



# FINAL PROGRAMME

**TUESDAY 8 JULY 2014, LEVEL 4, SKYCITY CONVENTION CENTRE**

3.00pm - 8.00pm      Registration Desk Open

## CONFERENCE DAY ONE

**WEDNESDAY 9 JULY 2014, LEVEL 4, SKYCITY CONVENTION CENTRE**

\*Names highlighted in bold are presenting the paper.

7.30 am	<b>Registration Desk Open</b>	
	<b>Auckland 3 &amp; 4 (Plenary Room)</b>	
8.30 am	<b>Welcome &amp; Conference Opening Address</b>	
	<b>Paul Campbell</b> (President SESOC) <b>Kevin Thompson</b> (President IPENZ)	
9.00 am	<b>Address by Hon Nick Smith</b> Launch of the post disaster structural assessment field guides	
	<b>Auckland 3 &amp; 4 (Plenary Room)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
9.30 am	World standard structural engineering business  Paul Wymer, Past President of NZ Concrete Society, BBR Contech	
9.35 am	Achieving worldwide code acceptance of FRP materials through durability and materials testing (PN: 46)  Elaine Meriwether, <b>Scott Arnold</b> , & Amber Wagner  (World standard structural engineering business)	Developing robust and economical solutions for buildings subject to bushfire attack (PN: 40)  <b>Ken Watson</b> , Michael Kelly, Ian Bennetts & Justin Leonard  (Forensic engineering, ethics & disaster management)

10.00 am	Proposed new product conformity requirements to ensure consistency with the calibration of phi factors in AS4100 and NZS3404 (PN: 82)  <b>Anthony Ng</b> , Arun Syam  (Regulation – getting the balance right)	Guidelines for building failure investigations (PN: 25)  <b>Richard Sharpe</b> , Mike Stannard  (Forensic engineering, ethics & disaster management)
10.25 am	<b>Morning Tea Break (35 minutes)</b>	
	<b>Auckland 3 &amp; 4 (Plenary Room)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
11.00am	Regulation – getting the balance right  Neil Chevalier, Building Chemical Supplies.	Safe design of structures The advantages of RINGFEDER® Friction Spring for Earthquake protection in commercial building constructions,  Edward M. Cole, Engineering Manager, Ringfeder Power Transmission USA Corporation (Statewide Bearings)
11.05 am	Experimental testing of emulative and low damage fully precast concrete bridge bent in seismic regions (PN: 31)  <b>Mustafa Mashal</b> , Alessandro Palermo  (Regulation – getting the balance right)	Design wind speeds for really temporary structures (PN: 173)  <b>Russell Keays</b>  (Safe design of structures – what does it mean)
11.30 am	Sustainable and affordable rammed earth houses in Kalgoorlie: a real case study of an engineering project (PN: 113)  <b>Christopher Beckett</b> , Daniela Ciancio, Christof Huebner, Rachel Cardell-Oliver  (Regulation – getting the balance right)	Effects of realistic support conditions on the shear strength of hollow flange channel beams (PN: 133)  Mahen Mahendran, <b>Poologanathan Keerthan</b> , Anand Narsey  (Safe design of structures – what does it mean)
11.55 am	Australian/New Zealand Standard for Composite Structures, AS/NZS 2327 (PN:141)  <b>Brian Uy, Stephen Hicks</b>  (Regulation – getting the balance right)	Prequalification testing of temporary propping systems for tilt-up and precast panels (PN 120)  <b>Nicholas Haritos</b> , David Heath, Emad Gad and John Wilson  (Safe design of structures – what does it mean)
12.30 pm	<b>Lunch (60 minutes)</b>	

