Editorial

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Last year I wrote about the big challenges facing our planet, such as climate change, urbanisation, conflict and poverty. A lot has changed in the last year with Covid-19 transforming the way in which we interact and collaborate and our understanding on what progress means for our cities and communities. With the rollout of vaccines, there is light at the end of a long tunnel and I hope that we can see some form of normality in 2021.

The engineering community has united to address the myriad challenges through either rethinking use of materials, resource efficiencies or innovative use of technologies. In the post-Covid-19 world, it is important for us not to lose sight of issues such as climate change. As part of her inaugural address, Institution of Civil Engineers president Rachel Skinner (2021) launched a specially commissioned film – *Shaping Zero*, which I urge all of you to watch (Panos, 2020) and which speaks to the role of engineers in achieving net-zero greenhouse gas emissions and addressing climate change.

The first paper of this issue kicks off with climate change and the need for transparency and clear reporting on climate risks in the construction industry. This is vital, as the property and construction industry contributes to nearly 40% of the greenhouse gas emissions. Siew (2021) reviewed evidence from the top 100 construction and property companies in Malaysia, highlighting gaps in reporting on climate-related impacts. Barriers to reporting include costs, capabilities, lack of mandated reporting requirements, herd mentality and confusion over multiple toolkits. The guidelines provided by the international Task Force for Climate-Related Financial Disclosures potentially provide a pathway if the guidelines are made more industry specific and if both training and the implementation of nations' policies are improved.

Zhang *et al.* (2021a) explore the impact of agglomeration in the construction sector on productivity for different market sizes in China. The authors find that industrial parks and clustering of construction enterprises increases productivity with the potential to reduce resource consumption and support sustainability goals and targets.

The next two papers focus on resource efficiency through materials. Concrete is the most commonly used material in the construction

industry and a large contributor to emissions. To this end, Radwan *et al.* (2021) conduct a life-cycle assessment of mortar blended with fly-ash and slag to examine environmental performance. The authors conclude that introducing supplementary cementitious materials did not adversely affect performance and had the potential for wider use. Zhang *et al.* (2021b) studied the environmental implications of using fibre-reinforced polymers to strengthen concrete structures. Through life-cycle assessment, they evaluated both energy use and strengthening achieved through a variety of polymer solutions. Whilst carbon-fibre-reinforced polymer solutions offered better solutions in terms of strength, they consumed more energy. This demonstrates why, as engineers, we have to look at trade-offs when making decisions on material use or design solutions.

Watts *et al.* (2021) look at the perceptions of the contractors and their motivations for participating in the UK's Considerate Constructors Scheme (CCS). Using a case study, the authors note that, overall, the scheme does bring benefit to the project, stakeholders and wider construction industry. Watts *et al.* (2021) found that more work was required on engaging contracting staff to bring them on board to better realise the potential of this scheme.

Communication is key as we move forward in the post-Covid-19 world to create healthy cities. This will require engineers to push boundaries and work across disciplinary silos to co-create solutions that are innovative and acceptable for society.

We are looking for new reviewers and panel members from the UK and overseas, especially from industry, who can engage with our readership on innovative solutions applied in their countries that may have a global relevance. So please do get in touch with us and send us your CV if you are interested in being more involved. The journal publishes its most recent articles ahead of print on its Virtual Library homepage.

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