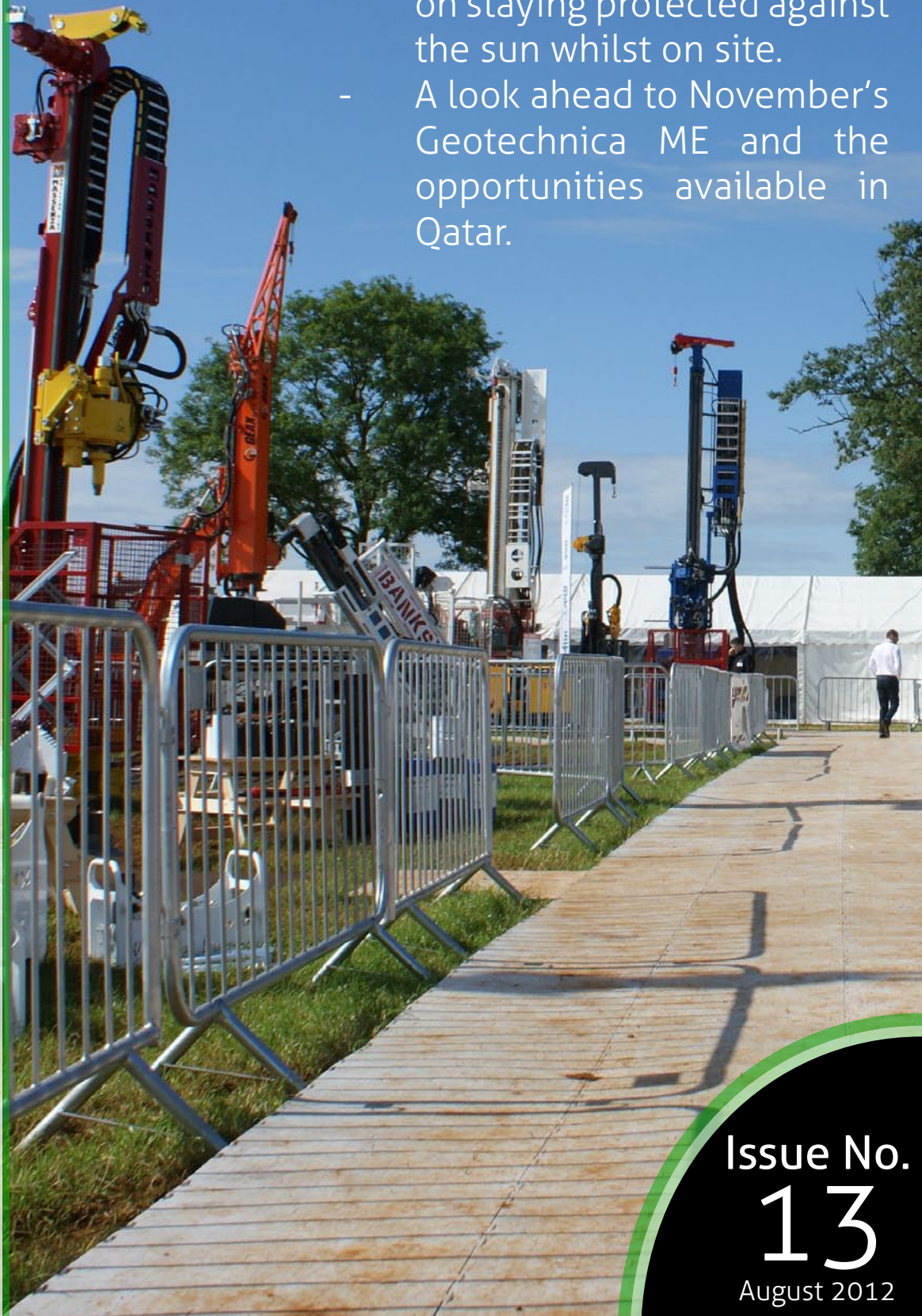


the Geotechnica

Geotechnica 2012 The Review

Also included:

- Water Supply Pipe Selection advice.
- Emma Betts gives advice on staying protected against the sun whilst on site.
- A look ahead to November's Geotechnica ME and the opportunities available in Qatar.



