The design and construction of Banbury flood storage reservoir

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SYNOPSIS. The primary purpose of the Banbury flood alleviation scheme is to reduce the incidence and severity of fluvial flooding in the town of Banbury. This is achieved by storing part of each severe flood in the flood storage reservoir – which is located upstream of Banbury, largely within the natural floodplain of the River Cherwell – limiting flows passed downriver to an amount that does not cause unacceptable flooding in the town.

The principal elements of the scheme are:

- an 'on-line' flood storage reservoir, with a storage capacity of approximately 3 million cubic metres;
- the raising of an 860m long section of the A361 road that passes through the flood storage reservoir; and
- the construction of various in-town flood defence banks and walls and a pumping station.

This paper is concerned primarily with the design of the flood storage reservoir. It covers the flood hydrology of the catchment, the development of the overall design of the reservoir and the flood modelling which established how it will perform. It goes on to describe the detailed design of the reservoir, covering the embankment, foundations and structures, then finally describes the construction of the scheme, including temporary works, the embankment materials specifications and river realignments.