Prioritisation strategy for seismic retrofitting of reinforced concrete buildings in Australia

**Research aims**

Developing a methodology, specifically suited for Australian buildings, for the evaluation and prioritization of existing vulnerable RC buildings, in order to propose suitable cost-effective retrofitting strategies.

**Three-tiered methodology**

The methodology will provide significant time-savings in the vulnerability assessment of RC buildings. Retrofitting strategies will be proposed for the different vulnerable buildings identified.

**Research significance**

The development of simple framework to assess the potential risk and identify the need of retrofitting for the existing RC buildings in Australia. Rapid seismic evaluation of existing Australian RC buildings, as performing detailed nonlinear analysis is computationally expensive when a large amounts of buildings need to be assessed.

**Proposed future application**

In addition, it can be used as a preliminary study for the development of Australian seismic evaluation and retrofit standards of the existing RC buildings.

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**Figure 1:** Earthquake loading vs Displacement graph for a ductile and limited ductility building

**Figure 2:** Soft story building

**Figure 3:** Building is safe

**Figure 4:** Example building plan with vulnerable features of category A and B

**Figure 5 (a, b):** Example of analysis results from level 2 scan check

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**Non-structural component checklist**

- Parapet
- Appendages
- Mechanical and electrical equipment
- Masonry chimneys
- Piping
- Stairs
- Ducts

**Non-structural component checklist**

- Partitions
- Masonry veneer
- Contents and furnishings
- Ceilings
- Light fixtures

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**More Information**

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