
ORDINARY MEETING

OF

CITY STRATEGY COMMITTEE

MINUTE ITEM ATTACHMENTS

Time: 9.30am
Date: Thursday, 6 December 2018
Venue: Committee Room 1
Ground Floor, Council Offices
101 Wakefield Street
Wellington

Business	Page No.
<hr/>	
1.6 North Wellington Football Clubs, Olympic Harrier and Athletic Club and Wellington Deaf Society	
1. Grant Stephens (Football Clubs) and Bruce Atmore (Olympic Harriers and Athletic Club) speech notes	3
2. Darryl Alexander (Wellington Deaf Society) speech notes	6
3. Letter from SILANZ: Sign Language Interpreters Association of New Zealand	7
4. Letter from Auckland Deaf Society	9
5. Letter from Wellington Association for Deaf Children	10
6. Letter from Deaf Sports New Zealand	11
7. Letter from Deaf Aotearoa	12
8. Letter from Deaf Waikato Club	13
1.6 Formary Textile Reuse Programme	
1. Presentation from the Formary Textile Reuse Programme	14
1.6 Victoria University of Wellington	
1. Letter from Victoria University of Wellington	24
2.1 Alcohol Control Bylaw	
1. Proposed Kelburn Park Alcohol Ban area	27
2. Proposed Kilbirnie Alcohol Ban area	28

2.2 Oral Hearing: Earthquake-prone Priority Buildings

- | | | |
|----|--|----|
| 1. | Carol Brown | 29 |
| 2. | Christopher Butler (Bond Store Body Corporate) | 87 |
| 3. | Geraldine Murphy (Inner City Wellington) | 89 |

City Strategy Committee 6 December 2018
Alex Moore Park Sport and Community Pavilion Project
Public Participation

On behalf of the 6 Clubs who have committed to work together to make this project happen, Football, Harrier and Deaf Society have a few words to say to you before you make a decision on this project

I am Grant Stephens, Committee member of North Wellington Senior Football Club

Eleven years ago as President of Junior Football at the time, I appreciated first hand that football as a code and users of Alex Moore Park in general were disjointed and operated completely in isolation.

What brought it home for me was a group of 50 parents huddled together in the wind and drizzle watching their 5 year olds play football at 9am on a Sunday morning. The day was miserable and the parents were standing next to the Johnsonville cricket clubrooms which were closed for the winter. How hard would it have been for those parents to be safely inside, enjoying a warm drink with cricket opening their clubrooms and making some money feeding and watering these parents and extended family who were looking for a solution to their problem?

We did indeed get cricket to open up for the remainder of that season. As well as being a positive experience for everyone involved it became only too clear that football as a code needed to be based on Alex Moore Park and it was completely futile to open a football club building for two half days a week for half a year.

It took some time but I did manage to bring all clubs operating on the park together and we all agreed that operating our own underutilised buildings which were not in good condition made no sense at all.

As a bunch of enthusiastic amateurs who all had day jobs we needed some help to realise our potential. Wellington City Council came to the rescue and provided seed funding to have a Sportville feasibility study undertaken. The results were overwhelming. The clubs could and should work together in a part of the city what was continuing to grow at fast rate.

Once the dust had settled they also provided further funding to allow us to form an incorporated society and help us recruit the initial tranche of board members, many of whom still serve on the board today. We had neither the time nor talent to do this ourselves.

It's not been an easy process and we've lost and gained foundation clubs along the way. The facts are however that:

1. The need has not diminished.
2. The area continues to expand.
3. The solid membership core is still in place and has been enhanced.

4. The drive to finish the job and create a community asset for future generations has endured.

In closing I need to make two important observations.

1. Co-operation within and between member clubs is at an all-time high. (Will give examples briefly at the time).
2. We've always achieved more and at a faster rate when Wellington City Council has been there to support us. (This has never been our core competency).

Now is the time to finish the job and allow the clubs to concentrate on their organisations and enjoy the benefits of a new facility together with the rest of the community.

I am Bruce Atmore and I'm here as a member of Olympic Harriers and Athletic Club. I've also got a limited licence to speak on behalf of Johnsonville Cricket Club. We reckon we're a kindred spirit with the cricket club as our 2 clubs have squatted side-by-side on Alex Moore Park for a number of years. I think their scoring office on the deck of the new building will be pretty cool too.

Olympic Harriers Club is a long-standing club. We were established in 1914 and had a fantastic centenary in 2014, where people gathered from far and wide and the great Richard/Dick Taylor was our guest of honour.

We're also a family club. We try to offer a fun and safe environment for people wanting to walk or run who live primarily in Johnsonville and other northern suburbs. However, we know that our family focus attracts families from all over greater Wellington.

This process has been a great way to get to know representatives of the other clubs and appreciate their needs and perspectives. And what great new digs!

However, if I was to encapsulate what this proposal really means to our club, I can best sum it up from recent conversations I've had with one senior member and one junior member of the club.

After our recent AGM, where members voted unanimously to go "all in" with the other sports clubs and the WDS, our club patron (also a life member) told me that in the early days of the club, members used to meet at various church halls to run and then gather for post-run resuscitation.

Then around the 1970s everyone was very excited when the club gained its own clubhouse. He believed as a result of this we were able to maintain our numbers and offer the advantages that came with having our own space.

However, he was adamant that the proposal in front of you represents a further "evolution" of the club and is an essential step to grow numbers, make new friends and take the club into the future.

The junior member I spoke with was actually my 13 year old son. He's a member of both OHC and NW junior football. Apologies to NW football, but I think I've almost got what he said verbatim: "Dad, the football clubrooms are bit rubbish, but this building sounds pretty cool".



Hi, I'm Darryl Alexander and I'm a representative of the Board of Wellington Deaf Society.

Over 80 years, Wellington Deaf Society moved around many times, holding gatherings in the City, Hutt Valley and Porirua, with members coming as far as Kapiti Coast and Wairarapa areas.

First we have our own homes, and then we see the Deaf Club as our other "second home". We have been without one for the last four years and it has been difficult and isolating time for us. The survey responses from our members in our search for a new place for a Deaf club, determine that the Johnsonville area was identified as the ideal location for our "second home".

When the Alex Moore Park opportunity came up, it was a perfect match not only location-wise but also the spirit and understanding between the clubs. They were very welcoming of Wellington Deaf Society. By collaborating and understanding each other, we also can exchange and share languages and cultures, and being part of the wider community.

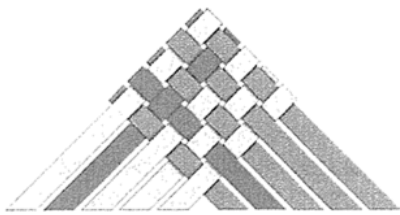
Wellington is the only city in New Zealand where NZSL users have increased (by 37%) due to presence of Victoria University of Wellington's NZSL programme, which disseminated into the wider population. We have opportunity to make something special here with this project, as we can enhance it by fostering the environment where Deaf, NZSL users and general public can converge.

We share similarities with Maori culture and the importance of the Marae. Deaf Club provide a place where knowledge, Deaf culture, NZSL can be shared, a place where we can socialise and celebrate, and a place where national and international Deaf people come and meet the local community. We would like to table these letters of support we have received highlighting the importance of Deaf Club for the our community.

Deaf individuals would have the confidence participating in the community knowing that we have a "second home" where Deaf identities, cultures, NZSL, stories are preserved and protected for future generations.

With this opportunity, we want to create a family friendly place. A place where everyone can have a sense of belonging. A place to share our cultures and languages with everyone through sport and community activities. To create an environment where NZSL thrives as one of the New Zealand's official languages.

Therefore it is important to have a space for the Deaf, and NZSL community. We hope that with your support of this project, we will be able to maintain and celebrate our Deaf culture and NZSL in Wellington.



SLIANZ
Sign Language Interpreters Association of New Zealand
Te Rōpū o Ngā Kaiwhakamārama Reo Turi o Aotearoa

PO Box 6090
Wellesley Street
Auckland

5th December 2018

Kia ora,

Re.: Alex Moore Park Sport and Community Inc. proposal

I am writing on behalf of the Sign Language Interpreters Association of New Zealand (SLIANZ) in support of a proposal to redevelop a large clubroom building at Alex Moore Park, to be jointly operated and maintained by the above group and Wellington City Council.

In particular, we want to support this proposal because it would provide a shared home for the Wellington Deaf Society, who have for a number of years been without a base since the closure of the club building on Marion Street. The fact that the Deaf Society have continued to run a program of regular activities speaks to the need for the Wellington Deaf community to come together and the value that the Deaf community places on face-to-face interaction, as this provides them the opportunity to converse in their native language, New Zealand Sign Language. Having a more permanent physical base would allow for more of these opportunities in a culturally safe space.

The proposed redeveloped clubrooms would also offer opportunities for people in the surrounding community to experience a "Deaf hosted" environment. Many members of our Association started on the path to become professional sign language interpreters through such experiences and it is of immense value to have a regular venue to socialise with Deaf people and to practise sign language skills.

The current proposal offers a unique opportunity to tailor a building so that it will be fully accessible and safe for Deaf users. This offers potential for organisations such as our own to use the building as a venue to collaborate and consult with the Deaf community and discuss professional issues. It would also be an ideal venue for social events, for example to open the SLIANZ annual national conference which is hosted in Wellington every few years.

It is exciting that six diverse clubs / societies have collaborated on this proposal and have found so much common ground to develop a strong proposal. I would like to add my support to the votes of Wellington Deaf Society members who have overwhelmingly decided in favour of the proposed redevelopment of Alex Moore Park.

Ngā mihi,



Micky Vale
President
president@sliaz.org.nz
www.sliaz.org.nz

 AUCKLAND DEAF SOCIETY INC

5 December 2018

TO WHOM IT MAY CONCERN

It gives me great pleasure to provide a letter of support for Wellington Deaf Society's proposed joint venture to work with other community groups to enable the development of a sports hub at Alex Moore Park.

Wellington Deaf Society provides social, sporting, recreational and educational opportunities for Deaf people of all ages and their families and friends. The society, like many others around the world was established to relieve the isolation sometimes experienced by Deaf people in mainstream hearing society.

This project will provide the Deaf community of the Wellington region with a community hub much like our own here at Auckland Deaf Society. Like us, the Wellington Deaf Society provides a vehicle for Deaf people to come together and celebrate Deaf culture, history and language. New Zealand Sign Language is an official language of New Zealand and like any language it is passed from one generation to the next. Over 90% of Deaf children are born into hearing families. Therefore, his cultural exchange often happens in "Deaf spaces" which are sometimes referred to as "Deaf club". This venture would see the establishment of regular gatherings of members of the Deaf community where this can occur.

Our two organisations enjoy a wonderful collaborative relationship which allows both to service the diverse and often complex needs of the Deaf community. We are both members of a National Deaf Clubs Forum which was established to allow us to share resources, knowledge and maximise the impact each organisation can make.

When our members are in Wellington they will enjoy the opportunity to visit the Wellington Deaf Club and socialise with friends. we have a reciprocal arrangement for members of Wellington Deaf Society.

We wholeheartedly support the work of Wellington Deaf Society because when people have a strong sense of identity and community connection they lead happier and more productive lives.

Should you require any further information, please do not hesitate to contact me.

Yours sincerely



Julie-Anne Taylor
Acting Manager



5 December 2018

Wellington City Council
101 Wakefield Street
Wellington 6011

Dear Councillors,

Wellington Association for Deaf Children (WADC) is a parent run organisation advocating for our deaf and hard of hearing children who will become the next generation of the Deaf Community. WADC works closely with Wellington Deaf Society on community events that strengthen Deaf people and promote New Zealand Sign Language.

WADC is keen to support Wellington Deaf Society in re-establishing a Deaf Club as a 'second home' for the Wellington Deaf community, as part of the Alex Moore Park project in Johnsonville. When WADC ran a holiday programme in 2016 it became clear that Johnsonville is an ideal location for the region's Deaf community to gather as it is easily accessible from across the region. A new Deaf Club for Wellington Deaf Society will mean that WADC families will be more easily included in activities celebrating Deaf identity, culture and language.

In the past WADC has used Wellington Deaf Society premises for monthly meetings, parent training and other family get-togethers. WADC would therefore request the use of the new premises whenever possible for events, training, and community meetings.

Having a home will enable Wellington Deaf Society to take the lead again in the Wellington Deaf community and strengthen it. WADC sees the collaboration with other founding groups as positive for Deaf children and their families as it will result in a wider awareness of the Deaf community and New Zealand Sign Language among the general public.

WADC will be celebrating Christmas together with Wellington Deaf Society this Saturday and will look forward to more shared activities in the future.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'P. Laing'.

