

# news *line*

Recent events and initiatives from the British Geological Survey

## Airborne survey

**T**he BGS, working in collaboration with the Geological Survey of Finland (GTK), has commenced a major airborne geophysical survey covering the whole of Northern Ireland. The survey is a major component of the TELLUS project, sponsored by the Northern Ireland Department of Enterprise, Trade and Investment (DETI) and managed by the Geological Survey of Northern Ireland (GSNI). Airborne electromagnetic (EM) data provide information on the electrical conductivity of the subsurface. The magnetic data provide information on subsurface structure and mineral resources, while the radiometric data provide information on the natural and man-made radioactivity. Together, the three datasets provide a cost-effective and non-invasive means of studying the near surface and providing essential new information to address environmental and sustainable resource issues.

## A first for BGS

**T**he BGS is the first of the Natural Environment Research Council's research centres, and one of the very few public sector research establishments, to achieve registration to ISO 9001:2000. 'We have worked very hard to achieve this,' says Executive Director, Dr David Falvey, 'and we are all extremely proud of the achievement. It is a credit to all BGS staff and once again it demonstrates our leadership in UK science.' ISO 9001:2000 is an internationally recognised quality management standard and is applicable to all types of organisations. Certification will demonstrate to our clients, customers and stakeholders that we have a sound business management system and an enthusiastic staff who are committed to a process of continual improvement to performance and business efficiency.

## Murchison House achieves gold standard

**T**he BGS's Murchison House office has been awarded the Gold Level Award as part of the Keep Edinburgh Clean award scheme. A City of Edinburgh Council officer visited the building in early March and assessed the premises against a list of criteria that would meet the Gold Level Award.

The Keep Edinburgh Clean awards scheme is designed to recognise the good work done by businesses and other organisations to make Edinburgh a cleaner and greener city. There are three types of award — standard, silver and gold. The gold level recognises excellence from organisations that make a significant positive impact on their local environment.

Murchison House is one of only a few establishments that have been awarded a gold award and will feature in the roll of honour in the council's *Outlook*



*Kevin Tait, Station Secretary at Murchison House (left), with Alistair Tibbit, People and Places Officer at City of Edinburgh Council, and some of the items that are recycled at Murchison House.*

magazine that is sent to every householder in Edinburgh. Since Murchison House was given the award, the council, who were very impressed by our grounds and biodiversity initiatives, have decided to include the building as part of their application for the City in Bloom award for 2005.

## Geosports 2005

**T**he weekend of the 14–15 May saw a BGS team travel to Utrecht in Holland to participate Geosports 2005. The event was organised by the Dutch Geological Survey (TNO), and featured teams from 10 European geological surveys. Many different sports were played and the BGS fielded teams in football, volleyball, tennis, and golf. The events were played in a friendly but competitive way, mostly at the excellent sports facilities of Utrecht University.

The tennis and football were particularly tough events and were hard fought all the way. The BGS and BRGM drew 1-1 in the football final, with BRGM eventual victors, winning 7-6 in the penalty shoot-out. In the

tennis, Mike Lelliot eventually finished runner-up in the Men's Singles and, with Dave Stocks, was a runner-up in the Men's Doubles. Mike and Sue Stocks were joint runners-up in the Mixed Doubles. David Falvey, BGS Executive Director, and Bill Hatton, Programme Manager for Information Systems Development (*below*), led by example, winning the golf with some inspired chipping and putting.





## BGS goes 3D

**A** Virtalis StereoWorks visualisation system has been installed at Keyworth to help us appreciate our geological data in 3D. Ian Smith, programme manager for the Digital Geoscience Spatial Model (DGSM) said, 'Our investment in virtual reality (VR) is part of a strategic change from paper to digital volume models at BGS. After all, geology is a 3D subject. Over the past five years, the standards, data structures and procedures for 3D modelling have been set by the DGSM project. By following the recommendations of the DGSM, all future models will be constructed according to best practice.'

The system has already begun to capture the imaginations of geologists and the numerous other bodies who are concerned with what lies beneath the ground, such as council planning departments, utility providers, landfill experts and representatives from the coal and oil industries.

Andrew Connell, technical director of Virtalis, explained, 'This StereoWorks configuration consists of a single large screen on to which stereo images are rear-projected by a Christie Mirage S+4K. This is the first projector of its type in Europe and is capable of extremely high resolution and brightness, boasting one and a half megapixels.'

