice on the issues to be addressed.

2.3.2 Access to information
The Council will keep a register of all earthquake-prone buildings, noting the status of requirements for improvement or the results of improvement, as applicable. Information concerning the earthquake-prone status of a building will also be contained in the property file and GIS system.

The following information will be provided in the Land Information Memorandum (LIM) for each building:

- Address and legal description of land and building.
- Earthquake-prone status: potentially earthquake-prone, likely to be earthquake prone, or earthquake-prone (as above), and what these categories mean.
- Date by which strengthening or demolition is required (if known).
- A record of any notice issued under section 124 of the Building Act.
- Statement that further details are available from the Council property file.

In granting access to information concerning earthquake-prone buildings, the Council will comply with the requirements of the relevant legislation.

2.3.3 Taking action on earthquake-prone buildings

The Council encourages building owners to get independent assessments of the structural performance of their buildings. It will also use the powers given in section 124 of the Building Act 2004—including the power to give written notice requiring work to be carried out, and to erect a hoarding, fence or warning sign—to take action regarding earthquake-prone buildings.

Before exercising its powers under section 124, the Council will discuss options for action with owners, with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from the owner for strengthening or removal of the earthquake-prone building. In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

When setting a timeframe for action on an earthquake-prone building, the Council will take into account previous strengthening and/or any contractual or statutory obligations that the building owner may be subject to, as well as the timeframes in this Policy and any written notification of the timeframes the building owner has already received.

In determining an acceptable approach to strengthening, the Council will take into account the heritage values of listed heritage buildings as set out in section 4 of this Policy.

2.3.4 Extensions of time

Where a building owner is unable to meet the timeframes listed but has made substantial progress towards undertaking earthquake strengthening works, they may apply to the Council for an extension of time. Extensions of time will not exceed three years and will be subject to conditions set by the Council. Only one extension of time will be granted for each building.

2.3.5 Interaction between Earthquake-Prone Building Policy and other sections of the Building Act 2004

When an application for a consent for a Significant Alteration to a building is received and the building may be earthquake-prone as defined in the Building Act 2004, evidence must be provided that the building has a collapse strength of over 33% of the current Building Code, or the building will be required to be strengthened to at least 33% of Code as part of the consent. As a general rule, commercial buildings constructed after 1976 are unlikely to be earthquake-prone.

When an application for a consent involving a change of use is received, the requirements of section 115 of the Building Act 2004 for the building to be strengthened to as near as is reasonably practicable to the strength of a new building will be followed.

2.3.6 Buildings damaged by an earthquake

Buildings may suffer damage in a seismic event. Applications for a building consent for repairs will be required to include structural strengthening work to restore the structural strength of the building to the level it was before the earthquake or to 33% of the current Building Code, whichever is the greater.

If a building consent application for repairs is not made and/or the repair work is not completed within a timeframe that the Council considers reasonable the Council reserves the right to serve notice under section 124(1) of the Building Act 2004 to require the work to be done.

2.4 Other methods to encourage seismic strengthening of buildings

The Council will continue its current provision of Heritage Incentive Grants and free advice to owners of heritage buildings. It will also review whether it should introduce other tools to encourage seismic strengthening in the process of developing the 2012-22 Long-Term Council Community Plan.

3 Dangerous and Insanitary buildings

3.1 Overall approach

The Christchurch City Council is committed to ensuring that Christchurch City is a safe and healthy place to live in. The Building Act 2004 provides the means to ensure that buildings that become dangerous or insanitary are improved to meet the Building Code standards, and the Council wishes to administer the Building Act in a fair and reasonable way.

Dangerous and insanitary buildings will be dealt with in much the same way as the Council already deals with those buildings—by responding to complaints received from the public and advice received from the New Zealand Fire Service.

3.2 Implementation

3.2.1 Identifying dangerous and insanitary buildings

Where a building complaint is received from the public and/or advice is received from the NZ Fire Service that a building is dangerous, the Council will investigate and assess the condition of the building to determine whether it is dangerous or insanitary in terms of sections 121 and 123 of the Building Act 2004.

