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Editorial
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Editorial

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With the summer of 2017 in full swing as I write, the current run of hot weather will doubtless be accompanied by a spike in demand for clean water, especially in the crowded south-east of England. Spells of hot weather and the accompanying demand for water in the UK and elsewhere have been a concern for policy makers for some time. Water infrastructure and its planning is clearly an ongoing part of the ongoing public discourse, and it is clear that whatever policy directions are taken with regard to infrastructure and investment, there is still a great deal of uncertainty that surrounds these areas. The spirit of inquiry, systematic research and peer review as enshrined in the processes followed by all of the ICE journals ensures that we are well placed to test any new technologies that are proposed and to maximise the benefits to clients, designers and contractors. The present issue contains a further set of peer-reviewed articles that draw on a range of current theories and cover a range of topics.

There is something of a geographical range in the contents this time, too. Unusually for a volume of this type, these papers relate to work carried out in different parts of the world; two from the EU (Ireland and Italy), two from a wider European context (Russia and Turkey), and one from further afield in Kuwait. In regard to the Irish case (Brady and Gray, 2017), there is a case study of the recent transformation of the water sector in Ireland, together with a discussion of the challenges that still face the sector after many decades of underinvestment and associated problems. The information contained in this case study is of great benefit to those seeking to identify best practice in water supply based on comparative case studies. It is noteworthy that population growth and climate change are as much key drivers behind this rationalisation and restructuring as they are anywhere else. While economic growth cannot be sustained without proper infrastructure and the maintenance thereof, the lessons learnt here reflect the importance of stakeholder engagement and equity between stakeholders.

The Italian water supply case here reflects a different set of questions related to reservoir control rules. The questions are not new, in fact throughout the volume the question of optimisation, given a set of constraints and requirements, keeps emerging. Here though, Sulis (2017) tackles the question in a new and interesting way, making effective use of the improvement in processing power since the early days of reservoir management. The attractiveness of the approach used here relates to its generalisability and its ease of use – it being relatively easy to obtain the software and there being no need for specialist knowledge. As stated by the author, the need for reservoir control rules is likely to become ever more important under population growth, economic growth, and climate change, again highlighting a common set of themes in water management as related to civil engineering.

Moving on to Russia, again the question of optimisation of resources comes to the fore. The article by Mishukov and Smirnova (2017) relates to wastewater treatment, and comprises a discourse on the dosing of reagents during phosphorus and nitrogen removal from wastewater. The techniques set out in this paper could form the basis of improved nutrient removal in many similar plants worldwide where there is still much uncertainty regarding the appropriate means of removal.

A more laboratory-based offering is provided by Taştan (2017), who describes the problem of predicting the air entrainment that can occur in vortices in water intakes in a range of settings. Again, while the problem is not new, the proposed framework is, and readers are taken through the various aspects of this problem including the treatment of boundary and scale. While not strictly a water scarcity issue, it is clear that there is a need to understand flow behaviour at intakes for a wide range of different designs and a range of different flow rates. That the problem is well known is evidenced by a citation from 1956, well before the age of the easy-access, freely downloadable computer models.

Finally, the Kuwait case study is related to water resources connected with the intake of sea water in desalination plants. Almedeij and Alotaibi (2017) describe their work in assessing the periodicity of water intake. This is an attempt to facilitate the generation of synthetic water demand data of the kind so often needed in modelling studies. Kuwait presents a well-known example of a steady increase in water demand in conjunction with economic and population growth as shown in their Figure 1; the scales in this diagram will be of interest in terms of the volumes of water involved. The interest here lies in the factors used to correlate with water demand, and the strengths of the signals involved.

In summary, one key message from these interesting articles once again is that there is no substitute for properly designed investigation reinforced by detailed analysis and interpretation building on peer-reviewed work. Good research also builds on

the work of others, often carried out decades before. Reading this issue will, I hope, provide encouragement and stimulate discussion among your networks and co-workers. If you have an interesting story to tell in any of the subjects related to the results or discussion contained in these pages, please do consider submitting an outline to one of the Editorial Advisory Panel members (full details are available on the journal's homepage on the ICE Virtual Library website). On behalf of the Editorial Advisory Panel, I would like to wish all readers a good summer; ideally one free from any hosepipe bans or other restrictions associated with water scarcity.

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