Dr Patricia Laing
President



4th December 2018

Mayor Lester and Councillors
Wellington City Council

Alex Moore Park ~ Wellington Deaf Society

To Mayor and Councillors,

Deaf Sports New Zealand (DSNZ) was established in 1963 and is the only National Organisation, which is responsible for sports to be beneficial to Deaf/Hard of Hearing athletes in New Zealand. writing a support letter for Wellington Deaf Society and their venture with Alex Moore Park.

Deaf Sport New Zealand believes this project should get the full support of Wellington City Council, as this project can and will provide benefits and opportunities not just for the Deaf community, but for all other clubs and community.

Deaf Sports NZ has no hesitation in supporting the Wellington Deaf Society in being able to call Alex Moore Park their home. This provides the Wellington Deaf Community with some certainty, with a place to meet with others, and to share news and stories. Members can meet face to face, have a space, which is theirs.

This venue will not only just benefit the Wellington Deaf Society, but it will also benefit the wider community, both Deaf and Hearing, as Wellington Deaf Society will be able to host events such as local community days and sports events. Sport is a very big part of Deaf culture, Deaf community, and this venue could become a venue that is utilised by Wellington Deaf Society with the support of Deaf Sports New Zealand to host events in Wellington for not only the community in Wellington but for the national Deaf community.

In conclusion, Deaf Sports New Zealand endorses and supports Wellington Deaf Society and Alex Moore Park Sport and Community Inc's proposal to Wellington City Council for the Alex Moore Park project. By allowing Wellington Deaf Society and Alex Moore Park Sport and Community Inc an central place to call home, enabling them to interact with each other, and to be an central location for information sharing. This leads to more effective service delivery, improved feedback and better outcomes, including social and emotional wellbeing of our community members.

We encourage the Wellington City Council to consider the Alex Moore Park Sport and Community Inc proposal to utilise Alex Moore Park.

Many Thanks

A handwritten signature in black ink that reads "Chris Sinclair".

Chris Sinclair
President
Deaf Sports New Zealand

Founded 1963 - Affiliated with the International Committee for Sport for the Deaf (ICSD)

Postal Address:
PO Box 27190
Marion Square
Wellington 6011

Email:
president@deafsports.co.nz

Website:
www.deafsports.co.nz

4 December 2018

Wellington City Council
101 Wakefield Street
Wellington 6011



Dear Councillors

Deaf Aotearoa is the Disabled Person's Organisation (DPO) representing the voice of Deaf people, and is the national service provider for Deaf people. Deaf Aotearoa also works closely with Deaf communities, government agencies and other organisations to increase awareness, promote New Zealand Sign Language and strengthen the rights of Deaf people.

Deaf Aotearoa wishes to support Wellington Deaf Society in re-establishing a Deaf Club as a 'second home' for the Wellington Deaf community, as part of the Alex Moore Park project in Johnsonville. This is an ideal location for the region's Deaf community to gather, as it is easily accessible from across the region.

Deaf clubs are of vital importance for Deaf communities to foster identity and self-esteem and to reduce social isolation. A new Deaf Club for WDS will ensure the inclusion of Deaf people across the Wellington region. It will be a place to come together to celebrate identity, culture and language. Deaf Clubs cultivate shared experiences and storytelling and are hugely beneficial for the wellbeing of Deaf individuals and the community as a whole.

New Zealand's wider Deaf community will also benefit from a new Deaf Club in Wellington. Other ways to potentially utilise this space include events, training, meetings and much more. National Deaf community events, in particular sporting events, are held regularly. There are opportunities to host and provide a venue for these events if WDS has a suitable venue. In addition, a Deaf Club provides an opportunity for Deaf people visiting Wellington, including international travellers, to meet local Deaf people at their regular gatherings.

Having a home will enable WDS to strengthen its community, relationships and future. The collaboration with other founding groups may also serve to widen awareness of the Deaf community and NZSL among the general public, as well as increase WDS membership.

Deaf Aotearoa has enjoyed a close working relationship with Wellington Deaf Society for many years and will continue to work closely with WDS in the future.

Yours in Sign

Lachlan Keating
Chief Executive

PO Box 25439, Featherston Street Wellington 6146, New Zealand

0800 332 322

www.deaf.org.nz



Deaf Waikato Club
Facebook: Deaf Waikato Club | Email: DeafWaikatoClub@gmail.com



Tuesday 4th December 2018

Anthony Sammons
President
Wellington Deaf Society

Dear Anthony,

It is my pleasure to write a letter of support in your endeavour to create a second home for the Wellington Deaf Community.

When I meet you at the Deaf Club Forum earlier this year you spoke highly of how your club, Wellington Deaf Society (WDS) have been collaborating with other clubs in your region; Johnsonville Cricket Club, Johnsonville Rugby Club, Olympic Harriers and Athletics, North Wellington Football Club, and North Wellington Football Junior Club and your community's desire to have a 'second home'.

It is great that Wellington Deaf Society has an opportunity to provide a second home in a strategically important location to the Wellington Deaf Community which is vital in terms of bringing the whole of Wellington's Deaf community together.

Myself and Deaf Waikato club are in full support of your proposal. A 'second home' will provide benefits and opportunities for your club, it's members, wider Deaf community and the general public.

Having NZSL (New Zealand Sign Language) as an official language of New Zealand a building as a 'second home' will support retaining and the continuation of the language, Deaf culture and Wellington's Deaf community's identity for the future generations to come.

I hope that Wellington Deaf Society will be successful in this project as this building would not be just be for the Wellington's Deaf community but for the wider Wellington's people who are welcome to be part of our Deaf world and to preserve the future of the Deaf Wellington Society.

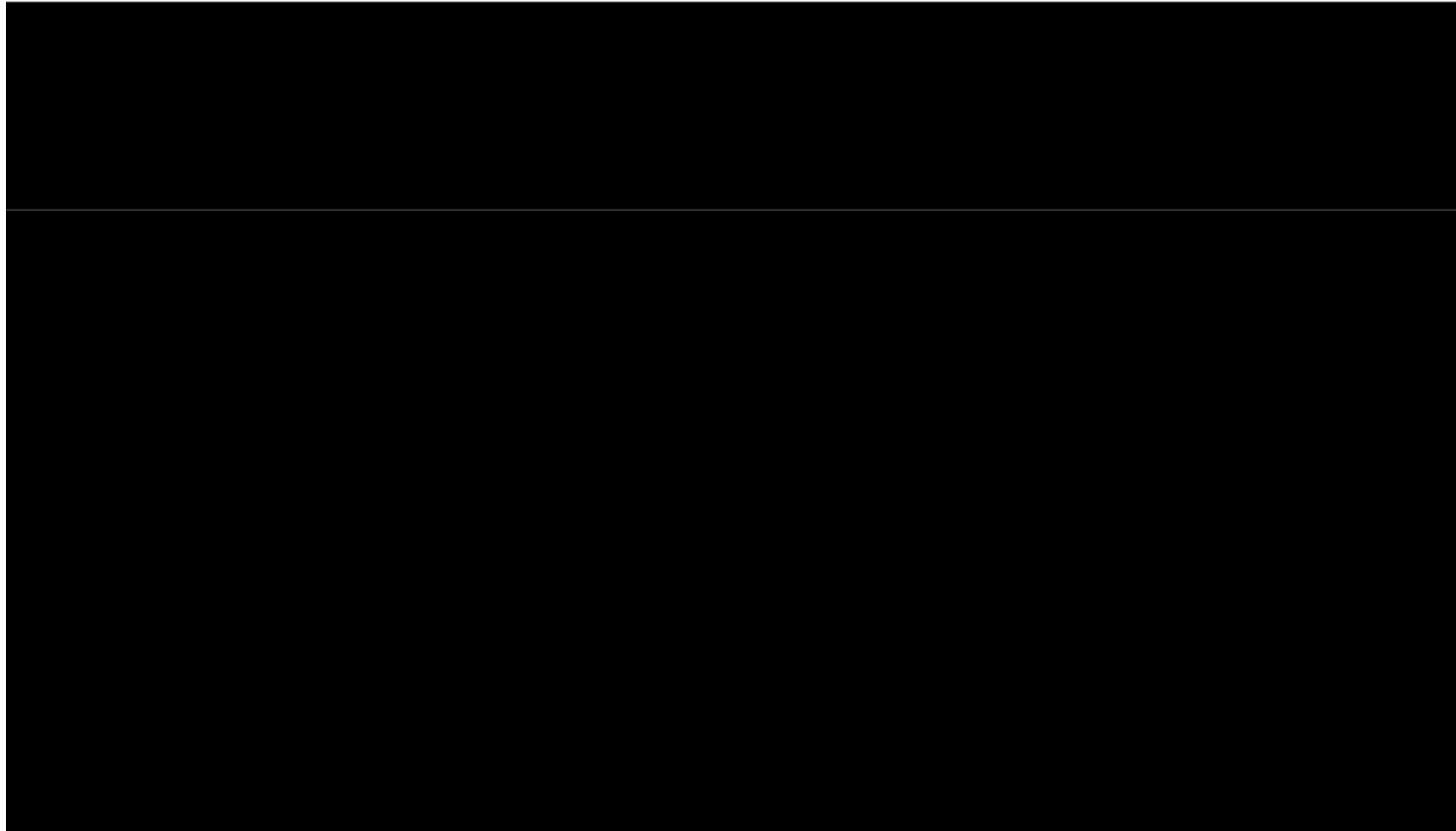
I wish you luck.

Yours sincerely

Rebecca Knowlton
Chairperson
Deaf Waikato Club







Why the issue global picture

- Volume of production
 - Now 100 billion garments per annum, only 1% recycled into clothing, loss of more than USD \$100 billion worth of materials each year
- Resource Usage
 - Earth Overshoot Day was 1 Aug 2018 (earliest day ever) – using 12 months of resources in just 7 months – 5 month deficit
- Climate Change
 - By 2050 textile industry will use more than 25% of the Carbon budget associated with 2°C climate change pathway
- Water Contamination
 - 190,000 tonnes of microplastics shed from our clothes into waterways
 - 80% of worlds drinking water now contaminated
 - all 24 brands of German beers sampled contaminated
 - global bottled water showed 93% of 259 bottles sampled contaminated



Why – the issue... local lens

- Auckland Council – textile waste comprises 9% of landfill, and is one of the fastest growing waste streams (exponential)
- Long legacy of landfilled synthetic clothing (generations)
- Consumer expectation – optics on doing the right thing
- Well documented pollution of our environment
- Current system is broken...
 - Charity Bin Model – Clothing Poverty
 - Off-shoring of waste textiles – impacts on developing nations
 - China closing it's borders to our waste – the need to take care of our waste on-shore...





Textile Reuse Programme

- Organisations are starting to understand the impacts of their clothing and textile consumption.
- In 2016, in response to approaches from organisations, realising their individual efforts to manage their textile waste streams were not addressing the complexity or the volume of the issue, The Formary proposed and lead the establishment of the Textile Reuse Programme.
- A collaboration of like-minded organisations pooled resources and efforts to develop a commercially scalable system to divert end-of-life textiles from landfill, and ensure the considerable inherent value encapsulated in the textiles was best captured.
- Starting from "ground-zero" the programme took a careful, staged approach to the challenge.





