BOOK REVIEW

Dam

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Trevor Turpin. Reaktion Books, 2007. ISBN 978-1861893284, 224 pp, £16.95.

This book states that dams are 'crucial' for the generation of power, for irrigation, for flood protection, water supply, navigation and canals. Turpin traces the development of dams from the Industrial Revolution to the present day, touching on issues including the environment and climate change. He suggests that dams are at a turning point, with dams being removed at an unprecedented rate in the USA while being created even more quickly than ever before in developing countries.

He argues that, if planned carefully, dams have a vital role to play in addressing climate change by providing renewable energy, river habitats, flood protection and water for irrigation for food production. He states, 'after 5000 years their time has come' and points out the profile of a 'vital yet neglected feature of modern life will be enhanced' in the years to come.

Turpin goes into some detail, with the aid of good illustrations, in describing the development of the Elan Valley and the dam at Vyrnwy as a means of describing what the dams symbolise as well as describing their functions. He points out that in his opinion dams symbolise 'power, strength, achievement, domination and civilisation'. Other examples are drawn from Iran, Egypt, Sri Lanka, Sudan, China and the USA, and cites the work of Lancelot 'Capability' Brown as works to change the landscape.

But not all the stories are good. Turpin suggests that dam engineers may possess a degree of arrogance, often refusing to learn from the mistakes of their predecessors, but on the other hand says they have also learned from and replicated previous successes, whether in terms of design, construction or appropriateness.

Turpin describes the historical development of dams in various parts of the world in some detail with excellent illustrations and even describes the proposals for a London barrage that was being promoted in 1935, which described an advantage as the 'enhancement of the value of riverside property' – how true!

He states that 'like many features of contemporary infrastructure' they are forgotten until either they go wrong or someone plans a new one. Wise words include 'we will do well to remember that without dams vast numbers of the earth's population would still be walking many kilometres each day for water, would starve, would suffer from disease brought about by inadequate sanitation and would be subject to regular flooding. Without them we would have no chance of arresting global warming.'

A fascinating chapter on dam designers and builders charts notable dam engineers and their work in the UK and overseas. Not forgotten are the pioneers of dam building in the USA, Egypt and India.

He tracks the introduction of the design and construction features such as puddle clay cores, cyclopean masonry dams, hydraulic fill dams, cement grouting, the development of mechanical excavators, model testing techniques, sheep foot rollers, arch dam design, concrete mixing and the use of water circulation pipes to cool concrete.

When talking about dams and the environment and landscaping proposals Turpin states that in his view we should be proud of dams and the contribution they make to universal sustainable development, 'rather than hide them in a rather apologetic fashion' – a view held by many of us perhaps.

Turpin then goes on to what he considers the 'anger' associated with dams – the constant resistance to construction which has only manifested itself in the past hundred years or so. Turpin cites the response to exploit Ullswater where a Thirlmere Defence Association was formed and the North Wales Hydro Electric Powers Act of 1952 which required 'the appointment of a landscape architect to preserve amenity and scenery'. Other examples cited included Cow Green, the Cardiff barrage, Sardar Sarovar, and of course he looks at the World Commission on Dams report. Turpin gives hope for the future stating that 'perhaps peace may finally break out in the world of dams' – as engineers face social and environmental issues.

A chapter on failures points out that the benefits of dams have become available at little risk to life or property and that when looking against a total of more than 45 000 large dams worldwide, the small number of failures in the overall picture of dam engineering must be one of success.

The book contains a useful list of references and a glossary.

Turpin's book will be of particular interest to engineers, environmentalists and historians and, because it is well written and well illustrated, also to the broader reading public. I thoroughly recommend it.

Andy Hughes
Editorial Panel