



Modelling impacts of sequential cascading natural hazards on the built environment



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The project

→ The purpose of this research project is to:

1. establish the context to understand the extent of direct and indirect losses relevant to infrastructure,
2. develop estimation methods to understand the impact of compound disasters on infrastructure losses,
3. provide a framework to better understand the value of infrastructure resilience investments.

→ How we plan to do this:

1. Network mapping

- a) Work with end-users (workshops) to understand and map current networks and understand their current knowledge of vulnerabilities within systems and how assets fail (direct damage)
- b) Use maps to understand flow of damage within and across networks/hazards (indirect damage)

2. Damage estimation

- a) Develop direct damage models (open source) using empirical data or component-based modelling → Link hazard metric to estimated loss.
- b) Use information from network maps to inform indirect damage estimation methods

3. Utilisation case studies

- a) Develop a series of hypothetical case studies to investigate individual hazard impacts to case study networks
- b) Develop 'retrofit' and 'resilience building' case studies (including cost-benefit analysis)
- c) Develop case study with compounding events to identify where models fail





Come along to
our workshop
and make
your mark!

Stream 3
Wednesday
12:15 pm

