

DUNEDIN CITY COUNCIL DANGEROUS, INSANITARY AND EARTHQUAKE-PRONE BUILDINGS POLICY

INTRODUCTION

The Building Act 2004 reflects the Government's concern for the safety of people using buildings. The main area of concern is 'dangerous', 'insanitary' and 'earthquake-prone' buildings. The Act requires all territorial authorities to adopt a policy relating to these buildings detailing the approach the territorial authority will take in performing its functions and how it will apply to buildings with heritage value.

This policy has been developed using the special consultative procedure detailed in section 83 of the Local Government Act 2002.

The 'dangerous' and 'insanitary' conditions can apply to any building while a building is deemed 'earthquake-prone' if it meets the criteria detailed in the Building Act.

This policy applies to all buildings **excluding** those used primarily for residential purposes. The exceptions are those residential buildings that are two or more storeys high and contain three or more household units.

DEFINITIONS

For the purpose of this policy the following words are defined as:

Basement	The part of the building below the lowest final exit, and below the ground level.
Building	A temporary or permanent movable or immovable structure intended for occupation by people.
Building Act	Refers to the Building Act 2004.
Collapse	<p>The point at which the structural integrity of the building is impaired, to the extent that a small increase in displacement from the current configuration would cause either:</p> <ul style="list-style-type: none">• further uncontrolled displacement under the influence of the seismic weight alone; or,• strains sufficient to fracture the materials of an element and render that element and any others to which load may be redistributed incapable of supporting the seismic weight.
Dangerous	If, in the ordinary course of events, the building is likely to cause injury or death to people in the building or to people on any other property or would likely damage any other property or, in the event of a fire, injury or death to people in the building or to people on any other property is likely because of a fire hazard or occupancy of the building.
Earthquake-prone	Having regard to its condition and to the ground on which it is built, and because of its construction, the building will have its ultimate capacity exceeded in a moderate earthquake and would be likely to collapse causing injury or death to people in the building or to people on any other property or would likely damage any other property.
Heritage Building	A building listed in Schedule 25.1 of the Dunedin City District Plan.

Improved Capital Value	Means the improved value as shown on the Dunedin City Council rating information database on the date the Building Consent application is applied for.
Insanitary	A building that is offensive or likely to be injurious to health because of how it is situated or constructed or is in a state of disrepair, or has insufficient or defective provisions against moisture penetration, or does not have potable water or sanitary facilities adequate for its intended use.
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.
Storey	The main level(s) above the lowest ground level of a building (excluding below ground basement levels).

OBJECTIVE

The objective of the policy is to describe the manner in which buildings deemed to be potentially dangerous, insanitary or earthquake-prone will be identified, categorised and what action shall be taken and the Dunedin City Council's priorities in performing its functions and how the policy will apply to heritage buildings.

BACKGROUND

Dangerous or Insanitary Buildings

All buildings, at the time of construction are required to meet the safety and sanitary requirements of that era. With time, mainly due to changing safety and sanitation requirements, neglect, unauthorised building alterations or unauthorised change in use, a building can become dangerous and/or insanitary. Some events may also change the status of a building, for example, a major fire.

Earthquake-prone Buildings

Earthquakes can occur anywhere in New Zealand with the highest activity being along the Alpine Fault. Dunedin also has the Akatore Fault lying off the southern coast (see Appendix 1 – Earthquake Hazards). Both faults have the potential to cause damage to the City.

Prior to the 1931 Hawke's Bay earthquake there was no building code in New Zealand. Since that time there have been six codes that have progressively increased the structural performance criteria for buildings. All codes require the minimum life expectancy of a building to be 50 years.

It has only been the Building Acts 1991 and 2004 that have included provisions that describe an 'earthquake-prone' building. The latest Act has lifted the minimum structural performance criteria to be met by existing buildings.

Dunedin has numerous heritage/historic buildings that make up the character of the City. While they were constructed before the first building code was introduced, because of the style of construction, they may well withstand the effects of an earthquake. Heritage buildings will therefore be treated generally the same as any other building.

Seismic Risk to Dunedin City

The two main 'threats' to Dunedin City are the Akatore and Alpine Faults. The following table describes the estimated recurrence interval for the faults and the

possible effects on Dunedin. The intensity measurement used is the Modified Mercalli Intensity Scale (Appendix 2) that describes the effects of shaking at a particular point.

