Spotlight on Structures

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 Demountable Steel and Composite Structures
Brian Uy*, Vipulkumar Patelb, Dongxu Li and Farhad Aslania
* Centre for Infrastructure Engineering and Safety, School of Civil and Environmental Engineering, The University of New South Wales, Sydney, NSW, Australia
b School of Engineering and Mathematical Sciences, College of Science, Health and Engineering, La Trobe University, Bendigo, VIC, Australia
a School of Civil, Environmental and Mining Engineering, The University of Western Australia, Crawley, WA, Australia
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. Romeroa, C. Ibañezb, A. Espinosc and J.M. Portolésd
a Instituto de Ciencia y Tecnología del Hormigón (ICITECH), Universitat Politècnica de València, Valencia, Spain
c Department of Mechanical Engineering and Construction, Universitat Jaume I, Castellón, Spain
b School of Civil and Environmental Engineering, Tongji University, Shanghai, China
d School of Civil, Environmental and Mining Engineering, The University of Western Australia, Crawley, WA, Australia
http://dx.doi.org/10.1016/j.istruc.2016.06.005

Hot-rolled steel and steel-concrete composite design incorporating strain hardening
L. Gardiner, 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
Yi Yi Chen, Wei Li and Cheng Fang
State Key Laboratory of Disaster Reduction in 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, Quang-Huy Nguyen, Dang Dung Le and Olivia Mirza
University of Transport and Communications, Hanoi, Vietnam
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, Rannui 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 Chenn, Xingzhao Zhang, Mingshann Zhao, Chi-King Leear, Tat-Ching Fung and Sing-Ping Chiew
School of Civil and Environmental Engineering, Nanyang Technological University, Singapore
r Singapore Institute of Technology, Singapore
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

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.2016.10.001

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

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

Jingfeng Wang*, Jiaxin Wang* and Haitao Wang

* School of Civil Engineering, Hefei University of Technology, Anhui Province, 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

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

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

Zhiciao Lai*, Zhihui Huang* and Amit H. Varma*

* Purdue University, Lyles School of Civil Engineering, West Lafayette, IN, USA


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

André Plumier*, Dan Dragar*, Nguyen Quang Huyc and Hervé Degée

* University of Liege, Belgium

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 Anvarul 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

Kristin Thomas*, Robert G. Driver*, Steven A. Oosterhofs and Logan Callele

* COWI North America, Halifax, NS, Canada

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