3.2.2 Taking action on dangerous and insanitary buildings

On being satisfied that a building is dangerous or insanitary, the Council will advise and liaise with the owner to discuss action to be taken. If notification was received from the Fire Service that the building was dangerous, it will liaise with the Fire Service to discuss the proposed action. If the building is a listed heritage building, the Council will take into account its heritage values in determining a course of action, as set out in Section 4 of this Policy.

The Council will use the powers given in section 124 of the Building Act 2004—including the power to give written notice requiring work to be carried out, and to erect a hoarding, fence or warning sign—to take action on dangerous and insanitary buildings.

Before exercising its powers under section 124, the Council will seek, within a defined timeframe, to discuss options for action with owners with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from the owner for dealing with the dangerous or insanitary situation by alterations to the building, removal, or action being taken under the Health Act 1956 (see below). In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

In the case of a building that, due to its structural condition is considered to be dangerous because it is likely to collapse, in whole or in part, potentially causing injury to occupants or persons in areas adjacent to the building, immediate evacuation, the fencing off of the building, shoring up of structures and the preparation and implementation of a Temporary Protection Plan to ensure security (fire and vandalism) of any vacant buildings will be required.

Where it is considered measures are necessary to avoid immediate danger or to fix insanitary conditions, the Council will use the powers given in section 129 of the Building Act 2004.

Note: Provisions also exist in the Health Act 1956 to deal with nuisance conditions related to certain matters associated with housing (under section 29(f), overcrowding likely to be injurious to health, and under section 42, insanitary conditions likely to cause injury to the health of persons, or a dwelling that is otherwise unfit for human habitation).

4 Heritage Buildings

4.1 Special considerations and constraints

The Council believes it is important that heritage buildings, structures and objects identified in the Christchurch City Plan and Banks Peninsula District Plan are protected and appropriately upgraded to mitigate the risk of loss of life and loss of heritage fabric in the event of a major earthquake. For this reason, heritage buildings will be categorised and assessed in the same way as other potentially earthquake-prone buildings, and subject to the same timeframes for strengthening. When a heritage building must be strengthened, however, every effort will be made to protect the heritage values of the building, and to meet the Council's heritage objectives set out in this Policy, the Christchurch City and Banks Peninsula District Plan, and the Christchurch City Council Heritage Conservation Policy. As noted above, the Council intends to continue to support the upgrading of heritage buildings

through its Heritage Incentive Grants and the provision of rates-funded advice.

When considering heritage buildings under this Policy, account will be taken of:

a. The importance of recognising any special traditional and cultural aspects of the intended use of the building;
b. The need to facilitate the preservation and ongoing use of buildings and areas of significant cultural, historical, or heritage value;
c. The circumstances of each owner and each building, including whether the building has undergone any previous strengthening work.

When considering what action to take on listed or scheduled heritage buildings that have become dangerous or insanitary, the Council will take into account the heritage values of the building in determining possible courses of action and seek to avoid demolition wherever possible. The skills of suitably qualified professionals with heritage expertise will be engaged where necessary to advise and recommend actions.

5 Disputes

If a building owner disputes Council's decision, or proposed decision, to classify their building as earthquake-prone, or any other matter relating to the exercise of the Council's powers under sections 124 and 129 of the Building Act 2004 relating to earthquake-prone, dangerous or insanitary buildings, they may apply for a determination from the Chief Executive of the Department of Building and Housing, as set out in the Building Act 2004. Such a determination is binding on the Council.

6 Monitoring and Review

The number of buildings strengthened and the level to which they are upgraded will be monitored. This Policy will be reviewed within five years of its adoption.

