

Sesoc Conference 2012

Held Auckland 2-3 November

It was recognised a long time ago that there was a clear need for a practitioner-orientated general technical forum for Structural Engineers in New Zealand.

SESOC has been planning to have such a conference for some time, but after the events of the last two years it was finally time to follow through.

Our first biennial conference was some months in the making, but our plans came to fruition in early November thanks to some great work by the organising committee, ably assisted by IPENZ.

The theme of the conference was simple – “From theory to practice”. What can we learn from the events of the past few years and how can we ensure that these lessons are not lost? In these days of industry self-regulation, the challenge is clear - to demonstrate that our profession is proactively engaged in furthering our

technical advancement and spreading that knowledge across the industry. It became clear also during the conference that the structural engineer's role in society is an important issue to many. How can we more effectively engage with society, recognising that their general awareness of what we do has dramatically increased? The participation of so many delegates in this inaugural event was an important step in achieving that advancement and spread of knowledge.



THANK YOU

The SESOC conference committee wishes to pass on their thanks for the heavy-duty encouragement and support they received from all parties involved and attendance by so many. We trust that the relationships renewed and knowledge gained were worth the time taken in attending.

Guest & Keynote Speakers



CRAIG GIBBONS
ARUP Brisbane

Craig Gibbons from Arup Brisbane gave an entertaining and fascinating presentation on Arup's part in the design, engineering and construction of the 473,000m², 234m tall CCTV building in the new Beijing Central Business District in China.

Student Engineer Annual Award

It was also announced at the conference that Craig has donated \$4000 to the setting up of a Student Award, one each for Christchurch and Auckland University Engineering schools, for the best student abstract submitted by November each year. Those chosen will then have their papers published in the following SESOC journal.



CCTV building Beijing China



BADEN EWART
Deputy General Manager,
Operations, CERA (Christchurch)

Due to our intended Keynote Speaker being unavailable at the last minute, delegates were instead treated to the presence of Baden Ewart from Canterbury Earthquake Recovery Authority's (CERA). Baden is Deputy General Manager Operations, and as such has developed and managed the demolition and operations work programme (both residential and commercial) in Christchurch since the Canterbury earthquakes. His job has been challenging and at times controversial, with Baden and Warwick Isaacs having to oversee some of the tougher decisions about the future of some of Christchurch's most iconic and historic buildings as well as leading the CERA team engaged in clearing the damaged residential areas.

The conference was pleased to have the benefit of Baden's holistic view of the situation and the opportunity to ask questions directly about the preservation options for historic buildings. The committee also appreciated his ability to fill the Speaker role at such short notice.

Paper Authors and presenters

In all, 34 papers were presented at the conference. These papers have now been made available as downloads from www.sesoc.org.nz/Members_area/presentations.cfm. All in all the papers presented gave delegates a varied and absorbing cross-section of engineering issues. See a full list of paper titles below.



Presentation of paper by David Idle



Dr David Hopkins presents "Lesson from Canterbury – Engineering Matters"



Sheri Javadian from AECOM presents "Secondary Response Analysis of Equipment Floors – A Case Study: Wairau Road 220 kV GIS Switchgear Building"

