



REGULAR NEWS AND VIEWS FROM **ROGERS GEOTECHNICAL SERVICES**

> INVESTING. DEVELOPING.



IN THE LAB

MANY A SLIP...

WELCOME, TOBY!

CONTINUALLY INVESTING IN SERVICE QUALITY

VARIETY IS THE SPICE...

GRANNY ROGERS' MUSINGS

## Welcome to RGS insite issue 63

Our regular newsletter celebrates more than 15 years of drilling and keeps you up to date with RGS and industry news.

**Rogers Geotechnical Services Ltd** are **site investigation specialists** offering ground investigation and geotechnical services to developers, builders, structural and consulting engineers, architects, insurance companies, local authorities, piling and foundation engineers, private individuals and other geotechnical consultants.



# CONTINUALLY INVESTING IN SERVICE QUALITY

**Client satisfaction lies at the heart of all that we do.**

Of course, many factors contribute to consistently great service but expanding our capacity and capability with new equipment, machines and vehicles is essential in giving our many clients ever better options and greater satisfaction.

We continually invest in additional resources to deliver **high quality solutions** for contracts of every scale and type across the UK.

Our newest arrivals include:

➤ **1** **AN AQUA TROLL 500 MULTIPARAMETER SONDE**  
For low-flow sampling, spot checking, remote monitoring and long-term water or stormwater monitoring.

➤ **2** **AN INCLINOMETER**  
This precision instrument allows us to measure displacements both in the ground and in the structures that lie beneath it (such as retaining walls).



**EQUIPPED TO SUPPORT SITE INVESTIGATIONS AND SOLUTIONS OF ALL SIZES, WE'RE AT YOUR SERVICE WHENEVER YOU NEED US, ANYWHERE IN THE UK.**

**CALL OUR FRIENDLY, HELPFUL TEAM TODAY ON [01484 604354](tel:01484604354)**

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RGS ON THE ROAD

Variety... the spice of **geotechnical** life!



We're used to the old joke that a geotechnical specialist's job is 'boring', and yes, we spend plenty of time **drilling boreholes**.

However, ask an RGS expert what we do and you'll find that our work is anything but humdrum, comprising a multitude of mission-critical tasks and projects in every kind of setting from highways and housebuilding to castles, car parks, coal mines and canals.

By way of illustrating the variety of our work and the many ways we solve problems for our clients, the following list of jobs shows the range of work covered by RGS in just one two-week period in March 2021:

- 01 Two separate cable percussive drilling jobs on public highways, including traffic management **CUMBRIA**
- 02 Ground penetration radar [GPR] surveys - electromagnetic pulses are used to image the subsurface for the location and identification of different materials, voids and structures **LONDON**



- 03 Plate load testing, ie calculating the ultimate bearing capacity of ground and its probable settlement under particular loads **SOMERSET**
- 04 Low-flow sampling with the new **AQUA TROLL KIT** **CUMBRIA**
- 05 Rotary coring using the new **GEO 105 RIG** **SHIPLEY**
- 06 Trial pitting and soakaways **LEEDS**
- 07 Cable percussive drilling ('shell and auger') **CUMBRIA**
- 08 Trial pits for buried utility services **BIRMINGHAM**
- 09 Inclinometer monitoring **LANCASHIRE**
- 10 Level surveying to check for ground movement **HULL**
- Phase One desk studies! **NATIONWIDE**

WHEREVER YOU ARE IN THE UK, RGS IS HERE TO SOLVE YOUR PROBLEMS WITH ADVICE, SUPPORT AND TOP QUALITY GEOTECHNICAL SERVICES.

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STAFF DEVELOPMENT

Welcome, **Toby!**



We're delighted to welcome a new member into the RGS Laboratory team. **Tobias (Toby) Merry** joined our crew at the end of April as a **Laboratory Technician**. Toby brings with him valuable specialist expertise, having gained a Master's degree in Geology at Birmingham University.

RGS has always committed to developing team members' talents and aptitudes, and with his strong geology roots, Toby's keen to expand his knowledge with as much practical experience as possible in his new role.

Geotechnical laboratory work bridges both fieldwork and engineering, so as well as working within the laboratory itself, Toby's already been out on site with **Lab** and **Field Technician, Dev**. He's also looking forward to gaining field experience with the drilling teams, too.

“ I'm really **enjoying my work**, and I know that I have a **great opportunity** here at RGS to learn, grow and develop my career. My **ultimate goal** would be to become a **geotechnical engineer** - so watch this space! ”



## In the RGS laboratory



Many RGS clients regularly use our UKAS-accredited laboratory for the cost-effective testing and analysis that's crucial to their site investigations. In this edition, we're shining the spotlight on two tests which evaluate **rock strength** - vital information for every construction project.

### ROCK STRENGTH TESTS

**Uniaxial (or Unconfined) Compression Strength (UCS)** of a rock material (ie the maximum compressive stress a drilled core specimen can tolerate under zero confining stress) is a critically important factor in construction engineering projects. UCS can be determined directly using a **laboratory-based UCS test**, which indicates not only the maximum failure load sustained by the specimen, but also the particular mode of failure (eg shear, tensile, etc). When used alongside tension tests, UCS tests are particularly useful for high rock strengths and can also determine whether a rock sample exhibits asymmetry in compression vs. tension.

