

CLUTHA DISTRICT COUNCIL POLICY

Policy Number	06 – 04 – 001	Earthquake Prone
Prepared by	Regulatory Services Manager	Buildings
Authorised by	Council	
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Policy on Earthquake Prone Buildings

Purpose

The intent of the policy is to limit the risk to people and property as a result of earthquake shaking.

This policy sets out the trigger actions for identification, assessment and improvement (if required) of earthquake prone buildings

Policy

Seismic Risk and Strategy

Timescales for the implementation of agreed strategies for earthquake prone buildings are set out and these depend on the building's function and degree of seismic risk.

Seismic risk is measured by comparing the assessed performance of a particular building to the performance required of a new building designed to the current New Zealand Building Code. Seismic risk is expressed as a percentage of current code standard.

The level of seismic risk in the Clutha District is mitigated by its remoteness from major tectonic faults with short earthquake return periods. In addition the district contains few buildings of a size and configuration that would be seismically vulnerable.

This policy reflects a simple approach toward the identification and treatment of earthquake prone buildings. Most buildings in the district will not require any assessment of seismic capacity. However, Council will screen all applications for building consents, and will progressively check for risk across the district over the next ten years.

The focus will be on high-risk buildings which do not meet the minimum 33% of current code. High risk buildings are those that have concrete, brick, stone or block components (excluding chimneys) above 4m in height and which are outside the scope of section 11.7.1 of NSZ3604:1999.

The buildings most likely to be of concern in the Clutha District are multi-storey buildings built from un-reinforced brick, concrete, stone or block.

This policy does not apply to buildings used wholly or mainly for residential purposes, unless they are multi-storey buildings with 3 or more household units.

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Procedures

Applications for Building Consents

This will apply when applications to Council are made in respect of:

- Alteration of buildings (Section 112 of the Building Act)
- Change of use of buildings (Section 115 of the Building Act)
- Extension of life of buildings with limited life (Section 116 of the Building Act)
- Subdivision of buildings (Section 116A of the Building Act)

On receipt of one of the above applications, Council will check to see whether the building is high-risk. If it is, Council will require an initial evaluation of the building at the applicant's expense.

Council evaluation

In addition, Council may at its discretion carry out preliminary investigations of buildings within the District. In these cases, the preliminary investigation will be at Council's cost.

Council will focus its investigations for the first two years primarily on critical buildings (civil defence, medical, fire and police facilities) and public buildings that require an Evacuation Scheme (under the Fire Service Act 1975) due to high public usage.

Council will then progressively check other buildings throughout the District over the following eight years, with the priorities and resources set through the Annual Plan process.

If a preliminary investigation identifies that the building may be earthquake prone the council may direct the building owner to commission an initial evaluation process (IEP). The timeframes for providing the IEP report are set out in section 3 of this policy. The IEP report shall be submitted in full to the Council who may at its discretion direct the building owner to commission a detailed seismic assessment.

Heritage buildings

Heritage buildings will be considered on a case by case basis in consultation with the building owner, the New Zealand Historic Place Trust and any other relevant heritage groups. Due emphasis will be attached to heritage assets that are valued by the community.

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Assessment

Three levels of assessment may be carried out. In increasing rigour, and therefore cost, these are:

- 1) Preliminary investigation (desktop exercise commissioned by Council to ensure complaints and Council identified concerns not related to applications do not impose unwarranted expenses on building owners)
- 2) Initial evaluation process (report by an appropriately experienced structural chartered professional engineer, which may be all that is necessary to confirm that the building is not earthquake prone)
- 3) Detailed seismic assessment (detailed assessment and report by an appropriately experienced structural chartered professional engineer)

The appropriate level of assessment will be decided by the Council in consultation with the building owner and their structural engineer.

When a seismic assessment report is required as a result of an application under Sections 112, 115, 116 or 116A of the Building Act, the report shall be provided to Council before Building Application processing can be completed.

Where Council has requested further seismic assessment having completed its own preliminary investigation, the report shall be provided to Council within 12 months for buildings requiring an Evacuation Scheme. Reports on other buildings shall be provided to Council within 2 years. Failure to provide further seismic assessment may result in Council issuing a "Notice to Fix" requiring the owner to provide proof of compliance with section 122 of the Building Act.

Action to be taken

If a building is deemed to be earthquake prone after the structural assessment, meetings will be held with the building owner to develop an appropriate strategy for strengthening the building to appropriate standards. At the conclusion of the consultation the building owner will be required to implement the agreed strategy. This may include appropriate strengthening works, changing to a lower risk building use, or demolition as a last resort.

The timeframe for the implementation strategy will depend on the building's seismic capacity. The following table is an appropriate guide for non-critical buildings:

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Seismic Capacity	Timeframe
33% or more current design code	No action required
25-32% current design code	25 years
20-24% current design code	20 years
Less than 20%	15 years

Demolition is not an option in the case of a listed heritage or historic building unless the appropriate approvals are obtained.

This section addresses minimum design standards for structural improvement. This matter requires the exercise of sound technical judgement and will be the subject of consultation between the council and building owner and their respective advisors. Clearly, critical buildings that have a civil defence role, medical facilities, fire stations, buildings with high occupancy and the like would require a higher standard of seismic capacity.

Ideally, buildings would be retrofitted to achieve 100% current code. This may however be economically unrealistic. Equally, it would appear unreasonable to upgrade a building to standard significantly in excess of what would be deemed earthquake prone, as this would require the building to be upgraded to a higher standard than other buildings in the locality that are not earthquake prone or have not been subject to applications under the Building Act.

Accordingly, a desirable standard for retrofit is set at 67% current code and a minimum at 33% current code. The retrofit standard for a particular building would be set by council in consultation with the building owner and their respective advisors.

Action may be taken by Council under Section 124 of the Building Act 2004 where buildings are less than 33% of Code standard, and owners have failed to agree to a management strategy with Council, or failed to implement the agreed management strategy.

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Definitions

Earthquake prone building –

Section 122 of The Building Act 2004 defines earthquake-prone buildings as:

- (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 –

For the purposes of s122 a moderate earthquake is defined in the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 as:

“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 the site.”

That means that an earthquake prone building would be one whose seismic capacity was 33% current code or less.

Relevant Legislation

- Building Act 2004, subpart 6.
- Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005, section 7.
- Local Government Act 2002, section 83.

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Legal Compliance

Section 131(1) of the Building Act 2004 requires all territorial authorities to develop and implement a policy on earthquake prone buildings. Section 131(2) stipulates that the policy must state –

- (a) the approach that the territorial authority will take in performing its functions under this Part; and
- (b) the territorial authority's priorities in performing those functions; and
- (c) how the policy will apply to heritage buildings.

Section 132(1) requires that this policy must be adopted in accordance with the special consultative procedure under s83 of the Local Government Act 2002.

Related Policy and Documents

N/A

Key Words

Earthquake prone buildings, heritage buildings, Building Act 2004.