

Seismic Risk Evaluation for Wellington City Council

Embassy Theatre Kent Terrace



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Kestrel Seismic Risk Evaluation Report on Embassy Theatre 20250728

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Executive Summary

Overview

The Embassy Theatre is located on the corner of Kent Terrace and Marjoribanks Street at the end of Courtenay Place, a busy Wellington inner-city district for entertainment and nightlife. The building includes a cinema complex, the last remaining one in this inner-city area, a restaurant and other food and commercial outlets. The three storey concrete façade cinema complex includes one large theatre and two smaller cinemas below.

The building was originally constructed in 1924, prior to any requirement to design for specific seismic loadings, as a reinforced concrete building with a riveted steel substructure on shallow concrete foundations and a lightweight roof structure. It has been strengthened and redeveloped in three stages from 2001 when two basement theatres were added. Further strengthening and fitout additions occurred during 2009 and 2010.

The building is recognised as a place of historical/cultural significance by Heritage New Zealand and has a Category 1 heritage listing.

A Detailed Seismic Assessment (DSA) of the Embassy Theatre has recently been undertaken by Dunning Thornton Consultants on behalf of Wellington City Council as owner of the building. The DSA indicates an earthquake rating of 30%NBS assuming an Importance Level 3 (IL3) for the building with some building elements scoring below the earthquake-prone threshold of 34%NBS.

This rating, plus the exposure of people within and around the building, mean that the building has been confirmed as earthquake prone by the regulatory arm of Wellington City Council. We have subsequently been advised that the new deadline to complete strengthening work on the Embassy is now 2041, which includes the four year extension to remediation deadlines due to the Government's review of the earthquake-prone building legislation.

Seismic Risk Evaluation

Wellington City Council, as the owner of the building, is seeking an independent evaluation of the current seismic risk posed by the building. The purpose of this risk evaluation is to inform their decision on the continuing occupation of the building, and to identify any short-term risk mitigation measures to be implemented while broader planning for the strengthening of the building is undertaken.

This report summarises known seismic information on the structure, and provides a qualitative risk evaluation which assesses the current seismic risk to the regular occupants and different users of the building, and to people in surrounding public areas.

This risk evaluation draws upon the 2021 BRANZ decision framework for council-owned earthquake-prone buildings and the seismic risk guidance produced by MBIE last year.

Seismic Vulnerability and Risk Exposure

Two issues limit the seismic rating to 30%NBS: inadequate tying of the front Kent Terrace façade back into the Marjoribanks Street external shear wall; and the out-of-plane vulnerability of the south wall above roof truss level.

The connection of the front Kent Terrace façade to the shear wall along Majoribank Street is limited by the weak capacity of the encased steel beam rivet to column connection and lack of bracing capacity due to large window openings. In strong shaking there could be rupture at this point, leaving the north-west corner of the building vulnerable.

The south wall supporting the high side of the lightweight roof cantilevers 4.5 metres above the steel roof trusses that span the main theatre space. The wall has limited out-of-plane capacity. Possible hingeing immediately above the steel roof trusses could lead to wall collapse into the empty southern lot.

Additionally, the plaster ceiling over the main theatre has also been rated as 30 to 40%NBS because of uncertainty about bracing capability. Foundations are rated at 35%NBS due to possible loss of support due to liquefaction of subsoil layers.

Occupancy of the building is characterised by a limited number of full-time staff and a fluctuating number of cinema attendees, generally between about noon and 11pm at weekends and 5pm to 11pm during weeknights. This typically involves between 100 and up to 900 people, most of whom are in or around the building for an average of 2 hours.

Consequence of Closure

Closure of the Embassy Theatre would have a negative effect on the area, and to the cinema-going public of Wellington. It is likely to impact a number of restaurants, food outlets and bars in the vicinity that currently benefit from the Embassy's patronage. It would also reduce options for cinema screening in Wellington. The nearby Reading complex is closed, leaving only Lighthouse Cuba to regularly screen films in central Wellington.

There would also be contractual issues to resolve with Event Cinemas, the operators of the complex.

Overall Evaluation of Risk

Strengthening already undertaken between 2001 and 2010 clearly reduces the seismic risk from its original form. Vulnerabilities identified show that structural damage is now unlikely in *moderate infrequent* earthquakes (eg. 100 year return period or 1% annual probability of occurrence). The shaking intensity during the Kaikoura earthquake was close to this level and no damage was observed. However under more *significant* earthquake shaking, damage to sections of the building is likely.

