

# **Restoring Storage Capacity at Roseau Reservoir following Hurricane Tomas**

S. YEOH, Halcrow Group Ltd (CH2M HILL Company), Peterborough, UK

---

**SYNOPSIS.** On 30 October 2010 Hurricane Tomas passed over the island of St. Lucia causing significant damage to the Roseau Dam. The dam is a 40m high Concrete Faced Rockfill Dam (CFRD) constructed between 1993 and 1995 and is owned and operated by the Government of St Lucia, Water & Sewerage Company Inc. (WASCO). The peak reservoir level in Hurricane Tomas is not known, however there are indications which suggest that the peak level would have been at least 3.35m above the spillway crest level - equivalent to a peak discharge of 293m<sup>3</sup>/s (about 100 years return period).

In early 2011 Halcrow engineers carried out site inspections and commissioned a bathymetric survey, sediment sampling and testing. A comprehensive report detailing the assessments carried out and recommendations for remedial works was prepared and submitted to the Government of St. Lucia for consideration and approval.

This paper discusses the catastrophic impact of hurricane forces on a small dam, in particular the siltation problem and works necessary to help restore the storage capacity in the reservoir. The case study also demonstrates that siltation in the reservoir, which is normally perceived as a long term problem, can be extensive in a relatively short period under extreme forces and that reservoir flushing, which is the preferred way of managing siltation in reservoirs, may not be practical for Roseau Reservoir.