

Precast Concrete in Reservoir Engineering

New Construction Techniques in Water Retaining Design

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SYNOPSIS. The use of pre-cast concrete is not new in dam and reservoir engineering. Mott MacDonald Bentley Ltd. (MMB) has promoted a new technique of constructing water retaining elements from pre-cast wall units stitched together with in-situ concrete.

MMB is designing and constructing 14 service reservoirs for Yorkshire Water Services Ltd. (YWS) ranging from 136m³ up to 16,000m³. As part of the productisation of the Service Reservoir design and construction each of these reservoirs all use the same principle pre-cast components. This technique has then been developed for application for reservoir spillway channels using similar components.

This paper provides an overview of the design and construction of the pre-cast service reservoirs and describes the trials carried out on different pre-cast units for spillways. In both applications, the aim has been to provide a modular design which can be re-used, reducing both design and construction time across a programme of reservoir improvement works. This will facilitate MMB to deliver a step change in the improvement of site safety, cost efficiency and assurance in construction quality.