The likelihood of an earthquake of sufficient magnitude that could cause structural failure of sections of the building (*significant* earthquake shaking with a 500 year return period) until strengthening is completed, assuming a 2041 end date, is considered moderate (ie. a probability over the 16 year period of 3.2%, or 1 in 31). The chances of a *significant* earthquake occurring while the building is occupied during cinema screenings is lower, at around 0.65% or 1 in 150. This could be reduced if the identified achievable remedial action was undertaken earlier.

Applying the BRANZ decision framework that balances the life safety risk exposure (assessed as *high*) against the consequences of closure (assessed as *moderate*) results in an overall occupancy assessment supporting the building to remain open for its current uses.

Summary and Recommendations

Having regard to the likelihood and consequence aspects outlined above, it is considered that continued occupancy and use of the building is appropriate for the period until strengthening is required to be completed in 2041. However, serious consideration should be given to undertaking earlier remedial work to improve the structural vulnerabilities identified, all of which could be done while the building continues to operate.

1. Introduction

1.1 Background

A Detailed Seismic Assessment of the Embassy Theatre on the corner of Kent Terrace and Marjoribanks Street has recently been undertaken by Dunning Thornton Consultants on behalf of Wellington City Council as owner of the building. The Council has commissioned Beca to do a peer review of the Dunning Thornton assessment.

Dunning Thornton have assessed the seismic rating for the building as being 30% of New Building Standard at Importance Level 3. This rating, plus the exposure of people within and around the building, mean that the regulatory arm of Wellington City Council has confirmed the earthquake-prone status of the building.

1.2 Purpose of risk evaluation

Wellington City Council as the owner of the building is seeking an independent evaluation of the current seismic risk posed by the building to inform their decision on continuing occupation of the building, and to identify any short-term risk mitigation measures to be implemented while broader planning for the strengthening of the building is undertaken.

This report summarises known seismic information on the structure, and provides a qualitative risk assessment which evaluates the current seismic risk to the regular occupants and different users of the building, and to people in surrounding areas.

1.3 Basis of this report

This report is based on the following sources of information on the structure of this building:

- Detailed Seismic Assessment by Dunning Thornton Consultants, Rev B, dated 1/08/2024
- Geotechnical seismic desktop assessment by Tonkin + Taylor dated 5 October 2022
- Email confirmation on 17 July 2025 by Wellington City Council of the estimated numbers of people using and attending the building for the various purposes and functions, and indicative periods of time that they are in or around the building.

In addition, an inspection of the building was undertaken on 18 October 2024 in the company of Dunning Thornton engineers, the Beca peer reviewer and WCC personnel.

This seismic risk evaluation is supported by the application of the 2021 BRANZ document *Managing earthquake-prone buildings – a decision framework*¹. This framework enables the elements of seismic risk to be examined in more detail than in standard engineering seismic assessments, including the risks and consequences associated with closing the building prior to strengthening.

Reference is also made to the 2022 MBIE document *Seismic Risk Guidance for Buildings*². This guidance summarised current thinking around the continued occupancy decision-making for buildings with low seismic ratings.

1.4 Structure of this report

The regulatory context in terms of the earthquake prone buildings provisions of the Building Act and the Health and Safety at Work Act is summarised in Section 2. An overview of the building and the Detailed Seismic Assessment by Dunning Thornton is given in Sections 3 and 4, and an evaluation of the current risk is summarised in Section 5.

An indication of the impacts of the closure of the building is outlined in Section 6 in order to convey the consequences of that decision option.

Recommendations are made in relation to continued occupancy in Section 7, along with shorter-term mitigation recommendations. Key risk messages and other actions are also summarised.

¹ Managing earthquake-prone buildings – a decision framework – November 2021, BRANZ

² [Seismic Risk Guidance for Buildings](#), July 2022, MBIE

2. Regulatory Context

2.1 The Building Act

The earthquake prone provisions of the Building Act 2004 were amended under the Building (Earthquake-prone Buildings) Amendment Act 2016. They contain the requirement for territorial authorities to identify buildings or parts of buildings that are potentially earthquake-prone, to request engineering assessments for them from the owners, and to determine them as being earthquake prone when certain requirements are met.

The Act includes statutory timelines for strengthening or demolishing earthquake-prone buildings but does not preclude continuing to use and occupy them. The time period for buildings in Wellington, a high seismic hazard area, is 15 years from the date of issue of an EPB notice, unless deemed to be Priority Buildings (either because they are constructed of unreinforced masonry and located above nominated thoroughfares, or their failure could impact on a priority route for emergency services), in which a reduced period of 7.5 years applies.

