OR/14/012 About the GeoSure dataset

From Earthwise
Jump to navigation Jump to search

**Background**

Public understanding of the effect of ground conditions on the safety of their property and the implication for the value of their property is growing. Local councils are under increasing pressure from central government to provide environmental information. Information about geological hazards is needed, in particular, the identification of areas with a potential for ground movement.

In response to this, The British Geological Survey initiated a development programme to produce datasets that identified and assessed potential geohazards threatening the human environment in Great Britain. Along with the GeoSure ground stability datasets, the programme also generated:

- Superficial Deposit Thickness Models
- Scans of onshore borehole logs for Great Britain
- Scans of geology and historic topography maps
- Ground permeability data
- Susceptibility to groundwater flooding data
- Geological indicators of past flooding data
- Environmental sensitivity data
- GIS data identifying potential radon hazard
- Soil Parent Material Model
- Non-coal mining hazards data

**Who might require this data?**

Natural ground stability hazards may lead to financial loss for anyone involved in the ownership or management of property, including developers, householders or local government. These costs could include increased insurance premiums, depressed house prices and, in some cases, engineering works to stabilise land or property. Armed with knowledge about potential hazards, preventative steps can be put in place to alleviate the impact of the hazard to people and property. The cost of such prevention may be very low, and is often many times lower than the repair bill following ground movement.

The identification of ground instability and other geological hazards can assist regional planners; rapidly identifying areas with potential problems and aid local government offices in making development plans by helping to define land suited to different uses. Other users of these data may include developers, homeowners, solicitors, loss adjusters, the insurance industry, architects and surveyors.

**What the dataset shows?**

GeoSure ground stability data consists of six data layers in Geographical Information System (GIS) format that identify areas of potential hazard in Great Britain. It is essentially a national hazard
susceptibility map. These data have been produced by geologists, geotechnical specialists and information developers at the British Geological Survey and are presented as separate GIS data layers relating to the cause of the geohazard. These are explained in brief below:

**Shrink swell**

Swelling clays can change volume due to variation in water content, this can cause ground movement, particularly in the upper two metres of the ground that may affect many foundations. Ground moisture variations may be related to a number of factors, including weather variations, vegetation effects (particularly growth or removal of trees) and the activities of people. Such changes can affect building foundations, pipes or services.

**Landslides (slope instability)**

Slope instability occurs when particular slope characteristics (such as geology, gradient, sources of water, drainage, or the actions of people) combine to make the slope unstable. Downslope movement of materials, such as a landslide or rockfall may cause damage, such as a loss of support to foundations or services or, in rare cases, impact damage to buildings.

**Soluble rocks (dissolution)**

Ground dissolution occurs when certain types of rocks, containing layers of soluble material, get wet and the soluble material dissolves. This can cause underground cavities to develop. These cavities reduce support to the ground above and can lead to a collapse of overlying rocks.

**Compressible ground**

Some types of ground may contain layers of very soft materials like peat or some clays. These may compress if loaded by overlying structures, or if the groundwater level changes. This compression may result in depression of the ground surface, potentially disturbing foundations and services.

**Collapsible deposits**

Some kinds of rocks and soils may collapse when a load (such as a building or road traffic) is placed on them, especially when they become saturated. Such collapse may cause damage to overlying property or services.

**Running sand**

Some rocks can contain loosely packed sandy layers that can become fluidised by water flowing through them. Such sands can ‘run’, potentially removing support from overlying buildings and causing damage.

Retrieved from
‘http://earthwise.bgs.ac.uk/index.php?title=OR/14/012_About_the_GeoSure_dataset&oldid=26667’

**Category:**

- OR/14/012 User guide for the British Geological Survey GeoSure dataset