

## **CLIMATE CHANGE, SLOPE STABILITY AND NECESSARY STABILIZATION OF THE ACCESS ROAD, LUNDY ISLAND, BRISTOL CHANNEL, UK**



*J.N. GRIMES, M. BURROWS AND A. ROBERTSON*

Grimes, J.N., Burrows, M. and Robertson, A. 2008. Climate change, slope stability and necessary stabilization of the access road, Lundy Island, Bristol Channel, UK. *Geoscience in South-West England*, **12**, 49-54.

Lundy Island is a remote island in the Bristol Channel, situated about 18 km north-north-west of Hartland Point. John Grimes Partnership has had in-depth involvement in the improvement of access facilities to the island since 1998. Prior to construction of the cliff road and new jetty, visitors to Lundy had to disembark using small boats to ferry them from the ship to the south-east end of the island. The access to the top of the island and village was a track that obliquely crossed the steep coastal slopes. The new jetty and road allows access to the island at all weather and states of tide (its tidal range is 9.2 m). Significant movement has been experienced on the coastal slope at the south-east end of the island. The slope exhibits the potential for instability, predominantly sliding and small-scale wedge failure. Climate change is resulting in increasing rainfall and sea level, which may significantly increase both landslip occurrence and marine erosion along this section of coastline.

Strengthening of the access road has been carried out in phases. Due to the location and environmentally sensitive setting, the remediation works are complicated in concept, design and execution. The most recent phase of road stabilization works addressed landslip potential both in the rock mass and in the overlying superficial material. Existing retaining walls were degrading and the road subsiding. The new retaining structure and road was formed by steel reinforced sprayed concrete, which was keyed to the existing road and rock and tied back using piles and anchors.

*John Grimes Partnership Ltd, Leonards Road, Ivybridge, Devon, PL21 9TT, U.K.*

*(E-mail: JohnG@johngrimes.co.uk).*

**Keywords:** Slope stability, climate change, Lundy.

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