# Wadi Dayqah Dams: design modifications in the wake of Cyclone Gonu

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SYNOPSIS: A contract for the construction of a 75m high x 400m long RCC Main Dam on Wadi Dayqah in Oman commenced in June 2006. During foundation excavation Oman was hit by a major cyclone with extensive flood damage to the infrastructure of the region. The unprecedented rainfall (almost one metre in 24hrs at one gauge) called for a review of the design floods which resulted in the 1 in 10,000 year flood being increased from 7,000 to 13,500 $m^3/s$. Following a study of options it was found possible to design modifications to the dam to accommodate this major increase in design flood with only minor additional cost and without any hold-up of the on-going construction. Hydraulic spreadsheets were used to optimise the design modifications, coupled together with re-assessment of the potential impact on dam stability taking advantage of the "as constructed" strength parameters as measured during the construction.