

First adopted:	April 2017
Revision dates/version:	1
Next review date:	April 2020
Engagement required:	Internal
Document Number	D-2251716
Associated documents:	
Sponsor/Group:	Facilities/Corporate

## SEISMIC PERFORMANCE OF BUILDINGS POLICY

### Purpose and Scope

1. This policy guides the management of building risks associated with seismic events by setting criteria for Significant buildings, frequency of assessments and operating parameters for Council buildings based on industry recognised importance levels for buildings of different functions.
2. This policy applies to all Hamilton City Council owned buildings. **For clarity it does not relate to the seismic performance of infrastructure such as bridges, reservoirs and other infrastructure structures.**
3. This policy:
  - Sets criteria for identification of Significant buildings
  - Determines for Significant and non-significant buildings:
    - When and what type of assessments are required for buildings
    - NBS% operating minimum for buildings
    - NBS% targets for buildings and other information required for decision making on upgrades.
  - Describes what information will be made available / published on Council facilities

### Definitions

New Building Standards (NBS and %NBS)	<p>New Building Standards refers to the building standards set out in the most recent enacted Building Acts.</p> <p>This is often referred to a building having a structural strength that meets a percentage of the NBS (%NBS)</p>				
Detailed Seismic Assessment (DSA)	An accepted comprehensive quantitative assessment of the strength and deformation capability of a building. A seismic assessment 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. A seismic assessment carried out in accordance with Part B of the current Engineering Assessment Guidelines.				
Significant buildings	Buildings that meet the criteria outlined in this policy and due to their function should have a high priority and focus on their seismic performance.				
Building type importance level	<p>Building type category as specified by NZS 1170:2002 or subsequent standard.</p> <table border="1"> <thead> <tr> <th>Importance Level</th> <th>Description of Building Type</th> </tr> </thead> <tbody> <tr> <td>Level 1</td> <td>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</td> </tr> </tbody> </table>	Importance Level	Description of Building Type	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
Importance Level	Description of Building Type				
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.
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.
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.
Level 4	Buildings that are essential to post-disaster recovery or associated with hazardous facilities.
Level 5	Buildings whose failure poses catastrophic risk to a large area (eg, 100 km <sup>2</sup> ) or a large number of people (eg, 100 000).

## Principles of Policy

4. This policy takes a risk-based approach to managing seismic related hazards for Council buildings.
5. The policy framework is based on the following principles:
  - a. Identify the Risk – categorise Council buildings into levels of priority using relevant risk factors and undertake appropriate assessments to better understand risks
  - b. Plan to address the risk – establish considered controls for buildings and targets that balances risk likelihood, consequence and investment
  - c. Take action in reasonable timeframes – set realistic timeframes for assessment and management of building-related seismic risk.

## Policy

### Identification of Significant Buildings

6. Council will prioritise seismic assessment and upgrades on Significant buildings contained in its building portfolio (refer Schedule 1).
7. A building will be classified as being Significant under this policy if it meets one or more of the following criteria. The building is:
  - a. A building type that is a minimum of Importance Level 3 (IL3).
  - b. Located where if it were to collapse that it could significantly disrupt motor vehicle movements on Critical Roads as shown in Schedule 2.
  - c. Identified by Council as being Significant due to serious risks that would be realised if the building collapsed.

### Seismic assessments and timeframes

8. Initial Seismic Assessments (ISAs) will be undertaken or existing assessments reviewed for all Significant Buildings by 30 June 2018.
9. A risk assessment will be undertaken on all non-critical buildings and where considered necessary, an ISA will be undertaken. Risk assessments will be completed by 30 June 2018 and any subsequently required ISAs by 30 June 2019.