Table 1 – Geological Faults That Will Provide Earthquake Activity Affecting Dunedin

	Estimated recurrence interval	Last event date	Next event	Estimated intensity	Probability earthquake will cause MM 7 +
Akatore Fault	2000 years	~1100 years ago	Unknown but considered a threat to the City	MM 7 – 8	23.2%
Alpine Fault	300 years	1717	Overdue	MM 7 – 8	3.2%

Dunedin is in an area of relatively low seismic risk when compared with other parts of the country, however, the Civil Defence Emergency Management Act 2002 requires a precautionary approach to risk even if there is scientific and technical uncertainty about the risk. While this approach is not necessarily required for this policy it is accepted that there is a low risk to the City and this policy reflects that risk.

PROCESS

Dangerous Buildings

Assessment

A desktop assessment using records held by the Dunedin City Council will not necessarily identify buildings that may be potentially dangerous. Buildings that are occupied by large numbers of people generally have a warning system in place and are included in the 'Building Warrant of Fitness' regime.

The Council will therefore only assess a building when there has been an event that may have affected the structural integrity of the building, for example a fire, or a complaint is received from a member of the public, a building tenant or another agency/department about a potentially dangerous building.

The Council will continue to work collaboratively with other agencies to identify and minimise the potential for the dangerous use of buildings.

Action

The Building Act outlines the actions to be taken when a building is deemed to be dangerous. They include:

- ♦ Installation of hoardings or fences placed to prevent access and injury
- ♦ Attaching warning notices warning people not to approach the building
- ♦ Initiating prosecution if buildings used after notices or hoardings are in place
- ♦ Giving written notice requiring removal of danger in a stated time period
- ♦ Initiating prosecution where there is failure to comply with notice
- ♦ Applying to the District Court to carry out the work to remove the danger, or demolish, where the work is not completed or is not proceeding with reasonable speed
- ♦ If immediate action is necessary to fix dangerous conditions the Council may take that immediate action and apply to the District Court to confirm the action
- ♦ Recovering all costs involved from owner
- ♦ Placing a charge on the land until the Council recovers the costs.

Insanitary Buildings

Assessment

A desktop assessment using records held by the Dunedin City Council will not necessarily identify buildings that may be potentially insanitary. The Council will therefore only assess a building when a complaint is received from a member of the public, a building tenant or another agency/department about a potentially insanitary building.

Action

The Building Act outlines the actions to be taken when a building is deemed to be insanitary. They include:

- ◆ Installation of hoardings or fences placed to prevent access and injury
- ◆ Attaching warning notices warning people not to approach the building
- ◆ Initiating prosecution if buildings used after notices or hoardings are in place
- ◆ Giving written notice requiring removal of the insanitary state within a stated time period
- ◆ Initiating prosecution where there is failure to comply with notice
- ◆ Applying to the District Court to carry out the work so that the building is no longer insanitary or to demolish, where the work is not completed or is not proceeding with reasonable speed
- ◆ If immediate action is necessary to fix insanitary conditions the Council may take that immediate action and apply to the District Court to confirm the action
- ◆ Recovering all costs involved from owner
- ◆ Placing a charge on the land until the Council recovers the costs.

Earthquake-Prone Buildings

There are a number of buildings in Dunedin that will not be deemed to be earthquake-prone. The Dunedin City Council accepts that a number of these buildings can be identified during a basic desktop assessment and can be eliminated as 'at risk' buildings. Buildings not eliminated at this time will need to undergo a more detailed assessment.

To further simplify the assessment process a building will only be assessed according to its level of importance. Table 2 indicates a building's importance and whether or not it will be assessed.

Identification

1. The Dunedin City Council will undertake, at no cost to the building owner, an initial desktop screening of Dunedin's building stock to identify those buildings obviously **not** earthquake-prone.
2. An assessment using the 'Initial Evaluation Procedure' outlined in the New Zealand Society of Earthquake Engineers' publication, *"Assessment and Improvement of the Structural Performance of Buildings in Earthquake"* (2006), will be carried out by the building owner on those buildings not eliminated in the first screening assessment. A copy of the resulting assessment report shall be provided to the Council within the timeframes stated in Table 3.
3. If a building is still deemed to be potentially earthquake-prone the owner will be required to carry out a more 'Detailed Assessment' as outlined in the New Zealand Society of Earthquake Engineers' publication, *"Assessment and Improvement of the Structural Performance of Buildings in Earthquake"* (2006). A copy of the resulting assessment report shall be provided to the Council within the timeframes stated in Table 3.

