Editorial

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Innovation and the digital agenda are at the forefront of the minds of our profession, our clients and indeed the UK government. As bridge engineering professionals, it is fair to say that we tend to remain ahead of the curve in implementing new software or innovative technology, as it enables us to deliver more engineering solutions with greater accuracy or in a more cost-effective manner. In this edition of *Bridge Engineering*, we have four papers that showcase this and the value that adopting these methods creates.

In their paper, Pan *et al.* (2019) present their analysis of creep and shrinkage on a self-anchored suspension bridge designed to link the Chinese mainland to an artificial island. Their study primarily focusses on the effect of creep and shrinkage on the stiffening girder in the bridge system, which equilibrates the substantial horizontal forces generated in a self-anchored suspension bridge. It proposes an innovative modification to the cable clamp system that allows ease of cable force adjustment through the life of a structure, ensuring that creep and shrinkage effects do not overstress the stiffening girder.

Chao *et al.* (2019) describe their use of laser scanning to monitor deflections of temporary works used for the launch of a new 140 m tied arch bridge that was constructed over a watercourse in Taiwan. In this paper, the authors also describe the innovative launch system that enabled erection of the deck to be undertaken without the need of using river transport to place the bridge deck. The point cloud data produced by laser scanning was used to validate predictive finite-element analysis undertaken on the launch temporary works.

McHaffie and Waldin (2019) present their work assessing damage to existing concrete bridge piers as a result of the devastating earthquake in Christchurch, New Zealand, in 2016. They describe their novel analysis and testing work to validate the residual strength of reinforcement at the plastic hinges that were caused by the earthquake. Their site validation work was undertaken in such a way that the relatively local remedial works could be implemented rather than substantial demolition of major parts of the structure, or demolition and reconstruction.

In the final paper in this issue, Prakhya *et al.* (2019) present a detailed analysis of movements that resulted from the

backfilling of a new concrete segmental arch constructed over a railway. Their two- and three-dimensional analyses assessed bound material properties and they undertook several sensitivity analyses to enable robust monitoring on site in order to facilitate safe construction. Their comparisons with site-measured values show good correlation with predicted values, demonstrating the effectiveness of such analyses for this application.

I hope the readership find these papers as interesting and informative as I have in editing this journal. We encourage readers to submit discussion pieces on these articles through the regular channel. We also encourage the entire readership to share their experiences in the profession by way of submitting an article to *Bridge Engineering*.

Regular readers will be aware that *Bridge Engineering* is increasingly publishing themed issues. This has been as a result of a strong response from our readership in writing about specific topics that the Editorial Panel have identified. We would like to open the opportunity up to the readership to suggest topics for future themed issues and participate as guest Editors in seeing these themed issues through to publication. Further details on this opportunity can be obtained from our Journal Editor, Kirsten Buchanan, by emailing kirsten.buchanan@icepublishing.com.

REFERENCES

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