Issue No.
13
August 2012

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Welcome to Issue 13 of **theGeotechnica**, and the first in a line of new and improved editions of the magazine. Over the coming months we will be unveiling many exciting new developments regarding **theGeotechnica**, starting with this month's overhaul in design and appearance and hopefully building to a fully interactive, media-rich flipbook edition of the magazine, with video and audio content integrated seamlessly into the existing articles. We do this in the hope that we can make the experience of reading **theGeotechnica** that much more enjoyable.

"...the Editorial Team here at theGeotechnica will be on the lookout for even more new, original and interesting content from all corners of the sector..."

Considering this, the Editorial Team here at **theGeotechnica** will be on the lookout for even more new, original and interesting content from all corners of the sector, and would actively encourage all readers to come forward with even the slightest bit of appropriate and relevant content - whether it be a small news item or a detailed case study of works recently completed or being undertaken. If this content is media rich and interactive, then all the better. We are looking to increase the already large readership of the magazine through better social media integration and promotion, as well as improving content month on month.

As an introductory offer for the new and improved magazine, for any content that is submitted we will provide free advertising space, proportionate to the quality of content provided, for that single edition of the magazine. From then on, if you have submitted content, you will receive a discount on all further advertisements placed within **theGeotechnica**.

Turning our attention to this month's edition of the magazine, we have several interesting arti-

"The article reviews the success of the event, including the immensely popular Geotechnical Conference..."

cles. Firstly, as featured on our cover this month, we have a review of July's Geotechnica - Equipe's flagship event and the UK's Largest Geotechnical Trade Show and Exhibition. The article reviews the success of the event, including the immensely popular Geotechnical Conference, as well as the Evening Charity Networking Event which crowned the first Geotechnica Rocks Battle of the Bands Winner.

We also have a particularly relevant article from Emma Betts of EB Safety. This month, Emma gives advice on staying safe and protected whilst out on site in the rare moments of hot weather and sunshine that have been sweeping across the country. Although these moments of sunshine have been brief and intermittent, it is still vitally important to be aware of the risks of UV rays and the like. In addition to this, Geraint Williams of Alcontrol also imparts his advice on the UKWIR Guidance of the Selection of Water Supply Pipes to be used in Brownfield Land.

Finally, we take a look at the Equipe Group's latest venture as they prepare to take Geotechnica abroad for the first time. With November's Geotechnica ME rapidly gaining support and attention from an increasing number of companies, including the Qatari 2022 FIFA World Cup team, we ask the question: Why should you be interested in Geotechnica ME, and Qatar as a whole?

We hope you enjoy this month's edition of the magazine and are inspired to contribute your own content for the coming editions of **theGeotechnica**.

Editorial Team,
theGeotechnica

Geotechnica 2012: A rare moment of blue skies and sunshine.



Above: Great attendance at the Geotechnical Conference.
Below: Visitor numbers are up on last year's figures.



Geotechnica equip[®] 2012 The Review

The 4th and 5th of July saw this year's Geotechnica - the UK's Largest Geotechnical Trade Show and Exhibition - return to the Upton Estate Showground.

2012 marked Geotechnica's fourth appearance on the calendars of the geotechnical and drilling communities, with this year event bigger and better than all three of its predecessors. Throughout 2012 the Equipe Group had been working hard to ensure that this year's event built on the success of previous incarnations, using their contacts to bring in

"Geotechnica 2012 saw a large number of attendees that maintained the positive, productive and bustling atmosphere that Geotechnica has become synonymous with..."

the best possible speakers for the Geotechnical Conference, whilst also employing a smarter marketing strategy to generate greater visitor numbers for the event. On reflection, it is safe to say that that hard work paid dividends, with increased visitor numbers and a very impressive roster of speakers.

Despite Mother Nature's best efforts, Geotechnica 2012 saw a large number of attendees that maintained the positive, productive and bustling atmosphere that Geotechnica

has become synonymous with since the events conception in 2009. Heavy rainfall on the Tuesday and Wednesday gave way to sunshine on the Thursday that was met with many sets of grateful, open arms. The rainfall on the first day of the exhibition was not enough to dampen the spirits of the many exhibitors and visitors, with large amounts of business being done and productive discussions being had. In fact, any rainy-day-blues that were to be had on the Wednesday were swiftly forgotten by the time the Evening Charity Networking Event came around.