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TABLE 3.2

IMPORTANCE LEVELS FOR BUILDING TYPES—NEW ZEALAND STRUCTURES

Importance level	Comment	Examples
1	Structures presenting a low degree of hazard to life and other property	Structures with a total floor area of <30 m^2 Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
2	Normal structures and structures not in other importance levels	Buildings not included in Importance Levels 1, 3 or 4 Car parking buildings
3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity greater than 150 (c) Primary school or secondary school facilities with a capacity greater than 250 (d) Colleges or adult education facilities with a capacity greater than 500 (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities (f) Airport terminals, principal railway stations with a capacity greater than 250 (g) Correctional institutions (h) Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10 000 m^2 (i) Public assembly buildings, theatres and cinemas of greater than 1000 m^2 Emergency medical and other emergency facilities not designated as post-disaster Power-generating facilities, water treatment and waste water treatment facilities and other public utilities not designated as post-disaster Buildings and facilities not designated as post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries
4	Structures with special post-disaster functions	Buildings and facilities designated as essential facilities Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations and emergency vehicle garages Utilities or emergency supplies or installations required as backup for buildings and facilities of Importance Level 4 Designated emergency shelters, designated emergency centres and ancillary facilities Buildings and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries
5	Special structures (outside the scope of this Standard—acceptable probability of failure to be determined by special study)	Structures that have special functions or whose failure poses catastrophic risk to a large area (e.g. 100 km^2) or a large number of people (e.g., 100 000) Major dams, extreme hazard facilities

