



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

> **DEVELOPING. DELIVERING.**



THE RGS LAB - AT YOUR SERVICE

DRIVING BUSINESS FORWARD

CONNECT, DISCOVER...

GRANNY ROGERS' MUSINGS

Welcome to RGS insite issue 61

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.

DRIVING BUSINESS

FORWARD!

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We constantly develop our resources to give our clients the best possible service, and this month, our newest 'team member' is an **eco-friendly forklift truck** to service our lab and drilling warehouse.

With the **rising volume of samples and cores** we're receiving for storage and disposal, this **power-efficient lithium forklift** will be kept very busy!



What's more, its greener energy source is far **kinder to the environment** than fossil-fuelled forklifts, and much safer to use in indoor environments.



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CLIENT SERVICES

The RGS laboratory **at your service!**



Many of our clients enjoy the benefits of using our **efficient, UKAS-accredited laboratory** for a wide variety of cost-effective testing and analysis.

Equipped to handle everything from the smallest project to large and complex projects, we provide a highly professional service to clients who include **national, regional and local construction firms, site owners**, property developers and archaeologists.

[Click here](#) to find out more

Continuing our thread of features that shine a light on what some of these tests and analyses are all about and the **vital site information** they reveal, we're looking this month at a widely used type of shear strength test.





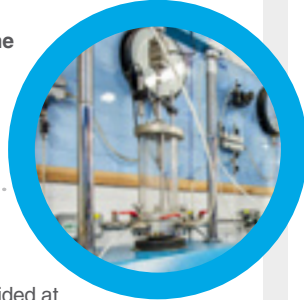
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THE QUICK UNDRAINED TRIAXIAL SHEAR STRENGTH TEST

There are different types of shear test, all of which subject a soil specimen to vertical and perpendicular stresses in order to measure the mechanical properties of a soil.

The quick undrained procedure is used to **determine the total shear strength** of a cohesive undisturbed soil sample at a pressure that reflects the sample's in situ depth. From this result the cohesion, c_u , can be established.



What determines the point at which a soil/sample fails?

'Failure' is usually perceived as something to be avoided at all costs. Counterintuitively, this test sets failure as an absolute requirement. However unfamiliar the notion, in the case of triaxial testing, a strong failure means a job well done!

Shear failure in soils occurs when **shear stresses** cause particles to slip past one another. The point at which this happens depends on a soil's **composition** (particle size distribution, pore fluid, etc), its **consistency** (water content, normally or over consolidated) and the **loading conditions**. In a brittle failure, the sample shears and slides along a line of weakness (eg a fissure or sand/silt lens).



Alternatively, a **plastic failure** (which can be seen when the sample barrels outwards under the load strain) occurs when the sample has compressed to **80%** of its original length

In some tests, a sample may show elements of both brittle and plastic failure: this is known as a 'compound failure'.

Analysing and applying the data

Using the axial displacement and axial load data generated by the quick undrained test, we can plot the failure curve, which:

- A** PROVIDES FURTHER EVIDENCE OF **HOW** THE SAMPLE HAS FAILED
- B** ALLOWS **MATHEMATICAL MANIPULATION OF THE DATA** TO CORRECT FOR ELEMENTS SUCH AS MEMBRANE CONFINEMENT AND AREA EXPANSION.

By extrapolating data from the graph, we can then identify the compressive stress, cohesion and failure strain, to determine the soil's shear strength.

FOR LABORATORY TESTING AND ANALYSIS OF SOILS, ROCKS AND AGGREGATES, TALK TO US AT RGS: PROFESSIONAL SERVICE THAT GOES THE EXTRA DISTANCE!

SOIL CLASSIFICATION TESTING

COMPACTION-RELATED TESTING

ROCK TESTING

SOIL COMPRESSIBILITY

CHEMICAL TESTS

PERMEABILITY

AGGREGATE TESTS

SHEAR STRENGTH



THE ROGERS ARCHIVE

Granny Rogers' Musings



When I started out in this industry, I think Granny Rogers was rather proud of my achievements and she was always **quick to offer advice** and to share her wisdom. On one such evening, we were sat together in her local hostelry.

“ She eyed me enigmatically over her fourth gin and tonic, and pronounced, **“When a manager tells you that they don't want problems, just solutions - you should hit them!”**

I was somewhat alarmed by her statement as my boss was a big bloke and I was a wimp. However, I asked her to explain. **“Get another G&T in and I'll tell you”**, she grinned. Leaving her to drain her glass, I went to the bar, bought her a fifth drink and a second shandy for myself, and settled back down at the table. Taking a large swig, she said, **“You see, Steve, as a Geotechnical Engineer you must understand all of the problems before you can effect an appropriate solution. If you miss even one potential problem, then there's a good chance that your solution won't work”**.

We both sat quietly for a moment while she downed her gin and I contemplated her advice. **“It's quite simple really”**, she said. **“A Geotechnical Engineer's job is to identify all of the problems and then solve them, one by one. For example, if you're considering slope stability of cuttings, what's the effect of excavating a service trench adjacent to the toe or crest of the slope? Of course, they'll both reduce the overall stability - but for different reasons”**.

Her eyelids drooped a little. **“That lasht gin an' tonic must have been off”**, she said. **“Steve, can you carry me to the car?”**”

TRAINING & CPD

Connect, discover, discuss, share, develop...
Online, the world's your oyster!



From Facetime and WhatsApp to Zoom and Teams, **virtual communication** has never been more important in connecting us with family, friends, colleagues and contacts than during the tsunami of Covid-19 restrictions that began in early 2020.

