

Council-owned Earthquake-prone Buildings Policy

Team and Department:	Property and Facilities, Planning and Environment
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1. Purpose:

To guide the management of risk associated with council-owned buildings that have been classified as earthquake-prone. This policy explains how Central Otago District Council will comply with the Building (Earthquake-prone Buildings) Amendment Act 2016 which places obligations on territorial authorities to identify and strengthen earthquake-prone buildings within a certain timeframe.

2. Principles:

This policy is based on the following principles:

- Identifying the risk – Categorise council buildings based on priority to determine timeframes for assessment and action
- Addressing the risk – Establish risk controlling mechanisms and targets which balance the likelihood and consequence of the risk with the alternatives and cost to address it
- Taking action – Set realistic timeframes for assessment and management of building related seismic risk.

3. Scope:

This policy applies to all Central Otago District Council-owned buildings. It does not apply to the seismic performance of infrastructure such as bridges, reservoirs and dams.

This policy:

- Sets criteria for identification of significant buildings
- Determines for both significant and non-significant buildings
 - What type of assessments are required and when?
 - NBS% targets and other information required for decision making on strengthening.
- Describes what information will be made available regarding council facilities.

4. Definitions:

- Building importance level – Building type category as specified by Clause A3 of the Building Regulations 1992. There are five levels of building importance based on the nature of the building and its use.

- Earthquake-prone building – Is a building which will have its ultimate capacity exceeded in a moderate earthquake, and if it were to collapse, would do so in a way that is likely to cause injury or death to persons in or near the building.
- Detailed seismic assessment (DSA) – An accepted comprehensive quantitative assessment of the strength and deformation capability of a building. This seismic assessment is carried out in accordance with Part C of the current Engineering Assessment Guidelines.
- Initial seismic assessment (ISA) – The recommended first qualitative step in the overall assessment process. It is carried out in accordance with Part B of the current Engineering Assessment Guidelines. This involves a high level of assessment and has a higher level of error than the detailed seismic assessment.
- New building standards (%NBS) – This refers to the building standards in the most recent amendments of the Building Act 2004. It measures the earthquake rating of a building against the standards and is expressed as %NBS. It measures how the building is likely to perform in a moderate earthquake.
- Significant buildings – Buildings which meet the criteria outlined in this policy and due to their function and due to their function, should have a high priority and focus on their seismic performance.

5. Legislative Framework:

The Building (earthquake-prone buildings) Amendment Act came into effect in July 2017 and sets out special provisions for earthquake-prone buildings.

The Act sets out new standards for seismic strength and provides a framework for the earthquake rating of a building to be assessed.

This Act is important for local authorities as it places them under an obligation as building owners to strengthen their buildings with certain timeframes depending on building use and geographic location. Central Otago is defined as a medium risk area and the table below sets out the timeframes for assessments and strengthening work.

Seismic risk area	TAs must identify potentially earthquake-prone buildings by:		Owners of earthquake-prone buildings must carry out seismic work within (time from issue of EPB notice):	
	Priority	Other	Priority	Other
High	1 January 2020	1 July 2022	7.5 years	15 years
Medium	1 July 2022	1 July 2027	12.5 years	25 years
Low	N/A	1 July 2032	N/A	35 years

5.1. Earthquake Risk:

Section 133AC of the Building (earthquake-prone buildings) Amendment Act 2016 defines the meaning of earthquake ratings as follows:

- (1) In this Act, earthquake rating, in relation to a building or a part of a building that a territorial authority has determined is earthquake-prone, means the degree to which the building or part meets the requirements of the building code—
 - (a) that relate to how a building is likely to perform in an earthquake; and
 - (b) that would be used to design a new building on the same site; and

- (c) as they apply on the day on which this section comes into force.
- (2) The earthquake rating of a building or a part of a building—
- (a) is determined by a territorial authority in accordance with the EPB methodology; and
- (b) is specified on the EPB notice issued for the building or part and recorded in the EPB register; and
- (c) determines the form of the EPB notice issued for the building or part.
- (3) An earthquake rating may be expressed as a percentage or a percentage range.

At risk buildings are classified as either earthquake-prone or earthquake risk. The categories of earthquake-prone buildings in the Building Regulations 2005 are:

% of New Building Standard (NBS)	Approximate risk relative to a new building	Life-safety risk description
<20	10-25 times greater	High risk
20-33	25 times greater	Very high risk

An earthquake risk building is a building that is assessed at being between 34% NBS and 67% NBS. While the risk of injury or death being caused by these buildings is lower than an earthquake-prone building, the risk of damage to the building remains high.

5.2. Significant Buildings:

The Building Regulations 1992 sets out a framework for determining the importance of a building. Council will use this framework to prioritise buildings for seismic strengthening.