Category C

30 years to upgrade or demolish

Category B

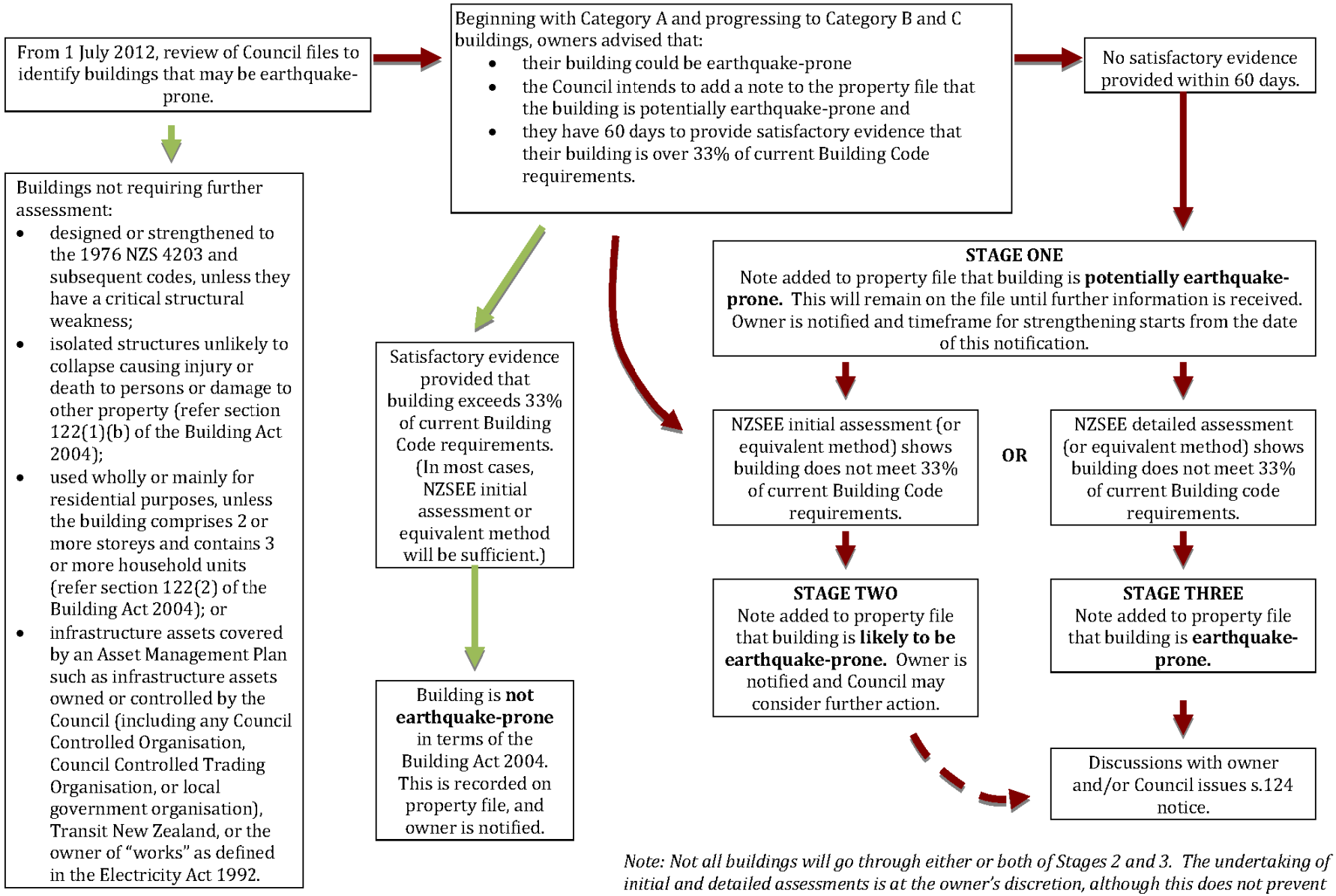
20 years to upgrade or demolish

For this Policy, Category B also includes *all* earthquake-prone buildings constructed of unreinforced masonry or unreinforced concrete that are not in Category A.

Category A

15 years to upgrade or demolish

Identifying and Recording the Status of Earthquake-Prone Buildings



Note: Not all buildings will go through either or both of Stages 2 and 3. The undertaking of initial and detailed assessments is at the owner's discretion, although this does not prevent the Council from carrying out an assessment at any time.

TABLE A

Earthquake-Prone Dangerous and Insanitary Buildings Policy 2006

1. Policy Approach

1.1 Policy principles
The Council has noted that provisions of the Building Act in regard to earthquake-prone, dangerous and insanitary buildings reflect the government's broader concern with the health and safety of the public in buildings and, more particularly, the need to address life safety in earthquakes. The Council has also noted that the development of these policies is up to each TA and has responded accordingly. This policy has been finalised after due consultation with Council ratepayers and stakeholders in accordance with section 83 of the Local Government Act 2002.

1.2 Definitions
Earthquake-prone buildings
Under Section 122 of the Building Act, the meaning of earthquake-prone building is

1. "A building is earthquake-prone for the purposes of this Act if, having regard to its condition and to the ground on which it is built, and because of its construction, the building -
    1. will have its ultimate capacity exceeded in a moderate earthquake (as defined in the regulations); and
    2. would be likely to collapse causing -
        1. injury or death to persons in the building or to persons on any other property; or
        2. damage to any other property.
2. Subsection (1) does not apply to a building that is used wholly or mainly for residential purposes unless the building -
    1. comprises 2 or more storeys; and
    2. contains 3 or more household units."

Moderate earthquake
Moderate earthquake is defined in regulation 7 in the Building (Specified Systems, Change the Use and Earthquake-prone Buildings) Regulations 2005 where -

"...moderate earthquake means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one-third as strong as the earthquake shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at that site."

Buildings will need to be assessed to determine whether they are earthquake-prone. As a general guide, an earthquake-prone building will have strength that is less than 33 per cent of the seismic loading standard in NZS 1170.5: 2004.

Significant alteration
Significant alteration, for the purpose of the Policy, is building work on the structural support of the building or building work that has a value of more than 25 per cent of the rateable value of the building.

1.3 Overall approach

Earthquake-prone buildings
Christchurch City lies in an intermediate seismicity zone some distance from a zone of high activity associated with the Alpine fault. However, known earthquake sources - in particular the Ashley, Springbank and Pegasus fault zone - exist within the region and are large and close enough to cause significant damage throughout the city.

The city buildings comprise a range of types reflecting steady development over more than 100 years and range from wood, unreinforced masonry, and brick buildings to modern multi-storey steel and reinforced concrete buildings. Refurbishment and redevelopment for new uses has meant some of the unreinforced masonry and brick buildings have undergone some levels of strengthening.

This policy reflects the Council's determination to reduce earthquake risk over time in a way that is acceptable in social and economic terms to its ratepayers. This policy does not serve as a guarantee that when an earthquake occurs buildings will not be destroyed or damaged, possibly causing injuries to people in or around the building, but this policy does aim to minimise some of the risk for, and arising from buildings in an earthquake.

The Council proposes therefore in this policy to carry out an initial desktop review to ascertain the number of possible earthquake-prone buildings and to establish reliable data on the number of buildings which were considered earthquake prone buildings under the 1991 Act and the degree of strengthening, if any, which has been undertaken to date.

The buildings will be categorised depending on the importance of the building and this data will be used to review the policy and set times for implementation of the strengthening programme.

