

# REMOTE CONTROL

Last month's annual Subsidence Forum heard how new developments are bringing down monitoring times. Francesca Breeze reports.

While supply chains, technical competence, managing costs, communication, innovation and regulation were all identified at the forum as the main challenges for the future, technology was recognised as the key driver to ensure those involved with subsidence worked smarter and faster.

This was the theme for the forum's "Innovations in practice" workshop, which outlined latest developments in SI, testing and monitoring.

A common grievance of homeowners is the amount of time it takes to settle a subsidence claim. The more complex cases involve monitoring and subsequently tend to take longer, lasting up to 18 months and costing from £7,500 upwards.

Before any remedial work begins, an investigation must be undertaken. This takes time as robust data will be needed before a decision can be taken on what solution to implement.

Over the past 12 months SP Monitoring Services has been assessing the effectiveness of black box and wireless sensor network (WSN) technology. Sensor technology, which is activated by motion, noise, vibration, light, moisture and temperature, has existed in other market sectors for years. Recent examples of sensor

use include vehicle tracking, quality and quantity usage for the brewing industry and even sensors for Koi carp lovers to ensure their fish are kept at the right temperature.

Graeme Phipps from SP Property Services believes that use of sensors will allow real-time control over the subsidence claims process. "If it's got a sensor, it can be tracked," he says.

Working alongside Box Telematics and Orange, SP has developed a suite of intelligent wireless sensors that can remotely monitor the movement of a building or structure. The box system collects, logs and uploads data to the web, transmitting using Zigbee TM radio wave technology via the Orange network.

Six months ago SP began working with loss adjusting firm Crawfords to evaluate its Tilt and Time Domain Reflectometry (TDR) dielectric sensors. These measure building tilt caused by ground movement. This technology can be used to confirm and validate various causes of subsidence using fuzzy logic algorithms.

Other features include automated notification enabling clients to log on and check movement trends, real-time data transfer and less opportunities for human error as well as being web accessible, resulting in

greater claims transparency.

SP predicts use of its sensors will shorten monitoring times from eight weeks to eight hours.

Having developed tools for real-time monitoring, Marishall Thompson is now supporting this with a facility to view SI data via a secure, password-protected portal. Accessed via Marishall Thompson's website or linked to a firm's own web address, the "mediation zone" is an area where all those involved with a claim can discuss evidence, access reports and assess case files.

Prompt boxes guide users to agree or disagree with presented evidence and all feedback is detailed. Early disclosure and greater co-operation and communication between parties may well reduce the length of a claim and lower costs. This single view system is being piloted by a number of insurers and local councils.

The Clay Research Group is exploring new developments in the field of root-induced clay shrinkage. Formed in December 2003, the group has a research site in north London and, according to Hilary Skinner from the Building Research Establishment, is undertaking one of the widest ranging clay research projects in the UK.

Its projects include exploring the use and benefits of electrical

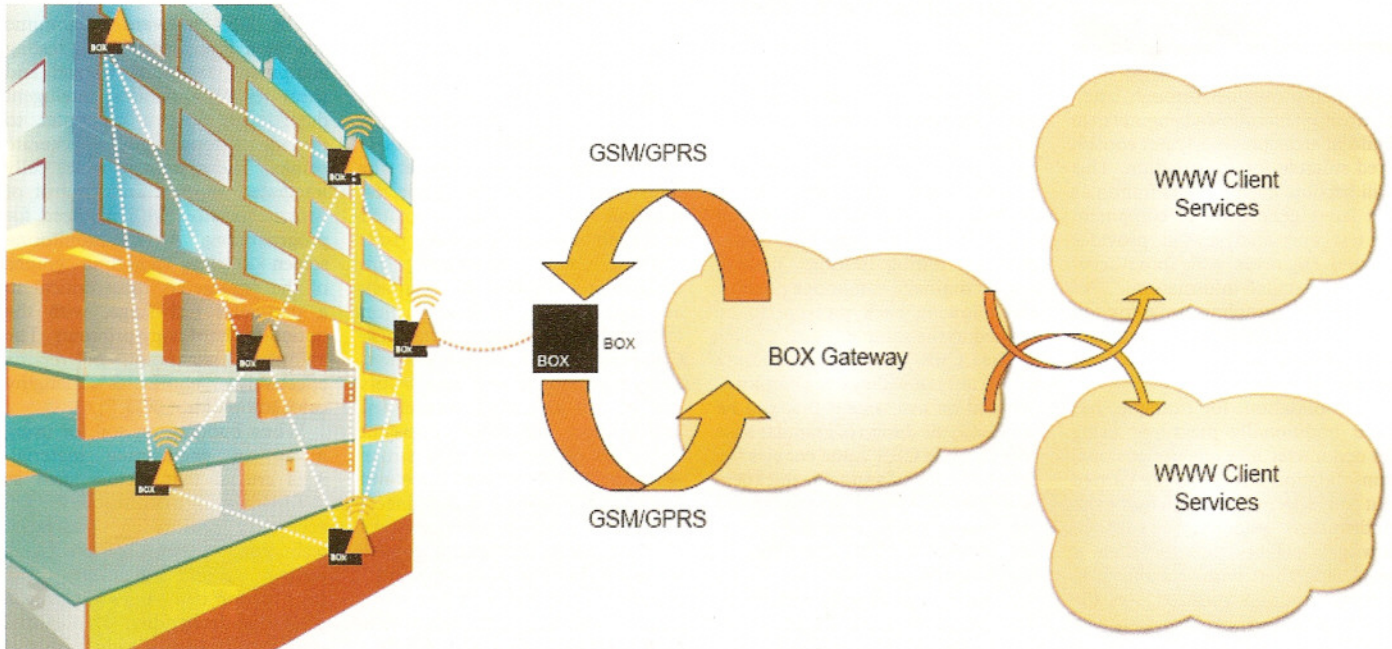
resistivity, climate modelling and further validation of the TDR sensor using the neutron probe and comparison of the filter test paper and oedometer using disturbed and undisturbed samples.

Commercially, the Clay Research Group has developed a geological risk model with Crawfords and is researching and developing the next generation of telemetry systems to measure building movement and soil moisture change. The Group is also involved with developing interpretative software to analyse the output from these devices as well as "virtual arborist" and "virtual geotechnical assessment" web-based applications.

In the Bioscience arena, the group has been researching the genetic expression of the stress response in plants and possible ground treatments are being investigated in the laboratory before being applied at its London research site.

The Subsidence Forum has an innovation register on its website, detailing a range of solutions including soil databases, airborne mapping and satellite measurement of clay swelling.

For further information visit [www.subsidenceforum.org.uk](http://www.subsidenceforum.org.uk) and click on "task forces", followed by "innovations".



In a wireless monitoring system, sensors attached to buildings can send movement data to owners via the internet