Building the Team

We are putting together a first class team of academics to support our program and we shall be making more announcements shortly. Each research partner is an expert in his or her particular field. It is an exciting time and hopefully more of our colleagues will be joining the Group and assisting where able.

Hilary Skinner
The Building Research Establishment

We are exceptionally pleased to welcome Hilary to the team both in her capacity as a research member, but also to facilitate the role of the B.R.E. as fund-holders should we receive financial assistance from the PCF.

This is a key role in bringing together the various interest groups representing insurers, adjusters and site investigation contractors.

Dr. Jeremy Pritchard - BioSciences

We welcome Dr. Jeremy Pritchard to the team, leading our investigations into the role of Abscisic Acid (ABA) in the mediation of stomatal response to stress. Jeremy will be using laboratory grown specimens to assess the effect of various forms of ground treatment and combine this with site work.

Jeremy has considerable experience in this field, and runs a well equipped laboratory at the BioSciences Department at Birmingham University. He will be measuring hormone production and understanding the triggers for the production of ABA, and how we might benefit in terms of getting trees to 'self-medicate'.

This is a key role. For the first time we are attempting to deal with the cause of the problem, rather than removing it or living with it. It might allow certain trees to be retained and the repairs to be put in hand quicker.

Most important of all if we are successful, it will allow us to define a timescale within which homeowners might sensibly expect their homes to be repaired. Houses damaged in the summer could be repaired in the following Spring. This will remove the need for expensive investigations and monitoring and pass on huge savings to insurers.

Dr Nigel Cassidy
Keele University

The Applied and Environmental Geophysics Group at Keele University is one of Europe's leading centres for near-surface geophysics research. It is fully equipped with the latest geophysical equipment, bespoke data processing, numerical modelling software and high-end computing facilities. Dr Cassidy is an expert in Ground Penetrating Radar, electrical imaging and geotechnical engineering

The role of Electrical Resistivity Tomography (ERT) is to (a) monitor moisture movement below ground over a few seasons, and (b) measure the benefit or otherwise of the various treatments we are applying. The savings using this method over soil testing are huge. We don't have to sunk augered holes into the ground every month, retrieve soils and test the samples in a laboratory.

For the first time, we can determine the influence of roots on clay soils with carrying out expensive, costly and time-consuming geotechnical investigations, the results of which are often flawed.

Nigel will be visiting some pre-selected sites regularly over the next few years to build a simple, 'plug and play' facility for use by adjusters and engineers that would like to apply this technology, but find it too complex for routine claims.

The aim of the project, suing Nigel's own words, is "to develop the next generation of imaging solutions for the geotechnical assessment of subsidence/heave risk associated with trees in clay-rich subsurface environments."

Trees in Leaf for Longer

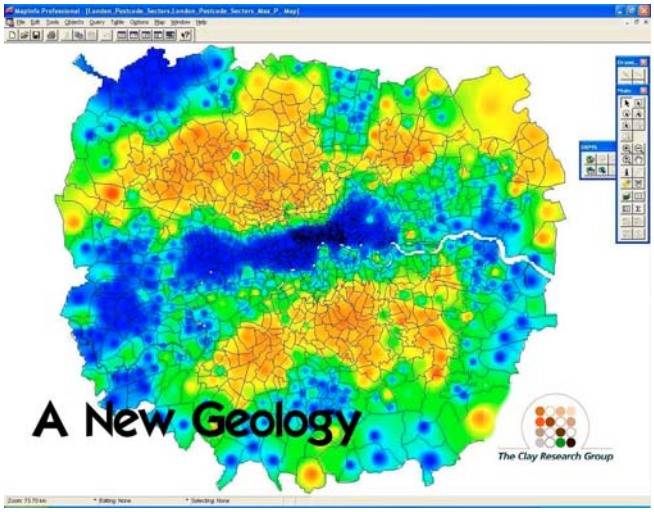
Leaves are dropping late this year, and all due to seasonal warming as the summers go on for longer.

This has significant implications for insurers as our models have already shown. The earlier the trees start to take up moisture and the longer they transpire, the worse it becomes.

The research project is timely, and with the help of the industry experts, we should be able to make progress in good time.

Soils - A New Geology

This is an extract from our new map – "A Digital Geology of the UK" – derived from claims data and actual investigations over a 15 year period. We record the plasticity indices at a level most relevant to clay shrinkage claims, which is around 2mtrs below ground. At this depth the suction curve is at its peak in cases where desiccation is of a magnitude sufficient to cause damage.



The image is not dissimilar to that provided by the British Geological Survey – which is good news. We see the highly shrinkable areas in the North West of London, and less well defined south of the Thames.

Bordering the Thames the soils are less shrinkable (blue), and the green areas provide an interesting insight into the intermediate category of soils. The superficial drift deposits that contain some clay, sometimes.

Using the graduated scale we get some idea of the thickness of these drift deposits, and the shading tells us they pose a reduced risk.

It is easy to see the power of a map that reflects the location of claims and the interaction with the soil beneath the house foundations. We might not know whether the soil is Oxford or London clay, but we have an excellent idea of just how risky it is.

It can be used at several levels. Underwriters can see straight away the high risk areas and distinguish them from the safer parts of the country. The data is in digital format and can be used in the 'virtual laboratory' applications like VISCAT and OSCAR. They can assist in triage when we first receive a claim. If it is September, and the homeowner reports a tree in the vicinity of damage, and the map shows it to be a high risk area, why not investigate 'day one'?

By using the slope of the soil horizon we can factor in two apparently unrelated aspects of soil. The first is the slope of the ground, and the second is the shrink/swell characteristics. This is of particular relevance when looking at the green shaded areas. The ones of intermediate plasticity, or variable depth.