For the first year, the Networking Event on the Wednesday of Geotechnica featured a Battle of the Bands contest, sponsored by Geotechnica Observations. Battling it out for the Winner's Trophy were Chaindogs, Indigo

Wolf and The Patsy Gamble Band. After three thoroughly entertaining sets, The Patsy Gamble Band came out on top and were presented with their trophy by a representative of sponsors Geotechnical Observations. The evening also featured a hog roast provided by The Pig on the Hill, as well as a cold buffet and a well-stocked drinks bar - all of which were greatly received by all that attended. Fortunately, the high

"The conference speaker programme featured many names that were and still are at the top of their respected fields..."

spirits raised during the Networking Event appeared to usher in better weather for day two of the event, with the rain and wind giving way to sun-

Geotechnica 2012 - The Numbers:

- 2 Days.
- 67 Exhibitors.
- 14 Demonstrations.
- 19 Speakers.
- 5 Sponsors.
- 3 Bands.
- 1 Hog Roast.
- 638 Attendees.

shine and blue skies.

The conference speaker programme featured many names that were and still are at the top of their respected fields, names such as ChalkRock Ltd's Professor Rory Mortimore, LQM Ltd's Professor Paul Nathanail and former Professor of Geotechnical Engineering at Kingston University - Professor Eddie Bromhead. Fortunately, the conference did not fall prey to its own hype, with all of the 19 speakers delivering insightful, educational and entertaining

talks that not only educated the observers, but also sparked discussions and debates that are vital to the continuing development of our industry. With almost every single one of the talks filling the conference marquee to maximum capacity, it is obvious that the conference programme was well received, with the presentations one of the main forces behind Geotechnica's continued success.

Overall, the general consensus from all exhibitors and

"Rest assured, Geotechnica 2013 will continue on from the success of this year's event..."

attendees was that the event was a resounding success. The Equipe Group would like to thank all of those that exhibited, presented and attended this year's Geotechnica, and helped make it the most successful event yet. A special thank you must also be extended to this year's sponsors: Geotechnical Engineering, Geotechnical Observations, Clear Solutions, Rockbit UK and DuraDeck.

Plans are already being made for next year's event, alongside Geotechnica's first escapade abroad to Qatar in November of this year for Geotechnica ME. Geotechnica 2013 will again be held on the Upton Estate Showground, this time on the 3rd and 4th of July.

Rest assured, Geotechnica 2013 will continue on from the success of this year's event, whilst maintaining and building upon its set of base principles: Communicate. Promote. Network. Learn. ■



Above: Networking at the Evening Event



Swaying in the breeze: Geotechnica flags and banners.



Bustling: Geotechnica's positive atmosphere was as good as usual.



Runners Up: Chaindogs.



Runners Up: Indigo Wolf.



Winners: The Patsy Gamble Band.



Relaxed: The Evening Networking Event in full swing.

Upcoming Courses - Autumn/Winter

provided by Equipe Training

3rd September	Site Investigation Awareness
4th September	Working Safely on Geotechnical Sites
5th September	Drilling Awareness for Engineers
6th September	Applied Geology and Soil Description Workshop
7th September	Rock Description Workshop based on Clarke & Walker
10th September	Geotechnical Laboratory Awareness
11th September	Instrumentation and Monitoring
12th September	In Situ Testing
13th September	Design of Site Investigation
14th September	Rotary Drilling Awareness



12th October & 30th November	Soil Description Workshop
19th October & 7th December	Rock Description Workshop
14th December	Basic Foundation Design (in accordance w/ EC7)



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Water Pipes: Selecting the right pipe can be vital



WATER SUPPLY PIPE SELECTION

Alcontrol's Senior Environmental Scientist Geraint Williams provides UKWIR Guidance on the Selection of Water Supply Pipes to be used in Brownfield Land.

UKWIR (UK Water Industry Research) published the above document, which prompted the withdrawal of the Information and Guidance Note 9-04-03, Laying Pipes in Contaminated Land, WRAS 2002 (Water Regulations Advisory Scheme). The UKWIR guidance provides threshold levels for the specification of water pipes. The aim is to ensure that standard water supply pipes are not laid in ground conditions that would, over time, result in the permeation or degradation of the pipe and lead to a breach of the drinking water standard at a customer's tap.

