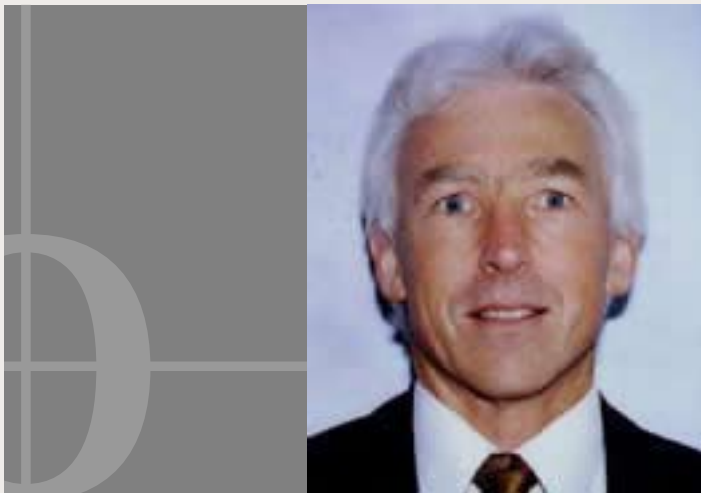


Issue 5 • February 2009

Welcome to the fifth edition of SESOC NEWS. For general information regarding the NZ Structural Engineering Society (SESOC) and for committee contact details refer www.sesoc.org.nz

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SESOC

Structural Engineering Society of New Zealand

For general information and for committee contact details refer www.sesoc.org.nz

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SESOC News

Changing of the Guard

Longstanding SESOC management committee member Mark Batchelar is our new president and Geoff Sidwell, Maurice Quinn and Graeme Spencer have joined as new committee members, elected at the August 2008 AGM. Mark was elected president and changes to portfolios were agreed at the first meeting of the new committee in December 2008.

Mark has been a member of the SESOC management committee for many years and is respected by others on the committee as having a valuable mix of design experience, including international recognition in the field of timber design, as well as ongoing professional involvement with the Timber Design Society and with IPENZ. In accepting the position Mark said the mix of personnel and skills on the management committee gave him confidence that he would have excellent support in his new role as SESOC President.

Ashley Smith will remain on the management committee as immediate past president, Geoff Bird will continue as treasurer, John Dale as secretary and Gordon Hughes as membership co-ordinator. Stewart Hobbs has recently taken over as editor of the SESOC journal and he would be happy to receive any ideas or assistance with papers or articles for upcoming journals. Stewart may be contacted by email at shobbs@xtra.co.nz. A full list of the new management committee, including portfolios and contact details, may be found on the SESOC website via the following link: <http://www.sesoc.org.nz/management.html>

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Precast Floors and Shell Beams

A draft paper on “Precast Double Tee Support Systems” has been prepared by a SESOC subcommittee led by John Hare. This paper is a follow up to the article in SESOC News # 4 about precast double tee flange supports. The draft double tee paper has been loaded onto the SESOC website home page “Latest News” section at <http://sesoc.org.nz/index.html>, together with two separate Appendices for download and comment.

Included in the draft double tee paper is section 6.3 outlining a proposed split of design responsibilities for precast floor systems between the project structural engineer and the precaster. It is important to clarify this split of design responsibilities given the requirement nowadays to consider more carefully the interaction between precast floors and the adjoining structural frame.

In parallel with this work by SESOC, PrecastNZ has also recently published a new document entitled “Notes for Designers and Users of Prestressed Precast Concrete Floor Systems and Shell Beams”. It gives detailed recommendations for the design and construction of precast floors and shell beams and also covers the issue of design responsibility from the precaster’s perspective. The document may be accessed and downloaded using the following website link: <http://www.precastnz.org.nz/precast/index.cfm?680D5D53-50BA-1DC3-65B3-34A09B2EF0D0>

With design of shell beams particular note should be taken of PrecastNZ’s recommendations for 300mm minimum shell depth, relatively uniform shell sides, non-reliance on shear reinforcing in the shell and issues to be taken account of with design and construction of temporary propping.

SESOC members who are involved in this area (who may be either project structural engineers or precasters) are encouraged to read both the above documents and send any comments back to SESOC.

Comments on the SESOC Double Tee paper should be made to John Hare at johnh@holmesgroup.com

Comments on the PrecastNZ paper may be made to Ashley Smith at ashley@structuresmith.co.nz, who will collate and pass them on to PrecastNZ.

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The deadline for comments on both papers is 20 March 2009.

In addition to the above SESOC continues to support the DBH, SESOC, NZSEE and NZCS working party in writing a guide for design, assessment and retrofit of Hollowcore floor systems. It is expected that a draft of that document will soon be available for review.

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Anchor Bolts for Steel Structures

The draft “SESOC Design Guide – Anchor Bolts for Steel Structures” has been reviewed by the SESOC Management Committee and edited by Barry Davidson and is available for download and comment at <http://sesoc.org.nz/SESOC-AnchorBolts.pdf>. In developing this draft paper, considerable effort has been made to achieve a consensus position on the recommended design approach for anchor bolts. It is intended to publish an updated copy on the SESOC website, and in the SESOC journal, after taking account of any comments received.

Deadline for comments is 27 February 2009.

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SESOC / IStructE Seminar Series

During 2008, SESOC in association with IStructE organised three different nation wide series of one day seminars. These were developed to provide attendees with a basic understanding of the fundamental principles of structural engineering relevant to the particular seminar topic.

The courses presented were:

- Fundamentals of Seismic Design
- Fundamentals of Earthquake Resistant Concrete Structures
- Fundamentals of Structural Steel Design

These were originally targeted at providing coverage of design fundamentals for ‘new to NZ’ designers and recent graduates. However, it was encouraging to see the support for this series across a wide range of age and experience levels, as well as from sole practitioners and small company employees through to some of the larger consultancies, as well as local body and government organisations. On average, there were around 300 attendees at each of the seminar series, a great response.

