

The University of Adelaide - Faculty of Engineering, The University of Auckland - Faculty of Engineering, supported by The Australian Earthquake Engineering Society and The New Zealand Society for Earthquake Engineering present:

# Fundamentals of Seismic Assessment and Improvement of Unreinforced Masonry Buildings

## Why You & Your Employees Should Attend This Seminar

**This full day seminar is intended as an introduction to the procedure for seismic assessment of unreinforced masonry (URM) buildings. Attendees are expected to have a sound understanding of AS1170.4 and basic structural engineering principles, but little prior experience in the detailed seismic assessment of unreinforced masonry buildings.**

In particular, the seminar is targeted at recent structural engineering graduates, structural engineers that have trained overseas but are unfamiliar with the seismic response of unreinforced masonry buildings and those that already have experience with the subject but are interested in a 'refresher'.

### The Seminar will cover topics including:

- Site inspections
- Selection of material properties
- Out-of-plane analysis of walls
- Determination of diaphragm characteristics
- Determining demands on wall-diaphragm anchorages
- Equivalent frame analysis on in-plane loaded walls

A particular feature of the seminar is that the final 2 sessions of the day will address methods for improving the seismic performance of unreinforced masonry buildings.

All information will be presented in a manner consistent with the AS 3826 Strengthening Existing Buildings for Earthquake, NZSEE Section C8 Seismic Assessment of Unreinforced Masonry Buildings and ASCE-41 Seismic Evaluation and Retrofit of Existing Buildings document. Reference will also be made to the new "Minister's Code for upgrading health and safety in existing buildings" which has a section on Earthquake requirements.

### Other Benefits

- Comprehensive resource through the seminar notes
- Knowledgeable experienced speakers with good platform skills
- The opportunity to network with industry peers

### Who Should Attend

Designers, Specifiers, Site Engineers, Contractors, Building Certifiers, Local Authorities, Consulting Engineers, Project Managers, Graduate Engineers

### Investment details

- \$500 (GST exclusive)

### Seminar fees include:

Tea and coffee on arrival  
Morning Tea  
Lunch

Afternoon Tea  
Comprehensive seminar notes

# Programme

8.30 - 9.00am Registration

---

**Session 1:** Overview of general structural seismic response, definition of terms, local and global failure modes, observations from past earthquakes

---

**Session 2:** Out-of-Plane wall response

---

Morning Tea

---

**Session 3:** Flexible diaphragm assessment

---

**Session 4:** Masonry materials; tension & shear anchors

---

Lunch

---

**Session 5:** In-plane pier and spandrel response

---

**Session 6:** Equivalent frame analysis

---

Afternoon Tea

---

**Session 7:** Retrofit philosophy, securing, methods of wall remediation, ties and straps, base isolation

---

**Session 8:** Diaphragm retrofits, 'splints and bandages', wall overlays, post-tensioning, supplementary structure

---

Optional attendance. Group discussion and/or break out into working groups to discuss how to tackle attendee current or past projects. Those wishing to participate should bring appropriate project details.

You may wish to download and bring either a digital or hard copy version of the assessment document with you to the seminar.

# Speakers' Profiles

## Professor Jason Ingham



Jason obtained his doctorate from the University of California San Diego in 1995 and is Professor of Structural Engineering at the University of Auckland. His research interests are primarily focussed on the seismic behaviour of masonry and concrete buildings, with his interest for over a decade having been primarily directed towards seismic assessment and improvement of unreinforced masonry (URM) buildings. Jason and his research students have received several international awards for their masonry research and Jason led the collection of data related to the performance of masonry buildings following the Canterbury earthquakes, with evidence subsequently presented at the Canterbury Earthquakes Royal Commission.

Jason has also undertaken post-earthquake building inspections in Sumatra (Indonesia) and in Nepal. In 2015 Jason was a member of a study tour to inspect URM building damage following the Napa (California) earthquake and in 2016 Jason was a member of the NZAid-funded team that provided technical training to Nepalese engineers on the seismic assessment and improvement of masonry and concrete buildings. Jason is a past member of the executives of SESOC, NZSEE and the NZ Concrete Society, and is a Fellow of IPENZ. Jason is also QuakeCoRE Flagship leader for Flagship 3 pertaining to earthquake-prone buildings.

## Professor Michael Griffith



Michael Griffith is Professor in the School of Civil, Environmental and Mining Engineering at the University of Adelaide. He obtained his PhD in Structural Engineering from the University of California at Berkeley (1988) after completing his BSc(Civil Eng.) and MSc (Civil Eng.) degrees at Washington State University in the US. Dr. Griffith is a member of the Standards Australia Australian Earthquake Loading Code committee, a Fellow of the Institution of Engineers, Australia, state committee member of the SA Structural College and Past-President and now Honorary Life Member of the Australian Earthquake Engineering Society. His main professional and research interests are in the field of earthquake engineering and structural dynamics with a particular interest in the performance of unreinforced masonry structures in earthquakes. He has co-authored over 200 research papers in the field of structural engineering and sits on the Board of Directors for the International Association of Earthquake Engineering which is based in Tokyo.

# Venues

## Monday 28 November

### Swinburne University of Technology

Engineering Building (EN) - Room EN214  
John Street, Hawthorn, Victoria

Accessible by train, tram or bus. All-day ticketed parking is available at Swinburne. There are also ticketed off-campus car parks and on-street parking options.

## Tuesday 29 November

### The University of Adelaide

Ingkarni Wardli Building - Room 5.57, Level 5  
North Terrace, Adelaide, South Australia

Note: The organisers reserve the right to cancel individual seminars should registration numbers for that venue be unviable. Should this situation occur, delegates will be offered a full refund.

**Registration** (Please register online for Melb seminar at <https://www.trybooking.com/NJBL> or for Adelaide seminar at <https://www.trybooking.com/NPJN> OR complete the form below, scan, and return to [sandersonseminars@gmail.com](mailto:sandersonseminars@gmail.com))

**Name(s):** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Mobile:** \_\_\_\_\_ **Email:** \_\_\_\_\_

**Dietary Requirement:** \_\_\_\_\_

### Please indicate which seminar:

**Melbourne** - Swinburne University of Technology     **Adelaide** - University of Adelaide

No. of registrants                      at \$500.00ea = \$ \_\_\_\_\_

Credit Card Details

Visa                       Mastercard

Card Number: \_\_\_\_\_

Expiry Date: \_\_\_\_\_    3 digit security no: \_\_\_\_\_    Name on Card: \_\_\_\_\_

Please register online or complete form, scan & email to [sandersonseminars@gmail.com](mailto:sandersonseminars@gmail.com) OR mail to PO Box 4014, McKinnon, Vic 3204. For all enquiries please call 03 9015 8350. NOTE: Full payment must be received prior to each seminar.

