

Spotlight on Structures

Research Journal of The Institution of Structural Engineers

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

Structures is a collaboration between the Institution and Elsevier, publishing internationally-leading research across the full breadth of structural engineering which will benefit from wide readership by academics and practitioners.

Access to *Structures* is free to all during 2015. From 2016, Institution members will continue to receive free access as one of their membership benefits. The journal is available online at: www.elsevier.com/locate/structures

The following articles 'in press' have been made available online since April:

Seismic Rehabilitation of RC Columns Under Biaxial Loading: An Experimental Characterization

Hugo Rodrigues^a, António Arêde^b, André Furtado^b and Patrício Rocha^a

^a School of Technology and Management, Polytechnic Institute of Leiria, Portugal

^b Departamento de Engenharia Civil, Faculdade de Engenharia, Universidade do Porto, Portugal

^c Superior School of Technology and Management of Polytechnic Institute of Viana do Castelo, Portugal

<http://dx.doi.org/10.1016/j.istruc.2015.03.001>

Rapid visual screening for seismic evaluation of RC hospital buildings

Daniele Perrone^a, Maria Antonietta Aiello^b, Marisa Pecce^b and Fernando Ross^b

^a Department of Engineering for Innovation, University of Salento, Lecce, Italy

^b Department of Engineering, University of Sannio, Benevento, Italy

<http://dx.doi.org/10.1016/j.istruc.2015.03.002>

Highlights:

- A method to evaluate the seismic risk of hospitals has been proposed
- The main parameters of seismic vulnerability in hospitals have been defined
- A relationship between vulnerability, hazard and exposition has been proposed
- The seismic risks of two hospitals have been evaluated

Automating measurement process to improve quality management for piping fabrication

Mahdi Safa^a, Arash Shahi^b, Mohammad Nahang^b, Carl Haas^a and Hamid Noor^b

^a Department of Civil and Environmental Engineering, University of Waterloo, Waterloo, Ontario, Canada

^b School of Business & Economics, Wilfrid Laurier University, Waterloo, Ontario, Canada

<http://dx.doi.org/10.1016/j.istruc.2015.03.003>

Effect of span length on progressive collapse behaviour of steel moment resisting frames

Farshad Hashemi Rezvani^a, Amir Mohammad Yousefi^b and Hamid Reza Ronagh^a

^a School of Civil Engineering, The University of Queensland, Brisbane, Australia

^b Department of Civil Engineering, Faculty of Engineering, Lorestan University, Lorestan, Iran

<http://dx.doi.org/10.1016/j.istruc.2015.03.004>

Shear Tests of Hollow Flange Channel Beams with Real Support Conditions

Poologanathan Keerthan, Mahen Mahendran and Anand Narsey, Science and Engineering Faculty, Queensland University of Technology, Brisbane, Australia

<http://dx.doi.org/10.1016/j.istruc.2015.03.006>

Experimental testing of grouted connections for offshore substructures: A critical review

Paul Dallyn^a, Ashraf El-Hamalawi^b, Alessandro Palmeri^a and Robert Knight^b

^a School of Civil and Building Engineering, Loughborough University, Leicestershire, England

^b Civil Engineering, E.ON New Build and Technology, Nottingham, England

<http://dx.doi.org/10.1016/j.istruc.2015.03.005>

Replacement of Deformed Side-Face Steel Reinforcement in Deep Beams With Steel Fibers

Robin G. Tuchscherer^a and Alejandra Quesada^b

^a Northern Arizona University, Dept. of Civil Engineering, Construction Management, and Environmental Engineering, Flagstaff, AZ 86011, USA

^b 2013 FHWA Dwight D. Eisenhower Fellow, San Diego, CA, USA

<http://dx.doi.org/10.1016/j.istruc.2015.03.008>

Highlights:

- Nine reinforced concrete deep beams were fabricated and tested
- Beams contained varying combinations of stirrups and steel fibers
- Crack widths under the application of service loads were measured
- Crack widths for specimens containing 0.5 and 1.0% fibers were similar to beams containing 0.2 and 0.3% stirrups
- The implication being that fibers could potentially supplant conventional stirrups in deep beam regions

Robustness of simple joints in pultruded FRP frames

Jawed Qureshi^a, J. Toby Mottram^b and Behrouz Zafari^b

^a School of Architecture, Computing and Engineering (ACE), University of East London, London, UK

^b Civil Research Group, School of Engineering, University of Warwick, Coventry, UK

<http://dx.doi.org/10.1016/j.istruc.2015.03.007>