

Detailing of Precast Cladding, Flooring Systems & Stairs for Multi-Storey Buildings

Presented by The New Zealand Concrete Society

Why You & Your Employees Should Attend This Seminar

Claddings, precast floor systems and stairs are key structural elements and their interaction with lateral load systems can drastically alter expected design performance. Moreover, poor design detailing and the incorrect installation of claddings, floors and stairs can drastically compromise the overall seismic performance of those systems. The Canterbury earthquake sequences imparted severe lessons and some traditional connection details did not perform as well as expected, with issues such as unexpected pounding between claddings, brittle failures of connections and fasteners, excessive out-plane movements, damage to floor supports and loss of stair seating. A proper review of existing connections and improvements are necessary to increase the overall robustness of claddings, floors and stairs.

The aim of the seminar is to provide a comprehensive overview of existing connection detailing and current design methodologies and propose improvements through worked examples.

This seminar will cover:

- Overview of current practice details and load-paths
- Understanding the performance of floors, stairs and claddings during the Canterbury earthquakes
- Large scale laboratory testing of traditional cladding and floor connections and suggested improvements
- Step-by-step design methodologies according to current standards (NZ1170.5 and NZS 3101) through design examples
- Future research trends and proposed alternative connections for floors, stairs and claddings

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, Building Owners, Property Developers.

Investment details

NZCS members \$340 (GST exclusive) per person
Non NZCS members \$440 (GST exclusive) per person
(includes complimentary NZCS membership until 31 March 2016)

Seminar fees include:

- Tea and coffee on arrival
- Afternoon tea
- Comprehensive seminar notes

Venues

Wellington

Tuesday 8 September 2015

InterContinental Hotel
2 Grey Street, Wellington

Christchurch

Wednesday 9 September 2015

Chateau on the Park
189 Deans Avenue,
Riccarton, Christchurch

North Harbour

Tuesday 15 September 2015

QBE Stadium (formerly North Harbour)
Stadium Drive, Albany, Auckland

Auckland

Wednesday 16 September 2015

Ellerslie Event Centre
80-100 Ascot Avenue
(Ellerslie Racecourse),
Greenlane, Auckland

Programme

12.30 – 1.00 pm

Tea/coffee & Registration

1.00 – 1.30 pm

Introduction (*Rick Henry*)

- Overview of building deformations and demands on different elements (cladding, stairs, floors)

1.30 – 2.15pm

Concrete Cladding (*Andrew Baird*)

- Fundamentals/EQ performance
- Overview of cladding performance during the Canterbury earthquakes and large scale laboratory tests

2.15 – 3.00pm

Stairs and Precast Flooring (*Rick Henry*)

- Fundamentals/EQ performance
- Overview of stairs performance during the Canterbury earthquakes
- Overview of flooring performance during the Canterbury earthquakes and large scale laboratory tests
- Highlight deficiencies in the detailing through review of load paths

3:00 – 3:30pm

Afternoon Tea

3.30 – 4.30pm

Cladding - Detailing/Design (*Andrew Baird*)

- Demonstrate improvements of existing details (including out-plane behaviour) and design methodology
- Step-by-step numerical design examples
- Future research trends: design detailing of alternative dissipative cladding system connections

4.30 – 5.00pm

Stairs and Precast Flooring Detailing/Design (*Rick Henry*)

- Improved design detail concepts and design methodology
- Step-by-step numerical design examples

5:00 pm to 6:00 pm

Discussion, Networking and Refreshments

Speakers Profiles

Andrew Baird

Andrew is a structural engineer in the commercial structures team at Beca Ltd in Auckland. Andrew completed his PhD at the University of Canterbury, where the focus of his research was on the seismic performance of precast concrete cladding systems. Andrew undertook his research during the Canterbury earthquakes, gaining first-hand experience on the performance of past and present precast panel detailing from observations following the earthquakes, as well as through experimental testing in the University of Canterbury's lab.

Rick Henry

Rick is a lecturer in the Department of Civil and Environmental Engineering at the University of Auckland. He is responsible for teaching courses in concrete materials and design and conducting research into cement technology, seismic design of reinforced and prestressed concrete structures, precast concrete construction, and low-damage seismic design. Rick is currently leading research projects into the seismic behaviour of reinforced concrete walls, connections in precast concrete floor diaphragms, and post-tensioned precast concrete wall systems. Rick currently sits on the technical committee for the NZS 3101 Concrete Structures Standard.

The NZ Concrete Society acknowledges the following supporting organisations for making this seminar series possible:

Presenters

Andrew Baird

Courtesy of Beca Group Ltd

Rick Henry

Courtesy of University of Auckland

Supported by Precast NZ Inc.



Registration Form - Tax Invoice: GST Registration Number 48-931-944

Name(s):

Company:

Postal Address:

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Please indicate which seminar and venue:

- ☐ **Wellington**, Tuesday 8 September 2015 ☐ **Christchurch**, Wednesday 9 September 2015
☐ **North Harbour**, Tuesday 15 September 2015 ☐ **Auckland**, Wednesday 16 September 2015

Payment details:

No. of member registrants [] at \$391.00 GST inclusive = \$

No. of non-member registrants [] at \$506.00 GST inclusive = \$

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NOTE: Full payment must be received prior to each seminar.