1.30 pm	<b>Auckland 3 &amp; 4 (Plenary Room)</b> <b>Keynote Speaker Robert Bird</b> , BEng FIEAust CPEng NPER Founder and Chairman of the Robert Bird Group	
	<b>Auckland 3 &amp; 4 (Plenary Room)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
2.30 pm	Guidelines for prequalification and design of post-installed and cast-in anchors in Australia (PN:118)  <b>David J. Heath</b> , Emad F. Gad  (Regulation – getting the balance right)	Safety in design - what does this mean to a structural engineer (PN:144)  <b>Peter Ho</b> , Mike Fordyce  (Safe design of structures – what does it mean)
2.55 pm	Influence of pre-saturation of recycled concrete used in the concrete mix (PN:100)  <b>Thuraichamy Suntharavadivel</b> , Joseph Coughlan and Kai Duan  (Engineering projects – sustainability, innovation)	New design approach for timber connections controlling both fastener and wood capacities (PN:159)  <b>Pouyan Zarnani</b> , Pierre Quenneville  (Safe design of structures – what does it mean)
3.20 pm	<b>Afternoon Tea (20 minutes)</b>	
	<b>Auckland 3 &amp; 4 (Plenary Room)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
3.40 pm	The quick-connect moment connection for portal frame buildings - an introduction and case studies (PN:139)  <b>Dr Felix Scheibmair</b> , Prof Pierre Quenneville  (Engineering projects – sustainability, innovation)	Brookfield Place - safe design and construction of the building capitol (PN: 135)  <b>James Taylor</b> , Angus Leitch, Declan Barrett, David Eden  (Safe design of structures – what does it mean)
4.05 pm	New composite construction of beams combining steel T-section and RC flange (PN:131)  <b>Alex Remennikov</b> , Marcus Roche  (Engineering projects – sustainability, innovation)	Which Structural System is Best? (PN: 177)  <b>Gregory MacRae</b> , Jose Chanchi and Trevor Yeow  (Safe design of structures – what does it mean)
4.30 pm	The Mambo/Tema Case Study: Pro bono design and construction of bridges in rural Tanzania (PN: 140)  <b>Garrett Bray</b>  (Engineering projects – sustainability, innovation)	Experimental investigation of response of steel tubular columns to close range explosions (PN: 129)  <b>Alex Remennikov</b> , Brian Uy  (The dynamic and quasi-static loading of structures)

4.55 pm	<b>Auckland 3 &amp; 4 (Plenary Room Closing address (10 minutes))</b>
5.05 pm	<b>Finish</b>

5.15 pm - 7.30 pm	<b>MEET &amp; GREET COCKTAIL FUNCTION</b> Auckland Foyer and Exhibition Area, Level 4 SkyCity Convention Centre
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## CONFERENCE DAY TWO

THURSDAY 10 JULY 2014, LEVEL 4, SKYCITY CONVENTION CENTRE

7.30 am	<b>Registration Desk Open</b>	
8.30 am	<b>Reception Foyer Level 4</b> <b>Poster Session</b>	
9.00 am	<b>Auckland 3 &amp; 4 (Plenary Room)</b> <b>Guest Speaker Tim Ibell</b> FREng CEng BSc(Eng) PhD FStructE MICE FHEA, University of Bath, UK	
	<b>Auckland 3 &amp; 4 (Plenary Room)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
10.00 am		The dynamic and quasi-static loading of structures  Paul Wymer, Past President of NZ Concrete Society, BBR Contech
10.05 am	Development of geopolymers precast floor panels for the global change Institute at University of Queensland (PN:37) <b>Rod Bligh, Tom Glasby</b>  (Engineering projects – sustainability, innovation)	Characterization of Overstrength Factors for Buckling Restrained Braces (PN: 179)  <b>Brandt Saxey, Mark Daniels</b>  (The dynamic and quasi-static loading of structures)
10.30 am	Morning Tea (35 minutes) <b>Poster Session continues</b>	