The latest UKWIR document follows in a long tradition of extremely conservative guidance:

WRAS Guidance

It was widely accepted that the original WRAS document, shortly after publication, was incomplete, outdated and inappropriate. In 2002, the WRAS threshold concentrations were based on its predecessor, the 1994 Foundation for Water Research Guidance (FRA 0448 Laying Portable Water Pipelines in Contaminated Soil). The origins of the prescribed WRAS parameters could be traced all the way back to the 1983 ICR-CL threshold levels, based on gasworks contaminants – criterion not necessarily relevant to risk of permeation or corrosion of buried water pipes.

UKWIR Guidance

Fundamental problems persist with the updated UKWIR guidance. These have caused issues for consultants and laboratories. The report was the output of a water industry-funded research programme. The document may need to undergo revision in the future. The UKWIR guidance includes an extensive list of contaminants, which seems overkill. It refers to a staged process of investigation, involving a desk study, site walkover, preliminary risk assessment and investigation, but defaults to a mandatory analytical suite:

1. Extended VOC suite by purge and trap or headspace and GC-MS with TIC
 - 1a. +BTEX+MTBE
2. SVOCs by purge and trap or headspace and GC-MS with TIC (aliphatic and aromatic C5-C10)
 - 2e. + Phenols
 - 2f. + Cresols and Chlorinated Phenols
3. Mineral oil C11-C20
4. Mineral oil C21-C40
5. Corrosive (Conductivity,

Redox and pH)

Specific suite identified as relevant following site investigation:

- 2a. Ethers
- 2b. Nitrobenzene
- 2c. Ketones
- 2d. Aldehydes
6. Amines

"As the outcome of the assessment is highly predictable, it would seem reasonable to opt for barrier pipe and save money on any investigation costs."

Data assessment of the above parameters forms part of the Site Assessment Report. Data supported threshold values are used to assist in the selection of pipe materials. The thresholds are so low that most brownfield sites are likely to fail the criteria. As the outcome of the assessment is highly predictable, it would seem reasonable to opt for barrier pipe and save money on any investigation costs. The document was subject to consultation within the water industry but little external consultation with the wider contaminated land community.

The guidance runs contrary to standard practice in terms of risk assessment. It refers to an extensive list of contaminants, many of which are unlikely to be present on the majority of sites in the UK. Because the analytes are non-routine, most large commercial laboratories only provide costs for conventional analyses. The generic groups still contain compounds

that do not belong within those classes (for example Benzo(a)pyrene is listed as a VOC). The guidance also specifies the analytical technique required for testing – there are many examples where this is inappropriately prescribed. Regardless of the differences between them, individual compounds are not considered separately instead they are summed into very broad groups.


Conclusion

If the new guidance remains in the current format, it could lead to much more extensive testing on potentially contaminated sites. However, in the majority of cases, where the cost of investigation exceeds the costs of installing a particular pipe material, it is likely to lead to water companies adopting an overly conservative blanket approach and specifying barrier pipe for all brownfield sites, regardless of site-specific levels of contaminants. This will generally increase the cost of development with no overall benefit. The total costs (including the fittings, etc) need to be closely reviewed in relation to different size development sites, allowing for a real options appraisal to be made. It is evident that barrier pipe has higher installation costs. The costs of future maintenance also need to be taken into account.

"There is an argument for an alternative, less conservative approach. Water companies have, for the most part, adopted the UKWIR guidance, albeit with important clarifications presented as supplementary guidance notes."

There is an argument for an alternative, less conservative approach. Water companies have, for the most part, adopted the UKWIR guidance, albeit with important clarifications presented as supplementary guidance notes. The indications are that certain water companies are now willing to adopt a more pragmatic approach.

Selection of the suite for analysis should be based on the history and previous usage of the site as well as accounting for contaminants that have the potential to impact the pipe. Guidance needs to be evidence based, using a true risk assessment approach. Such guidance should refer to latest research on permeation characteristics of contaminants, thickness of plastic pipe, residence time and attenuation factors as well as seeking to ensure broader consultation (AGS, EIC, consultants, environmental labs). ■



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SUMMER IS FINALLY HERE

Emma Betts of EB Safety provides some important advice for those of us working outdoors in the glorious British summer - while it lasts anyway...

