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Editorial

Pedro Colmar Gonçalves da Silva Vellasco BSc, MSc, PhD, DIC
Professor, Structural Engineering Department, State University of Rio de Janeiro – UERJ, Brazil

This issue of *Structures and Buildings* consists of five technical papers. The first paper by Lacidogna (2017) highlights the effects associated with usual structural configurations adopted in high-rise construction. The investigation is centred on the combination of resistant solutions such as wall–frame interaction, in-parallel variable height bracings, combination of variable section elements with different variation laws, and the general stiffening of thin-walled open-section shear walls coming from rigid floor elements. The outcome of the paper confirms the necessity of adequate design engineering tools that properly consider second-order effects.

The second paper by Pulatsu *et al*. (2017) presents a numerical assessment of ancient natural stone columns in the Mediterranean region made from multiple blocks or 'drums'. This was accomplished with the use of a two-dimensional custom-made computational model based on the discrete-element method to obtain capacity curves and corresponding failure mechanisms. The results indicated that rigid overturning is the main collapse mechanism under uniform horizontal forces, but a combination of rigid and shear failure mechanisms might also occur, depending on geometric characteristics and the choice of joint material properties. The ancient free-standing column imperfections also proved to have a significant influence over the lateral load resisting capacity and consequently, undamaged columns structural analysis may not represent their actual load-carrying capacity.

In the third paper by Siempu and Pancharthi (2017), the bond performance of ribbed reinforcing bars in self-compacting concrete is reported by means of an experimental investigation and a comparison to normal vibrated concrete results. The main investigated parameters were the characteristic concrete strengths, the bar diameters and the embedment lengths. The experimental bond stress values were compared to models available in the literature. The investigation led to the development of an analytical model to forecast the bond strength of ribbed reinforcing bars in both vibrated and self-compacting concretes.

The fourth paper by Ahmad *et al*. (2017) evaluated the effects of using carbon-fibre-reinforced polymer laminates to strengthen the webs of notched-end concrete beams. Two levels of shear reinforcement were cast and the effect of web strengthening the notched ends with polymers was evaluated. The results indicated that beams with polymer strengthening improved their ultimate loads by up to 17% when compared to unreinforced beams. The authors concluded that retrofitting failed beams with polymer web strengthening reached 90% of the undamaged beam failure loads.

The final paper by Tang *et al*. (2017) concerns long-span concrete structures subjected to early-age thermal expansion and subsequent contraction coming from the exothermic cement hydration reaction. This paper evaluated the finite-element model efficiency, based on the isothermal calorimetry results, to forecast in situ concrete early-age temperature development. The paper focusses on the benefits of the use of ground-granulated blast-furnace slag to replace cement in structural concrete. The simulation results were validated against semi-adiabatic calorimetry and indicated a reduced thermal loading due to the slag presence.

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

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