Furthermore, it seems likely that digital, eco-friendly communication channels such as these (and many others) will form part of the 'new normal' in our post-pandemic lives, both at home and at work, and while they will never match the quality of direct, in-person interaction, there are **numerous benefits** to be harnessed. One of them, we suggest, is easier access to the many learning, development and networking opportunities at professional conferences and webinars, **wherever they might take place in the world.**

Attending international conferences has always demanded **significant costs in terms of travel, time and carbon footprint.** Now, the conference doors are wide open: you can attend a conference in Tokyo or Dubai as easily as one in your nearest city - and without the costly long journeys, hotels and time away from the family (it's true of course, that some might miss those elements more than others)! Similarly, online business webinars have dramatically increased in popularity throughout the Covid lockdowns, providing **flexible, interactive opportunities** for discussion, training and development across most sectors.

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With this in mind, **why not sign up for an upcoming event** that could reap dividends **for you, your organisation and your career**? There are literally hundreds of online conferences and webinars going on worldwide - some in niche, specialist areas and others offering presentations and workshops on diverse themes, and there are always opportunities to make valuable new connections with those who share your concerns, challenges, specialisms and interests.

The following list represents a tiny sample of the many digital events coming up soon, so grab a coffee, **click on the events** and browse the schedules - then book a ticket or two!

CONFERENCES

The following conferences bring together **leading scientists, researchers, practitioners, educators** and **more** to present and explore latest innovations, themes, practical challenges and solutions.

Many conferences also take place in **other worldwide venues**, often on different dates, so if you have a particular interest in connecting with presenters and delegates in a specific country, just scroll through the listings on the **World Academy of Science, Engineering and Technology (WASET)** site.

MARCH 4-5

ICGGE 2021:
International
Conference on
Geotechnical and
Geoenvironmental
Engineering

RIO DE JANEIRO

Listener registration fee
\$300 ↗

MARCH 15-16

ICGMCT 2021:
International
Conference on
Soil Mechanics,
Classification and
Testing

LONDON

Listener registration fee
\$300 ↗

APRIL 22-23

ICGEEG 2021:
International
Conference on
Geotechnical
Engineering and
Engineering Geology

LONDON

Listener registration fee
\$300 ↗

MAY 17-18

ICAMGGE 2021:
International
Conference
on Advanced
Measurements
in Geotechnics
and Geotechnical
Engineering

SYDNEY

Earlybird registration fee
\$250 until 16.04.21 ↗

MAY 24-25

ICCB 2021:
International
Conference on
Civil and Building
Engineering

LONDON







Earlybird registration fee
\$250 until 23.04.21 ↗





WEBINARS

Many professional organisations present webinars, offering valuable opportunities to share knowledge and ideas with others around the world - and many of them are free of charge. The following examples are all available either now or very shortly.

<p>MARCH 1 12.00 - 13.00</p> <p>Construction Leadership Council: What is construction's role in kick-starting economic recovery?</p> <p>Free of charge ➤</p>	<p>MARCH 3 18.00 - 19.00</p> <p>ICE Virtual Site Visit: A day in the life of a graduate site engineer</p> <p>Free of charge ➤</p>	<p>MARCH 4 13.00 - 14.00</p> <p>ICE Groundwork CPD: Accelerate reparation time for settlement defects</p> <p>Free of charge ➤</p>
<p>MARCH 9 17.30 - 18.30</p> <p>Gunnislake (Cornwall) mine collapse</p> <p>Free of charge ➤</p>  <p>On June 20 1992, a sudden collapse of ground occurred in the garden of a house in Cornwall, leaving a crown hole of more than 8m in diameter and 10m deep. This ICE webinar traces the impact, the intricate engineering that followed and the key lessons learned.</p> <p> <small>Institution of Civil Engineers</small></p>	<p>MARCH 18 18.00 - 19.15</p> <p>Werrington Grade Separation, Curved Box Jack</p> <p>Free of charge ➤</p>  <p>In order to remove a major bottleneck in the network, a diver-under structure was needed to accommodate two railway lines beneath the East Coast main line. In this lecture, organised by the British Tunnelling Society, Matt Hadden discusses the significant engineering challenges faced during this complex construction project.</p> <p></p>	<p>AVAILABLE ON YOUTUBE</p> <p>Construction's Recovery from the Age of Coronavirus</p> <p>Free of charge ➤</p>  <p>Alasdair Reisner, CEO of the Civil Engineering Contractors' Association, along with other speakers from UHY Hacker Young discuss what should be done to ease construction's recovery from the current global crisis. This webinar, originally held on April 23 2020, was presented by the Construction Industry Council (CIC).</p> <p></p>

RGS CPD

We hope you're now feeling inspired to explore the vast online conference and webinar opportunities open to you, your staff, teams and colleagues, and to sign up for new development experiences across the world!

With the exciting **recovery of the construction sector** already underway, **upskilling your people is likely to be crucial** in making the most of every business opportunity. RGS offers a **superb range of bespoke and tailored CPD programmes** available virtually and, when Covid restrictions permit, face-to-face.

[CLICK HERE](#) TO FIND OUT MORE ABOUT RGS TRAINING AND CPD, OR CALL US ON **01484 604354** TODAY!



Do you need
a phase one
environmental
desk study
report?



RGS STANDARD **RGS PREMIUM**

Contact us for more details
and to discuss your options
for this service

For more information about your investigation requirements
please don't hesitate to contact us.

[Telephone on 01484 604 354](tel:01484604354)

[Click here to email us](#)

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.

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