British summer is here at last and despite the recent wet weather and flooding I am ever optimistic that we will eventually have some hot, sunny weather! With this in mind we at EB Safety thought some basic information and advice on avoiding the dangers of over exposure to the sun and heat stress would be useful especially for those of us who work outdoors for long periods of time.

We all enjoy the sun and warm weather it makes us feel good, but too much sunlight can be harmful to the skin and health. Over exposure to ultraviolet (UV) rays causes damage to the skin and people who work outdoors for most of the day are unfortunately at greater risk of developing skin cancers. Occasionally working in hot conditions, can cause overheating and heat stress can occur when the body's means of controlling its internal temperature start to fail.

"There are both short and long term dangers to prolonged exposure to the sun."

There are both short and long term dangers to prolonged exposure to the sun. In the short term sunburn can be very painful, causing the skin to redden, blister and peel. Even mild reddening of the skin is a sight of skin damage. In the long term too much sun speeds up the aging of your skin, it can become leathery, mottled and wrinkled, but more seriously it can increase the risk of developing skin cancer.

Some people are more liable to develop skin cancers than others; particular care should be taken if:

- You have fair or freckled skin that doesn't tan easily or goes red before tanning
- You have red or fair hair and light coloured eyes
- You have a large number of moles

Sun burn is a clear sign that UV radiation has damaged the genetic material (DNA) in your skin cells. Skin cancer can occur due to the damaged DNA causing cells to start growing out of control. The risk of melanoma (the most serious type of skin cancer) is tripled by getting painful sunburn even just once



every two years.

There are two major types of UV rays that damage the skin; these are UVB which is responsible for the majority of sunburns and can cause skin cancer and UVA which penetrates deeper into the skin. This type of UV ages the skin but contributes much less towards sunburn.

Here are some simple steps to protect yourself:

- Remember even if you are not fair or freckled the sun is at its strongest in summer for

the 3-4 hours around midday and UV can filter through, even on cloudy days.

- Wear a hat! A hard hat will provide some shade for your head, so wear it!
- Cover up! Most ordinary clothing, long sleeves and jeans or overalls will stop most of the UV rays
- Keep your top on! Even if your skin tans easily, don't be tempted to have your top off especially around midday.
- Use sunscreen creams of sun protection factor (SPF) rating of 15 or more which protects against UVA and UVB

"Up until the age of 18 it is normal for new moles to appear, but after that age you should look out for any growths..."

Regularly check your skin for changes or newly formed moles or any other skin discoloration. An early warning sign is often a small scabby spot that doesn't heal after a few weeks. Up until the age of 18 it is normal for new moles to appear, but after that age you should look out for any growths on the face, especially around

the nose and eyes or backs of your hands. If you notice any of these signs you should consult your doctor.

- Stay in the shade whenever possible, especially at break and lunchtimes
- Drink plenty of water to avoid dehydration.

"Dehydration can severely affect your ability to function safely in hot conditions. When working in hot conditions you should consume about 1 pint of water every 20 minutes..."

Dehydration can severely affect your ability to function safely in hot conditions. When working in hot conditions you should consume about 1 pint of water every 20 minutes, but be aware that thirst is not a good indication of dehydration. If you are thirsty you have already started to suffer the effects of dehydration. Drink plenty of water, avoid tea, coffee and carbonated drinks.

Heat stress occurs when the body's means of controlling its internal temperature starts to fail. A combination of air temperature, humidity, work rate and clothing can lead to heat stress. The body reacts to heat by increasing the blood flow to the skin's surface and by sweating. This results in cooling as sweat evaporates from the body's surface and heat is carried to the surface of the body from within by increasing blood flow.



Above, Right and Below: The sun may be shining, but protecting yourself is the priority.



“Heat stress can affect individuals in different ways and some are more susceptible to it than others.”

