

WCC ASSESSES QUAKE-PRONE BUILDINGS

All Territorial Authorities are required to have an earthquake-prone building policy. Wellington City Council has taken an active approach but, like councils around the country, will be considering reports from Christchurch building failures.

By Claire Stevens, Wellington City Council

New Zealand's capital sits astride the visually striking Wellington fault, and there are major faultlines to the east and west of the city. Wellingtonians have watched how Canterbury has dealt with its earthquakes over the past year with trepidation. This is not surprising given that Wellington, not Christchurch, had always been seen as the city facing the biggest quake risk.

Wellington City Council has had an active approach to earthquake-prone buildings since the 1970s. A building safety policy was adopted in the 1990s, which documented the assessment of buildings that were likely to be earthquake-prone under the Building Act 1991.

Work was undertaken to strengthen many Wellington buildings to either two-thirds of the 1965 Code (NZS1900: chapter 8) for normal buildings or 100% for heritage buildings. For Wellington, 100% of the 1965 Code is somewhere between 25 and 35% of the current new building standard. Thus, these buildings have often been reidentified as earthquake-prone as part of the current process.

Council's earthquake-prone building policy

The Building Act 2004 required all Territorial Authorities in New Zealand to adopt an earthquake-prone building policy. It also changed both the scope of buildings to be considered and the point at which a building would be determined to be earthquake-prone along the building strength continuum.

The council initially adopted its policy in May 2006, giving building owners relatively short timeframes of 5–15 years in which to complete strengthening work. A special timeframe of 2 years was included for buildings that had previously been issued with section 66 notices under the 1991 Act. In conjunction with the policy, development work started to estimate:

- how many buildings required assessments
- what tools were available
- who would undertake assessments.

Heritage buildings are treated similarly to other buildings in the policy so that they are preserved. It is important that work is undertaken if they are earthquake-prone. Limited funding is available for building owners to assist with strengthening of heritage buildings.

In 2008/09 the policy was reviewed, taking into account lessons from the Gisborne earthquake and feedback from the public. Councillors voted to extend the timeframes to between 10 and 20 years and provide some flexibility for owners of multiple earthquake-prone buildings to negotiate the staging of strengthening work.

Structures built after 1976 likely to meet criteria

The loading standard NZS 1170.5:2004 *Structural design actions – Earthquake actions – New Zealand* was compared with previous loading standards for buildings in Wellington city. This showed that structures built



The 1940s City Gallery has been strengthened in recent years. © Wellington City Council.

after 1976 were unlikely to fall below the current criteria for earthquake-prone buildings. Using the initial evaluation process developed by the New Zealand Society for Earthquake Engineering, it was estimated there were about 3,800 properties to assess across the city.

Procedures to support the policy were developed while a pilot group of assessments aided fine-tuning. These procedures are still being reviewed as new issues arise. Recently, this has included colour-coding the notices that are attached to buildings deemed to be quake-prone.

Evaluating quake-prone buildings

A summary of the information that the council holds about the building, including previous strengthening, is sent to engineering consultants. They undertake a site visit and prepare an initial evaluation process (IEP) assessment. Council then notifies the owners that the building is:

- unlikely to be earthquake-prone (if the result is over 34%)
- potentially quake-prone (if the result is less than 34%).

The owners have an opportunity to provide additional information to show that the building is better than the council's assessment.

If the owners agree that the building is earthquake-prone or if the council receives no response, the council issues a section 124 notice setting out the required timeframe for strengthening.

Some owners are prompt in providing information, and there has been a marked increase in interest since the Christchurch quakes. Tenants are putting pressure on owners to get strengthening work under way or are threatening to shift to new premises. The prospect of no rental income is likely to focus the attention of building owners.

Increase in strengthening work consents

Strengthening of buildings has proceeded relatively slowly during the past 3 years of difficult economic times. But the Christchurch quakes have prompted an increase in applications for building consents for strengthening work.

Council has assessed 2,957 Wellington buildings so far. Of these, 2,072 are unlikely to be earthquake-prone, 203 have had a notice issued and the remainder are part-way through the process. About 1,300 properties are yet to be assessed. The project is due to be completed by June 2013.

Council a significant owner of city property

Wellington City Council not only has to implement the regulatory aspects of this policy, but as a significant property owner, it has identified several buildings as earthquake-prone including the Town Hall and its 7-storey 1950s headquarters next door. Some \$42 million has been budgeted for the strengthening work, and planning is well under way. Other landmark buildings on the council's portfolio, such as the 1940s City Gallery and the 1920s Embassy Theatre, have been strengthened in recent years.

Comprehensive policy review in the pipeline

In light of the Christchurch quakes, the council has started a comprehensive review of its earthquake-prone buildings policies. A report was considered by Mayor Celia Wade-Brown and councillors in September.

Results from the technical investigation of buildings in Christchurch by the Department of Building and Housing as well as the Royal Commission on building failures caused by the Canterbury quakes may also have an impact on future policy direction. ◀