LOGO.FR.3



LOGO.FR.4



LOGO.FR.5



LOGO.FR.6



LOGO.FR.7

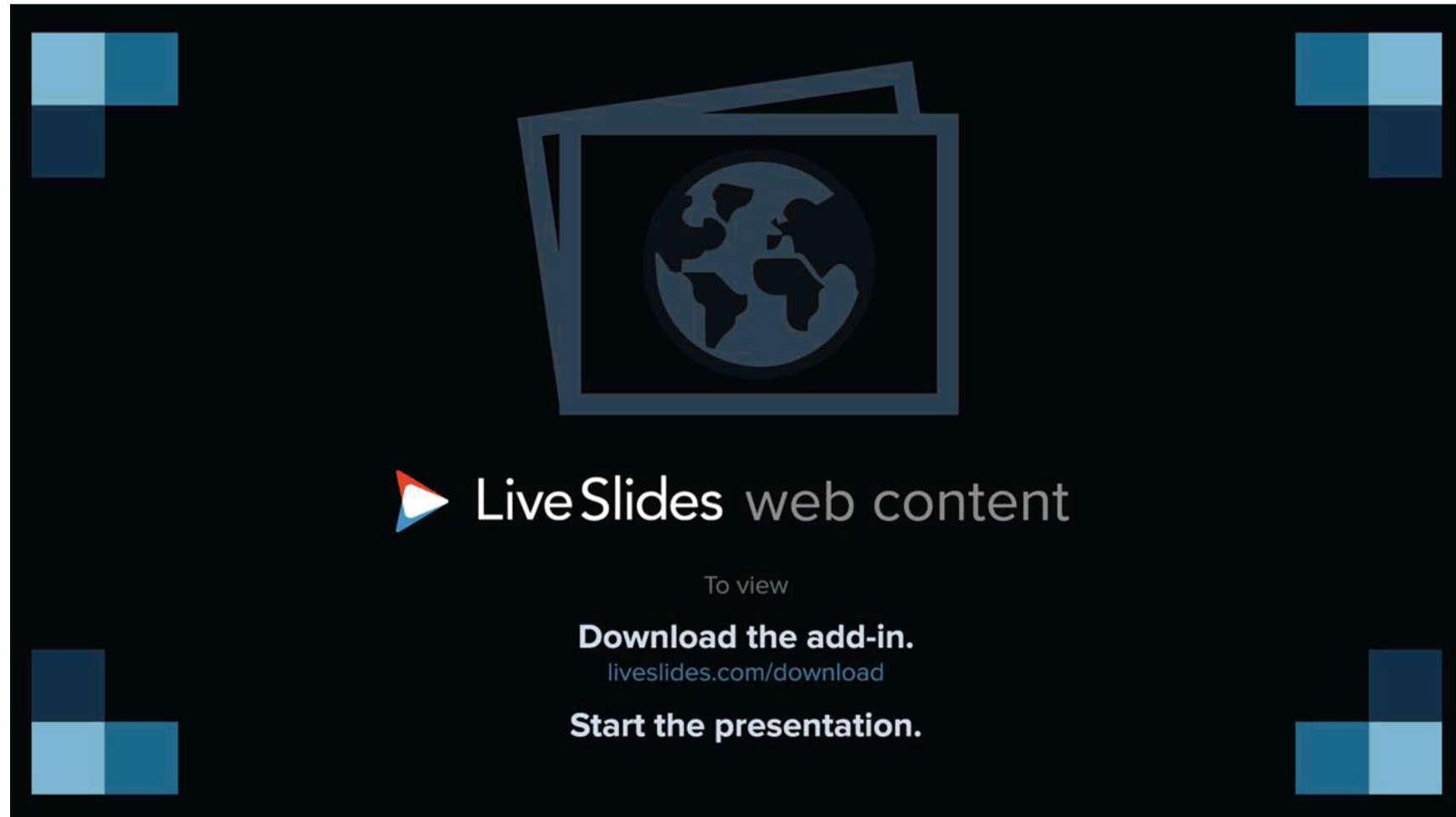



FORMARY REUSE LOGO
COLOUR TREATMENTS







A dark-themed advertisement for LiveSlides. At the top center, there is a graphic of two overlapping presentation slides. The front slide features a circular icon of a globe. Below this graphic, the text 'LiveSlides web content' is displayed in a light grey font, preceded by a play button icon. Underneath, the text 'To view' is centered. Below that, the text 'Download the add-in.' is followed by the URL 'liveslides.com/download'. At the bottom, the text 'Start the presentation.' is displayed. The advertisement is framed by four decorative corner elements, each consisting of a 2x2 grid of squares in various shades of blue and dark blue.

 LiveSlides web content

To view

Download the add-in.
liveslides.com/download

Start the presentation.



Membership Benefits – WCC



Used to Useful

Textile Reuse Programme





VICTORIA UNIVERSITY OF WELLINGTON, PO Box 600, Wellington 6140, New Zealand
Phone +64-4-463 6713 Email rainsforth.dix@vuw.ac.nz Web www.victoria.ac.nz

4 December 2018

Jim Lewis
Policy Advisor
Wellington City Council

Via email: Jim.Lewis@wcc.govt.nz

Dear Jim,

Alcohol Control Bylaw

Thank you for the opportunity to comment on the proposed amendment seeking to address alcohol control for Kelburn Park. The University is struggling to understand the issue this is aimed at resolving.

The University has been working proactively and successfully to ensure our students understand their responsibility as new citizens of Wellington and we implement several actions to support this.

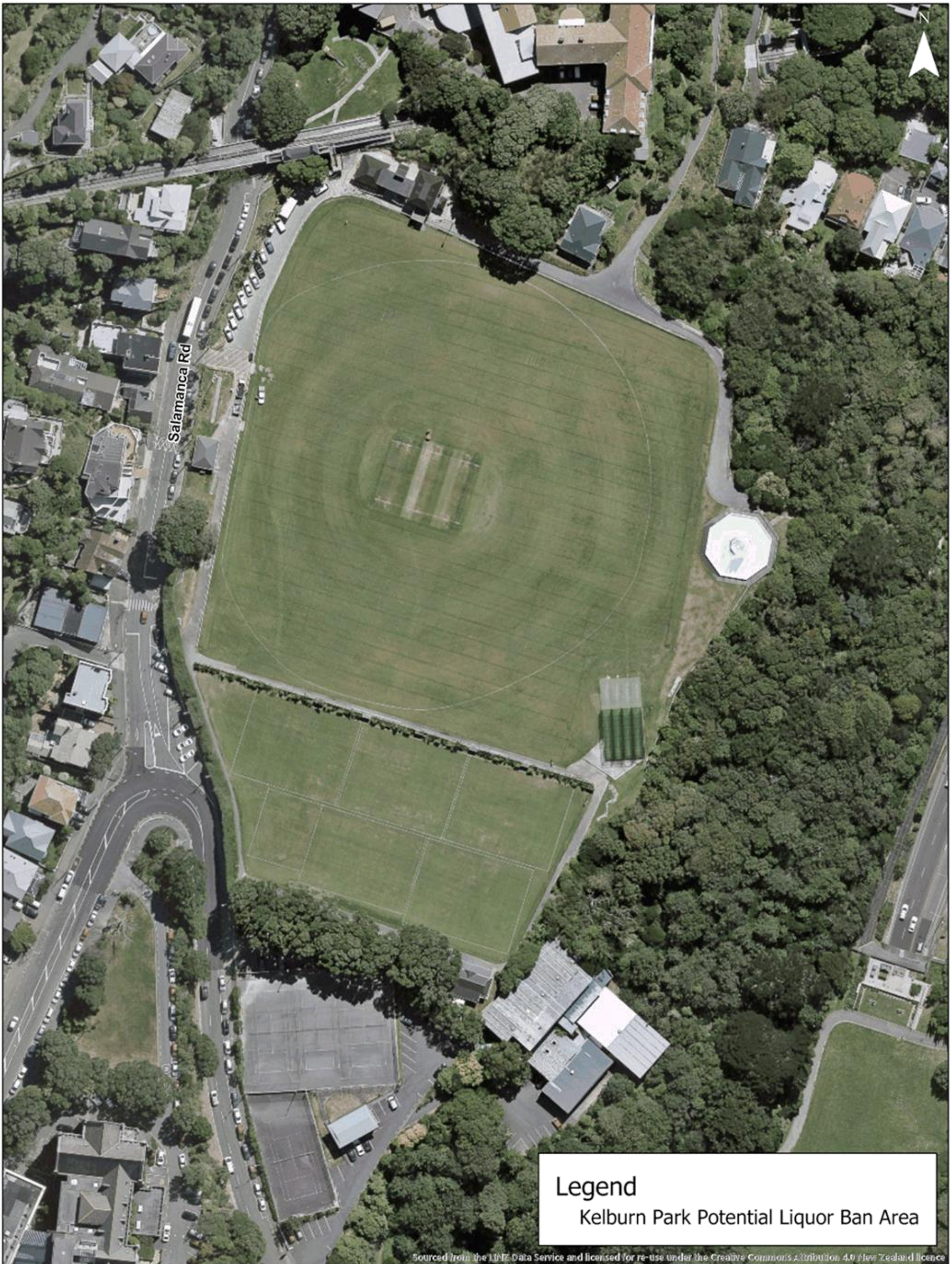
- Meeting with neighbours prior to student arrival in February to hear concerns and discuss our plan.
- A welcome letter sent from the Vice-Chancellor to all residents of student halls and other new students prior to arrival with one of the key messages being neighbour responsibility.
- Direct messaging to students through the induction and orientation period about alcohol harm, being a good citizen and impact of our behaviour on our neighbours.
- Full-time Night Managers at Halls to manage behaviours from 8pm-4am in all halls.
- Constant surveillance of Kelburn Park by University Security.
- Immediate response to calls from neighbours.
- 0800VIC8888 – calls go directly to security office.
- Safety Bus – large bus to deliver students to CBD, constant small vans bringing students back to halls from 11.30pm– Wednesday through to Saturday.

Each year brings a new cohort of students and there is significant evidence that the age group coming into the Halls of Residence as first year students are drinking less alcohol and are more socially responsible. There is no evidence that our students' use of Kelburn Park over the last two years has given rise to the level of concern which would warrant an alcohol ban for Kelburn Park.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'RDX'.

Rainsforth Dix
Director Student and Campus Living



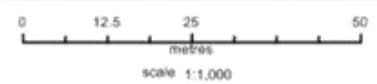
Kelburn Park Potential Liquor Ban Area
December 2018

Property boundaries, 20m contours, road names, rail line, address & site points sourced from Land Information NZ. Crown Copyright reserved. Property boundaries accuracy: +/- 1m in urban areas, +/- 30m in rural areas. Census data sourced from Statistics NZ. Postcodes sourced from NZ Post. Assets, contours, water and drainage information shown is approximate and must not be used for detailed engineering design. Other data has been compiled from a variety of sources and its accuracy may vary, but is generally +/- 5m.

MAP PRODUCED BY:
Wellington City Council
101 Wakefield Street
WELLINGTON, NZ

ORIGINAL MAP SIZE: A3
DATE: 5/12/2018
AUTHOR: moore3
REFERENCE:

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke





Kilbirnie Potential Liquor Ban Area 3 V2.0
December 2018

Property boundaries, 20m Contours, road names, cell free, address & site points sourced from Land Information NZ. Crown Copyright reserved. Property boundaries accuracy: +/-5m in urban areas, +/-30m in rural areas. Census data sourced from Statistics NZ. Postcodes sourced from NZ Post. Assets, contours, water and drainage information shown is approximate and should not be used for detailed engineering design. Other data has been compiled from a variety of sources and its accuracy may vary, but is generally +/- 1m.

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Wellington City Council
101 Wakefield Street
WELLINGTON, NZ

ORIGINAL MAP SIZE: A3
DATE: 5/12/2018
AUTHOR: moore3
REFERENCE:

**Absolutely Positively
Wellington City Council**
Me Heke Ki Pōneke

6 December 2018

Oral submission to Wellington City Council on earthquake prone priority buildings – Thursday 6 December 2018

imagine:

- Rate payers are told 2012, they will pay an extra \$6K, on top of their usual rates.
- They will again pay this amount in 2013.
- Relief comes in 2014. They only have to find an extra \$4K, on top of their usual rates
- This \$4K will continue to the present day and beyond for an indeterminate period of time.
- At the end of this indeterminate period of time the annual demand will cease. In return, the rate payers will then have to pay a lump sum of perhaps \$40K, \$80K, maybe over \$100K.
- What would be the likely response from the good citizens of Wellington?
- The above scenario is what is being demanded of the owners of the Blythswood Apartments, corner of Willis and Aro Streets.

extortionate / unreasonable demand:

Not sure state (central and local government) understands the **enormity** of what they are demanding of ordinary citizens, most of whom have very ordinary resources. I am not sure that state understands the **singularity** of what they are demanding of ordinary citizens. It is asking the **few** to fund for the **many**. I can think of no other such demand by a government of New Zealand; a government of whichever stripe.

ironies (a few only):

- I live in a small, one-bedroom flat located in a high-density building, the only property I own. I have no car and mostly walk everywhere and use public transport. My ecological footprint would be one of the lightest in N Z. Yet, I am being punished for how I live.
- State, to its credit, is building dwellings flat-out to house NZers. With the egregious strengthening demands on ordinary citizens, they will render other NZers homeless.

- Those commercially advantaged in the quake-strengthening industry appear to be judge, jury and beneficiary. The conflict of interest seems both glaring and outrageous.
- The 2016 Kaikoura quake showed that in Wellington, newly designed buildings failed. Older buildings, performed well. Spectacular failure waterfront area, but also failure in Te Aro area. Our building, Blythswood, a Council designated earthquake prone building, suffered no damage at all.
- The event to be mitigated, may never eventuate. Alternatively, if the quake is severe enough, no matter how much is spent on a building, it could collapse. The costs can outweigh the benefits. Some of us are prepared to take the risk rather than be made homeless or financially ruined.
- Sometimes, political expediency is justified; say to give citizens a feeling of reassurance, security. Such expediency should be funded by the government. Justice demands nothing less.

imagine again:

- thestrengthening costs, they don't want it, they are prepared to take their chances in their building as is. What would the Council do?
 - Force citizens from their home? Throw them into the street? Make them homeless?
 - Demolish the building?
 - Demand payment for the demolition that owners cannot / will not pay?
 - Force entry to the building to do the strengthening themselves?
 - Demand payment for the forced strengthening that owners cannot / will not pay?