Heat stress can affect individuals in different ways and some are more susceptible to it than others. Typical symptoms include:

- Lack of concentration.
- Muscle cramps.
- Heat rash.
- Severe thirst, a late symptom of heat stress.
- Fainting.
- Heat exhaustion.
- Heat stroke – hot dry skin, confusion, convulsions and eventual loss of consciousness.

While heat stress is more common due to hot environments created by a work process or in restricted spaces it is something to be aware of in extreme hot conditions outdoors as well.

In conclusion these are the six do’s and don’ts to avoid the dangers of over exposure to sun and heat stress:

- Do keep your top on to protect yourself from the sun’s harmful rays.
- Do wear a hat that covers the ears and the back of your neck.
- Do take regular breaks and try to stay in the shade at break and lunch times.
- Do not forget to drink plenty of water to avoid dehydration.
- Do use a high factor sunscreen SPF15 or more on exposed skin.
- Do not forget to regularly check your skin for any unusual moles or spots. See a doctor promptly if you find changes to existing moles or your skin.

Finally, do enjoy the sunshine with care; you never know when it will start raining again! ■

Job Opportunities in New Zealand

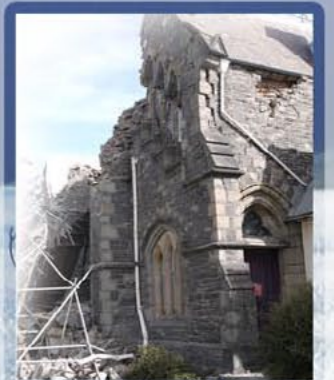


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Equipe is the sole agent for a geotechnical consultancy based in Auckland, New Zealand who are looking to set up an office in Christchurch to play an active role in the rebuilding of the city. There are a number of positions which we require to fill and details are provided below. The consultancy wishes to employ engineers from the UK to staff the office and for the right individuals to join the company on a permanent basis. This is a really exciting opportunity for anyone who wants to be involved with rebuilding one of the world’s major cities in a vibrant and diverse country.

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For more information on great opportunities, send a CV to: pete.reading@equipetraining.co.uk

THE LAND OF OPPORTUNITY



Move over USA - Qatar is the new Land of Opportunity. With the State's geotechnical demands growing by the day, Equipe are taking their flagship event Geotechnica to the Middle East - and they're inviting you to delve into the increasingly affluent Qatari market with them.



West Bay: A view across the water to the famous West Bay at night.

On the 6th and 7th of November this year, the Equipe Group will take their flagship event Geotechnica to Doha, Qatar. The event will follow in the footsteps of its UK originator, with exhibitors from around the globe gathering for a Geotechnical Conference and Exhibition. So why should you travel 3,500 miles to be there?

Qatar is a Gulf State but unlike others it is enjoying an economic boom. It has the fastest growing economy of any country in the world with a staggering 16.3% growth in GDP in 2011, slowing to an expected growth of 7.1% this year - and this from a country with a population of 1.6 million.

This small Gulf State has big

"Even before the award of the World Cup, Qatar was working on a master plan for sustainable development to be completed by 2030."

ambitions - driven by the award of the 2022 FIFA World Cup, as well as its own desire to improve the standing of the State in the world market. Even before the award of the World Cup, Qatar was working on a master plan for sustainable development to be completed by 2030. The funding for this rapid growth is financed by oil and huge gas reserves.

Almost every part of the capital and its outlying areas is under-

going development; many of these developments are challenging and innovative. Currently works are well underway with the construction of a new airport and dock facilities. The airport is being constructed on reclaimed land adjacent to the existing airport whilst the docks are being excavated to form a new large basin. It seems that whatever is created in Qatar, the easy way is not an option. Instead they are choosing to look for imaginative and innovative design in order to impress the rest of the world.

In order to host the 2022 World Cup, Qatar has embarked on a programme of building nine new football stadiums and upgrading three others. These stadiums will not be any ordi-

nary arenas. The games will be played during the hottest period of the year where temperatures will regularly soar to the mid 40's and peak at a sweltering 50 degrees centigrade - or thereabouts. It is therefore planned that all stadia will be completely air conditioned with the air conditioning powered by solar power.