Detailed Assessment

The detailed assessment will be required if a building is deemed to be potentially earthquake-prone at the end of the identification process. The timeframe in which the detailed assessment will be required to be completed will begin when a building is identified as being earthquake-prone.

1. Owners of buildings from which an emergency response service is provided during and after an emergency shall have an appropriately qualified structural engineer assess the building within **two years** of it being identified as earthquake-prone and a copy of the report shall be provided to the Council.
2. The owners of buildings falling into one of the following groups shall have an appropriately qualified structural engineer assess the building within **five years** of it being identified as earthquake-prone and a copy of the report shall be provided to the Council:
 - a. Buildings four or more stories high
 - b. Buildings that have a normal occupancy greater than 500 people
3. Owners of other buildings will be required to have an appropriately qualified structural engineer assess the building, and a copy of the report provided to the Council, when there is a 'change of use' notification or a building consent application for any alteration with a value as estimated on the building consent application form exceeding 25% of the improved capital value of the building.

Table 2 – Approach to Assessing And Strengthening Earthquake-Prone Buildings

IMPORTANCE LEVEL	PRE 1935	1935 CODE	1965 CODE	1976 Code to present
Post-Disaster Functions , e.g., Hospitals, Civil Defence Centres, Police, Air Traffic Control, Power, Radio	VERY ACTIVE (2 years)	VERY ACTIVE (2 years)	ACTIVE (5 years)	MODERATE (10 years)
Contains Crowds or High Value to Community , e.g., Schools, Tertiary Institutions, Medical Centres, Structures over four storeys, normal occupancy of 500 people or more	VERY ACTIVE (2 years)	ACTIVE (5 years)	MODERATE (10 years)	PASSIVE
Contains small crowds or Moderate Value to Community e.g., Hotels, Offices, Apartments less than four storeys	ACTIVE (5 years)	MODERATE (10 years)	PASSIVE	PASSIVE
Low Hazard e.g., Farm Buildings, Isolated Structures, Fences, Walls	PASSIVE	PASSIVE	PASSIVE	PASSIVE

Action*

1. If a building from which an emergency response service is provided during and after an emergency is assessed by the structural engineer as being earthquake-prone, discussions will be held with the building owner(s) regarding what can be done to strengthen the building to at least the minimum design code standard. At the conclusion of the discussions the building owner(s) will be required to strengthen the building, or carry out any other agreed action within 15 years.
2. Owners of other buildings deemed to be earthquake-prone through the identification process or detailed assessment will be required to meet and discuss what is required to upgrade to the minimum design code standard. The time frame for upgrading will be dependant on the degree to which the building is earthquake-prone, the building's importance, occupancy and the number of floors. Table 3 provides the timelines for remedial work.
3. All other buildings will be required to be assessed when there is a 'change of use' and/or alterations are carried out that exceed 25% of the improved capital value of the building.
4. If the Dunedin City Council is satisfied that a building is earthquake-prone and the building owner does not meet the requirements imposed on them as the owner, the Council may:
 - ◆ Install hoardings or fences to prevent people from approaching the building
 - ◆ Attach notices warning people not to approach the building
 - ◆ Initiate prosecution proceedings if buildings are used after notices or hoardings are in place
 - ◆ Give written notice requiring work to be carried out so that the building will not be earthquake-prone within a stated time period
 - ◆ Initiate prosecution proceedings where there is failure to comply with notice
 - ◆ Apply to the District Court to carry out the work to remove the earthquake-prone state, or demolish where the work is not completed or is not proceeding with reasonable speed.
 - ◆ If immediate action is necessary to strengthen the building to remove its earthquake-prone state the Council may take that immediate action and apply to the District Court to confirm the action
 - ◆ Recover all costs involved from owner
 - ◆ Place a charge on the land until the Council recovers the costs.

Table 3 outlines the timeline for assessment and remedial work.

** It should be noted by building owners that the criteria for determining whether a building is earthquake-prone may change with any new or amended Act and/or associated Regulations and this should be taken into consideration when planning upgrade work, i.e., consider 'future-proofing' the building.*

REVIEW PROCESS

At all stages during the decision making process the Dunedin City Council will be available for discussions with the building owner(s). It is accepted that there will be occasions when agreement will not be reached. On such occasions the following process is available:

- ◆ Initial Desktop Assessment Review.