At the time of the Kestrel site visit, the Embassy Theatre appeared to have been designated by Council as a priority building for EPB purposes. Priority buildings include those that could impede strategic transport routes or are situated where unreinforced masonry buildings could fall onto high traffic areas. However, we have subsequently been advised that the priority building designation has been removed, leaving the Council, as owner, a 15 year timeframe from the date of the EPB notice to complete seismic work, ie. extending the end date from 2034 to 2041. This expiry date includes the four-year extension to the deadlines for strengthening or demolition of existing earthquake-prone buildings provided as part of the current Government review of the management of seismic risk to existing buildings.

The Building Act defines dangerous buildings as those that pose an immediate threat to people in and around the building. The definition of a dangerous building and process for managing them is set out in section 121, and excludes consideration of vulnerability to earthquakes. Buildings are not considered dangerous buildings unless they cause immediate danger to the people in or around them in the ordinary course of events.

2.2 The Health and Safety at Work Act

The Health and Safety at Work Act 2015 (HSA) establishes that building owners and employers are considered a person conducting a business or undertaking (PCBU). PCBUs must protect the health and safety of workers (and others) while providing a safe working environment as far as is reasonably practicable.

The meaning of *reasonably practicable* is defined in Section 22 of the HSA as involving the weighing up of all relevant matters, including:

- (a) *the likelihood of the hazard or the risk concerned occurring; and*
- (b) *the degree of harm that might result from the hazard or risk; and*
- (c) *what the person concerned knows, or ought reasonably to know, about—*
 - (i) *the hazard or risk; and*
 - (ii) *ways of eliminating or minimising the risk; and*
- (d) *the availability and suitability of ways to eliminate or minimise the risk; and*
- (e) *after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.*

The Act does not have specific provisions that relate to seismically vulnerable buildings, but Worksafe issued a position statement³ (last updated in June 2018) which notes that:

If a building is found to be earthquake prone, this doesn't necessarily mean that it shouldn't be occupied. The Building Act provides a period of several years for strengthening or demolition work to be undertaken. While the risk to people in or around an earthquake-prone building is greater than an equivalent new building, this doesn't typically require short-term action.

2.3 The Local Government Act

Section 14 of the Local Government Act 2002 requires councils to take the interests of current and future communities into account when making decisions. This means decisions to close council buildings should also account for the economic, social and cultural impacts on the local community. Under this Act, councils must also consider the views and perspectives of people likely to be affected by the decision.

³ [Dealing with earthquake-related health and safety risks: information for PCBUs and building owners](#), July 2022, Worksafe

3. Building Overview

3.1 Site context

The Embassy Theatre is located on the corner of Kent Terrace and Marjoribanks Street at the end of Courtenay Place, a busy Wellington inner-city district for entertainment and nightlife. The building includes a cinema complex, the last remaining one in this inner-city area, a restaurant and other food outlets. The three storey concrete façade cinema complex includes one large theatre and two smaller basement level cinemas below.

3.2 Description of the building

The building was originally constructed in 1924, prior to any requirement to design for specific seismic loadings, as a reinforced concrete building with a riveted steel substructure on shallow concrete foundations and a lightweight roof structure. It has been strengthened and redeveloped in three stages from 2001 when two basement theatres were added. Further strengthening and fitout additions occurred during 2009 and 2010.

The building is recognised as a place of historical/cultural significance by Heritage New Zealand and has a Category 1 heritage listing.

3.3 Building usage

In addition to the main cinema complex operated by Events Cinemas, the Embassy Theatre building contains other tenancies: two restaurants, other food outlets and a shoe repair retail space. The New Zealand Film Festival Trust also has an office in the building.

The main cinema has a maximum capacity of 750 and the two basement level cinemas have seating for 76 each. Films are screened evenings during week days and generally from midday until late on weekends.

The Capital restaurant on the corner of Marjoribanks and Kent Terrace opens for five evenings per week and seats approximately 40 people, the Lebanese restaurant opens for lunch and evenings seven days, mainly take-out, and the shoe repair outlet operates five days during work hours.

The size and peak occupancy leads to the building having an Importance Level categorisation for Building Code purposes of Importance Level 3 (IL3). This requires that a seismic loading corresponding to 1000 year return period ground shaking is used for design and assessment purposes.

4. Overview of Seismic Assessment

4.1 Summary of the Detailed Seismic Assessment

A Detailed Seismic Assessment was undertaken by Dunning Thornton Consultants and the report provided in August 2024.

This assessment found the building to have a seismic rating of 30%NBS (IL3) due to inadequate tying of the front Kent Terrace façade back into the Marjoribank Street external shear wall; and the out-of-plane vulnerability of the south wall above roof truss level.

