Structures and Buildings
Volume 167 Issue SB7

Editorial
Chan

ice | proceedings

Proceedings of the Institution of Civil Engineers
Structures and Buildings 167 July 2014 Issue SB7
Page 387 http://dx.doi.org/10.1680/stbu.2014.167.7.387

ice Institution of Civil Engineers
publishing

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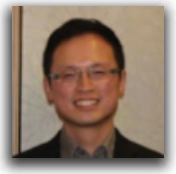

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This issue of *Structures and Buildings* features five technical papers covering timber, reinforced concrete and steel structures, and with authors from Australia, France, Italy, Malaysia, Switzerland and the UK. Through their papers, they have shared their technical expertise in conducting experimental investigation, formulating analytical modelling and developing finite-element simulation. They have also demonstrated a strong linkage between research and practice. Current design provisions were assessed and new design rules were proposed which are readily accessible to engineers. The following are the highlights of each of the technical contributions.

The first paper, by Alonso *et al.* (2014), presents the experimental and numerical investigations on the mechanically laminated timber arched suspension bridge. The experimental results suggested that the laminated timber bridge behaved elastically well beyond the design load and both a high level of ductility and recovery capacity were demonstrated. This study demonstrated the successful use of locally produced, short lengths of low-quality timber as an economical and sustainable construction material in the construction of relatively long-span, stiff and strong structures.

The second paper, by Teo and Müller (2014), reports two series of experimental studies to investigate the effectiveness of shallow-angle bent-up bars employed in reinforced concrete construction. The experimental results demonstrated the superior performance of the shallow-angle bent-up bars in terms of strength and deformation. Compared to stirrup reinforcement, the use of shallow-angle bent up bars can achieve total steel saving of up to 18%. Design provisions to update the current code of practice were also recommended.

The third paper, by Ranzi and Luongo (2014), discusses the new analytical approach to evaluate the cross-sectional analysis carried out within the framework of the generalised beam theory (GBT). This new analytical procedure allows the conventional modes including the distortional, shear and local modes to be considered collectively and has an appealing application towards open, partially closed and closed cross-sections.

The fourth paper, by Maduliat *et al.* (2014), examines the cross-section classification system in the European Standards for cold-formed channel steel sections. Forty-two pure bending tests were conducted in addition to full evaluation of the material properties. Test results indicated that the current section classifications defined in Eurocode 3 are not accurate for cold-formed channel sections. New design rules were proposed.

This issue concludes with the paper by Boissonnade *et al.* (2014) on the design of cellular beams against lateral torsional buckling. Three full-scaled experimental tests and 4000 numerical parametric tests were conducted. Based on the structural performance data, the current design rules in European standards were assessed and new design rules were recommended.

I sincerely hope you will enjoy reading this issue and share my thoughts in congratulating the authors for their achievements and contributions to date.

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