Of course in order to host the Cup, Qatar will need an infrastructure to support the event, for this it is planned to improve the existing road network with motorways to each of the stadia and connecting onward to Saudi Arabia. Some of these are already under construction, with the others planned to be completed well before 2022. At the same time Qatar



Tourist Attraction: The Islamic Museum in Doha.

is embarking on an ambitious plan to build a metro system in Doha and high speed rail links to each of the stadiums.

The metro will be built at a depth of 50m below ground, beneath the congested city.

"Because of the deadlines, works are being carried out at a very fast rate, which is stretching the currently available resources in the State."

The geology is generally quite uniform with Eocene limestone overlying shales of a similar age. However the limestone tends to be very variable with large solution features and voids. Weathering also tends to be very variable. Tunnelling in these ground conditions is extremely challenging, as are the site investigation works being carried out to find the voids and weaker zones of limestone. These site investigations use a combination of geophysics and drilling to locate these voids and weaker zones.

Because of the deadlines, works are being carried out at a very

fast rate, which is stretching the currently available resources in the State. In recognition of this HE Hassan al-Thawadi, Secretary General of the Qatar 2022 Supreme Committee, visited the UK in January this year to heighten interest in the potential work amongst the UK civil engineering industry. The state is calling out for consultants and contractors to help them deliver their vision.

Understandably, it is going to take more stadiums, roads and a rail network to support the World Cup and in recognition of this there is an determined drive to build hotels, training camps, shops and leisure facilities. These projects, some of which are already underway, include a 6km long shopping mall, an Education City with a state of the art university, a cultural centre, and a new convention centre. This is in addition to a business hub, West Bay which aspires to produce a skyline to match any around the world.

Currently plans are being drawn up and tenders put together for investigations and building contracts which will stretch the current resources to its limit.

“One site investigation project currently being drawn up will require the total current availability of rigs in the State to drill on one project...”



Grand Hyatt Hotel: Geotechnica ME Venue.

One site investigation project currently being drawn up will require the total current availability of rigs in the State to drill on one project for three years. Clearly further resources will be needed to meet the challenging deadlines and pace of construction. With so much going on there is a danger that corners will be cut just to meet deadlines however there is a real desire by everyone involved in the process to deliver high quality design and construction. This was very much part of the message from HE Hassan al-Thawadi that Qatar is looking to enlist the help of engineers who can deliver high quality in an innovative and collaborative way.

With the UK economy looking very flat for the foreseeable future Qatar looks a very tempting market within which UK skills can thrive, so what better place to show off our expertise than Geotechnica ME in November?

“Qatar and its capital Doha is a vibrant friendly country with a cosmopolitan feel located on the blue waters of the Gulf...”

The show will include a superb line up of speakers for the Geotechnical alongside an ever-growing list of trade exhibitors. The show will be held at the Grand Hyatt Hotel, a five star venue which has its own beach area and superb facilities.

Geotechnica ME is not the sole reason that you should be considering visiting Qatar, however. Qatar and its capital Doha is a vibrant friendly country with a cosmopolitan feel located on the blue waters of the Gulf and surrounded by a stony desert. One word of warning, driving is not for the feint hearted but once you get used to a different driving style you can get around quite easily. There are four ring roads around Doha

so eventually you will end up where you want to be.

A real must for all is a visit to the Souq Waqif. We recommend that you soak up the atmosphere of a traditional market place where you can buy souvenirs, traditional Qatari dress, spices, perfume, jewellery and traditional foods, all amongst the narrow alleyways which make up the Souq. Sit in one of the many restaurants sipping tea and watch the world go by.

Alternatively you can take an evening stroll along the Corniche, a broad tree lined promenade which circles the bay and provides a perfect view across the waters to West Bay and its towering skyscrapers. From the Corniche you can take a trip on a Dhow across the bay. Just off the Corniche you will find the Museum of Islamic Art, the building is a fascinating modern design and houses a fine collection of Islamic art which spans from the 7th century to the 19th century.

All in all, there are many reasons to make the trip out to Qatar in November - not least of which to take part in and support Equipe's first venture into the international market. More details, including how to book your place at the event can be found online at www.geotechnicame.com.

White Sand, Blue Sea: Grand Hyatt's beaches.



Geotechnical Conference and Trade Show

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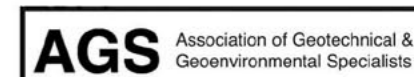
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