Additionally, the plaster ceiling over the main theatre has also been rated as 30 to 40%NBS because of uncertainty about bracing capability.

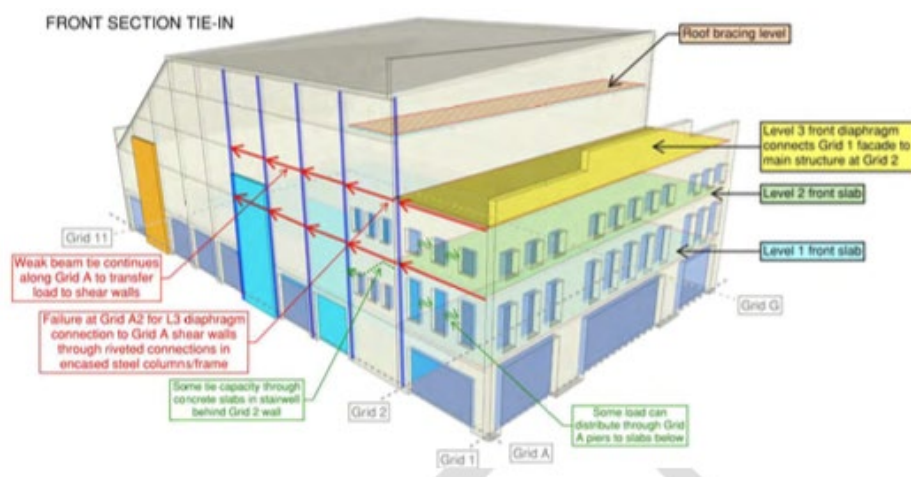
Foundations are rated at 35%NBS due to possible loss of support from subsoil liquefaction.

We understand that the assessment has been peer reviewed by Beca.

4.2 Main structural weaknesses

The two primary structural weaknesses limiting the seismic assessment to 30%NBS are: inadequate tying of the front Kent Terrace façade back into the Marjoribanks Street external shear wall; and the out-of-plane vulnerability of the south wall above roof truss level.

The roof level concrete diaphragm slab (Level 3) between the Kent Terrace frontage and the high level wall to the roof over the main theatre is inadequately connected to the shear wall along Marjoribanks Street. This is primarily due to the weak capacity of the encased steel beam rivet to column connection and lack of bracing capacity due to large window openings. In strong shaking there could be a separation of the elements at this point, leaving the north-west corner of the building vulnerable.



The south wall supporting the high side of the lightweight roof cantilevers 4.3 metres above the steel roof trusses that span the main theatre space. The wall has limited out-of-plane capacity. Possible hingeing immediately above the steel roof trusses could lead to wall collapse into the empty southern lot.

The plaster ceiling over the main theatre is in a largely original state and covers a large area. It is poorly braced, particularly in the longitudinal direction. Transversely, it is somewhat confined by the Marjoribanks Street and south side shear walls. The ceiling is made from plaster panels (flat panels and moulded fibre reinforced pieces) fixed and suspended from timber framing, spanning between roof trusses. The ceiling is hung from a multitude of rudimentary nailed timber frames slung over the bottom chord of the roof trusses with the occasional cross brace. The lateral load path is complex and limited by the capacity of the nail connections in the hanging frames. However, it is it hung from multiple locations with moderately ductile nail connections, and therefore doesn't automatically become a life safety hazard. Therefore Dunning Thornton have given the ceiling a range from 30-40%NBS (IL3) to reflect the likely relative risk but also the uncertainty in this assessment.

4.3 Strengthening options

The Dunning Thornton report provides an outline of strengthening options. These were also discussed during the onsite visit on 18 October. The two critical weaknesses could probably be addressed while keeping the building open as follows:

- Improving the connections of the Level 2 and Level 3 diaphragms back to the main shear walls along Marjoribanks Street and the corresponding south side wall is recommended. This may take the form of long tie beams/plates fixed to the face of the shear walls and diaphragm edges. This could more readily be undertaken externally if that was agreed to by the heritage architect.
- The upper roof structure above the main theatre has a sarked timber diaphragm supported on stud frames that sit on top of the main steel roof trusses. The load path from the upper roof diaphragm to the steel trusses could be improved by bracing these stud frames in both orthogonal directions to the trusses below and by enhancing the connection of the south wall to the high-level roof.

Additionally, strengthening to the main theatre ceiling from inside the main roof space is likely to be possible. Adding bracing to the hangers and improving hanger connections is a priority. Further refixing of the plaster elements to the timber framing may also be required for enhanced diaphragm performance.