Conclusion:

If the intention to strengthen dwelling places goes ahead, the costs should be met largely by the state. The ordinary citizen cannot be asked to bear the outrageous burden for political expediency. The few should not be asked to carry the load for the many. Justice demands nothing less. As it stands, it would appear the state is determined to bleed us dry.

N.B. My argument is from a personal perspective. As academic support I offer papers; *Towards a rational discussion of earthquake strengthening requirements: a critical analysis of the MBIE proposals*, dated 2014. Also, *EBSS (Evidence Based Seismic Strengthening), Don't mention the law, Review of the new seismic strengthening regulations and methodology*, February 2017: pages 1-3, 12-14, 20-21. The sixty one page document can be provided if WCC does not have a copy. These papers were produced by Ian Harrison, Principal tailrisk economics. Mr Harrison is an expert in the field.

Carol Brown
31/3 Aro Street
Wellington 6021
carol.brown@xtra.co.nz
04 3852 607

EBSS
Evidence Based Seismic Strengthening

Don't mention the law

Review of the new seismic strengthening
regulations and methodology

February 2017

Contents

Part one: Introduction and Overview.....	6
The big issues.....	6
Structure of the document.....	10
Part two: Key conclusions.....	12
Part three: How did we get to where we are today?.....	15
The recent policy development history.....	15
What did we learn from Christchurch?.....	19
Wellington 2016.....	20
The test case - testing the legality of the 34% trigger point.....	21
Part four: Identifying earthquake prone buildings.....	26
The legal definition of earthquake prone building.....	26
Moderate earthquake definition.....	26
The definition of ultimate capacity.....	28
MBIE's proposed definition of Ultimate Capacity.....	29
The Methodology in practice.....	33
Severe structural weaknesses.....	36
Part five: Seismic Ratings system and risk education.....	39
The risk grading requirement.....	39
Basic flaws in the relative risk approach.....	39
The EAG response.....	41
Fair Trading Act offences.....	42
Part six: Cost of Assessments.....	45
Part 7: The IEP.....	48
General issues with the IEP.....	48
Key structural problems.....	48
Test case building example.....	49
Part eight: Technical and other issues.....	52
Joint buildings.....	52
Pounding (Part C1).....	52
Timber framed buildings (C10).....	54
Reinforced concrete buildings (C-5).....	57

Unreinforced masonry buildings (C8)..... 57
Validation and testing..... 60

Part two: Key conclusions

MBIE has appropriately defined the key term in the definition of earthquake prone building

Ultimate capacity has been defined as the point at which a building has lost gravity support and so is close to collapse. The problem is that the definition has been effectively ignored in the Chief Executives Methodology, which is used to identify earthquake prone buildings.

MBIE has wilfully ignored the Supreme Court

In a landmark decision in 2014 the Supreme Court found that earthquake prone buildings should be assessed against a moderate earthquake. *The methodology is riddled with explicit and implicit tests against undefined severe earthquakes.*

Engineers have been directed to understate buildings' seismic capacity

In a methodology document provided to engineers they were told that the assessed seismic rating should never match the actual capacity of the building. *Put bluntly, engineers are being told to rig the results.*

Engineers should be required to attest that EPBs meet the legal test

The attestation could read (for an Auckland property): 'I Bill Smith, engineer, attest that the building at xxx will lose gravity support when subject to peak accelerations of 0.043g in a moderate Auckland earthquake'. Councils should make the same attestation before a building is declared to be earthquake prone.

Wellington's 2016 earthquake shows claims about EPB risk grossly overstated

The Council's website states that earthquake prone buildings can be expected to collapse in a moderate earthquake. The Wellington quake was moderate, but only two of nearly 700 earthquake prone buildings had structural damage, and none collapsed. If the Council's claim was correct hundreds of buildings should have been badly damaged, or should have collapsed

The NZSEE risk grading framework is grossly misleading

Extremely low risk buildings are being identified as high risk, and very high risk, when there is very strong evidence that they pose extremely low life safety risks. We believe that engineers have breached the Fair Trading Act by making misleading statements about the need for services, and making unsubstantiated statements about earthquake risk. EBSS intends to make a complaint under the Act.

The methodology is a mess

It is full of inconsistencies and vague statements. It is difficult to understand what it means let alone have any confidence in the outcomes. The methodology is open to manipulation that will deliver more EPBs.

There has been no testing of the models

We have no idea of the economic impact because no one knows how the earthquake prone building methodology will work in practice. We have previously put the cost at \$10 billion, but it could be considerably higher. There can be little confidence that it will deliver consistent results. The model development process falls well short of minimum testing and validation standards, let alone best practice.

The Initial Evaluation Procedure evaluation should be honestly calibrated and applied

The IEP is much cheaper than a full engineering assessment and is better fit for a mass-screening regime. It has been calibrated so it often generates absurdly low assessments. This should be fixed so it is a real option for building owners who are forced to get an assessment.

Policy development process has been captured by private interests

The large engineering firms that have played the critical role in the development of the Chief Executive's methodology have an obvious conflict of interest that has not been managed by MBIE.

The evidence that reinforced concrete EPBs actually perform very well has been ignored

From a life safety perspective, older reinforced concrete buildings performed as well as modern buildings, in the Christchurch earthquake. This was inline with the performance in other earthquakes. This evidence has been ignored and these building are being assessed even more conservatively.

Simple low cost interventions that will deal with the worse risks have been ignored

The focus has been on a grandiose national assessment programme that will have little impact on life safety. The recent Wellington/Blenheim proposals to address the worst risks in 300 unreinforced masonry buildings is expected to cost \$9 million. A national rollout of an effective programme in medium and high risk areas could well cost less than \$100 million.

Government should contribute to save our architectural heritage

A start of sorts has been made in Wellington. It would not cost much to protect towns such as Whanganui, which could be decimated by the regime. Earthquake strengthening of all buildings in low risk areas, and reinforce concrete buildings in all areas is mostly a waste of money. The Minster released figures in his 2015 speech showed that significant delays in building strengthening would not cost a single life.

Call an implementation halt

No framework should be implemented until it has been properly tested. The experience with 'modern' buildings in Wellington should be a major concern, and we should not proceed until the event is fully understood and any implications for seismic risk management has been worked through. A delay could also be used to work out a more timely but measured response to the unreinforced masonry building risk issues.

Get independent advice

A fresh perspective is needed. MBIE and the earthquake engineering profession are inevitably wedded to a regime that will not deliver good results for New Zealand.

orange - limited occupancy and red - unsafe) that older RC buildings performed worse than newer ones. But the measured difference in performance was quite small (55 percent stickered vs. 44 percent) and was exaggerated by their methodology. They lumped together the orange and red stickered buildings as poor performers. We redid the numbers based on just the unsafe buildings. The older building performance was almost exactly the same as the modern building performance (actually just slightly better).

Wellington 2016

Performance of EPBs

In broad terms the Wellington earthquake could be described as moderate.

Of the nearly 700 EPBs just two, we understand, suffered structural damage and none collapsed. Many of the buildings must have been subject to forces approaching and beyond moderate earthquake levels. The general level of performance was as we expected for a moderate earthquake (see below). The WCC claim, on their website, that the EPBs could be expected to collapse in a moderate earthquake. If that was true hundreds of buildings would have been badly damaged or would have collapsed. The website information is misleading and should be withdrawn.

Modern buildings

The big news was the partial collapse of the modern Statistics Department building and the apparently poor performance of several other modern buildings. It is now acknowledged that there is a design flaw in many modern buildings that have used precast concrete elements, but beyond that it is too early to draw strong conclusions about the relative performance of 'non-flawed' modern, and the older reinforced concrete buildings. The earthquake sequence was unusual, and the distant earthquake 'suited' the older shorter rigid buildings better than modern tall ones. It would be a different story if Wellington where to be hit by a close severe earthquake.

Lessons

Nevertheless, Wellington did reinforce what should already have been known. First, there is no such thing as a completely safe building. Earthquakes interact with actual buildings in complex ways that cannot always be understood and modelled ahead of time, and there is always the chance that that a particular earthquake will have a particular building's number. This has to be acknowledged, and short of tearing down the entire building stock and starting again, accepted. The issue comes down to the risk and the only way to make risk decisions is on the best quantitative evidence.

⁷ Kam, W.Y., Pampanin, S. and Elwood, K. (2011). Seismic Performance of Reinforced Concrete Buildings in the 22 February Christchurch (Lyttleton) Earthquake. *Bulletin of the New Zealand Society of Earthquake Engineering, Special Issue 44(4)*: 239-279.

Second, the NZSEE's pronouncements on the relative risk of buildings sits on even shakier ground. If tall flexible modern buildings are relatively more vulnerable to (the more frequent) distant earthquakes, then it is difficult to say whether they are a lower risk overall let alone assert that they are 10 or 25 times less risky.

The test case - testing the legality of the 34% trigger point

The NZSEE regime is not only economically irrational, it is unlawful. There is no legal requirement that defines an EPB as having a less than 34 %NBS. The legal requirement is that a building must exceed its ultimate capacity, and be likely to fail in a moderate earthquake. It is patently obvious that for most EPBs this is not true.

At the end of 2014 we decided to test the law by seeking a determination from MBIE that two test case buildings were not earthquake prone because the Wellington City Council had not applied the right legal test.

The main argument

Our case was built on two main arguments. First, we presented a NZSEE Executive Officer's explanation⁸ that at the 34 % trigger point a building had a very low probability of failure. Second we presented GNS Science and US Geological Survey based analysis that put that a probability of a collapse, in a moderate earthquake for the relevant building class at 10,000-40,000 to one. Thus, obviously, it is not likely that the building will collapse in a moderate earthquake.

We produced a cost benefit analysis for one of the buildings. The cost to strengthen the building to 34%NBS according to one engineering assessment was \$4 million. We assessed the life safety benefits at a little over \$20,000.

The use of the IEP

The Council's designation was based on an Initial Evaluation Procedure (IEP) assessment. We argued that the Council could not be satisfied that the buildings were earthquake prone based on a procedure that was just a screening device. The Council puts a caveat on its IEP assessments that they are only a screening device and should not be used by anyone for any other purpose. This caveat was removed from the IEP that was provided to MBIE.

The Supreme Court Decision

At that point the Supreme Court had delivered its decision in the Insurance Council v Canterbury University case. The issue was whether the legal test was that a building was

⁸ Clark W. and O'Rourke H. 'Review of the Hastings Opera House Redevelopment Project 2004-2008 and Subsequent Assurance Reviews commissioned by the Hastings District Council

Towards a rational
discussion of earthquake
strengthening
requirements: a critical
analysis of the MBIE
proposals



Who com report? self - Ian
Harrison did
2014: date
compiled.

About tailrisk economics

Tailrisk economics is a Wellington economics consultancy. It specialises in the economics of low probability, high impact events including financial crises and natural disasters. Tailrisk economics also provides consulting services on:

- The economics of financial regulation
- Advanced capital adequacy modelling
- Stress testing for large and small financial institutions
- Regulatory compliance for financial institutions
- General economics

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3

Table of contents

Executive Summary	4
Section 1: Introduction and overview	7
Section 2: Are there 15,000 to 25,000 earthquake prone buildings in New Zealand?	11
Section 3: A comprehensive cost benefit analysis of the Ministry's Proposals	17
Section 4: Issues not considered by the Ministry	27
Section 5: Improving our understanding of an optimal response to earthquake risk	32
Section 6: Recommendations	40
Bibliography	42

Executive Summary

In December 2012 the Ministry of Business, Innovation and Employment (the Ministry) released a set of proposals relating to the earthquake strengthening of existing buildings. The most important of these proposals is a nationwide timetable that would accelerate the strengthening or demolition of 'earthquake prone' buildings.

The Ministry's proposals are largely based on the premise that between 15,000 and 25,000 buildings in New Zealand are earthquake prone. This is not true. In fact very few buildings are earthquake prone as defined in New Zealand law, or as most people would understand the term.

In assessing the size of the problem the Ministry did not use the legal definition of an earthquake prone building, which defines earthquake prone as 'likely to collapse in a moderate earthquake'. Instead it used a test devised by a working group of the New Zealand Society of Earthquake Engineers (NZSEE) in 2006. This test applies a much stronger definition of earthquake prone, and captures a much wider set of buildings, than the legal test. Very few of the buildings caught by the NZSEE test are likely to collapse in a moderate earthquake.