Papers delivered at the conference

- **Lesson From Canterbury – Engineering Matters** - David Hopkins
- **The Allocation Of Damage To Structures Resulting From An Earthquake Sequence** - Nicholas Brooke, Barry Davidson
- **Lessons From Ground Damage In The Canterbury Earthquakes For Engineering Practice** - P Brabhakaran
- **Report On The 'Project Masonry' Recovery Project** - Dizhur, Ingham
- **The Old Municipal Chambers Building – Damaged But Not Destroyed – Will It Be There In Another 125 Years?** - Parker, Uno, Lourenco, Marques, Pereira, Meyer, Mayes, Weaver
- **Economic Benefits Of Seismic Isolation** - David Whittaker
- **Design Of The Linked Column Frame Structural System – A New Zealand Application** - Fussell, Dusicka, Clifton, Wong
- **New Low Damage Timber Frame Solution For Multi-Storey Office Type Buildings** - Jamil, Quenneville, Clifton
- **Innovative Use Of Buckling Restrained Braces At The University Of Auckland** - Richard Built, Peter Beazley
- **Pres-Lam In Practice: A Damage-Limiting Rebuild Project** - Brown, Lester, Pampanin, Pietr
- **Building Seismic Risk Assessment - Enhancing The Tep: 'Tep Plus'** - Spencer, Ferner, Yuen
- **Verification Of The Proposed Acceptance Criteria For The Assessment Of Reinforced Concrete Columns** - Boys, Bull
- **Seismic Assessment Of The Mangatangi Spillway Shaft Using Nonlinear Time History Analysis** - Tony Stuart
- **Domain Road Interchange, Tauranga Eastern Link – Design For Post Earthquake Operational Continuity** - Walker, Idle, Konrad
- **A Review Of Shallow Foundation Design Practice In New Zealand** - Nick Harwood
- **Simplified Pushover Analysis For Pile Foundations** - Michael Pender
- **Performance, Damage Assessment And Repair Of A Multistorey Eccentrically Braced Framed Building Following The Christchurch Earthquake Series** - Gardiner, Clifton, Macrae
- **Lateral Load Tests On Earthquake Damaged Houses In Christchurch** - Morris, Briscoe, Holt, Carradine, Yeoh
- **Seismic Resilience Foundation System For Residential Dwellings And Possible Construction Techniques** - Lian Ching Oh
- **Strengthening Of Waipuna Bridge For Ew 220kv Power Circuit** - Tatham, Brown
- **Design And Construction Of Integral Connections For Accelerated Bridge Construction – A Case Study Of Morrin Road Bridge** - Peter Wiles, David Idle
- **Design Of Forsyth Barr Stadium, A Fully Roofed Natural Turf Stadium In Otago, New Zealand** - Trevor Robertson
- **Monitoring Of Wind-Induced Motion Of Tall Buildings** - Carpenter, Cenek, Flay
- **Secondary Response Analysis Of Equipment Floors – A Case Study: Wairau Road 220 Kv Gis Switchgear Building** - Sheri Javadian
- **Liquid Tuned Dampers For The Mitigation Of Wind Induced Vibration** - Barry Davidson
- **Considerations For The Design Of Large Scale Temporary Structures** - Steve Gaskin
- **Timber Bolted Connections: From Research Results To Code Proposal** - Pierre Quenneville
- **Steel Fibres Combined With Conventional Reinforcing: Amazing Synergies Using Available Design Guidelines** - Ross, Vitt And Ratcliffe
- **More Stars For Your Money - A Comparative Study Of Five Structural Systems And Their Quakestar Rating** - Mayes, Wetzel, Weaver, Goings, Tam, Brown
- **Post-Tensioning For Multi-Storey Timber Buildings** - Buchanan, Palermo, Carradine, Pampanin
- **Designing Buildings For Seismic Resilience** - Kam Yuen, Turkington, Spencer
- **Structural Engineering For A Resilient Result – More Than Code** - Michael King
- **Cpeng – A Mark Of Quality?** - Derek Bradley
- **Quakestar - Deaths, Dollars & Downtime, A Reliable Building Seismic Rating System For New Zealand** - Parker, Holden, Hopkins, Hare, Mayes, Snook

Sponsor involvement - Principal Sponsors



A Tata Steel Enterprise



Steve and Brett from ComFlor hosted Friday dinner

ComFlor is a range of composite floor decking systems that offers longer spans, minimised concrete volumes and sets the benchmark for modern construction. ComFlor takes away the old constraint of 2.7m beam centres and allows the designer to design and optimise the structure – whether it is in steel, timber or concrete – then choose a profile to suit. Link to the ComFlor website: www.comflor.co.nz/ComFlor_Technical.asp



www.buildingchemicalsupplies.co.nz



Rebecca Chevalier, Neil Chevalier, Ryan Cudby from Building Chemical Supplies Ltd

Tyfo is the original and most tested FRP Seismic and Structural Strengthening system in the world. A free no-obligation preliminary design service is offered by the Engineers at Fyfe Co LLC.

MC-Bauchemie specialise in concrete injection for structural, flexible and waterproofing of concrete. They produce specialised concrete repair and protection systems.

BCS is the exclusive NZ importer and distributor of Tyfo and MC-Bauchemie products, please contact us for any enquiries or a list our approved applicators: www.buildingchemicalsupplies.co.nz

Dinner - Friday Evening

Sponsored by ComFlor, the Friday dinner was well attended and enjoyed.



Peter Deane, Ashley Smith



Stewart Hobbs, Yogesh Kumar, Ashley Smith



James Jensen, Bruce Galloway, Hamish Neville, Mike Stannard, Warwick Banks



Andrew Bolland, Karen Foley



Jennifer Krempin, Bobby Collins, Christopher Figg



Mike Edwards, Paul Tanner from Sika



Amy Williams, Michelle Grant, Hamish McKenzie



Michelle Grant, Hamish McKenzie



Networking and relaxation time



Tammy Herron, Mark Kurtovich



Anthony Ng, Kay Hyland



Barry Brown, Barry Davidson, Gordon Hughes



Lindsay Jones, Hugh Morris



Representatives of CANZAC and BOSFA share the hospitality



Adam McHugh, Tony Kennedy, Philip McDonald from BSK Consulting Engineers and Alistair Boys, Holmes Consulting Group



Outdoors with time to confer



Rob Heywood, David Whitaker and wife, Mark Spencer



Tom Moore, Andrew Blacker



Murray Spicer, Peter Radley, Patrick Harris



Neil Horsfield, Rob Jury, Aaron Beer



Trevor and Liz Robertson, Mark and Sue Batchelar, Pierre Quenneville



Peter Beazley, Alistair Fussell, Matt Cameron



Kings College Jazz Band provided background music pre-dinner



A highlight of the dinner was the presentation of the inaugural SESOC President's Award for outstanding services to New Zealand Structural Engineering. The award for 2012 was made to Trevor Robertson.



