Issue Number 3 October 2004

香港岩土及岩土環境工程專業協會
ASSOCIATION OF GEOTECHNICAL & GEOENVIRONMENTAL SPECIALISTS (HONG KONG)

AGS (HK) NEWSLETTER

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Editorial

Welcome to the third issue of the AGS(HK) Newsletter. AGS(HK) continues to move from strength to strength. This year AGS(HK) has already arranged a number of well attended ground forums & CPD courses, new Ground Investigation Guidelines are targeted for publication later this year and the AGS(HK) Working Groups are actively pursuing various industry initiatives.

This issue of the AGS(HK) newsletter is a bumper edition featuring a focus report from our Business Practices Working Group discussing Equitable Risk Sharing, a topical subject which I am sure you will find an interesting read.

AGS(HK) in conjunction with the Applied Geoscience Centre and Hong Kong Construction Association have recently published a new book *Geology of Site Investigation Boreholes from Hong Kong* by Prof Chris Fletcher. A book review can be found within these pages together with details on how to obtain a copy.

This issue also includes reports on a recent AGS(HK) ground forum on *Microtunnelling in the Urban Environment* and also a CPD Course on *Contaminated Land Evaluation and Legal Issues.*

AGS(HK) is a non-profit organization. As a means to cover the publishing cost of this newsletter, organizations are invited to provide sponsorship. Sponsors will be provided with a half page company profile in the newsletter for wide distribution amongst the Hong Kong Geo-Community. Interested parties should contact the Editor (see below).

Comments

Please feel free to send comments to :

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e-mail : david.sein@gammonconstruction.com

AGS (HK) Membership Drive

A familiar question arising from various geotechnical professionals is "How can I become a member of the AGS(HK)?" You may not be aware that :

- AGS(HK) is not a learned society;
- AGS(HK) is a non profit industry organization;
- members mainly comprise organizations rather than individuals;
- academic institutions, client bodies, consultants, contractors and lawyers are typical member organizations which cover the broad spectrum of the geotechnical and geoenvironmental industry; and
- all employees from member organizations are members by default.

AGS(HK) was formed for the purpose of providing an industry voice with a balanced view. Key aims of the AGS (HK) are to :

- promote, enhance and maintain the quality of professional practice in geotechnical and geoenvironmental engineering;
- facilitate close liaison between all geotechnical/ geoenvironmental organizations;
- champion the geotechnical industry in Hong Kong;
- publish guidelines on good practice and on ethical and professional matters;
- encourage quality management systems in geotechnical works; and
- assist and influence decision making within all relevant organizations.

Benefits of Membership

We receive numerous queries from individuals asking if their company is a member and we have provided a list of current AGS (HK) member organizations on the back page of this newsletter.

AGS(HK) would like to thank members for their continued support and participation.

Benefits of being a member organization include :

1. all employees within the member organization are eligible for member benefits;
2. discounted fees for CPD courses organized by AGS(HK);
3. free issues of selected publications from the AGS(HK) such as Ground Investigation Guidelines (GIGs), newsletter, etc;
4. participation in the AGS(HK) Committees & Working Groups; and
5. recognition within the geotechnical or geoenvironmental community and contributing towards the direction and initiatives of the geo- industry.

How to Join

If your company is not a member but would like to join AGS(HK) and contribute towards this dynamic and exciting organization, please contact our Membership Secretary, Mr Y C Chan at e-mail address ycycchan@netvigator.com. Membership application forms may be downloaded from our website. Eligibility for various member classes can be found in the AGS(HK) Rules on our website.

Newsbites

New Ground Investigation Guidelines (GIGs) Under Preparation

In September 2003, AGS(HK) published and distributed to the geotechnical community the first four Ground Investigation Guidelines (GIGs). The four GIGs cover *Contract Documentation, Planning & Programming Considerations, Procurement*, and *Design Guidelines.*

AGS(HK) GIG Working Group is currently preparing three additional GIGs which will cover *Karst, Soft Ground Tunnelling*,and *Supervision.* The target date for publication of these new GIGs is October/November 2004.

