



## **EVENING MEETING**

**MONDAY 21<sup>st</sup> NOVEMBER 2016 at 6:00pm**

One Great George Street, London  
(Nearest tube: Westminster)

### **Haldon Range Dam Earthquake Damage, New Zealand**

By  
**Craig Scott, MWH**



For a brief synopsis see overleaf

**Admission free  
Teas available from 5.30pm**

**For more information please contact  
Tim Fuller (BDS Secretary) on 020 7665 2234 or email : [bds@ice.org.uk](mailto:bds@ice.org.uk)**

This meeting will also be streamed live on the internet. For more details on how to view this meeting online please visit the BDS website.



# The Haldon Range Dam

## Earthquake Damage, New Zealand

### Synopsis

The Haldon Range Dam, located in the district of Marlborough, New Zealand was a 250,000 cubic metre storage capacity, privately owned, recently constructed earth dam for irrigation water storage and supply purposes. The region is New Zealand's premier area for Sauvignon Blanc wine production, well liked in the UK and contributing 75% of the total NZ production. The region borders the North and South Islands and geology that has created the favourable conditions for wine is also part of the Marlborough Fault System, a set of four large dextral strike-slip faults and other related structures, which transfer displacement (avg. 40mm/year) between the Alpine fault and the Kermadec Trench, which together form the boundary between the Indo-Australian and Pacific Plates.

The Haldon Range Dam was impacted and damaged by two major seismic events, first in July 2013 (0.2g, 6.5 Richter), then again in August 2013 (0.75g, 6.6 Richter). Craig was requested by the regional dam regulator and emergency civil defence authority to inspect the dam after each event and recommend actions, if necessary, to protect the village of Seddon located downstream. Craig's recommendation post the August inspection was an immediate lowering of the reservoir water level to reduce the risk and impacts of a potential dam breach. The dam had no low level outlet to achieve the lowering and substantial works were required which took a week post event to complete.

The presentation will briefly describe the dam history, characteristics of the earthquakes, damage observed, the basis for decision making, general dam performance of other dams in the region, a description of the dam now, and other pertinent aspects related to New Zealand legislation. The presentation will have a core focus on his actions to lower the reservoir, and an introspective personnel commentary on the interactions of Craig and others during the week it took to lower the reservoir level including regulators, owners, consultants, lawyers, media, and emergency services etc. Craig will aim to frankly inform the audience of his personnel experience in decision making during an emergency event, recommending and managing a dam and reservoir during an emergency drawdown.



## Biography details for the presenter

Based in Edinburgh, Craig Scott is the Europe and Africa Dam and Hydropower sector leader for MWH. Prior to this role he was the MWH Asia and Pacific Dam and Hydropower sector leader. He is a member of the British Dam Society, a former board member of the New Zealand Society of Large Dams (NZSOLD) and a former member of the Technical Committee of Irrigation New Zealand (INZ). His last board commitment for NZSOLD was as co-convenor of the 2013 six yearly joint NZSOLD and ANCOLD conference which had the theme of 'Multiple Uses of Dams and Reservoirs', attended by representatives of 15 countries.

He is presently a representative on the ICOLD Multipurpose Water Storage working group and is co-authoring a new ICOLD Bulletin on the topic due for completion, to be presented at the ICOLD Johannesburg 2016 annual meeting in May.

A civil engineer, Craig has spent his entire career planning, designing, managing, or supervising the construction of dams and appurtenant structures predominantly for hydropower or water supply use. Under New Zealand rules related to dams is he defined as a 'Category A Recognised Engineer' in equivalent terms an All Reservoirs Panel Engineer.

Craig resided in city of Christchurch during the 2010 destructive earthquakes that destroyed the city and which were a prelude to the earthquakes that impacted the Haldon Range Dam.