



## Dam and reservoir conduits: inspection, monitoring, investigation, maintenance and repair

### Project Summary SC110006

This comprehensive guidance on the inspection, monitoring, investigation and repair of conduits (tunnels, culverts and pipes) within dam and reservoir structures is aimed at reservoir engineers, operators and owners with an engineering background. Application of the guidance will help to achieve long-term improvement in the safety management of reservoirs and dams, and so help protect human life and property.

#### About the guidance

The guidance describes current best practice and experience of operating and maintaining dams and reservoir conduits. Arrangements where the conduit is incorporated in a tunnel through a reservoir or dam abutment are not covered. Also excluded are drainage and inspection tunnels (galleries), and concrete and masonry dams.

Case studies and images are used to illustrate best practice and to share practical knowledge from legacy and existing schemes – their successes, failures and challenges.

The report has 12 chapters, together with a supporting appendix of case studies, which are arranged to guide readers to the sections most relevant to their interests. Contents include:

- descriptions of conduit forms and materials
- failure modes
- inspection and investigation procedures and techniques
- emergency actions
- renovation and repair
- replacement and abandonment

The guidance contains advice on safety management and the associated responsibilities for designers and operators, with recommendations on engaging appropriate specialist advice.

This new report provides specific advice on reservoir conduits which has not previously been available. It complements existing documents on the safety assessment of embankment dams, concrete and

masonry dams, and valves and pipework which contain some reference to safety assessment of conduits.

#### How can I obtain a copy of the guidance?

An electronic copy of the guide (CIRIA C743) is freely available from CIRIA's website: [CIRIA free download](#)

This summary relates to information from project SC110006, reported in detail in the following output(s):

**Report:** SC110006; CIRIA report number C743

**Title:** Dams and reservoir conduits – inspection, monitoring, investigation, maintenance and repair

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#### Research Collaborators:

The guidance has been produced in a collaborative project run by CIRIA, and authored by experts from Atkins Ltd, Mott MacDonald Ltd and the University of Bristol. The authors were assisted by an international team of experts from water companies, engineering consultancies and the academic community.

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