



LANDSLIDE MANAGEMENT ON THE ISLE OF WIGHT

*Isle of Wight Centre for the Coastal Environment,
Isle of Wight Council, UK*



Background

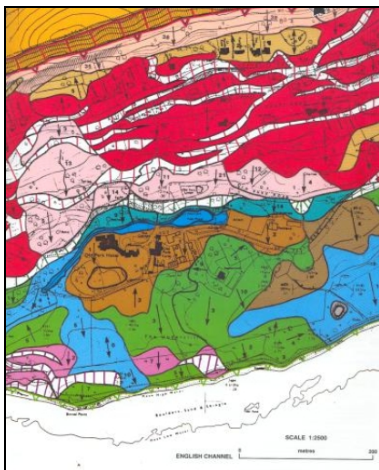
The Undercliff landslide complex was activated as a result of aggressive coastal erosion following a rise in sea-levels after the last ice age about 10,000 years ago. Slow, intermittent ground movements in the vicinity of the town of Ventnor and along much of the Undercliff has resulted in much damage to property and services over the last 200 years. Management of the landslide hazard has involved the development of a model of contemporary ground behaviour for the Undercliff based on geomorphological mapping, monitoring ground movement at various sites along the Undercliff, site investigations, damage surveys, determination of past movement rates and a review of historical events.

The key aims of the Landslide Management Strategy on the Isle of Wight are to:

- Reduce the likelihood of future movements by controlling the factors (both natural and anthropogenic) that cause ground movement.
- Limit the impact of future ground movement through the adoption of appropriate planning and building controls.

Geomorphological Mapping

The Coastal Visitor's Centre in Ventnor holds copies of a series of geomorphological maps that were produced for the Council in 1991. These detailed 1:2500 scale maps cover the Undercliff from St Lawrence to Luccombe, and are a valuable source of information on ground behaviour, geomorphology and planning guidance. The maps are available to the public, and are used to assist potential homeowners and investors in making informed decisions about the purchase of properties on the Undercliff.



An example of the geomorphological maps held in the Coastal Centre

Monitoring Ground Movement

The Council maintains an extensive network of sensors that monitor ground movement at various locations throughout the Undercliff, as well as one site at Afton Down. In addition, two automated weather stations provide valuable rainfall data that can be used to evaluate ground water conditions; an important causal factor in ground instability. The network currently comprises approximately 120 sensors, as well as several tell-tales to measure movement across cracks in areas where the installation of electronic sensors is not appropriate. New sensors are periodically added into the monitoring network if a need for greater sensor coverage is identified and the resources are available.



Surveying an instrumented site on the Undercliff Drive

Data from the sensors is collected and analysed, and any potentially developing movement trends are identified. In this way the Council can hopefully be made aware of problems before they arise and formulate an appropriate response. In the case of more rapid movements occurring, several of the sensors at sites that are more vulnerable to damage being caused by ground movement will automatically notify the relevant Council officer, or, if the movement is considered to be significantly large, the emergency services.

Public Involvement

The Coastal Centre actively issues advice to local homeowners as to how individuals can minimize the damaging effects of ground movement on their property in the form of the recently reissued 'Advice to Homeowners' leaflet. In addition, the Coastal Centre maintains an extensive library that holds a great deal of information on both the Undercliff landslide complex and landslides in general.

LANDSLIDE MANAGEMENT

