

Editorial

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Paper has its origins in wood, so it is symbolic that this (December 2020) issue of the Structures and Buildings journal, the final to appear in print, is focused on timber structures research. All issues of the journal from 2021 onwards will appear online only, prompted by recent increases in online activity and by the difficulty of sending printed copies abroad during the Covid-19 outbreak.

This second installment of the special issue dedicated to timber structures research (the first of which appeared in May 2020) comprises seven papers. The opening paper (Molina *et al.* 2020) focuses on double-shear test data for timber-concrete connections based on steel dowels which were either bonded into the timber using an epoxy adhesive, or were nudged into smaller diameter holes pre-drilled into the timber. Bonding led to significantly improved slip modulus and longitudinal shear strength of the connections. Eurocode 5 is found to under-predict the slip moduli. The study proposes regression models for these moduli which incorporate the mechanical properties of the constituent materials and which show improved correlation with the test data.

The second paper (van Roestel *et al.* 2020) focuses on the load bearing behaviour of structural insulated timber panels. A three-pronged (theoretical, numerical and experimental) approach is used to show that the load distribution capability of such panels is strongly influenced by asymmetric stiffening, but hardly by symmetric stiffening. When the panels are connected to a sole plate at the base, both the magnitude and sign of the moment at the base are functions of the panel's slenderness ratio, owing to the effect of the shear deformations.

The third paper (Teodorescu *et al.* 2020) is written in the context of interventions on timber-to-timber joints in heritage buildings. An experimental investigation is presented into the structural action of dowels made of massaranduba, a Brazilian hardwood, within timber joints made, alternately, of chestnut (a hardwood) and spruce (a softwood). The results show that the wooden dowel's behaviour (including embedment strength) is divergent from that of a metallic one, and that Eurocode 5 (due to its sole focus on metal dowels) underestimates the resistance of these hardwood dowels.

The fourth paper (Pasca *et al.* 2020) continues the theme of testing regimes on connections, this time for quasi-static cyclic loading of connections between prefabricated wood-based sandwich panels and sills, as lateral force resisting systems for wall assemblies. The results are used to identify advantages and disadvantages of methodologies proposed in different standards for assessing timber joints with mechanical fasteners. One of the methodologies is based on providing a seismic design advantage of significant energy dissipation without significant loss of strength.

The fifth paper (Molina *et al.* 2020) uses tests to examine the validity of US and European standards for predicting the embedding strengths of Brazilian reforestation woods using steel fasteners. It is recommended that the Brazilian standard should adopt the approach of the European standard, which exhibits less scatter in the relationship between wood density and embedding load.

The penultimate paper (Altunisik *et al.* 2020) successfully employs a combined experimental and modelling strategy to understand the structural dynamics of historical timber mosques which have been restored, while the closing paper (Elbashir *et al.* 2020) appraises timber-to-timber dowel type joints reinforced with self-tapping screws under both monotonic and cyclic loads.

Of course we welcome your discussions on these state-of-the-art publications. Finally, as much of the world carefully navigates its way through the second wave of Covid-19 over the coming months, we hope that you and your families remain safe, please take care of yourselves.

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