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Editorial

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Editorial

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It gives me great pleasure as Chair of the Editorial Advisory Panel to welcome you to the first issue of *Engineering Sustainability* in 2020.

Our planet faces complex challenges such as climate change, urbanisation, continued population growth, demographic shifts, environmental pollution and poverty. This requires engineers to work across sectors and disciplines and to be actively involved in decision making throughout the project life cycle of infrastructure projects. The Institution of Civil Engineers (ICE) launched its Enabling Better Infrastructure programme in December 2019, which will enable decision makers to achieve better outcomes on infrastructure projects through 12 guiding principles and a resource hub (<https://www.ice.org.uk/news-and-insight/enabling-better-infrastructure>).

The first article of this issue is therefore very timely as it puts forward key outcomes from a high-profile workshop held with representatives from ICE, academia, funders, and governmental agencies and consulting. Hargreaves *et al.* (2020) discuss the need to rethink the value proposition of infrastructure projects to consider long-term sustainability as engineers shape the communities that we live in. The authors propose that engineers need to be and should be involved in strategic planning processes and work closely with cross-sector stakeholders to drive sustainable practices rather than the current react-and-respond approach.

This issue continues to interrogate global practices that can inform engineering sustainability through exploring what makes cities liveable, criteria for success for sustainable buildings, optimal roofing solutions for green buildings and the viability of energy recovery from storm water retention ponds.

Leach *et al.* (2020) introduce the nine-step Liveable Cities Methods (LCM), which is a decision making process that identifies potential barriers to achieving sustainability and liveability in cities. This approach was tested on the metro system extension into the city centre in Birmingham, UK with a view to creating a more active and inclusive city. The authors demonstrate that approaches such as LCM can enable engineers to consider what is 'better' and 'sustainable' engineering for the future.

Tang *et al.* (2020) examine factors and criteria influencing the success of sustainable buildings in Hong Kong. The authors highlight that in addition to new technologies, sustainable materials and energy efficiency, sustainable buildings require top management commitment, integration of project teams, innovation and inclusion of participants' perceptions throughout the project life cycle.

Illankoon *et al.* (2020) calculated the life-cycle costs for ten roofing typologies in Australia and selected optimum solutions for each climate zone. The flat concrete roof with a suspending ceiling was noted to be the optimum roofing solution for all climatic conditions in the country. Overall, factors such as initial costing and replacement costs significantly influence the life-cycle cost.

Costa *et al.* (2020) develop a novel screening tool for the evaluation of the energy recovery potential for storm water storage sites and test this tool on UK- and USA-based case studies. Energy recovery from storm water appeared to be limited to locations with abundant rainfall, a large contributing catchment and steep slopes. Significant head fall was noted as a critical factor to make the economic case for energy recovery.

The papers in this issue further emphasise that leadership, effective integration of project teams, innovative tools and resource-efficient solutions are required to engineer a better future. We need to share best practice and context-specific success stories to foster innovation to maximise societal benefit and reduce environmental impact.

We are looking for new reviewers and panel members from the UK and overseas 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 ICE Virtual Library homepage.

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