	<b>Auckland 3 &amp; 4 (Plenary Room)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
11.05 am	<p>Brookfield Place, Perth (PN:136)</p> <p>James Taylor, Angus Leitch, <b>Declan Barrett</b>, David Eden</p> <p>(Engineering projects – sustainability, innovation)</p>	<p>Implementation Of Displacement-Based Design Philosophy For Bridges In A Challenging Seismic And Geotechnical Environment (PN:146)</p> <p><b>Anton Kivell</b>, Caudillo Aguas, Ronald Wessel, Jamil Khan, Geoff Brown</p> <p>(The dynamic and quasi-static loading of structures)</p>
11.30 am	<p>The application of innovative steel damping devices to building structures (PN: 98)</p> <p><b>Jaehoon Bae</b>, YoungjuKim, TaesangAhn</p> <p>(Engineering projects – sustainability, innovation)</p>	<p>Investigation Into PRESSS Bridge Piers In Highly A Seismic Region (PN:36)</p> <p>Anton Kivell, <b>Jamil Khan</b>, David Hoffman</p> <p>(The dynamic and quasi-static loading of structures)</p>
11.55 am	<p>Al Bidda (Platinum) Tower, Doha (PN: 87)</p> <p><b>Ian Round</b></p> <p>(Engineering projects – sustainability, innovation)</p>	<p>Fire Performance and design of load bearing light gauge steel frame wall systems exposed to realistic design fires (PN: 161)</p> <p><b>Anthony Ariyanayagam and Mahen Mahendran</b></p> <p>(The dynamic and quasi-static loading of structures)</p>
12.30 pm	<b>Lunch (60 minutes)</b>	
1.30 pm	<p>Design considerations of tubular connections - an example through the Singapore Sports Hub National Stadium roof (PN: 51)</p> <p><b>Jane Nixon</b>, Richard Andrews, Peter Marshall</p> <p>(Engineering projects – sustainability, innovation)</p>	<p>Non-linear finite element analysis of base plate connections used in industrial pallet racking structures (PN: 66)</p> <p><b>Ahmad Firouzianhaji</b>, Ali Saleh, Bijan Samali</p> <p>(The dynamic and quasi-static loading of structures)</p>
1.55 pm	<p>Project application of structural analysis, design and laboratory testing of a complex masonry façade (PN: 60)</p> <p>Jonathon Turley, Michael Er and Ken Morkaya</p> <p>(Engineering projects – sustainability, innovation)</p>	<p><del>Best Practice in the design large span silo roof with shell and tension beam structures (PN: 10)</del></p> <p><b>Ahmad Nazari</b></p> <p><del>(The dynamic and quasi-static loading of structures)</del></p>

2.20 pm	Structural engineering and construction challenges for the Te Mihi Geothermal Power Station in New Zealand (PN: 175) <b>Peter Statton, David Pattinson</b>  (Engineering projects – sustainability, innovation)	Structural and containment failure analysis of ductile steel pipes (PN:53)  <b>Ali Rajabipour</b> , Robert E. Melchers  (The dynamic and quasi-static loading of structures)
2.45 pm	A pragmatic approach to seismic risk reduction for a portfolio of high risk buildings (PN:115)  <b>Helen Ferner</b> , Aaron Beer , Kam Weng Yuen , Sam McHattie  (Assessment & maintenance of old structures)	Effect of fit-out and construction type on dynamic properties of floor systems under human excitations (PN: 116)  Tuan Nguyen, <b>Emad Gad</b> , Nicholas Haritos, John Wilson  (The dynamic and quasi-static loading of structures)
3.10 pm	<b>Afternoon Tea (20 minutes)</b>	
3.30 pm	Advanced seismic analysis methods and their application to earthquake damaged tall building repair and strengthening design (PN: 149)  <b>Zheng Ping Wu</b>  (Assessment & maintenance of old structures)	Traffic-generated vibration of highway bridges (PN: 17)  <b>David M Lilley</b> , Joanna Winslade  (The dynamic and quasi-static loading of structures)
3.55 pm	Evaluation of aging reinforced concrete (R/C) bridge girders (PN:73)  Amit Sagar, <b>Saman De Silva</b> , Sujeeva Setunge  (Assessment & maintenance of old structures)	Ceiling diaphragm actions in cold formed steel-framed domestic structures (PN: 91)  <b>Ismail Saifullah</b> , Emad Gad, Rojit Shahi, John Wilson, Nelson Lam , Ken Watson  (The dynamic and quasi-static loading of structures)
4.20 pm	Performance of wine storage tanks: lessons from the earthquakes near Marlborough (PN: 151)  Christopher Kahanek, <b>James Rosewitz</b>  (Assessment & maintenance of old structures)	Parametric studies in the design of large-scale hyperbolic paraboloid shell and lattice structures (PN: 93)  <b>James Bernasconi</b>  (The dynamic and quasi-static loading of structures)
4.45 pm	<b>Auckland 3 &amp; 4 (Plenary Room Closing address (10 minutes)</b>	
5.00 pm	<b>Finish</b>	