During the seminar series we sought feedback on what topics would be desirable for any future seminars. If you were not at the recent seminars, and would like to provide topic suggestions, we would welcome these. Please email to Geoff Bird, geoff.bird@beca.com

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Errata: Fundamentals of Structural Steel Design

A worked example of the preliminary design of an EBF frame was presented. Two errors were picked up during the seminar series, which are noted below:

1) Active link length check, Appendix C, page 3 (top)

$V_w = 737$ kN not 717, with a result for the equation of 1441 mm

i.e. $1.6 M_s / V_w = 1.6 * 649 / 737 = 1441$ mm

[Strictly speaking the formula variables should have been the nominal capacity rather than the dependable capacity as used – but the end result is the same]

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2) Active Link Overstrength

The HERA design guide Seismic Design Procedures for Steel Structures, R4-76, was originally developed in conjunction with the steel code at that time, NZS3404:1992. At that time active link overstrength was computed as the product of the overstrength multiplier and the active link nominal shear capacity.

However, a change introduced during a subsequent code amendment incorporated the strength reduction factor directly into the overstrength factor, meaning that the equation should then use the dependable active link shear capacity rather than the nominal shear capacity. i.e. $\phi_{oms} \phi V_w$

Note (1) to Table 12.2.8(2) NZS 3404 states “the values of ϕ_{oms} incorporate the reciprocal of the ideal capacity factor ... use in conjunction with $.. \phi R_u$ ”, a point that was missed by the author when preparing the worked example.

Thank you to the sharp-eyed attendee who pointed this out, albeit at one of the last seminars.

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Steel Structures Seminars – summer series 2009

Preparations by Steel Construction New Zealand Inc. (SCNZ) for a full day seminar for structural engineers are well underway. These seminars will occur in March and April 2009. SCNZ will focus on the draft new steel structures standard, NZS 3404.1, including guest presenters and case studies by local fabricators.

NZS 3404 is being re-organised into seven parts to improve usability and allow progressive development and release. Part 1, *Materials, fabrication, and construction*, is the first to be reviewed. Attendees will gain an understanding of how to apply the many useful features in this new standard, based on the draft. Seminar attendees will be able to pre-order copies of the new standard at a discounted rate, through SCNZ.

Further details on these seminars and contacts for registration may be found at: <http://www.standards.co.nz/touchstone/Issue+02/Engineering/Steel+structures+seminars.htm>

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Musings from the SESOC Wellington Bridge Group

Bridge Group Meetings

A successful inaugural meeting of the SESOC Wellington Bridge Group was held in Wellington during September 2008. Two presentations on current bridging projects were made during the evening. Approximately 65 attended and included designers, contractors and bridge asset owners from throughout the country. Feedback was very positive.

The next meeting is currently being planned and is expected to take place in Wellington during March 2009. The time and venue will be notified when details have been confirmed.

Standard Precast Concrete Bridge Beams

The standard bridge beam details are now available as NZTA Research Report No 364 and can be downloaded free from the NZTA web site <http://www.landtransport.govt.nz/research/reports> or hard copies purchased through NZTA by addressing orders to research@nzta.govt.nz.

The standard bridge beams cover Super T beams for 20, 22.5, 25 and 30m spans, Single Hollowcore beams for 16, 18, 20, 22.5 and 25m spans, Double Hollowcore beams for 12 and 14m spans and I-beams for 18, 20, 22 and 24m spans.

Note the disclaimer at the beginning of the report and in the General User Notes contained within.

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IStructE News

Effective 1 January 2009 Graham Owens has taken over the role of president of IStructE from Sarah Buck. We thank Sarah for her great work during the centenary year and wish Graham all the very best for 2009. Graham is scheduled to visit New Zealand in 2009 but as yet there are no dates confirmed. We will keep you posted.

In addition to the new president, Martin Powell will replace Keith Eaton as chief executive from 1 January 2009. Martin is currently the chief executive of the Concrete Society, which he has transformed over the last six years into a thriving membership organisation. Martin's entire career has been within the construction industry and he brings a wide knowledge to the Institution.

The Institution has reviewed its branding and has decided to change its logo. The "Lion King" logo will be dropped and the new branding and templates used from 1 January 2009. In addition a new website will be launched in January 2009.

We have received 100 copies of "Stephen's Cityscape". This is a small booklet giving a short commentary on 16 well-known structures which members were asked to vote on as part of a centenary competition to pick their favourite structure. It features artwork by artist Stephen Wiltshire MBE. Voting for the favourite is now over but for members who would like a free copy of the booklet please contact Richard Aitken at Beca richard.aitken@beca.com.

There is also one copy of the proceedings on the IStructE Centenary Conference held in January 2008 *Celebrating 100 years of Excellence in Structural Engineering*. This is also available to any member who would like to borrow it. Again please contact Richard Aitken to arrange.

It was great to see a New Zealand entry, the University of Auckland Business School, being named as one of four finalists for the Award for Education and Healthcare Structures 2008. The Institution encourages New Zealand structural engineers to consider an entry into this year's IStructE Awards.

The IStructE Council has been reviewing how it functions and its constitution. At the council meeting held in October 2008 it was agreed that division chairpersons should be included as members of the council in future. Therefore Richard Aitken will be invited to join council meetings in 2009 held on Thursday 8 January, Friday 22 May and Friday 9 October by video conference. The meetings will start at UK time 10.30am and finish at 4.00pm, although Richard has asked that they look at the agenda and agree which items he should participate in, to avoid staying up all night!

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