Whilst any improvements to the structure should target the highest NBS rating that is reasonably practicable, the building's improved NBS rating will ultimately be limited by the response of the ground. Liquefaction, particularly the north-west corner, is likely to be triggered at 35% to 40% ULS shaking. Improving the foundation performance is likely to be a major undertaking, very disruptive and costly depending on the target NBS of the upgrade. The works may involve installing new piles/micro pile foundations, significant foundations

beams, new floor slabs, ground improvement, and will also likely involve complex temporary works for the structure above.

4.4 Earthquake Prone Building status

As noted in Section 2.1, the Council's EPB team have now confirmed the building to be earthquake-prone, and not a priority building, with the expiry date for the EPB notice of January 2041.

5. Evaluation of the Current Risk

5.1 Overview

Evaluation of seismic risk involves considering the potential outcome of the identified building vulnerabilities at different levels of earthquake shaking (likelihood), and taking account of the exposure of people within and around the building (consequence).

An important consideration in evaluating the exposure component of risk is the period of time over which the building is likely to remain open prior to strengthening. There is a need to complete the strengthening work prior to the expiry of the date on the earthquake-prone building notice (January 2041). This indicates that the maximum likely period of occupancy and use of the building before strengthening is completed is around 16 years, noting that work identified to strengthen the building to above the EPB threshold is likely to be able to be done without building closure.

5.2 Indicative levels and likelihood of earthquake shaking

For this evaluation, four broad earthquake shaking levels can be considered. These are outlined in Table 1, along with their associated likelihoods of occurrence, including for the period of up to nine years under consideration for continued use and occupancy.

Table 1: Indicative levels and likelihood of earthquake shaking

Intensity	Frequency	Likelihood	Characterisation
Moderate	Infrequent	100 year return period 1% Annual Exceedance Probability 16% Probability of occurrence in 16 years	Ground shaking of limited duration that can cause damage to some less resilient buildings
Significant	Less frequent	500 year return period 0.2% Annual Exceedance Probability 3.2% Probability of occurrence in 16 years	Strong shaking but for a limited duration, with some ground damage due to liquefaction and landsliding
Major	Rare	1,000 year return period 0.1% Annual Exceedance Probability 1.6% Probability of occurrence in 16 years	Intense shaking for a minute or more that causes considerable ground damage and potential tsunami
Severe	Very Rare	2,500 year period 0.04% Annual Exceedance Probability 0.64% Probability of occurrence in 16 years	An extreme event with several minutes of intense shaking that also generates widespread ground damage and tsunami

5.3 Vulnerabilities and possible failure modes

As discussed in Section 4.3, the two primary vulnerabilities are:

- The connection of roof level concrete diaphragm slab (Level 3) between the Kent Terrace frontage and the high level wall to the roof over the main theatre to the shear wall along Marjoribanks Street. Separation of these elements in strong shaking would leave the north-west corner of the building vulnerable.
- The out-of-plane capacity of the south wall supporting the high side of the lightweight roof cantilevering 4.3 metres above the steel roof trusses spanning the main theatre space. Possible hinging immediately above the steel roof trusses could lead to wall collapse into the empty southern lot.

5.4 Current usage and risk exposure

The current use of the building in terms of peak and average numbers is summarised in Table 2 below.

Table 2: Current usage and risk exposure

Maximum number of people	<p>Up to a maximum of ~900 people in the three cinemas (main theatre approximately 750, two basement theatres 76 each) along with ushers and sales people.</p> <p>Capital restaurant on the north west corner can house 50 diners and staff, evening only 5 days per week. There could be an additional 20 people in other tenancies.</p> <p>Total maximum approximately 950.</p>
Average number of people in the building at any one time	<p>A small full time staff (approximately 5) during normal working hours and average total cinema attendance of 200 between noon and 11pm weekends and 100 between 5pm and 11 pm during weekdays.</p> <p>Capitol restaurant on north west corner operates evenings Wednesday to Sunday with an average occupancy rate of 30. Other tenancies may have an average of an additional 10 people.</p>
Average user time in building (duration of use)	The vast majority of building occupants would be there for an average of 2 hours.
Average weekly usage	Approximately 8,000 person hours per week.

Occupancy is characterised by a limited number of people working in the building on a daily and weekly basis, but larger numbers (100 to 700) being present during evenings.

In terms of exposure to people outside the building, the frontage to Kent Terrace is regarded as a high foot traffic area.

5.5 Risk evaluation

The Embassy Theatre has been strengthened in various stages over time. However, strengthening work is not yet complete and further work is required to remove it from its current status of being earthquake-prone.

The building clearly represents a lower risk than in its original form. Structural failure is unlikely in *moderate, infrequent* earthquakes. However under more *significant but even less frequent* earthquake shaking, failure of sections of the building could occur.