6.30 pm - 10.00 pm	<b>CONFERENCE DINNER</b> Auckland 3 & 4, SkyCity Convention Centre Guest speaker Jamie Fitzgerald from Intrepid Journeys
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**CONFERENCE DAY THREE**

**FRIDAY 11 JULY 2014, LEVEL 4, SKYCITY CONVENTION CENTRE**

7.30 am	<b>Registration Desk Open</b>		
8.30 am	<b>Auckland 3 &amp; 4 (Plenary Room)</b> <b>Plenary Session</b> Panel and Open Discussion <b>Are we engineers or are we technicians?</b>		
10.10 am	<b>Morning Tea (30 minutes)</b>		
	<b>Auckland 3 (Breakout Room 1)</b>	<b>Auckland 4 (Breakout Room 2)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
10.40 am	An Innovative Approach to Retrofitting a Beam-Column Connection Using Carbon FRP Anchors and Composite Systems (PN: 168)  Elaine Meriwether, <b>Scott Arnold</b> , & Amber Wagner  (Assessment & maintenance of old structures)	Fire resistance rating of light gauge steel frame walls exposed to realistic design Fires: A review and development of time equivalent approach (PN: 162)  Mahen Mahendran, <b>Anthony Ariyanayagam, P. Keerthan</b>  (The dynamic and quasi-static loading of structures)	Slender precast wall panels Interacted with steel portal frames under earthquake loads (PN: 170)  <b>Joo Cho</b>  (Soil-structure interaction)
11.05 am	The Christchurch Arts Centre - heritage restoration project (PN: 102)  John Trowsdale, Peter Carney, Alistair Boys  (Assessment & maintenance of old structures)	Structures using hollow timber poles (PN: 160)  <b>Mark Batchelar</b> , Michael Newcombe  (The dynamic and quasi-static loading of structures)	Ground-motion maps based on recorded motions for the larger earthquakes in the Canterbury earthquake sequence (PN:103)  <b>Robert Buxton</b> , Graeme McVerry, Tatiana Goded  (Soil-structure interaction)
11.30 am	Seismic bridge assessments on Auckland's causeway upgrade (PN:81)  <b>P.W. Corbett, Denis Pino M.</b>  (Assessment & maintenance of old structures)	Design of blast resistant buildings in an LNG processing plant (PN:106)  <b>Troy Oliver</b> , Mark Rea  (The dynamic and quasi-static loading of structures)	Non-linear soil-structure interaction of bridge foundations in highly seismic regions (PN: 38)  <b>Ronald Wessel</b> , Phil Clayton, Anton Kivell, Jamil Khan  (Soil-structure interaction)