When there is disagreement about the inclusion or exclusion of buildings to be assessed after the initial desktop screening process, a review can be requested within 28 days of the building owner being sent notification of the screening result. An independent, suitably qualified and experienced structural engineer will re-assess the building based on the information used in the screening process and any additional information provided by the building owner.

There will be **no** cost to the building owner for this review.

- ◆ 'Initial Evaluation' Assessment Review

When there is disagreement after the assessment using the 'Initial Evaluation Procedure' the building owner(s) may lodge a request for a formal review of the process. When such a request is received the Dunedin City Council will have a peer review carried out by an independent, suitably qualified and experienced structural engineer.

The cost of lodging an application for a review shall be \$500.00.

INTERACTION WITH OTHER SECTIONS OF THE BUILDING ACT

Alteration to Existing Building

There is no requirement under the Act to require structural upgrading.

However, the Dunedin City Council will require any building to be upgraded to at least one third (33%) of the current design code for a new building on that site if the total value of alterations, as estimated on the building consent application form(s), for building consents granted over a five-year period exceed 25% of the improved capital value of the building.

Change of Use, Extension of Life and Subdivision of Buildings; and, Code Compliance Requirements - Change of Use

The Building Act requires buildings to be upgraded to "as nearly as reasonably practicable" to the current design code standards when there is a change of use, extension of life or the building has been subdivided. This is because a 'change of use' will generally affect the occupancy levels of a building and that in most instances that level will increase.

Therefore, when a notification is received, the Council will require:

1. A structural assessment from an appropriately qualified structural engineer; and, if required,
2. That the building be upgraded "as far as is reasonably practicable" to the current design code standards. The Dunedin City Council will accept 67%, or better, of the current design code for a new building built on that site as being "reasonably practicable".

HERITAGE BUILDINGS

The fact that a building is a Heritage Building will not be a 'trigger' for an assessment for its earthquake-proneness. They will be assessed along with other buildings within the City depending on their importance, occupancy and the number of storeys.

Alterations to a Heritage Building

However, the Dunedin City Council will require any building to be upgraded to at least one third (33%) of the current design code for a new building on that site if the total value of alterations, as estimated on the building consent application form(s), for building consents granted over a five-year period exceed 33% of the improved capital value of the building.

Change of Use of a Heritage Building

Special effort will be made to meet heritage objectives and to avoid the need for demolition. Discussions will take place between the Council and building owners to consider the merits of the building and any risk to people using the building and damage to other property. Dispensations may be considered to avoid work that will have a significant negative impact on heritage places. Strengthening work and building techniques that respect and protect the building's heritage value will be advocated and may be eligible for Council assistance through the Heritage Strategy.

The heritage value of these buildings will be discussed in the Dunedin City Council's Heritage Strategy.

FINANCIAL ASSISTANCE

The Dunedin City Council acknowledges that in instances where structural improvement must be carried out there will be a financial burden on the owner(s).

To help offset some of the initial costs the Dunedin City Council shall waive 30% of the building consent fees, excluding any levies, for any application to strengthen a building to the minimum design standard required by the Building Act.

Where a building owner takes the initiative to structurally upgrade a building to the minimum design standard or better before the process is initiated by another method, providing that the work is carried out within ten (10) years of the adoption of the policy, the Council shall waive the building consent fee, excluding any levies.

RECORDING OF EARTHQUAKE PRONE BUILDINGS

Whenever a report by a structural engineer concludes that a building is earthquake-prone this will be recorded on the property record, and will be included in any future Land Information Memorandum (LIM), and Project Information Memorandum (PIM). Once the building meets the required standard and has been issued a Code Compliance Certificate the record will be amended to show the building has been upgraded.

EDUCATION

Information about this Policy will be included with Resource Consent and Building Consent applications to ensure the applicant is aware of the new requirements.

POLICY REVIEW

This policy will be reviewed:

- ◆ Five years from the adoption of the policy (Building Act 2004)
- ◆ If there is a change to the Building Act or Building Code which requires an earlier review
- ◆ If Dunedin has an event that gives cause to reconsider the risk to the City.

Any review or amendment must be in accordance with the provisions of the Local Government Act 2002. This policy will not cease to have effect if it is due for review or is undergoing a review.