Soon, teams from the BGS will be able to use the Virtalis system for video conferencing and as part of the special university access grid that allows academics to share their latest findings nationally and internationally. Once the different modelling environments have been loaded on to the system, work will continue to bring the DGSM to a higher level of sophistication. This 3D model contains detailed data about the subsurface of the whole country. With space at a premium, not just in this country, but around the world, a fuller appreciation of what lies underground is becoming ever more important.

## BGS in Madagascar

**A** UK-US consortium led by the BGS has won a US\$ 6.9 million contract to prepare a geological map of northern and central Madagascar. The consortium also includes the United States Geological Survey (USGS) and local Madagascar partner, GLW Conseil. The group fought off competition from the French, on technical expertise and pricing, in a competitive tender. The three-year project, which started in early 2005, forms part of the US\$ 30 million Madagascar Mining Reform Programme, funded by the World Bank.

The success was achieved with support from the British Embassy, Antananarivo, and UK Trade & Investment, the government body that helps businesses export. The BGS now aims to build on its relationship with the Malagasy authorities. It predicts future opportunities under the Mining Reform Programme and hopes to win contracts to help develop the emerging Madagascar petroleum sector.

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## BGS and Fugro Airborne Surveys

**B**GS Executive Director, Dr David Falvey, and Fugro Airborne Surveys (FAS) Managing Director, Martin Frere, have signed a Memorandum of Agreement at a ceremony during the Indaba Conference in Cape Town, in February 2005. The BGS and FAS, both leading organisations in their fields, will work together, in Africa and other developing countries, on projects aimed at developing natural resources. The BGS's vast experience in regional geological mapping and FAS's expertise in airborne geophysics offer clients a single, integrated solution to resource exploration, including access to the training facilities of both organisations.

## Geology and flash flooding

Scientists at the BGS are investigating the link between damage caused by extreme rainfall events and the geology that underlies affected communities. A team from the Survey visited the area around Ryedale and Thirsk in North Yorkshire that was affected by flash flooding on 19 June 2005.

Geologists John Powell and Jon Ford explained that the BGS's geological model shows that the towns affected by the flood are locally underlain by mudstones, siltstones and boulder clay. These rock types and geological deposits form a barrier to water so the extreme rainfall could not soak into the ground and instead ran straight into streams and rivers, making them burst their banks. The extent of the recent flooding matches closely with the areas of ancient flood deposit that are shown on existing geological maps.

Engineering geologists Peter Hobbs and Helen Reeves drew parallels with the debris flows that blocked the A85 at

Lochearnhead in Scotland last year, trapping over 50 people in their cars. Although significantly smaller in size, similar debris flows were observed around the town of Boltby where the culverts designed to divert small streams beneath roads were overwhelmed by the debris-laden floodwaters.

BGS surveys in North Yorkshire, Lochearnhead and Boscastle are helping to build and develop our understanding of climatic events and their links to geology. This is crucial to manage and reduce the effects of flooding on vulnerable communities in Great Britain and elsewhere.



*Destruction to a property at Boltby, North Yorkshire, caused by extreme rainfall and subsequent runoff on 19 June 2005.*

## A really wild museum launch

The BGS has helped Mansfield Museum develop an exciting new exhibition, XplorActive, which looks at topics like recycling, Mansfield's heritage, countryside creatures and healthy eating. The BGS's contribution included rock samples, maps and expert advice to explain the importance of geology in Mansfield's industrial history. TV presenter Chris Packham officially opened XplorActive on 17 November 2004 and was one of the first to tour the new facility. The former presenter of BBC TV's *Really Wild Show* said, 'This is

a great exhibition, it has transformed the museum and will help teach visitors how to look after their environment. I am sure people will be excited by what they see here and be encouraged to take good care of their surroundings.'

The XplorActive project was made possible after Mansfield District Council made a successful bid for funding from the Heritage Lottery Fund. Additional funding was provided by The Environment Agency, Nottinghamshire County Council and the BGS.

XplorActive is open between 10 a.m. and 5 p.m. Monday to Saturday.



*TV presenter Chris Packham discusses the exhibits at the opening of XplorActive.*