With regard to the indicative annual probabilities of occurrence in Table 1, the likelihood of an earthquake of sufficient magnitude that could cause structural failure of sections of the building (*significant* earthquake shaking) over the remaining 16 years before strengthening is completed is considered moderate (ie. a probability over the sixteen-year period of 3.2%, or 1 in 31). The chances of a significant earthquake occurring during this time while the building is occupied is however lower, at around 0.65% or 1 in 150. This could be reduced if readily achievable remedial action was undertaken earlier.

Even if a significant earthquake occurs then it is not a given that there will be building failure. All earthquakes are different and impact buildings differently depending on the distance, direction and shaking frequency amongst other factors. This was well illustrated in Wellington following the November 2016 Kaikoura earthquake, when none of the designated earthquake-prone buildings (approximately 700 at the time) sustained notable structural damage.

Given that a significant earthquake occurs and building failure occurs, the accepted international figure for likelihood of loss of life is in the order of 10%. This would then mean that the risk of loss of life during the time the building is occupied would be less than 1 in 1,500 over 16 years or 1 in 24,000 on an annual basis. This could be compared with the 1 in 12,500 annual risk for driving (NZ road toll – Ministry of Transport statistics average of last 20 years, 2000-2020).

6. Impact of Closure

6.1 Ability to use other facilities

Closing the Embassy Theatre in the near term would seriously impact Wellington cinema goers. The nearby Reading Cinema complex has already closed, leaving only Lighthouse Cuba to regularly screen films in central Wellington. It will reduce options for cinema screening in Wellington.

There would also be contractual issues to resolve with Event Cinemas, the operators of the complex.

6.2 Effects on the community

Closure would also have a negative effect on the central city area. It is likely to impact a number of restaurants, food outlets and bars in the vicinity that currently benefit from the Embassy's patronage. Closure of tenancies within the building eg Capital Restaurant, will also limit the public's choices.

Therefore, using the BRANZ assessment framework, the consequences of closure of the building are assessed as *high*.

7. Application of the BRANZ Decision Framework

We have applied the BRANZ decision framework for council-owned earthquake prone buildings referred to in Section 1.3 to this building. The inputs, analysis and outcomes are included in the appendix to this report.

Having due regard to the consequences of closure (assessed as *moderate*) as well as the life safety risk exposure (assessed as *high*) results in an overall occupancy assessment that supports the building remaining open for its current uses.

The decision framework process from the BRANZ guide is shown in Figure 1 below.