In Auckland a moderate earthquake for the purposes of the Act is defined as about a one in fifty year event. This is equivalent to about a 4.5-5 earthquake on the Richter scale - sufficient to break teacups but not to destroy buildings. But in Auckland it is possible that thousands of buildings will be designated as earthquake prone using the NZSEE's test.

The NZSEE test has been used by territorial authorities to designate earthquake prone buildings. It is likely that most of their designations would not survive a legal challenge.

The NZSEE working group's test was not supported by an analysis of its costs and benefits. Recently the Ministry commissioned Martin Jenkins and Associates to do a cost benefit analysis of the NZSEE test and other policy options. This analysis showed that the present value of the direct benefits of the Ministry's preferred strengthening option was \$37 million. The benefits are low because very few lives will be saved by the Ministry's proposals - just 0.25 a year on average. The present value of the costs of strengthening was \$1,717 million. The actual costs of strengthening are likely to be over \$4 billion but have been discounted because it is assumed that they will be incurred some time in the future.

The analysis did not capture wider economic and social benefits because the consultants did not think they would be material. However, the Ministry came to an 'on balance' view in favor of an accelerated strengthening option, giving the impression that it believed that these economic and social benefits must be substantial.

Our analysis shows that this is not true. We have assessed the wider social and economic benefits as having a present value of just \$5 million. The earthquake strengthening requirements are designed to save lives not buildings; they will not materially improve the post earthquake resilience of our cities.

We also found that the Ministry's preferred option would impose substantial additional economic and social costs on those who will have to strengthen their buildings. Some people could lose their homes and others will see their retirement savings devastated. Communities will also be affected with the loss of low cost buildings that support small businesses and possibly hundreds of heritage buildings could be demolished.

With total benefits of \$42 million and costs of around \$2.4 billion (present value) the Ministry's proposals are clearly sub-optimal. Proposals with a cost to benefit ratio of greater than one should normally be rejected. What is needed here, are standards that are more precisely targeted to identify buildings with design flaws or which have deteriorated over time.

It is also clear that the proposal to impose a nationwide set of standards is flawed and has not taken appropriate account of the seismicity of different cities. As a result the cost to benefit ratios in cities with the low seismicity are extremely high. We have estimated the Auckland cost benefit ratio to be 1762 to one and Dunedin's to be 888 to one. Under the proposals over a billion dollars will be almost entirely wasted strengthening buildings in these cities. The Martin Jenkins study estimated that the Auckland strengthening would save just one life every 4000 years.

Our overall conclusion is that the Ministry's proposals are not based on a coherent analytical framework and are fundamentally flawed. They will result in substantial economic and social damage with very limited safety benefits.

Our key recommendations are that:

- The Ministry should publicly correct the false impression it has given that there are a large number of buildings that are likely to collapse in just a moderate earthquake.
- The Ministry should go back to the drawing board and develop earthquake-strengthening standards and policies that are based on sound, transparent and disinterested analysis.
- Territorial authorities should withdraw earthquake prone classifications that are not based on the legal definition of earthquake prone.
- If the Government decides to proceed with the proposals to fulfill a societal need to 'do something' after Christchurch then it should fund most of the strengthening work.

Section 1: Introduction and key findings

In December 2012 the Ministry of Business Innovation and Employment (the Ministry) released a set of proposals relating to the earthquake strengthening of existing buildings. The most important of these proposals was that there should be a nationwide timetable that would accelerate the strengthening or demolition of 'earthquake prone' buildings. The proposals were supported by three documents: a consultative paper, a regulatory impact statement and an expert report. These documents are intended to assist interested parties to make informed comments on the proposals.

There are a number of serious problems with the Ministry's proposals and supporting documents.

The Ministry's assessment of the number of earthquake prone buildings is exaggerated

The Ministry's proposals are largely based on the assumption that between 15,000 and 25,000 buildings in New Zealand are earthquake prone. This is not true. In fact very few buildings are earthquake prone as defined in New Zealand law, or as most people would understand the term.

The costs of the proposals far outweigh the benefits

The core policy proposal, to accelerate the strengthening or demolition of those buildings that have been (incorrectly) identified as earthquake prone, is a bad policy response to the Christchurch earthquake. Its costs will be at least 50 times greater than its benefits. In areas with low seismicity the cost/benefit ratios are much higher. In Auckland it could be over 1700 to one.

The analysis of earthquake risk could be improved

While there is much that is useful in the Ministry's documents, there are also a number of misleading statements and important omissions. These documents are not always a reliable resource to inform public debate over the issue of how safe we want our buildings to be.

Addressing the deficiencies in the documents

The purpose of this paper is to address the deficiencies in the consultative document and the Regulatory Impact Statement.

We discuss the definition of an earthquake prone building, why few buildings are in fact, and in law, earthquake prone, and that Territorial Local Authorities have not been using the correct legal test when identifying earthquake prone buildings.

Next, we present the results of a full cost benefit analysis of the Ministry's proposals. The Ministry commissioned a cost benefit analysis that captured the direct costs of strengthening buildings and the benefits that accrue from reductions in fatalities and injuries and in lower direct property damage.

This analysis showed that the benefits of the Ministry's proposals were \$37 million compared to costs of \$1,717 million. However, the analysis did not capture wider economic and social benefits. Because the Ministry came to an 'on balance' view in favor of an accelerated strengthening option, the strong implication is that these economic and social benefits are very substantial.

Our analysis shows that this is not true. We have assessed the wider social and economic benefits as falling in in range of \$3-10 million with a mid-point estimate of \$5 million. We also found that implementation of the Ministry's preferred option would impose additional economic and social costs, particularly with respect to heritage buildings, that would far outweigh those benefits.

We also did a 'sense' test on the Ministry's implied assumptions concerning wider post-quake benefits and found that the benefits would have to be extraordinarily high to justify the Ministry's policy decisions. As an example we calculated that a single latté would have to be worth \$100,000 to generate sufficient post-earthquake benefits from the bar and restaurant sector to justify strengthening to the 34 percent standard.

The evidence is clear. Widespread earthquake strengthening is bad policy. With total benefits of around \$42 million and costs of about \$2.4 billion it is almost entirely a waste of money. It will save very few lives but it will have a serious impact on the homes and savings of the affected owners and could have a devastating effect on the retention of heritage buildings.

In the third and fourth sections we address some of the misconceptions created in the Ministry's documents and address some key issues and information that were absent from the reports. The discussion covers:

- A comparison of the effectiveness of earthquake strengthening and other ways to save lives
- An assessment of the regional costs and benefits of the proposals
- Whether earthquakes are 'special' from a safety perspective
- A discussion of who should pay for earthquake strengthening if the proposals were to proceed
- Why the Ministry's own expert report shows that unreinforced masonry buildings are not as risky, relative to modern buildings, as the Ministry depicts.

Saw that after 2016 Kaikoua quake!

Our recommendations

We conclude with a set of recommendations.

The key ones are that:

- The Ministry should publicly correct the false impression it has given that there are a large number of buildings that are likely to collapse in just a moderate earthquake.
- The Ministry should go back to the drawing board and develop earthquake-strengthening policies that are equitable and which are based on sound analysis and the considered views of the New Zealand public.
- Those territorial authorities should withdraw earthquake prone classifications that are not based on the legal definition of earthquake prone.
- If the Government decides to proceed with the proposals to fulfill a societal need to 'do something' after Christchurch then it should fund most of the strengthening work.



'Earthquake prone' buildings Oamaru

Section 2: Are there 15000 to 25000 earthquake prone buildings in New Zealand?

The Ministry's assessment is wrong

The Ministry's preliminary assessment, that there are between 15,000 and 25,000 earthquake prone buildings in New Zealand that likely to collapse in just a moderate earthquake, should certainly be a source of concern and should, with some urgency, motivate a policy response.

Fortunately the Ministry is wrong. In fact very few buildings are likely to be earthquake prone, as defined in New Zealand law or as reasonable people would understand the term 'likely to fail in a moderate earthquake'.

What does earthquake prone building mean?

Obviously the term 'earthquake-prone' does not, by itself, mean very much. All buildings in New Zealand are earthquake prone in the sense that they are all subject to earthquakes, and nearly all will fail if the earthquake is big enough. Earthquake prone only has meaning where it defines a class of buildings that fail a specified performance test against a defined earthquake event.

The Building Act 2004 provides such a definition. Section 122 reads as follows:

- (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.

The Building Regulations (Earthquake Prone Buildings) 2005 defines a moderate earthquake as follows:

*For the purposes of [section 122](#) (meaning of earthquake-prone building) of the Act, **moderate earthquake** means, 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 that site.*

A moderate earthquake, therefore, is defined in relation to the 'large' earthquake that is used to design a new building. The large earthquake is broadly defined as a one in 500 year event and is measured using a technical analysis which captures the force exerted by the earthquake on a building. The magnitude of the force will depend on the seismicity of the area. In Wellington a one in 500 year earthquake is broadly defined as having an average peak ground acceleration (PGA) of 0.4 m/s^2 . The average PGA figure for Auckland is 0.13. The 'moderate' earthquakes are defined as having a PGA of one third of these figures and are one in fifty year events. In more commonly understood terms the Wellington and Auckland 'moderate' earthquake can be roughly equated to earthquakes measuring 6 and 5 on the Modified Mercalli Intensity (MMI) scale¹, or around 5.5-6 and 4.5-5 respectively, on the Richter scale. Earthquakes of these magnitudes are not destructive events. An MMI 6 event is associated with light building damage. A MMI 5 earthquake might break a few teacups.

¹ The Modified Mercalli Scale is a measure of felt intensity and captures perceptions of the force of the earthquake as well as observed damage.

The earthquake prone building definition has two operative words. A building has to be *likely* to *collapse* in a moderate earthquake. 'Likely' in this context should take its ordinary meaning. It certainly means more likely to happen than not - that is, a probability of more than 50 percent. It is more like a 65 to 85 percent probability with a midpoint of, say, 75 percent.

Collapse also takes its ordinary meaning – that is the building fails completely. It does not just mean the building is just damaged, even quite severely.

We know from the Christchurch and other New Zealand experiences that even unreinforced masonry buildings (which are almost all designated as earthquake prone) will generally stand up to some reasonably severe shaking. Very few collapsed in the first Christchurch earthquake, which was much more severe than the Christchurch measure of a 'moderate' earthquake. If the earthquake prone designations were correct then we would have expected at least 75 percent to have collapsed. And if those buildings were resilient in Christchurch the same designs will be even more robust against the lesser quake standards in areas of low seismicity, and in particular in Auckland.

The evidence for Wellington is also clear. Most of the designated earthquake prone buildings have already survived the 1942 Wairarapa earthquake that subjected them to a greater shock than a 'moderate' Wellington earthquake.

It is likely, therefore, that there are only a small number of earthquake prone buildings in New Zealand, mostly where there is some basic flaw in the design, or where there has been some deterioration in a building over its life that has affected its strength.

Note again the Nov 2016 quake

Why do the Ministry and local authorities believe there are so many earthquake prone buildings?

If it is obvious that there cannot be many earthquake prone buildings the question arises as to why the Ministry, and apparently many local authorities, have come to a different view.

It appears that the main reason is that they have been guided by a paper produced by a working group of the New Zealand Society of Earthquake Engineers (NZSEE) in June 2006. This report was intended to operationalize the Earthquake Prone Building requirements under the 2004 Act and the 2005 Regulations.

In the report the working group applied a more demanding test of building resilience than permitted under the legislation. It substantially ignored the requirements of the Act and substituted its own specification of resilience.

In developing its guidelines the working group made the following significant changes to the definitions of key terms in the Act.

Likely to collapse was defined as follows:

“(b) “likely to collapse causing injury or death to persons in the building” means that collapse and therefore loss of life could well occur as a result of the effects of earthquake shaking on the building.”

Substituting could “well occur” for “likely” represents a substantial reduction in the probability that a collapse event could occur. An event that has probability of occurrence of, say, 5 percent could be described as something that could “well occur” but not something that is likely. The switch has the effect of strengthening the standard.

The ‘collapse’ test was removed all together and replaced with a tougher test that is embedded in a set of complicated formulas. A member of the working group, Rob Jury(2006), explained the logic for this change as follows:

“The point of collapse under earthquake is difficult, if not impossible to predict. It is for this reason that engineers typically design buildings for the ultimate limit state (ULS). The ULS is a somewhat arbitrary state based on a combination of loads and a level of stress/deformation that from experience has been found to produce buildings that should have reasonable (acceptable) earthquake performance. At the ULS most buildings should be a long way from collapse. The NZSEE document does not address, in specific terms, assessment likelihood of collapse.”

