Editorial

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This is my first editorial as chairman of the Editorial Advisory Panel for *Structures and Buildings* and I would like to start by thanking my predecessor, Professor Ian May. He has been an excellent chairman and will be a hard act to follow. He remains on the panel for the time being during the transition period.

Professor May also remains in print, by contributing to a paper in this month's journal.¹ This paper covers the prediction of crack propagation in steel bridges and the use of composite patches to repair this. The finite element (FE) analysis used compares well against test specimens, showing the benefit of using such patches.

Staying with the theme of composite patches, the paper by Madkour² looks at the effect of carbon fibre reinforced polymer (CFRP) patches on reinforced concrete beams with web openings. In this case the CFRP has been placed where web openings have been formed in beams to allow for mechanical and electrical services. He proposes a numerical model for microcrack formation and propagation. Again, the FE results are compared with existing test results.

The previous two papers both used existing FE packages to compare against experimental results and these showed correlation. In the paper on aerostatic stability of bridges,³ the authors acknowledge the drawbacks of existing FE codes. Rather than developing an entirely new FE code, as is common in academia, the authors developed an API or 'plug-in' into an existing commercially available FE code. This technique gives the best of both worlds, enabling new code and simulation to be developed with the benefit of an existing working FE framework.

Sebastian *et al.* present the results of their investigations into

the use of limecrete slabs compositely acting with glulam timber beams.⁴ Not only do the beam and slab material have a low carbon footprint, the shear studs are made from iroko (a hardwood), rather than steel, and connected with a dowel made from ramin (another hardwood). The paper looks at fabrication practicalities, results of load testings and FE analysis, and reviews the benefits of this construction type compared to more conventional ones. An interesting read.

Finally, following the theme of repairing concrete structure materials, we have included a review of *Management of Deteriorating Concrete Structures* by George Somerville.⁵

REFERENCES

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