11.55 am	<p>Rockhampton Roundhouse - Engineering Heritage Assessment (PN:41)</p> <p>Phil Latham, Tasman Storey, <b>Toby Hodsdon</b></p> <p>(Assessment &amp; maintenance of old structures)</p>	<p>Finite element analysis of steel beam - CFST column joints with blind bolts (PN:56)</p> <p>Zhong Tao, <b>Kamrul Hassan</b>, Olivia Mirza, Tian-Yi Song, Lin-Hai Han</p> <p>(The dynamic and quasi-static loading of structures)</p>	<p>Design and construction of the South Road Superway(PN: 39)</p> <p>Lucas Wise, <b>Peter Selby Smith</b></p> <p>(Engineering projects – sustainability, innovation)</p>
12.30 am	<b>Lunch (55 minutes)</b>		
	<b>Auckland 3 (Breakout Room 1)</b>	<b>Auckland 4 (Breakout Room 2)</b>	<b>Epsom 1 &amp; 2 (Breakout Room 3)</b>
1.25 pm	<p>Assessment &amp; maintenance of old structures</p> <p><b>Michael Roach</b>, Director, Concrete Structure Investigation Ltd</p>		
1.30 pm	<p>Forensic engineering for a transmission line Failure (PN:89)</p> <p><b>Raghavendra Kulkarni</b>, John McCormack</p> <p>(Assessment &amp; maintenance of old structures)</p>	<p>Refined finite element modelling of concrete-filled steel stub columns (PN:54)</p> <p><b>Zhong Tao</b></p> <p>(The dynamic and quasi-static loading of structures)</p>	<p>Design of the counterfort retaining wall on the Barangaroo Headland Park Project, Sydney (PN: 16)</p> <p><b>Kenny Luu</b>, Ken O'Neil, Weimin Deng</p> <p>(Excellence in engineering education – the journey)</p>
1.55 pm	<p>Assessment of bridges challenging the structural engineering profession (PN: 97)</p> <p><b>Dr Rob Heywood</b>, Dr Ross Pritchard, Dr Peter Shaw</p> <p>(Assessment &amp; maintenance of old structures)</p>	<p>Application of a new racking cyclic loading protocol on cold-formed steel framed wallpanels (PN:21)</p> <p><b>Rojit Shahi</b>, Nelson Lam, Emad Gad, Ismail Saifullah, John Wilson and Ken Watson</p> <p>(The dynamic and quasi-static loading of structures)</p>	<p>Cost effective base isolation for houses, light commercial buildings and schools (PN: 5)</p> <p><b>Colin Ashby</b></p> <p>(Excellence in engineering education – the journey)</p>



2.20 pm	<p>Engineering characterisation of building performance with detailed engineering evaluation (DEE) data from the Canterbury earthquakes (PN: 112)</p> <p><b>Sheng-Lin Lin</b>, S.R. Uma, Mostafa Nayerloo, Rob Buxton, Andrew King</p> <p>(Assessment &amp; maintenance of old structures)</p>	<p>Durability design of steel framing in residential and low-rise construction (PN: 42)</p> <p>Michael Kelly, <b>Kenneth Watson</b>, George Thomson</p> <p>(The dynamic and quasi-static loading of structures)</p>	<p>Shotcrete design for irrigation canal lining (PN:111)</p> <p><b>Syed Hasan</b>, Gunvant Vaghela, James Yip, Ben Chung</p> <p>(Assessment &amp; maintenance of old structures)</p>
2.45 pm	<b>Afternoon Tea &amp; Close</b>		
3.00 pm	<b>Finish</b>		

#### CHRISTCHURCH FIELD TRIP - SATURDAY 12 JULY 2014

Note; Delegates are to organise their own travel to Christchurch and make their way to the Novotel Hotel, 52 Cathedral Square, Christchurch for bus pickup

9.15 am	MORNING TEA
9.30 am	Presentation on the Christchurch Earthquake Sequence – Novotel Hotel
10.30 am	Walking tour of city
12.30 pm	Lunch at local café
1.30 pm	Bus pick up of delegates at lunch café
1.30 pm	Bus tour of hills and Red Zone
4.30 pm	Return to city