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Dams and Reservoirs

Editorial

In the last issue of *Dams and Reservoirs* we published six of the papers that were submitted for the British Dam Society (BDS) Prize, which is awarded every two years for the best paper authored by a BDS Young Professional, that is a member under 35 years old at the time of the award. We had ten entries for the 2023 competition, and all were deemed worthy of publication in *Dams and Reservoirs*, so in this issue we are now able to publish the remaining papers as the first four papers of this issue.

Davis (2024a) describes how risk assessments were undertaken for reservoirs in Hong Kong based on a risk analysis system that was derived for UK reservoirs. However, many of the threats, loadings and consequences of failure are very different in Hong Kong to those in the UK, from which the system was derived. The paper identifies these and explains how the risk analysis was modified to suit the local conditions.

UK reservoir undertakers now have to exercise their On-Site Flood Plans, and the paper by Davis (2024b) gives an example of a live-play exercise carried out by the Canal and River Trust at one of their reservoirs. Suggestions on how to organise a failure simulation are given, including the individuals and organisations that should be involved. Having a contractor on site for the exercise showed how the On-Site Flood Plan had to be modified in the light of experience.

When seepage was observed through the joints of an unreinforced concrete gravity dam a stability analysis was called for. The paper by Choudhury (2024) explains the potential risks to the stability of the upper parts of the dam, and how the failure modes (sliding and overturning) were analysed. It was found that the factors of safety were too low to meet modern standards, and the paper describes the installation of post-tensioned anchors from the crest to the underlying bedrock.

When significant reservoir safety works were required on the largest natural (but raised) lake in Wales, the client, Natural Resources Wales (NRW), chose to deliver multiple benefits in accordance with NRW's wellbeing objectives. The paper by Bashford (2024) describes the engineering works carried out to ensure reservoir safety, and how many other benefits for the community were derived from these works.

The final paper in this issue is not a BDS Prize paper, but one by Yilmaz *et al.* (2024) from Turkey on research they carried out on pressures on the spillway plunge pool floor of Yusufeli dam. The plunge pool is over 200 m below the spillway crest, and their work used both physical and numerical models to determine the pressures exerted by the falling jet — essential when designing this critical component of a dam.

Comments or questions on any of these papers are welcomed, and we will aim to include such contributions, along with a response from the author, in a subsequent issue of *Dams and Reservoirs*. Please send any contributions to editor@britishdams.org or atpec@peppernet.org

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