EDITORIAL: May 2018

Editorial

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As I write this editorial I am looking forward to the imminent birth of my first child. Like me, my partner is also a consulting engineer and a chartered member of the Institution of Civil Engineers (ICE). As we prepare for our respective periods of parental leave, one of our concerns is how we will remain connected and keep in touch with the civil engineering sector.

As a member of the *Civil Engineering* journal editorial panel, it therefore gives me great pleasure to contribute to an authoritative source of information which actively keeps civil engineers connected – especially those not currently in work. This May 2018 issue is no different.

In this edition we have authors sharing their knowledge and experience on projects and subjects which exhibit innovation – including an award-winning tunnel project, a new bridge construction technique, a systematic approach to cost overruns and novel approaches to skyscraper design and construction.

Costes *et al.* (2018) start by describing the design and completed construction of the largest-diameter and deepest tunnel ever built in London – the Lee tunnel. The shafts have up to 98m deep diaphragm walls with strict verticality tolerances, fibre-reinforced concrete inner lining walls and strict crack-width requirements. The authors also discuss launching a tunnel-boring machine from a shaft without back-shunt tunnel boring – one of the many reasons why the project won the Major Civil Engineering Project of the Year Award in the 2016 British Construction Industry Awards.

The second paper by a global array of authors brings our attention to a method of bridge construction which, to date, has seen little use in the UK yet is gaining popularity in China. Deng *et al.* (2018) provide the historical background, structural characteristics and construction methods for corrugated steel web bridges, which offer a cheaper, lighter and more efficiently prestressed solution compared to conventional

concrete box girders. The authors report on the structural performance of the bridges with regards to bending, shear, torsion and buckling behaviour as well as constructed examples and new construction technologies.

In the third paper, Invernizzi *et al.* (2018) from the University of Leeds showcase their research on project cost overruns, which as we soon find out is not always as simple as comparing the final cost with the original estimate. They review how overruns are calculated in the literature and propose a way to assess cost overruns in a more rigorous and transparent way, using the UK's £163 billion nuclear decommissioning programme as an example.

Wang (2018) completes the issue by taking us back to China to outline the aspects of design, engineering and construction for a cluster of skyscrapers due for completion in 2019.

He reflects on the innovative seismic engineering performed using pendulum bearings and viscous dampers to disperse energy and relative movement. Building information modelling was also adopted throughout the project and extended to conduct virtual construction and logistics across the site. As-built information was compiled with on-site scanning for comparison with design information to monitor accuracy and progress.

As my partner and I prepare for our parental leave, during which we may not have a printed copy of the journal close to hand, we may instead be reading it online at the ICE Virtual Library, www.icevirtuallibrary.com/loi/jcien.

Finally, if you have found yourself out of work due to more unpredictable reasons – such as redundancy, illness or other difficulties – the ICE Benevolent Fund is there to help all civil engineers who are, or have been, members of the ICE. Please visit www.icebenfund.com to find out more.

References

- Costes E, Jewell P, Michel C and Pogu F (2018) Lee tunnel project – the first step toward a cleaner River Thames. *Proceedings of the Institution of Civil Engineers – Civil Engineering* **171**(2): 69–76, <https://doi.org/10.1680/jcien.17.00044>.
- Deng W, Zhou M, Hassanein MF *et al.* (2018) Growth of prestressed concrete bridges with corrugated steel webs in China. *Proceedings of the Institution of Civil Engineers – Civil Engineering* **171**(2): 77–84, <https://doi.org/10.1680/jcien.17.00045>.
- Invernizzi DC, Locatelli G and Brookes NJ (2018) Cost overruns – helping to define what they really mean. *Proceedings of the Institution of Civil Engineers – Civil Engineering* **171**(2): 85–90, <https://doi.org/10.1680/jcien.17.00001>.
- Wang AJ (2018) Design and construction innovations on a skyscraper cluster in China. *Proceedings of the Institution of Civil Engineers – Civil Engineering* **171**(2): 91–95, <https://doi.org/10.1680/jcien.17.00027>.

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