Editorial

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This issue of *Structures and Buildings* consists of five technical papers and a book review. The first paper, by Hejazi and Azadbakht (2015), examines the structural response of partial depth end-plate with a precast hollowcore slab semi-rigid composite joints. A numerical non-linear finite-element analysis was performed and showed that the partial depth end-plate thickness had a substantial effect on the joint's flexural capacity. The authors also proposed a calculation method for the estimation of the composite joint bending moment capacity, whose results were marginally greater than the finite-element simulations. The authors also concluded that their proposed calculation method could be used to estimate the load carrying capacity of partial depth end-plate composite joints.

The second paper by Choi *et al.* (2015) presents an investigation of the punching shear behaviour of reinforced concrete slabs with various shear reinforcements. Six slab specimens were tested focusing on the parameters: fibre type, shear reinforcement type and fibre volume fraction. The tests utilised conventional steel fibres, amorphous metallic fibres, stirrups and stud rails to be used as shear reinforcement while fibre volume fractions were incorporated into the concrete mixture. The results indicated that, in the case of slabs subjected to direct shear, the adoption of amorphous metallic fibres can enhance the test's ultimate load and associated deflections. These results were also compared to the current design codes predictions and strength models leading to the development of a resistance model for estimating the punching shear capacity of concrete using amorphous metallic fibres.

The third paper by Fattah *et al.* (2015) reports on a case study using finite-element software to investigate the dynamic analysis and structural design of a machine foundation on piles in homogeneous sandy soil. The study concentrated on foundation geometry, dynamic load amplitude and frequency, and damping ratio. The investigation also assessed the effect of pile diameter, spacing between piles, cap thickness and cap length over the pile foundation structural response. Normalised factors were also introduced to provide designers with a distinct view of the settlement and moments induced in the pile cap.

The fourth paper by Ho (2015) presents a simple alternative for pattern load analyses of arbitrary multiple-way spanning floor systems. The author claims that the procedure was conceived to work with existing commercial software packages providing more realistic predictions of structural members design loads. The proposed method was based on the influence line concept and

simply encompasses additions and multiples of the absolute sum of basic linear static analyses results.

The fifth paper by Arya *et al.* (2015) describes a model for estimating the sustainability of bridges using the indicators of climate change, resource use, waste, biodiversity and heritage, noise, dust, vibration, aesthetics, employment and businesses, construction costs, maintenance costs and user delay costs. The authors also evaluated each indicator and established the particularities of the adopted measurement methods. A case study comprising alternative designs for a motorway over-bridge is also presented with the aim of determining the most sustainable option. The authors also reported on the results interpretation and on alternatives to better improve the bridges design sustainability.

The final contribution of this issue was a book review by Rafeeqi (2015) of the first edition of *Design of Durable Concrete Structures* by Stuart Matthews. According to the review the book's objective is to aid readers in understanding concrete durability complexity and its effect on the long-term performance of structures.

I hope that readers find in this issue interesting and instructive and I would like to emphasise that comments from readers on the papers in this issue are very welcome through discussion articles.

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