Editorial

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Welcome to the February 2019 issue of *Civil Engineering*. My 11-year-old recently started at a new school, which involved numerous challenges such as making new friends, learning Mandarin and a new 14km bus journey. It struck me that as civil engineers we are continually making new journeys and facing fresh challenges – and the four papers in this issue touch on this.

First, we have new ICE president Andrew Wyllie's inaugural address to members. He concludes, 'this is your time, and I invite you to ... seize the opportunities that will allow you to fulfil your destiny, and to make your own meaningful and lasting contribution to the societies in which we live. This is an incredibly exciting time for ICE – please join us on the journey' (Wyllie, 2019: p. 8).

Mak *et al.* (2019) then write about their NEC journey in Hong Kong. Client MTR trialled the NEC3 Engineering and Construction Contract (NEC, 2013) for the second phase of a project to see how it compared with the conventionally procured first phase. The paper describes the tendering, team-building and construction performance of the second phase and shares the lessons learned on NEC contract administration and implementation.

The authors admit there was a slow start before the project team fully embraced the NEC collaborative philosophy, eventually developing a strong teamwork mentality which contributed to a successful project outcome. The trial is regarded as a success and the client is considering further use of the NEC contract.

Our second paper discusses implementation of the first phase of the Doha Metro in Qatar. Demmler *et al.* (2019) describe how delivery of this large urban project was achieved in challenging geotechnical and environmental conditions. The aggressive nature of the soil and groundwater required special construction methods to counteract the risk of sulfate attack and protect structures against corrosion.

Control of high groundwater inflows and management of water in an urban environment also required careful technical and logistical planning, and the stations had to be protected against flash flooding. Another challenge was transporting excavated materials from work sites through congested city-centre roads, which was partly solved by 2.4km of overhead conveyor belts.

Next, we go to India, where Shinde and Karjinni (2019) discuss the challenge of urban air pollution based on a case study of Delhi. Their paper presents the correlation between rising vehicle numbers – particularly powered two-wheelers – and air quality and health. The numbers make for stark reading. The number of registered vehicles in Delhi has increased from 0.52 million in 1980 to 6.93 million in 2010 and is forecast to reach 13 million in 2040.

During the 2-year study, the authors observed that carbon monoxide and nitrogen dioxide in Delhi in 2012 and 2013 exceeded Indian national standards by over 200% during winter months. During the same period the number of registered vehicles grew by around 15% and the proportion of respiratory deaths increased by 10%. The paper finishes with proposed measures to improve urban air quality.

The final paper, by Deng *et al.* (2019), describes the Chaoyang Bridge in China. The bridge features several design innovations, including the first use of corrugated steel webs (CSWs) for a cable-stayed double-deck crossing, new cable anchorage technology and a building information modelling management system to resolve structural defects.

The authors explain that the use of CSWs on cable-stayed bridges can reduce the self-weight of the main girder, increase the span of the structure and reduce the seismic response. Furthermore, CSWs simplify and shorten the construction process, thereby reducing construction costs.

I hope you enjoy the variety of the papers in this issue. Please remember you can access more recent papers in the Ahead of Print section on the ICE Virtual Library at www.icevirtuallibrary.com/toc/jcien/0/0.

A final thought for 2019: continuing professional development might seem a bit of a challenge at times but in an ever-changing world it is a necessary part of our career journey. I plan to have written my development action plan for 2019 before this issue lands on the doormat. Have you written yours?

References

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