

Spotlight on Structures

Research Journal of The Institution of Structural Engineers

In this section we shine a spotlight on papers recently published in *Structures* – the Research Journal of The Institution of Structural Engineers.

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Volume 9: Special issue

The latest issue of *Structures* is a special issue presenting selected papers from the 11th International Conference on Advances in Steel-Concrete Composite Structures (ASCCS 2015), held in Beijing, China, on 3–5 December 2015.

The Guest Editors for the issue were:

- **Lin-Hai Han**, Department of Civil Engineering, Tsinghua University, China
- **Wei Li**, Department of Civil Engineering, Tsinghua University, China

The issue includes the following papers:

Behaviour and Design of Connections for Dismountable Steel and Composite Structures

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<http://dx.doi.org/10.1016/j.istruc.2016.06.005>

Influence of Ultra-high Strength Concrete on Circular Concrete-filled Dual Steel Columns

Manuel L. Romero^a, C. Ibañez^b, A. Espinos^a, J.M. Portolés^b and A. Hospitaler^a

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<http://dx.doi.org/10.1016/j.istruc.2016.07.001>

Hot-rolled steel and steel-concrete composite design incorporating strain hardening

L. Gardner, X. Yun, L. Macorini and M. Kucukler, Department of Civil and Environmental Engineering, Imperial College London, South Kensington Campus, London, UK

<http://dx.doi.org/10.1016/j.istruc.2016.08.005>

Performance of Partially Encased Composite Beams Under Static and Cyclic Bending

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^c Department of Structural Engineering, School of Civil Engineering, Tongji University, Shanghai, China

<http://dx.doi.org/10.1016/j.istruc.2016.09.004>

Structural Behaviour of Beam to Concrete-filled Elliptical Steel Tubular Column Connections

J. Yang, T. Sheehan, X. Dai and D. Lam, School of Engineering, University of Bradford, Bradford, UK

<http://dx.doi.org/10.1016/j.istruc.2016.09.005>

Experimental study on seismic performance of new RCS connection

Xuan Huy Nguyen^a, Quang-Huy Nguyen^b, Dang Dung Le^a and Olivia Mirza^c

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^c Institute for Infrastructure Engineering, University of Western Sydney, Penrith, NSW, Australia

<http://dx.doi.org/10.1016/j.istruc.2016.09.006>

Finite Element Analysis on Mechanical Performance of Middle Long CFST Column with Inner I-Shaped CFRP Profile under Axial Loading

Guochang Li, Ranrui Zhang, Zhijian Yang and Bing Zhou, School of Civil Engineering, Shenyang Jianzhu University, Shenyang, China

<http://dx.doi.org/10.1016/j.istruc.2016.09.007>

Effects of Welding on the Tensile Performance of High Strength Steel T-stub Joints

Cheng Chen^a, Xingzhao Zhang^a, Mingshan Zhao^a, Chi-King Lee^c, Tat-Ching Fung^a and Sing-Ping Chiew^b

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<http://dx.doi.org/10.1016/j.istruc.2016.09.008>

Structural Behaviour of Stud Shear Connections with Solid and Composite Slabs Under Co-Existing Shear and Tension Forces

M.H. Shen and K.F. Chung, Department of Civil and Environmental Engineering, the Hong Kong Polytechnic University, Hong Kong, SAR, China

<http://dx.doi.org/10.1016/j.istruc.2016.09.011>

Seismic Behavior of Blind Bolted CFST Frames with Semi-rigid Connections

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<http://dx.doi.org/10.1016/j.istruc.2016.10.001>

A New Codified Design Theory of Second-order Direct Analysis for Steel and Composite Structures – From Research to Practice

Siu-Lai Chan, Yao-Peng Liu and Si-Wei Liu, Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, China

<http://dx.doi.org/10.1016/j.istruc.2016.10.002>

Numerical Modelling of Composite Floor Slabs Subject to Large Deflections

M.M. Florides and K.A. Cashell, Department of Mechanical, Aerospace and Civil Engineering, Brunel University, London, UK

<http://dx.doi.org/10.1016/j.istruc.2016.10.003>

Progressive Collapse Analysis of Concrete-filled Steel Tubular Column to Steel Beam Connections Using Multi-scale Model

Wenda Wang, Huawei Li and Jingxuan Wang, The Key Laboratory of Disaster Prevention and Mitigation in Civil Engineering of Gansu Province, Lanzhou University of Technology, Lanzhou, Gansu Province, China

<http://dx.doi.org/10.1016/j.istruc.2016.10.004>

Highlights

- The multi-scale model was used to investigate the collapse performance of joints
- The nonlinear static and dynamic analysis method were been used for analysis
- There are 4 phases of resistance mechanism of joints to resist collapse
- The catenary mechanism plays a vital role in the resistance of progressive collapse
- Joints should have a strong connection between the steel beam and CFST column

Shear transferring mechanisms in a composite shallow cellular floor beam with web openings

Bing Y. Huo and Cedric A. D'Mello, Department of Civil Engineering, City, University of London, London, UK

<http://dx.doi.org/10.1016/j.istruc.2016.11.003>

Post-fire Behaviour of Innovative Shear Connection for Steel-Concrete Composite Structures

Fidelis R. Mashiri^a, Olivia Mirza^a, Carlo Canuto^a and Dennis Lam^b

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^b School of Engineering, University of Bradford, Bradford, UK

<http://dx.doi.org/10.1016/j.istruc.2016.12.001>

Axial Compression Behaviour of Long Concrete Filled Double Skinned Steel Tubular Columns

Sulthana U. M. and Jayachandran S. A., Department of Civil Engineering, Indian Institute of Technology Madras, Chennai, India

<http://dx.doi.org/10.1016/j.istruc.2016.12.002>

Seismic Analysis and Performance of High Strength Composite Special Moment Frames (C-SMFs)

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<http://dx.doi.org/10.1016/j.istruc.2016.12.004>

Load-Carrying Capacity of End Cross-Girder with Inspection Holes in Composite Bridge

Eiki Yamaguchi and Hiroyuki Tsuji, Dept. of Civil Engineering, Kyushu Institute of Technology, Kitakyushu, Japan

<http://dx.doi.org/10.1016/j.istruc.2016.12.006>

An Analytical Design Method for Steel-Concrete Hybrid Walls

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<http://dx.doi.org/10.1016/j.istruc.2016.12.007>

Articles in press

The following articles have also recently been made available online:

An experimental analysis of a timber Howe truss

AKM Anwarul Islam and Daniel Phillips, Civil & Environmental Engineering, Youngstown State University, Youngstown, OH, USA

<http://dx.doi.org/10.1016/j.istruc.2016.12.003>

Full-scale Tests of Stabilized and Unstabilized Extended Single-plate Connections

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<http://dx.doi.org/10.1016/j.istruc.2016.12.005>

Alternative Admissible Functions for Natural Frequencies and Modeshapes of a Beam with Lumped Attachments

Farhad Mir Hosseini and Natalie Baddour, University of Ottawa, Department of Mechanical Engineering, Ottawa, Ontario, Canada

<http://dx.doi.org/10.1016/j.istruc.2017.01.001>