Cite this article
Chen Z (2019)
Editorial.
Proceedings of the Institution of Civil Engineers – Engineering Sustainability **172(7)**: 325–326,
https://doi.org/10.1680/jensu.2019.172.7.325

Engineering Sustainability

ice Publishing

Editorial

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The *Engineering Sustainability* journal planned a themed issue for 2017 on engineering the sustainable flood risk management infrastructure and system. In collaboration with colleagues at the *Engineering Sustainability* journal and more broadly in academia and practice, Dr Zhen Chen at the University of Strathclyde and Dr Geoff Darch at Anglian Water Services, formerly at Atkins, have championed this themed issue. While the *Engineering Sustainability* journal has published articles from the collection under this theme in the past, this issue provides a collection of eight further articles.

It has emerged from observations that there is an increasing need for sustainable flood risk management with dependable solutions to respond to more frequent large-scale rainstorms under climate change. It is expected that a more dependable civil infrastructure system underpinned by robust sustainable flood risk management strategies and tactics can effectively protect people, agriculture, the built environment and so on from flood risk and reduce net damages across flooded regions over the short and long term. Lessons learnt from the effectiveness and failure of flood defences across the world have identified an urgent need to develop a wider range of technical solutions and to improve the leadership capability in both engineering and management domains.

This themed issue aims to present and debate advances in technical approaches to sustainable flood risk management through multidisciplinary practice-oriented research and development. It includes both valuable experience sharing and rigorous independent study that translate knowledge gained from practice and research in sustainable flood risk management with regard to the development and use of management infrastructure and systems to inform risk-factored decision-making and actions against multi-scale floods.

In the call for papers for this themed issue, topics that were proposed included

- catchment-based approach
- community engagement and resilience
- damage and needs assessment
- emergency preparedness, warning and maintenance
- environmental permit for flood risk activities
- flood defence infrastructure design and management
- flood risk informatics and management system
- infrastructure performance and failure analysis
- risk-factored engineering policy and strategy
- river and coastal maintenance programmes.

The two champions of this themed issue have particular interest in the existing, enhanced or new roles that engineering can play in holistic flood risk management, especially in response to future pressures under climate change (CCC, 2019) and the need for a dependable built environment (Chen, 2019).

This issue contains eight articles that present insights on and research into a range of topics, including catchment partnership approach, community flood protection, flood defence deployment plan, participatory flood modelling, flood risk evaluation, flexible adaptation planning and storm water management. It's an honour for me, on behalf of the editorial team of this themed issue, to present the following articles to readers.

- A catchment partnership approach to delivering natural flood management in the Evenlode, UK (Old *et al*., 2019).
- Arguments for a co-production approach to community flood protection (Fitton and Moncaster, 2019).
- Delivering temporary flood defence deployment plans: lessons learned from case studies in the UK (Cartwright *et al*., 2019).
- Participatory flood modelling for negotiation and planning in urban informal settlements (Mulligan *et al*., 2019).
- Combining hydraulic modelling with partnership working: towards practical natural flood management (Norbury *et al*., 2019).
- A method for evaluating flood hazard and flood risk of east Bangkok plain, Thailand (Tingsanchali and Keokhumcheng, 2019).
- Flexible adaptation planning process for urban adaptation in Melbourne, Australia (Radhakrishnan *et al*., 2019).
- A critical evaluation of sustainable stormwater management practice and policy in Dublin (Rooney and Gill, 2019).

I hope readers find these articles stimulating and informative, and would be pleased to receive comments. In addition, I'd like to take this opportunity to thank all colleagues, including peer reviewers, who have worked hard throughout the publication process of this themed issue.

REFERENCES

Cartwright A, Tsavdaris A, Burton R and Matthews D (2019) Delivering temporary flood defence deployment plans: lessons learned from case studies in the UK. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 345–353, https://doi.org/10.1680/jensu.17.00016.

CCC (The Committee on Climate Change) (2019) *Progress in Preparing for Climate Change – 2019 Progress Report to Parliament*. CCC, London, UK.

Chen Z (2019) Grand challenges in construction management. *Frontiers in Built Environment* **5**: 31, https://doi.org/10.3389/fbuil.2019.00031.

Fitton SL and Moncaster AM (2019) Arguments for a co-production approach to community flood protection. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 335–344, https://doi.org/10.1680/jensu.17.00014.

Mulligan J, Bukachi V, Gregoriou R *et al.* (2019) Participatory flood modelling for negotiation and planning in urban informal settlements. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 354–371, https://doi.org/10.1680/jensu.17.00020.

Norbury M, Shaw D and Jones P (2019) Combining hydraulic modelling with partnership working: towards practical natural flood management. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 372–384, https://doi.org/10.1680/jensu.17.00025.

Old J, McKnight D, Bennett R and Grzybek R (2019) A catchment partnership approach to delivering natural flood management in the Evenlode, UK. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 327–334, https://doi.org/10.1680/jensu.17.00038.

Radhakrishnan M, Löwe R, Ashley RM *et al.* (2019) Flexible adaptation planning process for urban adaptation in Melbourne, Australia. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 393–403, https://doi.org/10.1680/jensu.17.00033.

Rooney JP and Gill L (2019) A critical evaluation of sustainable stormwater management practice and policy in Dublin. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 404–413, https://doi.org/10.1680/jensu.17.00022.

Tingsanchali T and Keokhumcheng Y (2019) A method for evaluating flood hazard and flood risk of east Bangkok plain, Thailand. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **172(7)**: 385–392, https://doi.org/10.1680/jensu.17.00031.