PROPOSED LOW DAMAGE DESIGN GUIDANCE
A NZ APPROACH
He aha te mea nui o te ao
What is the most important thing in the world?
He tangata, he tangata, he tangata
It is the people, it is the people, it is the people
— Maori proverb

The definition of insanity is repeating the same behaviors and expecting a different outcome.
*Albert Einstein*

Engineering is the art of modelling materials we do not wholly understand, into shapes we cannot precisely analyse so as to withstand forces we cannot properly assess, in such a way that the public has no reason to suspect the extent of our ignorance.”
— Dr AR Dykes
Low Damage Design Guidance - Why?
(What's wrong with code based minimum performance?)

Some personal observations (people, people, people)

- Buildings getting bigger, more expensive, more people on poorer land = consequence of failure is bigger
- Public expectations of performance is greater
- Communication of performance between stakeholders is not good enough
- Fear based decision making and/or sound bite decision making becoming more common
- Design profession becoming increasingly reliant on ‘cook book’ codes over 1st principle design
- Repeating mistakes by treating client and the public as ignorant
LDD – Who is it for?

**Stakeholders** (people, people, people)

- Public
- Owners and Developers (clients)
- BCA's
- Other design disciplines
- Contractors
- Researchers
Leadership, Vision & Objectives

Vision:

The industry standard approach to LDD

Objectives:

1. Provide high level guidance on what LDD should achieve
2. Provide design criteria to be satisfied
3. Provide assistance to BCA's & reviewers for compliance of LDD buildings.
Philosophy

• LDD is not ‘bolt on’ component. It’s a philosophy that must be holistically followed through all aspects.
• It requires the design team to agree performance with stakeholders, not blind reliance on Codes and Standards.
• LDD performance **may not be possible** on some sites
• It does not require ‘Low Damage Technologies’ to be used.
Document Hierarchy

Practical considerations

- Freely available
- Written in plain English – briefing guidance
- Overarching for more detailed guidance to follow

Diagram:
- Low Damage Design Guidance
- Seismic Isolation
- Buckling restrained braces
- Viscous Damping
- Other
# Performance & Acceptance

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Concluding Comments

*It is People, It is People, It is people.* Recent experience has highlighted four lessons:

1. Life Safety code based minimum design performance is not understood.
2. Engineers have not done a good job at communicating performance.
3. Out of service time is an important factor in decision making.
4. That clarity and ownership of terminology is important.

*It is People, It is People, It is people.* It is the author’s opinion that:

1. Owners and users will judge success of building performance; **not** engineers.
2. These issues are universal and international collaboration is important.
3. We must lead the conversation on resilience and LDD but not set the risk level.
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