Infrastructure matters

Peter Fitzgibbon, Editor

While shiny new capital projects with eye-watering budgets tend to grab the headlines – £600 billion of public and private expenditure over the next decade according to the government's Infrastructure and Projects Authority[1] – the nation's economic wellbeing is equally dependent on maintaining, renewing and making safe what already exists. And geotech has no less a role to play here.

For example, and as Daniel McGrogan relates on page 40, laser scanning is proving indispensable to The Coal Authority in locating and assessing the risk of ground subsidence in once-thriving coal mining areas. Again,

Tareq Khodabacksh explains on page 42 how a remote wireless condition monitoring solution brought speed and safety to the task of reinforcing a storm-battered sea wall and restoring the adjacent rail service. Britain's roads, too, need constant attention, and an article from Rachel Corfield on page 46 outlines how one enterprising local authority is using new software to back its invest-to-save approach to highways maintenance.

The Office for National Statistics valued the national infrastructure at £519 billion at 2014 prices, but its response to a FOI request that sought a figure for the cost of maintaining

it was rather less precise. 'Public sector expenditure data is not available at the level of detail needed, therefore, it is not possible to provide you with a figure for the operational cost.'
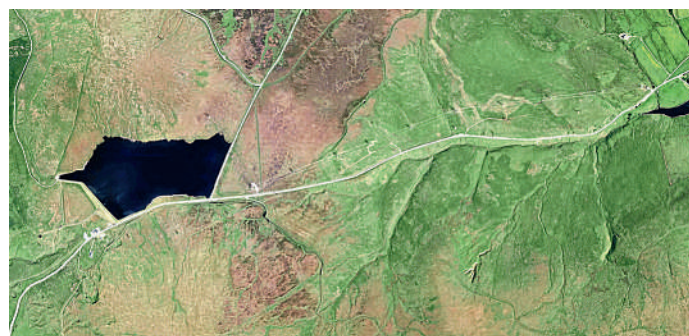
Just as well, then, that the government is now committed to embedding best practice asset management and whole life principles from the private and regulated sectors in public sector infrastructure projects and programmes.

1. https://www.gov.uk/government/publications/national-infrastructure-and-construction-pipeline-2017

The City of Edinopolis Opens its Doors to the World

The people of Scotland awoke to discover a large landmass off the eastern coast of Edinburgh, now understood to be the Smart City of **Edinopolis**. Edinopolis, the world's first purpose built floating-island city and future-living space has opened its doors to the world to show how the implementation of geospatial technology and innovation can improve people's lives and the environment they live within. The island was built a couple of decades from now in the North Sea outside of the Firth of Forth. It is almost fifty miles from the Edinburgh base of **Brainnwave,** the experts in geospatial data and data driven solutions, who were the key consultants during the design, construction and ongoing management of the island. **www.brainnwave.com**

Bluesky Aerial Photography Helps Conserve English Moorland

Bluesky has supplied high-resolution aerial photography for a major conservation project to protect and transform moorlands in northern England. Purchased by **The Moors for the Future Partnership**, as part of the Euro16 million **MoorLIFE 2020** project, the Bluesky photography provides a bird's eye view of the area, reducing the need for site visits. The imagery helps identify areas in need of attention, and is used to accurately estimate quantities of materials needed for works. MoorLIFE 2020 aims to improve the ecological condition of 95 sq. km of blanket bog in the South Pennines Special Area of Conservation, and reduce its susceptibility to wildfire through re-vegetating bare peat, improving hydrology and diversifying existing vegetation. **www.bluesky-world.com**

EarthSense Releases New Nationwide Map of Air Pollution

EarthSense Systems has published **MappAir** – the first ever high-resolution nationwide map of air pollution. Combining data from satellites and its own air quality monitoring sensors together with open source data, EarthSense has used complex modelling techniques to create the highly accurate map. Initially available for the whole of the UK at 100-metre resolution, MappAir shows how air pollution, specifically nitrogen dioxide, changes across the country and within towns and cities, highlighting likely sources and potential clean-air refuge areas. Using the British National Grid, EarthSense has divided the UK into 100 metre squares. Air pollution readings from satellites and its own Zephyr air quality monitoring sensors were combined with open data, including traffic emissions and weather conditions, to produce an annual average for each cell. **www.earthsense.co.uk**

thinkWhere Powers Humanitarian Disaster Response with OpenStreetMap Management Tool