Where only a few samples are to be tested, the **Point Load Test (PLT)** is a faster and simpler investigation in which load is applied between two points of a rock sample. Due to the portability of PLT equipment, these tests can be carried out either in the field or in the laboratory. The Point Load Index generated is a measure of tensile strength (as opposed to compression strength) which can be used to predict the sample's UCS.

While both of these procedures seek to calculate UCS, the appropriateness of one test or the other for a particular project or contract will vary. Our UKAS-accredited laboratory offers both types of rock strength test and we encourage you to discuss your exact requirements with our specialists in order to identify the most suitable procedures for your needs.

**NEED EFFECTIVE AND EFFICIENT TESTING IN THE FIELD OR IN THE LABORATORY?**

GET THE BEST SUPPORT AND ADVICE FROM OUR EXPERT TEAM

ON **01484 604354**



IN THE NEWS

## There's many a slip...



Images of incident courtesy James Loveridge / BNPS

In mid-April, Dorset's Jurassic Coast was spectacularly scarred by a **massive collapse** in the cliffs, close to the town of Weymouth. A World Heritage Site, the Jurassic Coast stretches for over 150 kilometres and contains unique rock formations and fossils from the Cretaceous, Triassic and Jurassic periods.

Natural weathering and coastal erosion by winds, rain and wave action all contribute to landslides in this exposed area, and this particular landslide was especially dramatic, causing the collapse of around **4,000 tons of rock** and soil from a 300m section of the sandstone cliff. Probably associated with shear failure, the mechanism appears to be a rotational slump - that is, the circular rock mass slid, rotating about an axis parallel to the slope.

Thankfully, nobody was injured by the cliff failure: it happened overnight, so there was no-one on or near the beach or clifftop at the time. With further cracks appearing on the cliff since the original incident, engineers are continuing to monitor the situation and the public are being strongly advised to keep safely away from this vulnerable area.





FROM WEYMOUTH TO THIRSK: READ OUR SLOPE FAILURE CASE STUDY

While rarely as dramatic as the Weymouth cliff collapse, landslides are common events: even a small downslope movement of soil or rock can have major consequences for the built environment and for infrastructure such as pipelines, roads, railways and dams. They can be triggered by natural causes and by human factors such as broken pipelines, inadequate drainage, explosions and increasingly, as a result of wildfire damage.

While it's almost impossible to stop an active landslide in progress, RGS regularly helps clients to prevent human-induced landslides as well as minimising the chances of natural collapses in high-risk locations.

**No matter what the scenario or where it may be in the UK, our expert teams carry out site investigations which might involve elements such as:**

- **evaluating** **unstable areas** and their boundaries
- **assessing** the history of a site's **previous ground movements**
- **geotechnical lab analysis** of **soil and rock properties**
- **assessment** of **causal factors** **landslide damage** and/or **slope stability**
- **proposals** for improving **slope stability**
- **monitoring** **groundwater** and **ground movement**



The cost of preventing (or minimising the risk) of landslides is dwarfed by the potential costs involved should such a disaster occur. If you're ever in doubt about the integrity of a slope or slopes on or near your site, don't hesitate to ask for our expert help.

**CONCERNED ABOUT POTENTIAL OR ACTUAL SLOPE FAILURE?  
RGS EXPERTS ARE HERE TO HELP: CALL US RIGHT AWAY  
FOR HELP AND ADVICE **01484 604354****

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## Granny Rogers' Musings Episode 7



In the last episode, Granny Rogers left me with a dilemma: given the intrinsic risk of shear failure when a sudden load is applied to an outrigger, **how should I investigate for the outrigger of a crane?**

“ Well... one (of many) problems with site investigation is the lack of information available up to 1.2m depth due to the need to excavate starter pits. When dealing with surface loads, it's essential to determine the strength parameters within this depth. This means that you'll often need to make further shallow investigations to obtain suitable parameters.

My first response to Granny's challenge was to suggest shallow boreholes and probes. She looked at me quizzically and retorted, **“And why would you not use plate load tests?”** I recalled Granny Rogers' mantra: **in geotechnical engineering you must always establish the problems before you can effect a solution.** With her wise words ringing in my head, I offered my reasoning. “Granny,” I began, **“I'd say that the main problem with plate load testing is the depth that the soil is stressed by the test itself. For a 450mm diameter plate, the depth to 20% of the applied stress will be approximately 675mm (1.25D). If the chosen outrigger is, say, 1.0m square, it will stress the soil to depths approaching 3m. Therefore, if (as is often the case) there's a surface crust of stronger soil, the test will overestimate the strength, meaning that shear failure of the ground could still occur”.**

My wise old granny looked at me and beamed. **“Well done, Steven, my boy”,** she said. **“It seems that you are now thinking like a geotechnical engineer should!”** ”



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CLIENT FEEDBACK

Talk to us

“ RGS were professional and courteous throughout the whole process. Highly recommended! ”

We're always keen to hear what clients think of our service and welcome feedback from our clients, colleagues and associates.

We're looking forward to hearing from YOU!

[Click here](#) to email us your comments.