10. Detailed Seismic Assessments (DSAs) will be undertaken on buildings in the following circumstances and timeframes:

	<b>Significant buildings</b>	<b>Non- significant buildings</b>
<b>Criteria when DSA required</b>	On receiving an ISA (by 30 June 2018) indicating a preliminary %NBS of less than 50%	On receiving an ISA (by 30 June 2019) indicating a preliminary %NBS of less than 34%
<b>Timeframe for gaining DSA</b>	DSA to be undertaken within 18 months of receiving ISA (no later than 31 December 2019)	DSA to be undertaken within 36 months of receiving ISA (no later than 30 June 2022)

11. Detailed Seismic Assessments will not be confirmed until a peer-review by a Chartered structural engineer (CPENG) has been undertaken.

### Seismic performance minimums and targets

12. For buildings with a DSA indicating a %NBS of less than 20%, Council should:
- Urgently implement a plan that minimises risks associated with the specific structural weaknesses that cause the %NBS score of less than 20% and/or
  - Vacate the building until work is undertaken to increase seismic performance to above 20%NBS.
13. In determining the appropriate course of action in response to a DSA where a build has a %NBS of less than 20%, staff will make a recommendation to Council following the consideration of various factors including:
- Whether the building is open to the general public
  - The degree to which any safety risks from the specific structural weaknesses that cause the %NBS score of less than 20% can be mitigated through controls other than closing the building
  - The impact on the community if the building was to be closed and be non-operational.
14. For buildings with a DSA indicating a %NBS of between 20% and 33%, Council will obtain detailed options and cost for seismic strengthening of the building to the legislative minimum and the relevant long-term seismic performance target in this policy.
15. When major structural building work is being planned on buildings, options should be presented that achieve the minimum compliance with the Building Act (i.e. increase the seismic performance rating to achieve compliance with the legislation (i.e.>33%NBS) and >67%NBS.

### Information on Council buildings

16. To allow informed use of Council buildings by the public, the relevant %NBS of each Council building will be made publically available once a DSA has been finalised on the building.

## SCHEDULE 1 – SIGNIFICANT BUILDINGS AND IMPORTANCE LEVELS

Building	Construction Date(s)	Importance Level (IL) Rating	Rationale for IL
Waterworld	1974 - 2007	3	Major public facility – potentially large crowds
Gallagher Aquatic Centre	1997	2	Major public facility
Hamilton Park Cemetery – Crematorium and Chapel	1962 - 2000	3 – 4 (crematorium)	Post-disaster function for crematorium and place of public assembly
Transport Centre Building	2001	3	Principal public transport terminal
Pukete Waste Water Treatment Plant	1976	4 (key buildings for basic treatment) 3 (other buildings)	Key buildings required for basic post disaster functions
Waiora Water Treatment Plant	1971	4 (key buildings for basic treatment) 3 (other buildings)	Key buildings required for basic post disaster functions
Refuse Transfer Station – Hazards Building	1985	3	Hazardous substance storage
Claudlands Events Centre – Arena, Conference Centre, Exhibition Halls and Holman Stand	1976 - 2011	3 – 4 (key buildings)	Key buildings required for post disaster functions
Te Rapa Sports Dome	1998	3	Major public facility – potentially large crowds
Duke Street Depot - Dangerous Goods Store	2003	3	Hazardous substance storage
Municipal Building (including Caro wing)	1960 - 1982	3	Major public facility
Hamilton Gardens Pavilion	1989	3	Major public facility – potentially large crowds
Buildings at Hamilton Zoo acting as enclosures for: <ul style="list-style-type: none"> <li>• African Hunting Dog</li> <li>• Cheetah</li> <li>• Chimpanzee</li> <li>• Rhino</li> <li>• Tiger</li> </ul>	1999 - 2012	3	Contains dangerous animals
Central Library	1960 - 1968	2	Major public facility
Waikato Museum	1985	2	Major public facility
Artspost	1916	2	Un-reinforced masonry prior to 1935
Seddon Park Buildings and Light Towers	1991 - 2000	3	Major public facility – potentially large crowds
Waikato Stadium – Stands, and Lighting Towers	1965 - 2003	3	Major public facility – potentially large crowds
Founders Theatre	1962	3	Major public facility – potentially large crowds

## SCHEDULE 2 – CRITICAL ROADS FOR IDENTIFYING SIGNIFICANT BUILDINGS