Building Regulations 1992 Clause A3		
Importance Level	Description of building type	Specific structure
Level 1	Buildings posing low risk to human life or the environment, or a low economic cost, should the building fail. These are typically small non-habitable buildings, such as sheds, barns, and the like, that are not normally occupied, though they may have occupants from time to time.	<ul style="list-style-type: none"> Ancillary buildings not for human habitation Minor storage facilities Backcountry huts
Level 2	Buildings posing normal risk to human life or the environment, or a normal economic cost, should the building fail. These include single family dwellings and carpark buildings.	<ul style="list-style-type: none"> All buildings and facilities except those listed in levels 1, 3, 4, and 5.
Level 3	Buildings of a higher level of societal benefit or importance, or with higher levels of risk-significant factors to building occupants. These buildings have increased performance requirements because they may house large numbers of people (more than 250), vulnerable populations, or occupants with other risk factors, or fulfil a role of increased importance to the local community or to society in general.	<ul style="list-style-type: none"> Buildings where more than 300 people congregate in one area Buildings with primary school, secondary school, or day care facilities with a capacity greater than 250 Buildings with tertiary or adult education facilities with a capacity greater than 500 Healthcare facilities with a capacity of 50 or more residents but not having surgery or emergency treatment facilities

		<ul style="list-style-type: none"> • Jail and detention facilities • Any other building with a capacity of 5,000 or more people • Buildings for power generating facilities, water treatment and other public utility facilities not included in level 4 • Buildings not included in level 4 or 5 containing sufficient quantities of highly toxic gas or explosive materials capable of causing acutely hazardous conditions which do not extend beyond the property.
Level 4	Buildings that are essential to post-disaster recovery or associated with hazardous facilities.	<ul style="list-style-type: none"> • Hospitals and other health care facilities having surgery or emergency treatment facilities • Fire, rescue, police stations and emergency vehicle garages • Buildings intended to be used as emergency shelters • Buildings intended to be used by the owner to contribute to emergency preparedness, or to be used for communication, and operation centres in an emergency, and other facilities required for emergency response. • Power generating stations and other utilities required as emergency backup facilities for level 3 structures • Buildings housing highly toxic gas or explosive materials capable of causing acutely hazardous conditions that extend beyond property boundaries • Aviation control towers, air traffic control centres, and emergency aircraft hangars • Buildings having critical national defence functions • Water treatment facilities required to maintain water pressure for fire suppression • Ancillary buildings (e.g. communication towers, storage tanks) required for operation of importance level 4 structures during an emergency.
Level 5	Buildings whose failure poses a catastrophic risk to a large area (e.g. 100 km ²) or a large number of people (e.g. 100,000).	<ul style="list-style-type: none"> • Major dams • Extremely hazardous facilities.

6. Policy:

6.1. Identification of Significant Buildings:

Council will prioritise seismic assessment and strengthening on significant buildings in its portfolio. These buildings will have been identified as potentially earthquake-prone by:

- Council (as building owner) undertaking engineering assessments; or
- Council (as the regulatory body) acting under s 133AG of the Building (Earthquake-prone Buildings) Amendment Act 2016.

A building will be classified as being significant under this policy if it meets one or more of the following criteria:

- The building is classified as importance level 3 or higher in terms of clause A3 of the Building Regulations 1992
- The building has unreinforced masonry which, if it were to collapse, could fall onto any part of public road, footpath or other thoroughfare (s 133AF (2) Building (Earthquake-prone Buildings) Amendment Act 2016)
- The building is identified by Council as being significant due to the serious risk that would be realised if the building collapsed.

6.2. Seismic Assessments and Timeframes:

Initial seismic assessments (ISAs) will be undertaken, or existing assessments reviewed for all significant buildings.

Detailed seismic assessments (DSAs) will be undertaken on buildings in the following circumstances and timeframes:

	Significant buildings	Non-significant buildings
Criteria when DSA required	On receiving an ISA indicating a preliminary rating of less than 50% NBS.	On receiving an ISA indicating a preliminary rating of less than 34% NBS.
Timeframe to obtain DSA	DSA to be completed within 36 months of receiving ISA. If the ISA is already held, the DSA must be completed no later than 30 June 2022.	DSA to be completed within 36 months of receiving ISA. If the ISA is already held, then a DSA must be completed no later than 30 June 2022.

Where a DSA assessment of less than 34% NBS, a description of the recommended strengthening works and a high level cost estimate will be obtained as part of the assessment.

6.3. Seismic Performance Minimums and Targets:

For buildings with a DSA result of less than 34%NBS, Council will:

- Implement a plan that informs users of the risk
- Consider whether or not the building qualifies for an exemption to strengthening under s133AN Building (Earthquake-prone Buildings) Amendment Act 2016
- Obtain detailed design options and costs for seismic strengthening to at least the legislative minimum of 34%NBS
- Where the works are of a level that trigger upgrade to comply with current Building Code requirements, then assess what those requirements are and the level of cost estimate
- Following detailed design and costs being completed, consider the future of the building and levels of service to the community
- If appropriate, programme strengthening works into the Long-Term Plan to meet statutory timeframes.

When major structural building work is being planned, options should be presented which comply with the Building Act and meet >34%NBS, or >67%NBS for 'priority buildings'.

6.4. Emergency Management Plans:

Certain Council buildings have been identified in district emergency management plans as 'priority buildings' due to their role in post disaster recovery. These buildings need to meet 67%NBS due to their importance. Where a building listed in an emergency management plan has been identified as earthquake-prone or earthquake risk, Council will explore alternative buildings to be used as an emergency centre and, if none are deemed suitable, prioritise strengthening the building.

7. Relevant Legislation:

Building (Earthquake-prone Buildings) Amendment Act 2016

Building (Specified Systems, Change of Use, and Earthquake-prone Buildings) Regulations 2005

Building Regulations 1992