Dangerous and insanitary buildings
The Christchurch City Council is committed to ensuring that Christchurch City is a safe and healthy place to live in. The Building Act 2004 provides the means to ensure that buildings which become dangerous or insanitary are improved to meet the Building Code standards, and the Council wishes to administer the Building Act in a fair and reasonable way.

Dangerous and insanitary buildings will be dealt with in much the same way as the Council already deals with those buildings - by responding to complaints received from the public and advice received from the New Zealand Fire Service.

1.4 Identification process

Earthquake-prone buildings
The Council will undertake an initial desktop review of council files to assess which buildings could be earthquake-prone and follow this with a brief inspection of each building, where necessary.
Buildings that will not require further assessment include those:

- designed or strengthened to the 1976 NZS 4203 and subsequent codes, unless they have a critical structural weakness.
- isolated structures unlikely to collapse causing injury, or death to persons or damage to other property (refer Section 122 (1)(b) of the Building Act 2004).

- used wholly or mainly for residential purposes, unless the building comprises two or more storeys and contains three or more household units (refer Section 122(2) of the Building Act 2004).
- that are infrastructure assets covered by an Asset Management Plan such as infrastructure assets owned or controlled by the Council (including any CCO, CCTO, or local government organisation) Transit New Zealand or the owner of "works" as defined in the Electricity Act 1992).

A list will be collated of earthquake-prone buildings according to the results of the assessments. When the Council reviews this policy, as required by the Building Act 2004, it will be in a position to decide upon a final category list for prioritising earthquake-prone buildings. At that time the desktop study will be completed and more information will be available about the numbers, types of buildings and amount of previous strengthening of buildings in the Council's district that are potentially earthquake-prone. The Review will give consideration to initiating a programme to carry out an initial evaluation of performance in earthquake by using the NZSEE initial evaluation method to assess buildings that are potentially earthquake-prone.

In the meantime, the Council will categorise earthquake-prone buildings according to the following:

Category A:	Buildings with special post-disaster functions as defined in AS/NZS 1170: 2002, Importance Level 4 and buildings constructed of unreinforced masonary or unreinforced concrete.
Category B:	Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170: 2002, Importance Level 3.
Category C:	Buildings with a Heritage Classification of 1 to 4 under the Council’s register.
Category D:	Buildings with an Importance Level less than 3 as defined in AS/NZS 1170:2002.

Any building that falls within more than one category will be assigned the highest category level (e.g. if a building falls under both Category A and C, it will be regarded as being a Category A building).
Attached to this policy as **Appendix A** is the current version of table 3.2 of AS/NZS 1170:2002 which lists the importance levels.

Dangerous and insanitary buildings
The Council will respond to building complaints received from the public and to advice received from the NZ Fire Service and then investigate and assess the condition of the building.

1.5 Assessment criteria
Earthquake-prone buildings
The definition of Earthquake Prone Buildings is given in Section 122 of the Building Act 2004 and the definition of moderate earthquake is given in the Building (Specified Systems, Change the Use and Earthquake-prone Buildings) Regulations 2005.

The Council will use the NZSEE Recommendations as its preferred basis for defining technical requirements and criteria. These Recommendations are designed to be used in conjunction with AS/NZS 1170 Loadings Standard, NZS 3101 Concrete Structures Standard, NZS 3404 Steel Structures Standard and other materials Standards.

Dangerous and insanitary buildings
The Council will assess dangerous buildings in accordance with Section 121(1) of the Building Act 2004.
The Council will assess insanitary buildings in accordance with Section 123 of the Building Act 2004.

1.6 Taking action on earthquake-prone, dangerous and insanitary buildings
The Council, on being satisfied that a building is earthquake-prone, dangerous or insanitary, will:

