

Cite this article

Sebastian W (2018)

Editorial.

Proceedings of the Institution of Civil Engineers – Structures and Buildings **171(9)**: 659–660,
<https://doi.org/10.1680/jstbu.2018.171.9.659>

Editorial

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Editorial

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This September issue of *Structures and Buildings* starts with a Commentary, written jointly between academia (University College London) and industry (Arup) on the burgeoning revival of construction in timber owing to the emergence of engineered timber products with excellent quality control on material properties (Sebastian *et al.*, 2018). The Commentary then zooms in on the exciting development of lightweight timber–concrete composite (TCC) floors, for which the structural efficiency can be improved beyond the single-span, simply supported status quo if research is conducted to underpin introduction of continuous, indeterminate TCCs in practice.

The issue then continues with papers on six topics written by authors from eight countries, reflecting the true international outreach and diverse theme of the journal.

The first paper by Shu *et al.* (2018) is a joint effort between universities in the UK and China to interpret the results of seismic performance tests conducted on end-perforated reinforced concrete beams strengthened with carbon fibre fabric externally bonded to the concrete in either rectangular or diagonal layouts. It is found that the improved energy dissipation capacity and hysteresis performance due to the bonded material are sensitive to the diameters of the perforations.

In the following paper from India, Behera (2018) attempts to quantify the improved torsional stiffness of reinforced concrete beams ‘U-wrapped’ with ferrocement. An analytical model based on skew bending theory with relevant material properties is shown to predict the secant stiffness at the cracking torque in good agreement with test data over a spectrum of core reinforcements, concrete grades, wrapping portions and mortar strengths.

Next, from Greece, Georgoussis (2018) presents a method to determine the optimum vertical axis in an asymmetric building through which the application of seismic lateral in-plane forces would induce minimum torsional response. The method, based on the discrete-element approach, is shown to be accurate for buildings with common mass and stiffness irregularities.

The final paper on buildings is written by Ayub *et al.* (2018) from Pakistan, and tackles the thorny issue of developing analytical seismic vulnerability curves for deficient mid-rise reinforced concrete building frames with setbacks. Non-linear static analysis using commercial software is combined with hazard level evaluation based on Fema 440 and damage quantified by correlation with natural periods of vibration. The output vulnerability curves suggest brittle failures of the buildings under consideration.

The remaining two papers of this issue focus on different aspects of bridges. From Korea and the USA, Jung *et al.* (2018) describe the historical development over the last 100 years, the performance and the state-of-the-art in rehabilitation techniques for road bridges in Korea. They employ a case study to show how rehabilitation strategies should account for the degree of technical risk and societal impact. In the closing paper from Portugal and the UK, André *et al.* (2018) analyse the data from extensive testing to failure of spigot and forkhead joints used in bridge falsework Cuplok systems. The output is an impressive analytical framework for probabilistic assessment of the resistance of falsework Cuplok systems.

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