

Large-scale structural testing

Past experiences and future research needs



Why do we need
large-scale tests?

Early Adoption vs. Evidence

Hollowcore was considered an innovative solution in the 1980s

...until it was subjected to seismic demands (20 years later)

System tests required to avoid a repeat



Resilient or Repairable Buildings

1. Structural components

Structural disciplinary Theme: “Whole of building seismic performance”

2. Structural systems (more than components)

3. Entire buildings (more than structural system)

Inter-disciplinary programmes

4. Clusters of buildings (more than 1 building)

5. Cities and communities (more than buildings)





QuakeCoRE 2

- DT2: Whole-of-building Seismic Performance
 - Whole of Building:
 - Vertical-horizontal system interaction
 - Diaphragm behavior and demands
 - Non-structural systems
 - Whole of life design
- Critical to seismic assessment (e.g. precast floors, diaphragms)
- Critical to new design (esp. low-damage design)

Agenda



Time	Section	Presentations	Who
9.00 – 9.30	Morning tea provided on arrival		
9.30 – 9.35	Intro		Rick Henry
9.35 – 10.15	Past tests and experiences	ILEE concrete building test	Rick Henry
		ILEE Robust building test	Greg MacRae
		Swinburne MAST wall tests & Japan collaborative tests	Lucas Hogan
		NCREE torsional building test	Ken Elwood
10.20 – 10.35	Future research and practice needs	Concrete buildings	Santiago Pujol
		Steel buildings	Charles Clifton
		Timber buildings	Minghao Li
10.35 – 10.50		Practice #1	Stu Oliver
		Masonry buildings	Jason Ingham
		NSE	Rajesh Dhakal
10.50 – 11.05		Practice #2	Jama Borzouie
		Simulation & model validation	Reagan Chandramohan
		Practice #3	Stephen Hogg
11.10 – 11.40	Discussion	Breakout into small groups (<10) to discuss and develop ideas further.	
11.40 – 12.00		Reporting back from groups.	
12.00	Next steps		