- Advise and liaise with owners of buildings identified as earthquake-prone, dangerous or insanitary to discuss action to be taken.
- Encourage owners of buildings identified as earthquake-prone to carry out an independent assessment of the structural performance of those buildings.
- The Council will liaise with the Fire Service to discuss the proposed action when notification has been received from the Fire Service of a dangerous building.
- Use the powers given in Section 124 of the Building Act 2004 to take action regarding dangerous, earthquake-prone or insanitary buildings to serve formal notice in accordance with the Building Act 2004, and consider whether it should also erect a hoarding, fence or warning sign.
- When setting a timeframe for earthquake-prone building action, the Council will also take into account previous strengthening and/or any contractual or statutory obligations which the building owner may be subject to.
- Where it is considered measures are necessary to avoid immediate danger or to fix insanitary conditions, the Council will use the powers given in Section 129 of the Building Act 2004.
- In the case of a building that, due to its structural condition is considered to be dangerous because it is likely to collapse, in whole or in part, potentially causing injury to occupants or persons in areas adjacent to the building, immediate evacuation, the fencing off of the building, shoring up of structures and the preparation and implementation of a Temporary Protection Plan to ensure security (fire and vandalism) of any vacant buildings will be required.
- On being advised of conditions that are alleged to be insanitary within the provisions of section 123 of The Building Act, the buildings will be inspected and a determination made as to whether action is required under sections 124 or 129 of the Act. [Note: Provisions exist in the Health Act 1956 to deal with nuisance conditions related to certain matters associated with housing under section 29(f) overcrowding likely to be injurious to health or section 42 because of insanitary conditions likely to cause injury to the health of persons or are dwellings unfit for human habitation.]

1.7 Interaction between earthquake-prone building policy and related sections of the Building Act 2004
When an application for a consent for a Significant Alteration to a building is received and the building has an earthquake-prone strength of less than 10 per cent of the Code, the building will be required to be strengthened to at least 33 per cent of Code as part of the consent.

Owners of buildings with a strength between 10 per cent and 33 per cent will be given consent for alterations and will be formally advised that when the first review of the policy is completed and timeframes for action set, the owner is likely to be served formal notice requiring action to strengthen or demolish the building within the timeframe set in the policy review.

When an application for a consent involving a change of use is received, the requirements of the Building Act, section 115, for the building to be strengthened to as near as is reasonably practicable to the strength of a new building will be followed.

1.8 Dealing with building owners

Before exercising its powers under section 124, the Council will seek, within a defined time-frame, to discuss options for action with owners with a view to obtaining from the owner a mutually acceptable approach for dealing with the danger, leading to receipt of a formal proposal from owners for strengthening or removal of earthquake-prone buildings, or otherwise dealing with the dangerous or insanitary situation by alterations to the building, removal, or action being taken under the Health Act 1956.

In the event that discussions do not yield a mutually acceptable approach and proposal, the Council will serve a formal notice on the owner in accordance with section 124 of the Building Act 2004.

1.9 Recording a building's EPB status

The Council will keep a register of all earthquake-prone buildings noting the status of requirements for improvement or the results of improvement, as applicable. In addition, the following information will be provided in the LIM for each earthquake-prone building:

- Address and legal description of land and building.
- Buildings identified by the desktop study that have not had a detailed engineering assessment which shows they have a greater than 33 per cent collapse strength will be noted as potentially earthquake-prone.
- Buildings identified as having less than 33 per cent collapse strength by the initial assessment method of NZSEE will be noted as likely to be earthquake-prone.
- Buildings assessed as having less than 33 per cent collapse strength using the detailed assessment method of NZSEE and about which the Council is satisfied are earthquake-prone under Section 124 of the Building Act 2004 will be noted as earthquake-prone.
- Date by which strengthening or demolition is required (if known).
- Statement that further details are available from the Council property file.

1.10 Economic impact of policy

The Council has reviewed the 2002 report 'Strengthening Existing New Zealand Buildings for Earthquake: An analysis of cost benefit using annual probabilities' prepared for the Department of Internal Affairs. For Christchurch, this report estimated the Net Present Value (NPV) of the cost of strengthening the applicable buildings to 33 per cent of current code to be $97.2 million.

1.11 Access to information

Information concerning the earthquake status of a building will be contained in the property file and GIS system. If a notice under section 124 is issued in respect of any earthquake-prone, dangerous or insanitary building then a record of that will also be available on the relevant property file and be included in the relevant LIM.

In granting access to information concerning these buildings, the Council will conform to the requirements of the relevant legislation.

The economic impact will be able to be assessed in more detail when the first review of this policy is undertaken. At that stage a database of buildings will be available.

2. Priorities

Earthquake-prone buildings
The Council has prioritised both the identification and the requirement to strengthen or demolish buildings as follows.