Scottish GIS company, **thinkWhere**, is playing a vital role in enabling the delivery of emergency response and aid to areas hit by natural and humanitarian crises. Working with HOT – the **Humanitarian OpenStreetMap Team**, thinkWhere has developed an advanced cloud-based mapping management system. Coordinating the work of tens of thousands of people around the world, the OSM (OpenStreetMap) Tasking Manager will improve the efficiency of map production, giving first responders and aid agencies faster access to up to date and accurate maps. HOT acts as the interface between the OpenStreetMap community, a collective of volunteers that use aerial photography, satellite imagery and low-tech field devices, such as GPS, to map features and infrastructure as well as people and events, and relief organisations. **www.thinkwhere.com**

QRoutes Launches Schools and Special Needs Transport Planning Software

QRoutes has announced the latest version of its **Transport Planning** tool, which is available online as easy to use software. Designed to simplify and improve the planning of school and special needs transport, QRoutes optimises routes and maximises vehicle utilisation, reducing operational costs. The tool enables planners to explore 'what-if' scenarios to find new improved routes. It also interfaces with existing data sets, making it easy to implement. The QRoutes planner can configure the system to take into account a wide range of variables affecting each route plan. These include board and alight times for different passenger types, and road type speed settings, which can be calibrated from actual journey times. **www.qroutes.co.uk**

CACI Boosts Location Planning Services with Mapmechanics Acquisition

CACI Limited has acquired UK digital mapping and data specialist **Mapmechanics Limited.** Mapmechanics has over 30 years' experience of using map-based data to provide solutions to complex business decisions, as well as providing comprehensive global map data, alongside market-leading GIS, logistics and optimisation software. Mapmechanics will join CACI's Location Planning Group, strengthening its existing capability to support clients geo-spatial targeting decisions. **Greg Bradford, CACI's Chief Executive**, comments: "We're delighted to welcome the Mapmechanics team and portfolio. Their expertise and track record in a range of specialised map based technologies is highly respected in the industry and by their clients. It complements CACI's current location planning capabilities and will enable us together to offer a wider and more tailored range of solutions to our clients." **www.caci.co.uk**

Landmark Solutions re-launches MAGIC interactive GB mapping service

Landmark Solutions has announced that it has successfully completed a major project to deliver modernised functionality for **Natural England's MAGIC** website. The interactive service generates over ten million maps every month, using over 300 data layers, and provides free access to over 2,500 users every day. Landmark, which hosts and delivers the interactive mapping tool for Natural England, has revamped MAGIC with a modern user interface, making it easier to access a huge array of maps and data from any device. Enhanced search tools for mapping layers have also been introduced, as well as improved printing options and a range of new tutorial videos for users looking to make the most of the wealth of location-based data provided within the site. **www.landmarksolutions.co.uk**

R.S.S.S at West Yorkshire Police adopts Trimble SX10 technology

The **KOREC** supplied **Trimble SX10 Scanning Total Station**, which combines high-density 3D scan data, imaging and high-accuracy total station data in a single unit, will provide RSSS Crime Scene Surveyors with more flexibility when collecting evidence at crime scenes. It will supplement the force's existing two short-range 3D laser scanners and newly purchased Trimble GPS. Crime scene surveying is often undertaken in challenging conditions with time constraints. The SX10 is a hybrid instrument, which means everything is combined into a single unit for easy transportation to scenes, especially those in hard to access areas. Using a single instrument also reduces the chances of contaminating evidence whilst allowing a flexible approach to data collection and best use of site time. **www.korecgroup.com**

Solent project considers what to do with dredged sediment

Recognising that local stakeholders are keen to use more of the sediment that is dredged in the Solent beneficially, **ABPmer** has been commissioned by the **Solent Forum** to explore opportunities for doing this in the region. Drawing on lessons learned from implemented beneficial use projects, ABPmer's project team is developing a set of high-level criteria to assess sites where dredged sediment could be used. The project will also develop a network of interested parties and stakeholders from across the region as well as nationally to understand the opportunities and barriers to sediment re-use. The outputs from this initial scoping exercise will identify a beneficial use site that the Solent Forum and its partners can consider further. **www.abpmer.co.uk**