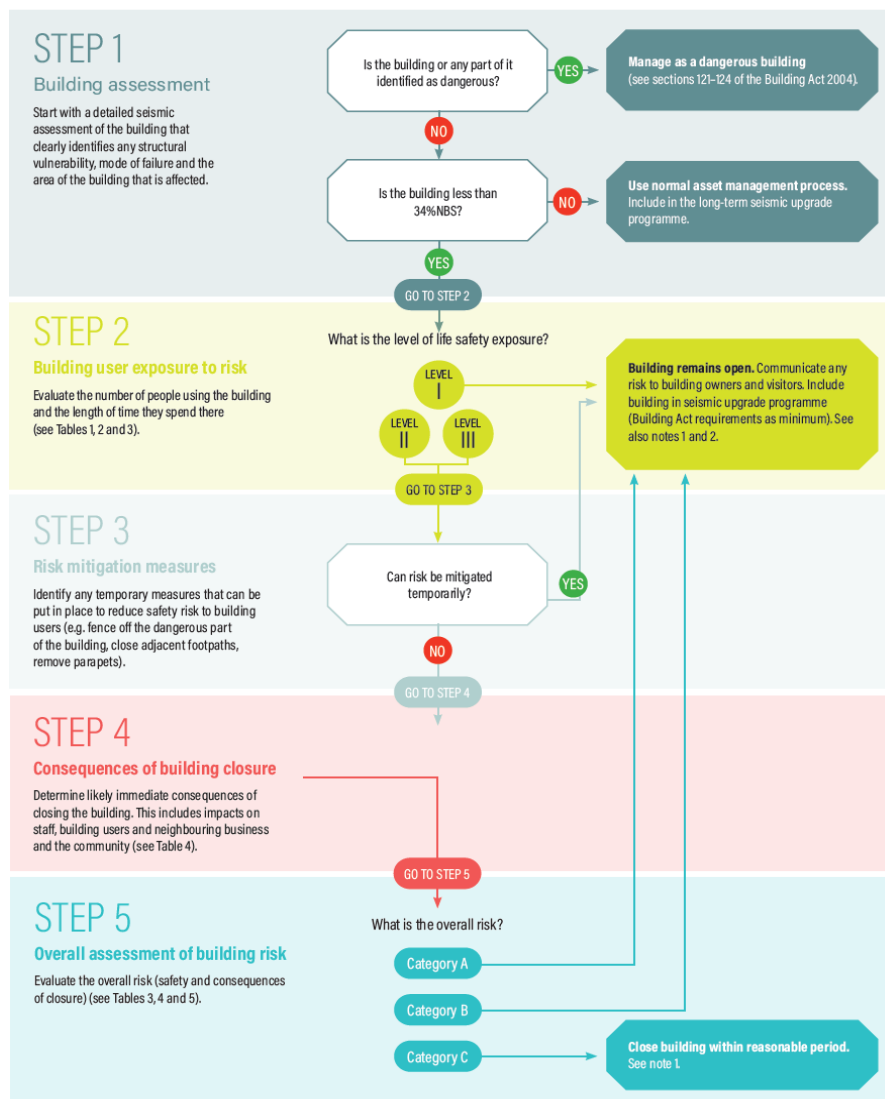


Figure 1: Overview of the BRANZ Decision Framework process

By way of a sensitivity check for this analysis, if the consequence of closure was considered *low* (eg. the services easily delivered through other means), then the analysis would lead to a recommendation to close the building.

8. Summary and Recommendations

8.1 Seismic risk overview

The Embassy Theatre has been strengthened in stages over time. Accordingly the building does represent a lower risk than prior to 2001 when the first strengthening stage occurred. However, vulnerabilities remain that do present a risk.

Structural failure is unlikely in *smaller more frequent* earthquakes. However under more *significant but less frequent* earthquake shaking, failure of sections of the building is more likely.

The likelihood of an earthquake of sufficient magnitude to cause structural failure of sections of the building over the remaining 16 years before the deadline for strengthening is reached is considered moderate. The chances of a significant earthquake occurring while the building is occupied is considered low.

8.2 Occupancy recommendations

Having regard to the above points, is therefore considered that continued occupancy and use of the building is appropriate until the deadline for requiring seismic strengthening is reached, ie. 16 years or until 2041.

This occupancy recommendation is supported by the application of the BRANZ decision framework for council-owned earthquake-prone buildings as detailed in the appendix to this report.

This occupancy recommendation is subject to the implementation of the short-term mitigation measures outlined below.

8.3 Recommended actions

Staff and regular users of the building should be briefed on the seismic status of the building prior to the EPB notice from Council being posted. A refresh of the earthquake drills and evacuation process - both generally for staff who regularly use the building and for when members of the public are attending shows - should also be undertaken at this time.

There should be a review in June of each year that verifies EPB notices being effectively displayed, and a written update provided on progress with planning for the seismic remediation of the building and associated timelines.

It is also recommended that serious consideration be given to undertaking earlier remedial work to improve the structural vulnerabilities identified, all of which should be able to be done while the building continues to operate.

8.4 Key risk messages

Some of the key risk messages to communicate the nature of the low seismic rating and associated risk include:

- The building has a low seismic rating due to the presence of structural weaknesses in the north-west corner façade and the roof level south side wall.
- Strengthening has been undertaken at various times so it now presents a lower risk to occupants than it would have been in its original form. However, its seismic resilience is lower than now expected.
- The building is not dangerous in terms of the Building Act, or in any imminent risk of failure in a moderate earthquake.
- Low %NBS ratings reflect the presence of structural shortcomings and a lack of resilience in these systems, not the levels of shaking at which they might fail
- The likelihood of an earthquake of sufficient magnitude that could cause structural failure of sections of the building over the remaining years before strengthening is completed is considered moderate (ie. a probability over 16 years of approximately 3%).
- In the unlikely event of an earthquake occurring, people should stay inside the building and not leave the building until after all shaking has ceased and the all-clear to exit the building has been given.
- Relevant key messages in MBIE's 2022 seismic risk guidance include:
 - *In most cases, seismically vulnerable buildings can be occupied while you plan, fund and then undertake seismic remediation work; and*
 - *In general, a low %NBS rating is no need for alarm or immediate action. The life safety risk is still very low.*

Appendix: The BRANZ Decision Framework for Earthquake Prone Buildings

Application of the BRANZ Decision Framework - Managing earthquake-prone council buildings