Clearly the change to a ULS measure is a tougher test than the legal one. The standard moves from likely to collapse to ‘a long way’ from collapse. This represents a change from a 75 percent probability to, say, a 1 or 2 percent probability.

While it is reasonable to translate the collapse requirement into the more technically precise ULS measure this does not mean that the calibration of the standard had to be strengthened. A ULS calibration could have been selected that could have been more faithful to the intention in the law.

The effect of these changes was to increase the required minimum of around 16 percent of the new building code under the 1991 Act to 34 percent.

The working Group explained their removal of the collapse criterion by saying that their view was that its reference in the Act did not relate to expected performance in a moderate earthquake but rather to an 'overall expectation'.

It is difficult to see how this interpretation can be sustained. Going back to the passage of the Building Act there is nothing in the Select Committee Report or in Hansard that even suggests that Parliament wanted to give the words in the Act something other than their plain meaning.

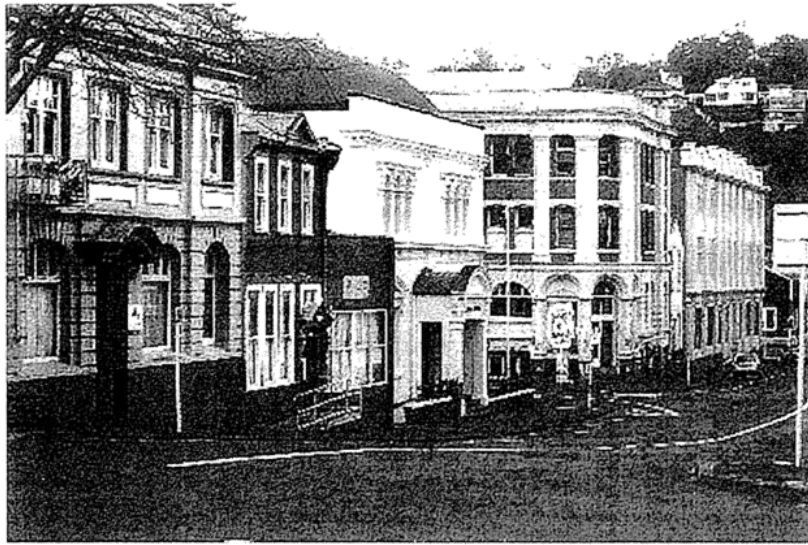
The upshot is that the NZSEE has effectively created its own earthquake prone building standard that was much stronger than required by law and the Ministry has given it a form of official status by providing an accompanying letter that stated: *"the NZSEE recommendations provide authoritative and timely information to assist TAs, owners and their engineers to make assessments of the structural performance of existing buildings, and to determine whether or not they are earthquake-prone."*

Territorial local authorities then seem to have followed the NZSEE and Ministry guidance without independently testing its legal status.

We believe that the NZSEE's interpretation of what constitutes an earthquake prone building is wrong. The meaning of the Act is reasonably clear and obviously requires a resilience test that is weaker than the NZSEE's and the Ministry's interpretation.

Our legal advice is that the NZSEE's and the Ministry's interpretations are wrong and would be unlikely to survive a challenge in court.

Quite apart from the legal position the Ministry's interpretation is obviously not consistent with an everyday interpretation of the term 'likely to collapse in a moderate earthquake', and is likely to lead to confusion and unnecessary concern.



'Earthquake prone' buildings Wanganui

Section 3: A comprehensive cost benefit analysis of the Ministry's proposals

The Ministry's cost benefit analysis effort

The Ministry commissioned Martin Jenkins and Associates (MJA) to produce a cost benefit analysis of earthquake strengthening options. The analysis captured the costs of strengthening so called earthquake prone buildings, and the expected benefits from lower death and injury rates and from reduced physical damage to buildings due to their higher earthquake resilience. Because the costs and benefits accrue over different time horizons the results are reported as present values. The annual future costs and benefits over 75 years are discounted by an appropriate interest rate.

The major benefit, the reduction in earthquake fatalities, is valued using the same cost of a human life as is used to value improved safety in roading investment decisions. This ensures that the value placed on safety in the analysis is consistent with society's valuation in what is the most important area where infrastructure spending has a safety element.

The results are presented for three strengthening levels, 34, 67 percent and 100 percent of the current code, and for the time allowed to achieve those standards.

The marginal impact of the Ministry's proposals is to increase the present value of benefits by \$12 million at a cost of \$759 million. The marginal cost to benefit ratio is 63.3 to one.

We have reviewed the MJA cost benefit framework and concluded that it basically sound. There is room for debate about the calibration of some of the key assumptions including the discount rate and the value placed on a human life in this context, but no reasonable alternative calibrations would affect the broad outline of the MJA results.

Table 1: MJA Cost benefit results

Policy	Present value benefits \$'m	Present value costs \$'m	Cost benefit ratio
34% current time frame	25	958	38.2
34% 15 years	37	1717	46.4
34% 5 years	60	2798	46.6
67% 15 years	89	7692	86.4
67% 5 years	145	12533	86.4
100% 15 years	144	9533	66.2
100% 5 years	237	15532	65.5

The costs far exceed the benefits

The key and obvious conclusion of the MJA analysis is that the costs of the Ministry's proposals far exceed the benefits. The present value of the strengthening costs is \$1.717 billion. This is less than the actual costs of around \$ 4 billion² because most strengthening is assumed to occur towards the end of the 15-year time frame and the costs have been discounted accordingly.

The benefits of the policy are only \$37 million. The reasons for this low figure are that strengthening will make very little difference to the cost of post-earthquake repair, and, importantly, will save very few lives. Because the stock of earthquake prone buildings is reasonably resistant to moderate earthquakes, and because very large earthquakes in New Zealand's major urban areas are very rare, the policy would only save, on average, about 0.25 of a life per year. A similar sized investment to make roads safer could save 20 to 30 lives a year.

² This figure is likely to be on the low side. There is little information in the MJ report on costs and it is not clear whether the cost estimates made provision for lost rents, remediation work and contingencies.

With a marginal cost benefit ratio of around 63 to one the analysis is telling us that the proposed policy is a bad one and that a more targeted approach, focusing on buildings with design flaws, or where deterioration has materially undermined structural strength, would be optimal.

However, the Ministry does not draw this conclusion. Rather, it says, having listed a set of costs and benefits, that it came to 'an on balance-decision' in favor of its policy position.

The cost benefit results are presented and noted, but it is explained that the estimates do not take account of the follow-on benefits of strengthening such as reduced social costs and impacts, improved post-earthquake functioning of cities and towns, or reduced economic losses.

The inference is that these additional benefits must be very significant to offset the large net direct cost figure. Given this significance it is not clear why the Ministry did not commission a comprehensive cost benefit analysis if it did not accept the MJA assessment that the wider benefits would not be material. It is not good practice, or even acceptable, to base a policy decision on a simple listing of a set of cost and benefit possibilities.

A full cost benefit analysis shows that 'follow on' benefits are not material

Because of the importance of a full cost benefit analysis to an assessment of the policy we have conducted our own analysis. The results are from a simplified model based on an application of the policy to Wellington. The outputs are then uprated to capture a New Zealand wide effect. Because Wellington is likely to accrue higher benefit than cities and towns in less seismically active areas, this approach is likely to overstate the level of benefits.³

Our mean estimate of the 'follow-on' social and economic benefits is \$5 million dollars. Taking the MJA estimate of the direct benefits of \$37 million our estimate of the total benefits is \$ 42 million.

³ We intend to develop a model that would capture the follow-on economic and social costs and benefits for an illustrative provincial town such as Wanganui.

We had to make a number of assumptions in calibrating our model and there is a relatively wide margin in our range of plausible outcomes. The model is at an early stage in its development and some of the figures will move around as the structure and inputs are refined. However, it is very clear that there are no plausible results that would overturn the results of the Ministry's direct cost and benefits model. Even if the true value of the benefits were 10 times our mid-point estimate the overall costs would still be higher than the benefits by a very large margin.

Why are the follow-on economic benefits so low?

There are number of reasons why the economic benefits from reduced business disruption following an earthquake would not be very high.

- The buildings which are affected by strengthening requirements are mostly old and typically house small, low value businesses. These businesses typically do not have strong downstream linkages that would exacerbate the ~~any~~ initial disruption.
- In the event of an earthquake many of these businesses will have a number of options (such as working from home) to reduce the effects of damage to their physical premises.
- Over-capacity in the many of the affected sectors (i.e. restaurants) means some business will be picked up by competitors who have not been as affected by the earthquake. While there might be a private cost to some small businesses there will be a more limited overall economic cost.
- Strengthening is designed to save lives not buildings. It is likely that many buildings strengthened to the 34 percent standard will have to be demolished or will require extensive repairs after the earthquake. At the very least they will be empty until they have ^{been} inspected. This could take some time as civil defence authorities are likely to take a very cautious approach to allowing reoccupation after the Christchurch experience.
- Building strengthening won't help when the key problem is damage to critical infrastructure and civil defence restrictions on access due to safety concerns. The key risk to Wellington's post-earthquake business functionality is that the foundations will fail on a few high-rise buildings with large parts of the CBD will being cordoned off until they are demolished.
- Finally, and most importantly, earthquakes that cause widespread damage are rare events, even in Wellington, and the expected benefits are according low.

Our assessment of the present value of the wider economic benefits is \$4 million.

The social benefits are also very low

The regulatory impact statement describes the social benefits of earthquake strengthening as reducing:

“ impacts on sense of community and identity through loss of gathering places, places of employment, schools, hospitals, homes, heritage buildings and places to recreate and create (i.e. sports grounds, performance venues, galleries, museums etc.)

costs/impacts associated with the displacement of households.”

Our assessment of these benefits is as follows:

Loss of gathering places

We have interpreted this as the loss of commercial gathering places such as restaurants and as reflecting the value of the business output to consumers (consumer surplus) over and above the value to the business. The present value (PV) of this consumer surplus is low for similar reasons to those set out in the discussion of the wider economic benefits.

PV social benefit: \$500,000

Loss of places of employment

This is already captured under economic benefits.

Loss of hospitals and schools

Hospitals and schools will not generally be affected by the requirements and there will be very little social benefit from this sector.

PV social benefit: \$100,000

Loss of homes

Only a small number of apartments, primarily in conversions from commercial properties, will be affected by the proposals. In many of those cases the apartments will still be lost in a large earthquake.

PV social benefits: \$50,000

Loss of heritage buildings

The standards are not a very effective way to save heritage buildings as they are designed to save lives not physical structures. The Christchurch experience showed that in a severe earthquake a 34 percent standard will not reduce the incidence of damage very much, and that the damaged heritage buildings are likely to be lost when civil defense imperatives outweigh heritage values. In more moderate

earthquakes a 34 percent standard will be more effective in reducing building damage, but this will be of less value in a situation where more time can be taken to save damaged buildings.

PV social benefits: \$500,000

Loss of places to 'create and recreate'

The importance of this factor is likely to vary markedly from town to town. With respect to Wellington, to our knowledge, only a few major recreational buildings are affected by the requirement. Two of the more obvious ones are the Opera house and the old stand at the Basin Reserve. Neither are likely to be used post an earthquake, even if strengthened, either because they have been damaged or there is no demand for their services.

PV of social benefits: \$100,000

Costs impacts involved with the displacement of households

As noted above few homes are affected by the proposals and the majority of occupants of those that are will still be displaced in a large earthquake.

PV benefit: \$50,000.

The wider social and economic benefits are outweighed by the wider social and economic costs

The wider social and economic costs include the following:

Reduction in low cost business accommodation

If owners demolish rather than reinforce their buildings then there will be a reduction in the availability of low cost business accommodation . This will negatively effect startup and marginal businesses. It is very difficult to assess the impact of this factor across New Zealand but even if the loss of producer surplus were just \$1 million per year then the present value of this cost would be around \$10 million.

Loss of heritage buildings

The proposals present a very significant threat to New Zealand's stock of heritage buildings, particularly in provincial towns, because in many cases it will be more economical to demolish than to strengthen. One way to quantify the social cost of this threat would be to think in terms of how much New Zealanders would be prepared to pay to allay a threat that could see hundreds or even thousands of their

heritage buildings disappear. If that figure were, say, just \$5 million a year, then the present value of that benefit would be around \$75 million.

Large Impact on individual owners has additional welfare costs

Unlike many policy proposals where the costs are borne widely across the community, the costs of the strengthening proposals will be borne by a relatively small group of owners. In many cases the impact will be devastating. Some owners could lose their homes and be presented with a demolition bill. Many others will suffer a large impact on their retirement savings. Because of these large wealth effects it is appropriate to make an adjustment to the dollar costs of the strengthening to better reflect the welfare costs of the proposals. We think that an adjustment of 33 percent is appropriate. This would increase the present value of costs by around \$570 million.