The trophy itself is a piece of Mount Albert rock which has been shaped, cored and edged with silver by artist, Ilse-Marie Erl, who is a well-known Auckland jeweller. Ilse-Marie was very excited to be involved in designing a one-off piece for this prestigious prize.



ASEC Conference 2014

We encourage your support of the next conference and would ask for others to take part in the planning and organisation of this important meeting. The venue and year are confirmed: **Sky City, Auckland, 2014**. The proposed month is July, and there will most likely also be a short visit to Christchurch. Many months of planning will be necessary to make this event successful but it will certainly result in a more effective cross-pollination of knowledge between Australia and New Zealand.

SPONSORS EXPRESSIONS OF INTEREST

If you were a sponsor for SESOC 2012 or want to sponsor ASEC 2014, please notify us via email to editor@sesoc.org.nz. Our policy on sponsors and the packages to be offered will be developed over the next 6 months.

SESOC conference notes 3/11/2012

Geoff Bird

SOILS PROGRAMME VERSION 3

1. CAPABILITY OF THE PROGRAMME

Covers Shallow foundations, Deep foundations and Retaining walls

1.1 SHALLOW FOUNDATIONS

Rectangular and circular pads strip foundations both unrestrained and restrained

1.2 DEEP FOUNDATIONS

Free head and fixed head piles, single and groups of piles, prestressed and reinforced concrete piles, steel I and circular piles and timber piles

1.3 RETAINING WALLS

Concrete, concrete masonry with and without buttresses and timber walls (Mass concrete walls are not included but are in Version 2)

2. FEATURES OF VERSION 3

- TABBED INTERFACE
- NEW LOOK
- IMPROVED LAYOUT AND ENLARGED GRAPHICS
- NEW REGISTRATION SYSTEM

3. HISTORY OF SOFTWARE

Version 1 was originally developed by Esli Forrest in the early 1990's and based on B1/VM4

Version 2 was improved in the mid 2000 using students who rewrote calcs and interface under the direction of Esli

Version 3 was created in response to critics concerning registration and the interface

One of the drivers was to create the type of interface used in MemDes and has been addressed by creating new Skin

Prompts

Graphics accessed by double clicking

4. REGISTRATION

New third party system pc specific licenced to members and locked to a PC (up to 2 per member)

- Online activation
 - Email activation
 - Trial evaluation for 14 days one use only.
- One of the drivers was to create the type of interface used in MemDes and has been addressed by creating new Skin

Online Activation

Go to Members page on SESOC Website and log in and go to Soils Software Click to activate and SRK and membership numbers are shown (after electronic check on financial status) At this stage only soils has new registration and it is hoped to have BeamDes done next year. Enter SRK & Membership numbers and press Activate Button and activate now

Email option

(Hope will not be needed) involves a wait for a reply email and the string from the email needs to be entered before activation
Trial Evaluation one time for 14 days

5. SUPPORT

Refer to help screen software only

Help File has been updated is comprehensive and has worked examples

6. DISCLAIMER

Reasons for disclaimer:

SESOC is not in the business of software development but is providing services and sharing information with its membership as a learned society.

Responsibility of user to ensure that the design is appropriate.

7. WORKED EXAMPLES

Several were shown to highlight new features. These include pad footing, retaining wall and concrete pile

8. TOOLS

- Can use blue highlight but slower to refresh
- Expand form enlarges screen by 20%

9. VERIFICATION

Limited testing

Feedback on general use of program wanted
A bug discovered on a 4m high retaining wall was demonstrated

10. LAUNCH

Prior to Christmas 2012

NOTICE OF CONFERENCE

Steel Innovations Conference 21-22 February 2013 - Christchurch

Steel Construction New Zealand is proud to be hosting the inaugural Steel Innovations conference in Christchurch in February 2013. Key topics of the two-day conference include seismic engineering, composite steel construction, fire engineering, durability, sustainability and steel bridges.

WHY ATTEND?

- Learn about the latest innovations in seismic damage-avoidance technology
- Listen to top local and international structural steel design experts
- Hear about projects that demonstrate the application of exciting new technologies
- Gain valuable professional development hours
- Network with fellow professionals and key structural steel researchers and practitioners
- Enjoy the brand new venue, the Air Force Museum Conference Centre at Wigram

For the latest Steel Innovations 2013 information, and to register, please visit www.scnz.org