



# The British Dam Society

## Binnie Lecture: 45 years of Dam Engineering

John Gosden, MA, MSc, CEng, FICE

Monday 5<sup>th</sup> October 2020

AGM at 6:00pm followed by the Binnie Lecture



**For brief presenter biography see overleaf**

This meeting will be streamed live on the internet via MS Teams. For more details please visit the events page on the BDS website: [www.britishdams.org](http://www.britishdams.org)

For more information please contact the ICE on 020 7665 2147 or email: [societyevents@ice.org.uk](mailto:societyevents@ice.org.uk)

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## Synopsis

The first half presents a description of three significant projects that were important in my early development and maturing as a dam engineer, drawing out some of the lessons I have learned on through the rest of my career. These projects presented a wide variety of challenges and comprised: a 15m high earthfill embankment on very soft alluvial foundations in Malaysia with gated flood control and service spillways; a 65m high earthfill embankment in Kenya constructed with halloysitic soil and founded on a variable sequence of volcanic strata derived from several eruptions; and an 80 m high concrete face rockfill dam in Cyprus founded on pillow lavas.

The second half considers the UK approach to the inspection of existing reservoirs. It starts with a reminder of what is set out in the Reservoirs Act 1975 (and its subsequent amendments), noting how this relates to its predecessor the Reservoirs (Safety Provisions) Act 1930, then looks at the differences in the Reservoirs (Scotland) Act 2011 and thirdly compares this with Australian practice. Observations on changes that have taken place in the reporting of inspections over time will be presented, followed by thoughts on a short survey of current practice with regard to the technical content of inspection reports. It will conclude with thoughts on where we can make further improvements in the approach to reservoir inspections that will assist future Inspecting Engineers.

## Presenter Biography

**John Gosden** is a dam engineer who has been practising in the UK and overseas for 45 years. He graduated from Cambridge University in 1975, joining Howard Humphreys (who later became part of Kellogg Brown and Root) and within four months was working overseas on his first dam project. In the first half of his career he worked in many countries across Africa, the Middle East, the Far East, the Indian Ocean and the Caribbean. Overseas he has designed more than 10 major new dams comprising earthfill, rockfill with clay core, concrete face rockfill and RCC gravity dams, ranging in height from 15 to 120 metres. He continued his education by completing an MSc in Geotechnical Engineering in 1983.

He was first appointed to the All Reservoirs Panel in 1989 and since 2000 most of his work has been undertaken in the UK. He was the lead author of the first edition of the Guide to the Reservoirs Act, co-author of the Guide to Quantitative Risk Management for UK Reservoirs and senior author of the Guide to Drawdown Capacity for Reservoir Safety and Emergency Planning. He was also the vice-chairman of the ICOLD Committee on the Operation, Maintenance and Rehabilitation of Dams.

He joined Jacobs in 2006, where a substantial proportion of his work has been on flood storage reservoirs. He has been Construction Engineer for 13 new flood storage reservoirs and carried out inspections and remedial works on numerous others. Until recently he has also been Jacobs global lead for dam engineering, providing particular support to their Australian offices.