The \$100,000 latté

One of the ways we tested the robustness of our conclusions was to make an estimate of the values that key inputs into the 'wider costs' equation would have to take to overturn the result that the overall benefits of strengthening are less than the costs.

In the Wellington context one of the benefits of the policy is that the food and entertainment sector, which is centered in the earthquake prone building dense Courtney Place and Cuba Street precincts, would be more resilient post an earthquake. This would have, applying the distinction used in the Consultative Document, both economic and social benefits. The physical output of the sector would be higher and there would be wider benefits in terms of the value people place of the greater availability of convivial meeting places in stressed times. Thus the hospitality sector can generate a value that is above the market value of the output (this is termed consumer surplus) reflecting the value that people put on these wider attributes.

As a general economic proposition this is a credible story. We tested our model to see just how large this consumer surplus would have to be to generate a sufficiently large expected value. We simplified the question by expressing all of the outputs of the Wellington café, bar and restaurant sector in terms of units expressed in cups of latte's. Thus an actual latte' is equivalent to one latte; a wine is equal to two, a meal six, and so on. We found that the required consumer surplus on per 'latte' basis would have to be as high as \$100,000. As much as Wellingtonians are reputed to

love their coffee this figure is beyond the bounds of plausibly by a very wide margin. It tells us that the Ministry's position is not credible.

The results of the previous cost benefit modelling that influenced policy development were wrong

We understand ^{that} ~~that~~ the Ministry, the NZSEE and some territorial authorities have been influenced in their understanding of the value of earthquake strengthening by some cost benefit modelling ⁴that was done around the time the Building Act was drafted. This analysis appeared to show that earthquake strengthening to both 34% and 67% levels showed positive net benefits on a nationwide basis. The Wellington City Council cited a later version of this work (commissioned for the Department of Building and Housing) in its submission to the Royal Commission of Enquiry on the Canterbury earthquakes.

"There is good evidence of a compelling benefit to cost ratio in strengthening above the current 33% of the New Building Standard in regions like Wellington where seismic risk is high."

We have examined the publically available descriptions of the model and concluded that, for a number of reasons, the model was likely to have substantially overstated the benefits from strengthening. For one, it assumed that the on-going economic and social benefits would be a factor of two of the direct life, injury and building damage benefits. There was no supporting evidence for this assumption and, as we have argued above, it is not well founded. We also thought that the model was likely to have materially overstated the direct benefits from strengthening.

The MJA cost benefit analysis confirms our assessment of the direct benefits. Their estimate is only about 10 percent of the Hopkins estimate.

It is now clear that the analytical evidence does not provide support for the Ministry's proposal. It is less obvious, however, whether the improved analysis has yet influenced perceptions of costs and benefits held by territorial authorities and the earthquake engineering community. Many views may still be based on an outdated understandings of social and economic costs and benefits.

⁴ For a good description of the model and its results see Hopkins and Stuart (2003)

Summary of cost benefit results

A summary of the MJA and our cost benefit results for the Ministry's proposals are presented in table 2.

Table 2. Cost benefit analysis summary

Analysis	PV Benefits \$'m	PV Costs \$'m
Direct costs/benefits (MJA)	37	1717
Wider Economic impacts	4	10
Social impacts	1	650
Total	42	2387



'Earthquake prone' buildings Cuba Street Weilington

Section 4: Evidence not considered by the Ministry

In this section we address some issues that were not considered in the Ministry's consultation documents. We discuss the regional differences in the efficiency of earthquake strengthening; the relative effectiveness of earthquake strengthening in saving lives; and the issue of who should pay for the cost of strengthening.

Regional costs and benefits

The Ministry has presented just the aggregate cost and benefit data for New Zealand. This obscures important differences due to varying exposures to large earthquakes in different parts of New Zealand. To show these differences we have calculated city cost benefit ratios using the city data reported in Hopkins and Stuart. While their absolute values for costs and benefits were respectively understated and overstated, their relative cost and benefit figures are probably reasonably robust. We have scaled their results to produce a set of city figures that are consistent with the Ministry analysis. The results, some of which are presented in table one, show that the dollar costs of a dollar of benefits in low seismic zones are extremely high. The ratio is 1762 to one for Auckland and 6209 to one for Whangarei.

Table 3. Ratio of costs to benefits by city

City	PV benefits \$'m	PV costs \$'m	Cost/benefit ratio
Auckland	0.2	281.3	1762
Dunedin	0.1	73.6	888
Hamilton	0.2	62.1	306
Napier	2.7	82.0	31
Hutt City	3.1	79.1	26
Wanganui	1.2	67.4	54
Wellington	23.1	569.4	25
Whangarei	0.03	19.1	6210

Many more lives could be saved by spending the money elsewhere

Another way of looking at the effectiveness of the earthquake strengthening proposals is to consider their effectiveness at saving lives compared to the other options open to society. Our estimates assume the same, 75-year horizon that MJA used in its cost benefit analysis. Where relevant we take account of time value by allowing money to be invested until it is required for life saving expenditures. We also assumed that earthquake strengthening occurs at the beginning of the period so the life saving benefits flow for the whole period. The estimates are preliminary. They are not precise and should be regarded as indicative of relative sizes rather than as point estimates.

Table 4. Lives saved from alternative expenditure options

Expenditure	Lives saved 75 years (normalized)
Health	2000-3000
Road safety	1000-2000
Tsunami mitigation	100-200
Building strengthening	20

The burden of earthquake strengthen should not be wholly borne by building owners

It seems to be taken for granted by the Ministry that the costs of strengthening should be borne by owners. We have argued in this report that there is no case for widespread strengthening and if this perspective is accepted then the issue of burden sharing should generally not arise. If the policy nevertheless proceeds, then there are strong equity and economic arguments that the costs should be shared more widely.

Society should pay if it has very conservative risk preferences

Earthquake prone buildings are not, by any reasonable definition of the term, dangerous and pose much lower risks than society is prepared to accept in other walks of life. If society nevertheless insists on a much higher standard of safety for buildings, and change the rules to give effect to that preference, then it is reasonable that society as a whole should pay for benefits that do not accrue to building owners. Further If the Ministry is correct that the wider social and economic benefits are material then the incidence of costs should follow these benefits.

Burden sharing will improve the quality of decision making

After an event like Christchurch there is an understandable political imperative both at the local and nation level to be seen to be doing 'something' regardless of the economic logic of that something. This is easier to do if the costs fall on a small minority of the population - property owners (who don't naturally attract sympathy if it is thought that they are large investors), and the policy does not have material budgetary implications.

If most of the costs were to fall on government then the proposals would be likely to come under more scrutiny and the quality of the analysis and decision making might improve.

Burden sharing will reduce the economic costs of the proposal

If the costs are spread to tax payers in general then this will remove the welfare costs that arise when a large wealth shock is imposed on a small part of the population.

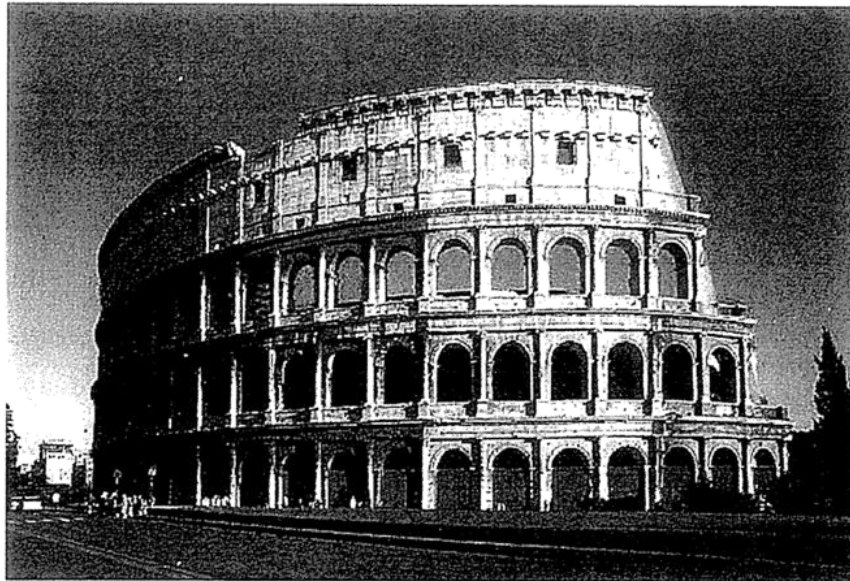
We think that the best policy outcome is that the economics of earthquake strengthening are understood and policies are directed to the strengthening of buildings with designed flaws and which are in a weakened condition. However, in

30

current circumstances it might be politically difficult to admit that the current implementation is both unlawful and too tough, and that it is appropriate to back off from the current interpretation of the standard.

The second best response would be to proceed to enforce just the least economically irrational parts of the proposals (dropping them for regions with low seismicity but proceeding with perhaps just the Wellington area) but to recognize that the burden should principally fall on central and local government.

A starting point would be central government 70 percent, local authorities 20 percent, and owners 10 percent.



'Earthquake prone' building Rome

Section 5: Improving our understanding of the costs and benefits of earthquake strengthening

In this section we discuss some of problems that arise because the Ministry does not have a coherent framework for its policy design. Having essentially ignored the results of its costs benefit work it has sometimes had to rely on statements to support its positions, which have the appearance of substance, but which are either meaningless, wrong, or in context misleading. They do not help New Zealanders understand the issues.

The Ministry has also fallen back on the implied support from the Royal Commission and earthquake engineering community who they suggest have come to similar positions to theirs.

We discuss:

- Whether the strength of buildings is 'adequate' or 'acceptable'
- The Royal Commission analysis of the strengthening threshold
- The role of earthquake engineers in determining society's safety standards
- Why earthquake prone buildings are not as risky as the Ministry claims
- Whether earthquakes are special from a societal risk perspective

Current building strengths are broadly adequate and acceptable

Without a clear analytical framework the Ministry has fallen back on general statements to the effect that the status quo is not an adequate or acceptable position. For example in the Consultative document it states:

“There must be public confidence that the risk posed by buildings in earthquakes is being managed down to an acceptable level. This recognizes that the risk of building collapse, death and injury can be reduced but never eliminated- therefore, the benefits of any reduced risk need to be kept in proportion to the cost of strengthening and building removal”.

There is no guidance here as to what constitutes acceptable other than the implied conclusion that the status quo does not meet those tests. The Ministry has not used the normal test that the acceptable level of risk is where the marginal benefits equal the marginal costs.

Nor has the Ministry taken any guidance from its expert report on what could serve as an objective benchmark for an ‘acceptable’ level of risk. The report cites the UK benchmark of 1 death in 10,000 years. Using that figure there is no basis for significant concern in New Zealand. The expert report presents data that shows that the risk of earthquake prone buildings in Wellington is over 1:100,000. This is over 10 times as safe as the acceptable standard. Buildings in areas with low seismicity will be hundreds of times safer.

The risks that we are prepared to accept to have an efficient transport system is a guide to New Zealanders’ risk tolerances. Currently the annual death rate on our roads is about one in 12,000. We could decrease this rate sharply if wanted to by the simple expedient of drastically reducing the maximum speed limit to, say, 10kph. We choose not to because the economic cost would be too high.

There is no substantive analysis behind the Royal Commission's recommendation on the earthquake prone threshold

The Royal Commission process did not develop an analytical framework to assist its decision on the strengthening threshold. It listed some of the options and their pros and cons but provided no mechanism for choosing between them.

The Royal Commission did not:

- Commission its own expert work on the subject
- Call for submissions on the cost and benefits of strengthening
- Develop its own quantitative framework for measuring costs and benefits

The Commission was aware of the results of the MJA cost benefit analysis. It did not contest the assumptions or results. Rather it suggested that there were other benefits that were not captured by the study. It listed two. One of these was that its recommendation would give 'peace of mind'. The other was a recitation of the facts about Christchurch deaths and a statement that the number of dead in the earthquake came as a surprise. The latter was true, but in a 1:2,500 year event should not in itself be a surprise and it not clear how it supports the Royal Commission's policy recommendation.

On the peace of mind argument, this does have some value, but as 34 percent does not provide complete protection and not much protection against the really big quakes (the Commission's report showed that buildings strengthening to 34 percent failed at the same rate as the unstrengthen buildings) it cannot be represented as a solution to the truly nervous.

With respect to the earthquake prone threshold the Commission simply said that: *"Apart from this one exception (on parapets and gable ends), there appears to be no evidence that to protect life safety the shaking level to be resisted for earthquake-prone buildings should be set higher than one-third of the requirement for new buildings."*

The Commission either ignored the evidence in the cost benefit analysis work that a higher threshold would save some lives, or took the view that these benefits were not worth the costs.

