



ASSESSING PRECAST CONCRETE FLOORS SEMINARS

With the fall-out from the Christchurch and Wellington earthquakes continuing to resonate through the construction industry, this series of seminars has been very well received.

It has been presented twice in Wellington (in November) and once in Christchurch (in December), and is to be repeated in other centres around the country in the New Year. Venues and dates are being confirmed.

Precast concrete floors are topped in-situ with reinforced concrete topping (often lightly) to form a composite floor system that generally also functions as a diaphragm. These floors are common in New Zealand buildings built during the 1980s and early 1990s.

The four common types of precast floor units are:

- hollowcore
- double tee
- ribs (with timber infill), and
- flat slabs.

Historic construction practices means all these floors types may be more vulnerable to earthquakes than current designs – particularly those constructed using hollowcore and double tee units, as illustrated in the recent Christchurch and Wellington earthquakes.

Assessing the capacity of existing precast floors is complex. A revision and substantial expansion of the appendix to Section C5 of the *Technical Guidelines for Engineering Assessment* that covers precast concrete floors has recently been completed.

It updates and simplifies the procedures for assessment of hollowcore floors previously published in the University of Canterbury 'purple book', and extends these procedures to cover other types of precast concrete floors.

The seminar presents a thorough overview of the updated assessment guidelines, including illustration of how the guidelines account for behaviours observed in past earthquakes and laboratory testing. Use of the guidelines will be illustrated by presentation of worked examples for key flooring types.

Presenters

Ken Elwood – the MBIE Chair in Earthquake Engineering at the University of Auckland and Director of QuakeCoRE: New Zealand's Centre of Research Excellence for Earthquake Resilience. He is actively involved in research related to the seismic response of existing concrete and masonry buildings. *(Courtesy of the University of Auckland)*

Des Bull – a structural engineer for 35 years, Des is Technical Director of Holmes Consulting with responsibilities for marketing and development of structural engineering services for HCG, emphasising concrete structures including commercial buildings and bridges. *(Courtesy of Holmes Consulting)*

Chris Poland – an Associate at Clendon Burns and Park in Wellington, Chris has worked as a consulting structural engineer for 12 years. Actively involved in Targeted Damage Evaluations of ductile frame buildings, he's a member of the MBIE working group developing assessment guidance for precast concrete floors. *(Courtesy of Clendon Burns and Park)*

Carl Ashby – a Principal Structural Engineer and the Wellington Manager for WSP-Opus. He has considerable experience in client and project team liaison and project delivery on a wide range of Commercial, Industrial, Residential, Health, Justice, Education, and Civil Infrastructure projects. *(Courtesy of WSP-Opus)*

The Concrete NZ – Learned Society is enormously grateful for the support from the organisations making the presenters available, and for the support of MBIE, SESOC and NZSEE.

Seminar costs

- **CNZ-LS members** \$340 (GST exclusive) per person
- **Non CNZ-LS members** \$440 (GST exclusive) per person (includes complimentary CNZ-LS membership until 30 June 2019)



2019 CONCRETE NZ CONFERENCE (10 – 12 OCTOBER)

The Society's annual conference heads to the Deep South next year, and for the first time ever will be held in Dunedin.

Members who hail from this part of the world can confirm that it is one of the most spectacularly scenic regions in New Zealand, with plenty of attractions and activities to be savoured around the conference.

Feedback about the destination has been overwhelmingly positive, and we expect a very good attendance.

The conference will be held at the Dunedin Centre. It includes the beautiful and historic Town Hall, in the centre of the city besides the Octagon. With all accommodation a few minutes' walk from the venue, the location is ideal.

More information available shortly, but please diarise the dates.



BEST WISHES FOR THE HOLIDAY SEASON



2018 has been a challenging year for construction in New Zealand with significant demand in many areas, complex infrastructure and housing issues and several large companies forced to close operations. In addition, the findings from recent earthquakes are still being analysed and incorporated into design and assessment guidelines.

These challenges require an innovative response by designers and contractors of concrete structures – as was graphically illustrated at this year's Concrete Conference in Hamilton by a number of presentations about projects being built around New Zealand.

The response to the challenges received added impetus from several seminars run by the Learned Society in collaboration with international partners. These also focused on innovative solutions using techniques such as fibre reinforced polymers or post-tensioned suspended slabs.

Our Society was also involved in seminars providing professional development for structural engineers on issues such as recent amendments to the Concrete Structures standard (NZS 3101) and the assessment of existing precast concrete floors.

Student engagement at the concrete conference has also been enhanced by running a concrete canoe race. This will become an annual event with more teams competing at next year's conference in Dunedin.

The council of the Learned Society has been active this year and continues to attract younger members including Paul Dillon from BBR Contech and Tim Sullivan from the University of Canterbury. Stepping down from council after many years sterling service is Rhys Rogers and we wish him well during his travels overseas.

I hope you all have a relaxing holiday and return refreshed to tackle whatever challenges 2019 may bring.

James Mackechnie – Learned Society President

OFFICE CLOSURE

Please note that the Learned Society offices will close on Friday 21 December and re-open on Monday 21 January.