The Council will undertake an initial desktop review of Council files to assess which buildings could be earthquake-prone and follow this with a brief inspection of each building, where necessary.

The desktop study will record the details of when a building was constructed, any subsequent strengthening or improvement and will record the number of buildings in each category set out in Section 1.4.

When the information is available the Council will review this policy, as required by the Building Act 2004 and will be in a position to decide on a final category list for prioritising earthquake-prone buildings and to set realistic timeframes for action.

In the meantime the category list will be as indicated below:

Category A:	Buildings with special post-disaster functions as defined in AS/NZS 1170: 2002, Importance Level 4 and buildings constructed of unreinforced masonary or unreinforced concrete.
Category B:	Buildings that contain people in crowds or contents of high value to the community as defined in AS/NZS 1170: 2002, Importance Level 3.
Category C:	Buildings with a Heritage Classification of 1 to 4 under the Council's register.
Category D:	Buildings with an Importance Level less than 3 as defined in AS/NZS 1170:2002.

Dangerous and insanitary buildings
Priority for action will be decided after investigation of complaints and Fire Service notifications are complete.

3. Heritage buildings

3.1 Special considerations and constraints
The Council believes it is important that its City Plan heritage listed buildings, structures and objects are protected and appropriately upgraded to mitigate the risk of loss of life and loss of heritage fabric in the event of a major earthquake. However, intrinsic heritage values of these buildings, places and objects must be protected and not adversely affected by structural improvement measures. Heritage buildings will be assessed in the same way as other potentially earthquake-prone buildings. To ensure that the heritage values are retained, protected and adequately secured against earthquakes, every effort will be made to meet the Council's heritage objectives set out in this policy, the Christchurch City Plan, and the Christchurch City Council Heritage Policy.

When considering heritage buildings under the Earthquake-Prone, Dangerous and Insanitary Policy, account will be taken of:

1. The importance of recognising any special traditional and cultural aspects of the intended use of a building.
2. The need to facilitate the preservation of buildings of significant cultural, historical, or heritage value.
3. The circumstances of each owner and each building, including whether the building has undergone any previous strengthening work.

When dealing with earthquake-prone, dangerous and insanitary heritage buildings, the Council will ensure the development of special and appropriate recovery management and planningfor heritage buildings to ensure, where possible,risk mitigation for the protection of heritage fabric and values. The skills of suitably qualified professionals with heritage expertise will be engaged to advise and recommend actions.

Council
25 May 2006

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TABLE 3.2

IMPORTANCE LEVELS FOR BUILDING TYPES—NEW ZEALAND STRUCTURES

Importance level	Comment	Examples
1	Structures presenting a low degree of hazard to life and other property	Structures with a total floor area of <30 m^2 Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
2	Normal structures and structures not in other importance levels	Buildings not included in Importance Levels 1, 3 or 4 Single family dwellings Car parking buildings
3	Structures that as a whole may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Buildings and facilities as follows: (a) Where more than 300 people can congregate in one area (b) Day care facilities with a capacity greater than 150 (c) Primary school or secondary school facilities with a capacity greater than 250 (d) Colleges or adult education facilities with a capacity greater than 500 (e) Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities (f) Airport terminals, principal railway stations with a capacity greater than 250 (g) Correctional institutions (h) Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate more than 5000 people and with a gross area greater than 10 000 m^2 (i) Public assembly buildings, theatres and cinemas of greater than 1000 m^2 Emergency medical and other emergency facilities not designated as post-disaster Power-generating facilities, water treatment and waste water treatment facilities and other public utilities not designated as post-disaster Buildings and facilities not designated as post-disaster containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries
4	Structures with special post-disaster functions	Buildings and facilities designated as essential facilities Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations and emergency vehicle garages Utilities or emergency supplies or installations required as backup for buildings and facilities of Importance Level 4 Designated emergency shelters, designated emergency centres and ancillary facilities Buildings and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries
5	Special structures (outside the scope of this Standard—acceptable probability of failure to be determined by special study)	Structures that have special functions or whose failure poses catastrophic risk to a large area (e.g. 100 km^2) or a large number of people (e.g., 100 000) Major dams, extreme hazard facilities