



The Post Subsidence Conference

We revealed our new product at the conference - GeoSTAT. It is a new way of looking at soils, and not one all geologists will appreciate because it takes account of several apparently non-geotechnical elements.



The model is based on the results of actual investigations. We add to the mix the claims frequency, settled cost and the depth of tree root activity. It knows nothing at all about the provenance or lithology of the soil - London clay or Lias for example - but it does reflect risk.

It's a useful tool for insurers and provides a risk map of the UK for root induced clay shrinkage. Used in the reverse - where we have lots of claims and no data - it is an indicator of drainage problems.

The Laboratory

We have sourced undisturbed samples of London clay from a brick manufacturer and set up a testing facility in the laboratory.

This takes the form of a four probed array to measure volumetric moisture content using resistivity.



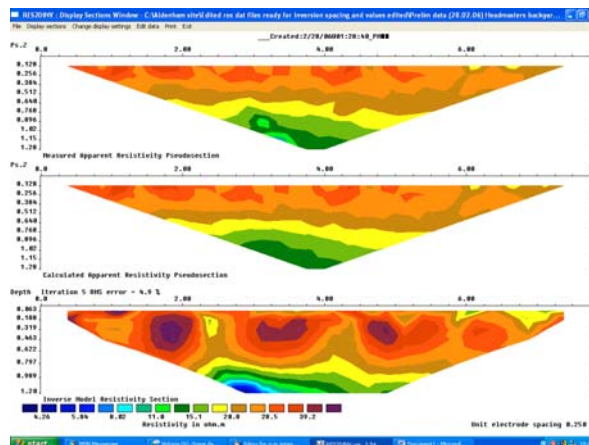
The laboratory is where we hope to image stomatal activity as well. The idea of getting anyone up a tree at 6.00am with a camera is appealing, but unlikely.

Progress Report

We are on target so far, which is a surprise to us all. The first set of ERT readings have been taken - see below. Now we have the spread of the root zone, Keele are building a suitable array to measure the resistivity.

MatLab are installing the levelling stations next week. Lots of them. We may - if we have time - sink our first hand augered bores.

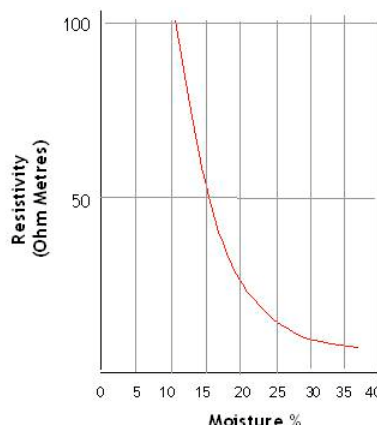
Southampton University are installing a weather station to measure rainfall and wind speed etc., as this forms part of their ongoing research into climate and global warming.



Aldenham will be the most heavily instrumented site in the UK for subsidence we would imagine.

Soil sampling and testing starts in April/May. Electro-tilt sensors are being collected for installation, and precise levelling begins shortly.

Typical ERT Values for London Clay

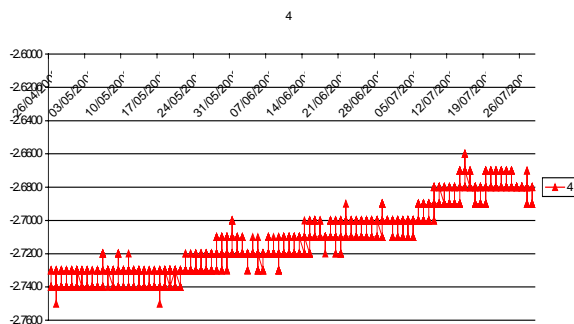


Resistivity Characteristics of London Clay



Tilt Sensors

We are analysing the output from electrolevels just now. For those used to measuring in millimetres it will come as a bit of a surprise. Instead, we are measuring rotation. Arc seconds and suchlike.



This graph shows the nature of the changes we face. We are measuring diurnal movement and spotting the beginning of trends very quickly. We have to magnify the results to spot these trends. The full screen view might be misleading.

Business Strategy

R&D is all very exciting, but it has to deliver a commercial advantage - some tangible bottom line benefit. Our strategy is to change the way we handle subsidence claims over the next few years.

The objectives are to avoid the need for traditional (a) monitoring, (b) investigations, (c) soil testing and (d) arborists reports. Note we have used the word 'traditional'. We recognise the need for good technical evidence, but why not make it 'excellent' technical evidence? Why settle for less?

The project benefits are easy to see. Not only do we save on costs, we remove process. The quality of the information is far superior to anything available today.

The biggest benefit of all? Everything is digital. A good system, suitably programmed, can understand and act on the message, even if we can't.

So, lets deliver ...

1. a better service
2. for less money and
3. increase profit all at the same time.

Why not?

Funding

It all came together thanks to the efforts of a few committed groups. Here we must mention **InFront Solutions** and **Crawford & Company**. Both have provided cash funding to keep us afloat with a commitment for the next 3 years.

Thanks also to **Aldenham School** in North London who have provided the research site we needed in North London. Access to a reasonably secure, 100 acre site with a variety of mature trees has saved the day.

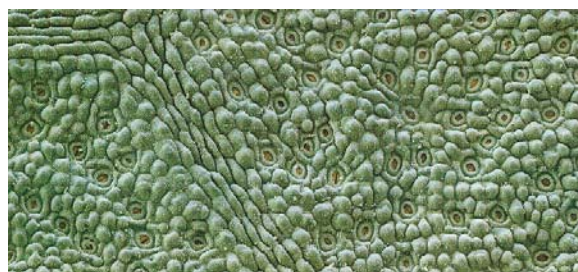
Thanks to **MatLab** who are installing and instrumenting the site at no cost. Amazing. Setting in place quite costly levelling stations, deep datums, sinking boreholes and retrieving samples and testing.

Thanks also of course to the academics who have joined us, some of whom have found the project so exciting they have waived their fees.

The nicest part of it all is the open co-operation between the parties. Aldenham 6th Form have the opportunity to be coached by Professors of Geotechnics, investigations crews are offered tractors and tea by the school to move their equipment and everyone seems genuinely interested in what is going on, with exchanges taking place behind the scenes. It's a fantastic atmosphere to work in.

Stomata

For those of you who don't know what all of the excitement is about, take a peek for yourselves. We have borrowed this image from a recent edition of Nature.



It is a striking image of stomata taken from the underside of a leaf. We hope to supplement our work with such imagery, although we can't promise it will be of such high quality of course.