The justification for an accelerated imposition of the 34 percent standard was that:

“There is considerable merit in completing the work expeditiously as there is obvious benefit in society being better prepared before a destructive earthquake.”

There are no supporting arguments elsewhere in the report and no regard appears to have been given to the additional costs of the proposal or of regional differences in seismicity and in benefits and costs.

‘Earthquake prone’ buildings are not 25 times riskier than buildings built to the current code

In both the consultation document and the RIS the Ministry cites NZSEE figures that purport to show that buildings at 16 and 33 percent of the modern code are, respectively, 25 and 10 times more risky than a modern building. These figures are misleading. They take account of just the likelihood of a building failing but ignore the probability of death and injury once a building does fail. A risk measure should take account of both factors.

The Ministry’s expert report (Taig 2012) show that the probability of death given a building failure is much lower in unreinforced masonry buildings than in modern building (about 6 percent compared to more than 25 percent for reinforced concrete high-rise buildings). Thus the risk of death in sound unreinforced masonry buildings is not markedly higher than that in some sound modern high-rise buildings. Figure 22 of the report shows that the risk of a UMR building is only about 40 percent higher than a post 1980s moment resisting high-rise building. With other building types the margins are wider but the relative risks are well short of the claimed 1:25.

The risks posed by earthquakes in the riskiest areas are lower than other material risks

The RIS makes the following statement about relative risks.

“Further advice on these issues (risks) was sought from GNS Science and international risk experts as part of the review. A key finding of this work is that individual risk from earthquakes is small when it is averaged over the whole population – other day-to-day activities pose more immediate risks to life safety, for

example, fatality risk from road accidents (see Figure 1 below). However, it can be significant relative to other hazards at higher risk locations. "

The last part of this passage gives the impression that earthquake risk is still a material source of concern in some locations despite the low overall level of risk. Taken literally the statement is true. The expected death rate from bee stings in Wellington is higher than that from the collapse of unreinforced masonry buildings in earthquakes. But it is substantively misleading because the death rate for all material accident hazards including fire, drowning and motor accidents are all still well above the earthquake death rate in earthquake prone buildings.

Are earthquakes special?

The Consultative Document says that earthquakes are different because of the possibility that they could result in a large number of deaths.

"While they are rare, earthquakes differ from other risks because of the high death toll and impact that individual earthquakes can wreak on communities. Even though more people die in road accident than earthquakes, most fatal earthquakes involve fewer than four deaths per event. New Zealand's worst single road toll was 15 people killed in a bus accident in Northland in 1963."

There is at least an implication here that a death is more significant if it occurs en masse in an earthquake rather than in an isolated accident and that this should be factored into the policy decision.

The problem is that the Ministry does not explicitly take this argument anywhere and it is not possible to establish what weight, if any, it placed on the mass casualty possibility in arriving at its policy conclusions. The RIS does refer to a discussion of large-scale events in the expert report but the literature cited in that report does not support any special status for the value of a death in a large-scale accident. Several recent studies found that people value lives equally whether they are lost in small scale or in large-scale events.

However, even if it were the case that New Zealanders would like to place an additional weight on avoiding large-scale death toll events, for the most part taking account of this factor would not support the Ministry's proposals.

The weighting would not apply to small towns and low seismic areas
Death tolls in provincial towns and low seismic areas would not be on a large scale even without any earthquake strengthening so there is no justification for applying a higher weight for the cost benefit analysis for these areas. If 10 people were killed in an earthquake in Wanganui or New Plymouth, this is no more than could be killed in a bad road accident.

Probably wouldn't make a material difference to the death toll in Wellington
If Christchurch is a guide the death toll in unreinforced masonry buildings in a very large Wellington would not be very high. The number of unreinforced masonry buildings was much higher in Christchurch in Wellington and the pedestrian density in the critical areas was also higher than would be expected in Wellington. While no one died in a reinforced building in Christchurch this may have been a matter of luck because reinforcement to the 34 percent standard did not make a material difference the incidence of building failure.

Tsunamis not buildings pose the greatest risk of large-scale loss of life
After the Indian Ocean tsunami of 2003 a study was conducted of New Zealand's Tsunami risks (Berryman 2005). It showed that the expected loss of life due to tsunamis was of an order of ten times as great as that due to shaking of buildings and that the biggest tsunami loss of life events are much bigger and more prevalent. The biggest 1:2500 year event in Gisborne could take 12,000 lives while thousands could be lost in each of a number of east coast cities including in Napier Wellington and Christchurch.

It would be possible to mitigate some of these risks by building sea walls and by the evacuation and demolition of the most affected areas. If the level of risk aversion applied in the Ministry's proposals were applied consistently it might mean, possibly the abandonment on large parts of Wellingtons low lying Southern suburbs. As that is not proposed it difficult to see what can be motivating the concern with the much less acute risks posed by building shaking.

Safety judgments cannot be made on the basis of the engineering alone

The NZSEE is on the record as wanting a minimum standard for existing buildings of 67 percent of the modern code and as we have seen has been instrumental in having the Building Act interpreted to require upgrading to a 34 percent minimum.

While the earthquake engineering expertise is obviously a critical part of standard setting it is not the whole story. It is also necessary to have a sound economic framework to make an assessment of costs and benefits. There was no such framework in the 2006 Working Group document and the calibration of the standard was simply based on the Working Group's opinion of what is acceptable. That opinion of what is good for New Zealand is no more valid than that of any well informed New Zealander and perhaps less so. Earthquake engineers have a conflict of interest because it is in the profession's economic interest to have a higher standard.



Cuba Street Wellington 2027

Section 6: Recommendations

Our key recommendations are that:

One

The Ministry should publicly correct the false impression it has created that there are a large number of buildings that are likely to collapse in just a moderate earthquake.

Two

The Government should go back to the drawing board and develop earthquake-strengthening standards that are based on a considered analysis of their costs and benefits. The current legal definition of an earthquake prone building is not well crafted and the test set by regulation not firm enough. The NZSEE test is too tough by a wide margin.

Three

An independent and authoritative agency such as the Productivity Commission should be commissioned to do the research and analysis that is needed to calibrate the standards.

Four

Standards should be set by a public authority, not by parties with a commercial interest in the outcome.

Five

Territorial authorities should withdraw earthquake prone classifications that are not based on the legal definition of earthquake prone.

Six

The Government should fund most of the strengthening work when it imposes requirements based on a societal need to be seen to be taking some action as a response to Christchurch, rather than a reasonable assessment of the risk posed by buildings

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**WCC EPB PRIORITY BUILDINGS CONSULTATION
THURSDAY 6 DECEMBER 2018, 101 WAKEFIELD STREET
ORAL SUBMISSION ON BEHALF OF THE BOND STORE BODY
CORPORATE, EGMONT STREET, TE ARO**

- My name is Christopher Butler and I am a member of the Body Corporate Committee of the Bond Store, a 17 unit residential complex located in a converted heritage URM building in Egmont Street, Te Aro.
- Let me begin with a Wellington newspaper commentary on Egmont Street:
“The locality is a perfect sink of filth and hotbed of disease....Surely it is time that a determined and systematic effort should be made....to abate the numerous nuisances which exist in its midst, endangering the health and lives of its inhabitants.”
- That was a commentary from the “Evening Post” of 20 October 1876. Although only 21 years had passed since the monumental earthquake of January 1855, the paper was referring not to seismic risk but rather to deficiencies in public sanitation.
- I mention this less as a matter of historical interest, and more for contemporary reasons. First, those words from over 140 years ago remind us that media interest in matters of public welfare is not new.
- Secondly, they are a testament to the origins of Egmont Street – known more often at the time as Little Taranaki Street.
- Happily, Egmont Street no longer harbours filth and disease. It is in fact a pretty laneway thanks to the initiative the Council has shown in developing the character of Wellington’s inner city.
- What appears to be largely unchanged is the street’s ownership. Our understanding is that, now as then, Egmont Street has multiple owners with ties to the laneway dating back in some cases to its beginnings as a commercial area and an informal pathway to allotments.
- We believe Egmont Street continues to be a private road. As such we do not believe it meets the criteria of a public thoroughfare.
- There is nothing about the way Egmont Street is now used that challenges that view. Most commercial activity occurs at either end, with a restaurant and rental car depot sited close to the intersection with Dixon Street, and at the other end an electrical supplier and candle manufacturer close to the intersection with Ghuznee Street.
- Traffic is light, mainly vehicles of the occupants of 37 apartments in the two URM heritage buildings located half way up the laneway as well as users of the 20 odd car parks in Soho Apartments. There are occasional service vehicles, a few motorcyclists taking advantage of parallel parking

in the laneway, and unrelated traffic which likes to use Egmont Street as a “rat run” between Dixon and Ghuznee.

- Largely for safety reasons, particularly given this era of quiet vehicles and the distractions of personal electronics, thought has been given to installing retractable bollards to restrict day time “rat run” use by motor vehicles and this is likely to be looked at again. A security gate at the Dixon Street end is already closed to prevent public access overnight.
- Egmont Street also carries light pedestrian traffic, particularly at each end of the working day. It includes residents, users of a couple of small service businesses in the laneway, and it can be augmented sometimes by more curious visitors to the city and those interested in Egmont Street’s laneway character.
- We do not believe that Egmont Street can be classified as a “high traffic route” under any circumstances.
- Our concern on this point does not relate to any practical action required of priority building owners in the high traffic category because both URM buildings in the laneway completed facade and parapet strengthening in 2018 (and have deadlines for full EPB remediation of 2023 and 2025 respectively). Our concern is that inclusion under such a blanket classification could establish a de facto precedent with respect to future issues.
- Our written submission notes our concerns at the potential for blanket classifications to result in anomalies being overlooked or even created. It also outlines areas of support which we believe the Council should consider. Rather than rehearsing specifics once more in this submission, we would rather address these two points by noting our support for the separate submission being provided by Inner City Wellington.
- There is one particular anomaly which deserves more precise attention however. That is the significant difference which the EQP Building scenario imposes with respect to single-owner commercial premises as opposed to multi-owner residential counterparts. Present policy settings and their surrounding narratives more often than not tend to assume the former scenario rather than the latter.
- Residential owners face two special challenges. The first is to obtain agreement among themselves to a course of action that is achievable and acceptable to all, whatever their circumstances. The second is to organise and fund not only a substantial engineering project but also to relocate households for its duration at a very considerable cost to themselves and their families in both care and coin. More thought is needed.
- Thank you for the opportunity to reinforce the Body Corporate’s written submission filed by email on Friday 9 November 2018.

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Inner City Wellington (ICW) submission on Priority Building Consultation

Emergency traffic routes

- ICW agrees with the emergency transport routes for Te Aro and Wellington Central.
- Before priority buildings on those routes are labelled owners need to know how buildings are determined to be priority buildings and what evidence WCC must provide of the risk of the buildings collapsing onto the emergency routes.
- Does WCC intend to identify every EQPB on those streets as a priority building?

High traffic routes

- ICW does not agree that all the streets included are high traffic routes.
- No exit streets such as Barker St and Fifeshire Ave are not high traffic routes compared to Lambton Quay, Manners St or Taranaki St and should not be included.
- There is insufficient evidence to justify the inclusion of these and many other streets – such as Egmont St. These streets do not meet the criteria set out in MBIE Guidance.
- WCC appears to be identifying buildings as ‘potentially earthquake prone, yet to be assessed or not earthquake prone’ as a means to broaden the number of streets that are identified as high traffic routes.
- We do not see how WCC can still be identifying URM buildings that aren’t already on the EQPB list or have been strengthened and removed from the list, after working on this since 2006.
- An independent review must be undertaken of the approach to identifying URM buildings that are not currently earthquake-prone, and the determination of high traffic routes, to provide assurance that the buildings and streets fit the criteria.

Impact on owners

- Reducing the timeframe by up to 7.5 years will have huge financial implications for owners in a time of capacity constraints and rising prices. The blanket approach to high traffic routes and the lack of transparency on how priority buildings will be identified on emergency transport routes is going to compound the problem.
- There will have to be flexibility on timeframes and WCC must start preparing for that. It must be better for the city to get the whole building strengthened rather than focus resources on one element – which remains attached to an earthquake prone building.
- WCC knows there are owners, many of them in body corporates, who are struggling and it’s not for want of trying. WCC has to start actively engaging with and supporting these owners or it will have to manage the consequences.
- We want to remind councillors that the vast majority of affected owners bought well before the priority building provisions were implemented and well before the Building Act 2004. In short, they did not buy knowing these costs were coming.