With reference to Figure 1

Step	Considerations	Information / Comments
Step 1 Building assessment and further examination of key vulnerabilities	Seismic assessment is a Detailed Seismic Assessment?	Yes
	Report status and nature of review undertaken?	Final DSA report complete. Peer review commissioned but not supplied.
	Have all the secondary structural and heavy non-structural elements been identified?	Yes
	What are the structural elements of the building that score less than 34%NBS?	30%NBS (Importance Level 3) North west corner façade connection - 30% NBS South roof level cantilevered wall - 30% NBS Main theatre plaster ceiling – 30 to 40% NBS
	What are the modes of failure and the area of the building that is affected?	Façade connection and cantilevered wall likely outward failure . This would potentially affect people both outside the building, including the public (street) areas immediately adjoining.
	Are there other seismic vulnerabilities that score above 34%NBS?	Foundations are limited by likely liquefaction from 35 to 40% NBS.
	Is the building or any part of it identified as dangerous in terms of the Building Act?	No
	Other considerations	The Embassy Theatre is a Category 1 Heritage listed building

Step	Considerations				Information / Comments
Step 2 Exposure of people to building risk	Table 1: Life Safety Risk Exposure				
		High	Moderate	Low	
	Maximum number of people in building at any time	>100	10 - 100	<10	Max occupants: >100 ~950 maximum Occupants capacity Main cinema 750, two basement level cinemas 76 each, other tenancies 50
	Average number of people in building at any one time	>50	5 - 50	<5	Average occupants: >50
	Average user time in building (duration of use)	Over 8 hours a day	2 - 8 hours a day	<2 hours	Average user: 2-8 hours a day (events-based space predominantly).

Step	Considerations				Information / Comments
Step 2 (continued)	Average weekly usage (person-hours per week)	>2,000	50 - 2,000	<50	Average weekly usage: >2000 Likely usage: Cinemas 200 x 11 hours x 2 days (weekends), 100 x 6 hours x 5 weekdays, other tenancies 30 x 5 x 5 + 5 x 40 + 5 x 60 = ~ 8,650 weekly person-hours.
	Exposure to people outside the building	Risk of collapse onto high-use footpath (>100 people per hours); risk of collapse onto neighbouring structure	Risk of collapse on to adjacent moderate use footpath (5-100 people per hour)	Risk to low-use footpath (<5 people per hour)	External exposure: High Frontage to Kent Terrace/Marjoribanks Street. High foot traffic area.
Rating = High					

Table 2: Period of Exposure

		Likely period until strengthening commenced			
		Long	Medium	Short	
Seismic hazard zone	High	>3 years	1 - 3 years	<1 year	High seismic hazard zone.
	Medium	>6 years	2 - 6 years	<2 years	No project established to remediate. However, main vulnerabilities potentially relatively straight forward and likely to be able to be strengthened without closing the building.
	Low	>9 Years	3 - 9 years	<3 years	
Category = Long					

Step	Considerations	Information / Comments
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Table 3: Degree of exposure*Combines the results from Tables 1 and 2***Step 2 (continued)**

Exposure to risk (from Table 1)	Period of exposure (from Table 2)			
	Short	Medium	Long	
Low	I	I	II	
Moderate	I	II	III	
High	I	III	III	
Rating = III				

<u>Step 3</u> Risk mitigation measures	Close or relocate non-essential functions of building which do not provide community benefit (e.g. venues / tenant offices, storage functions, etc.)

Step	Considerations	Information / Comments
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Table 4: Consequence of closure**Step 4****Consequence of building closure**

	High	Moderate	Low	
Ability to deliver services by other means	Service cannot be delivered through alternative means	Service can be partially delivered outside of the building	Service easily delivered through other means	Cinema screenings may be able to be performed in other venues where the capacity allows.
Impact on vulnerable communities (homeless, disabled, high needs, children, elderly)	Vulnerable community significantly impacted as they cannot be easily catered for	Vulnerable community impacted but services/ amenities can be found nearby	Limited or no vulnerable community use the building/services	
Impact on neighbouring businesses	Neighbouring businesses significantly impacted by direct loss of customers	Neighbouring business affected by reduced foot traffic	Limited or no impact on neighbouring businesses	Loss of use of the Theatre complex is likely to result in an adverse impact to nearby hospitality businesses.
Impact on staff	Significant numbers of staff affected by closure	Some staff notably impacted by building closure	Few or no staff impacted	Assumes that the majority of staff can be redeployed.
	Category: High			

Step	Considerations				Information / Comments
Step 5 Overall assessment of building risk	Table 5: Overall occupancy assessment				Overall risk rating : B – considered appropriate for the building to remain open
		<i>Consequence of closure (from Table 4)</i>			
	Degree of exposure to risk (Table 3)	High	Moderate	Low	
	II	A	B	B	
	III	B	B	C	

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