The GIGs are aimed at young engineers and geologists involved with the planning, specification, design and supervision of site investigations and AGS(HK) hope they will find the GIGs to be useful tools. Any feedback whether positive or negative is encouraged via gig@ags-hk.org.

Hong Kong University AGS (HK) Scholarship 2004

In the last newsletter, AGS(HK) reported on 2003 scholarship awards at Hong Kong University, Hong Kong Polytechnic University and University of Science and Technology.

AGS(HK) Chairman, Michael Lacy (Benaim), was on hand to present the HK$10,000 AGS scholarship 2004 at Hong Kong University

Acknowledging Contributions to AGS(HK)

In the next few issues of the newsletter, we will be introducing some of the contributions made whose efforts make the AGS (HK) tick.

AGS(HK) Geoenvironmental Working Group recently arranged a very successful CPD Course on the topic of *Contaminated Land Evaluation and Legal Issues* (see article in this issue).

Contributing members of this active Working Group comprise:

- Michael Hendy (Geotechnical Consulting Group) – Chairman
- Graeme Jardine (Mott Connell)
- Carlton Hall (Lam Geotechnics Limited)
- Noël Preston (HDS Preston Ltd)
- Mark Badger (Dibb Lupton Alsop (DLA))
- Peter Rawlings (Gammon Construction Limited)
- Laurence Genée (ERM Hong Kong Ltd)
- Harry Lee (CH2MHill)

If you feel you could make a contribution to this working group, feel free to contact Michael Hendy at mike@gcgasia.com.hk.

Book Prize

Students, graduates and other young attendants of the ground forums are encouraged to submit written records of the presentations and dialogue that take place at the forums. The AGS (HK) offers a book prize to the value of HK$500 for the most concise and well-written record for each of the ground forums held. Suitable records may be sent to Dr Cyril Chan at:

e-mail: hfcchan@fugro.com.hk
postal: c/o Fugro Geotechnical Services Ltd
Units 8-11, 10th Floor
Worldwide Industrial Centre
43-47 Shan Mei Street
Fo Tan, Shatin, N.T.

Equitable Risk Sharing

Editorial Note :

The following article is courtesy of the AGS(HK) Business Practices Working Group. Any thoughts on the article below? Please fell free to express your views by sending letters to the Editor for publication in the next newsletter.

AGS has formed a Business Principles Group to examine and comment on issues of basic business principles pertinent to the members of the Association. This group will aim to identify a relevant issue for review and publication as a discussion in each issue of the AGS newsletter. The first of these discussion papers addresses the equitable sharing of risk between the parties to a Ground Investigation Contract.

Risk is a significant issue in construction below the ground. Risk, its management and the equitable sharing of it have been popular topics of discussion in recent years. Many in the industry consider striking the correct balance in the apportionment of risk and its management could have avoided many of the problems that have beset the industry in recent years.

The Construction Industry Review Committee under the chairmanship of the Hon. Henry Tang considered risk in the context of reforms necessary to improve the local construction industry. Their report provides very strong support to a more balanced apportionment of risk between the parties as a prerequisite to an environment conductive to healthy development of the industry.

Public works have been and are a significant component of demand for Hong Kong's construction sector. Over recent decades the industry has seen risk being progressively transferred from the Employer (HK Government) to Contractors. Many organisations in Hong Kong who procure construction services and are not Government Departments follow the lead taken by HK Government. It is only in recent years following the undermining of confidence in the industry as a result of the mid 90's short piling scandal that certain organizations have embraced a more open and participative contractual model (the partnering concept) and promoted a new apportionment of contract risk.

Many have published on the philosophy of risk sharing in construction contracts and proposed formulae for risk sharing. These formulae all generally conform to the basic principle that the party best able to bear the risk should carry the particular risk. In detail this principle suggests amongst others that:-

- The party who can best influence or control the occurrence of a risk should bear that risk.
- The party who can most economically hedge the consequence of a risk eventuating (for example via insurance) should bear that risk.
- The party accruing the major economic benefit of taking the risk should bear that risk.
- The party best able to manage the consequence of a risk eventuating should bear that risk.

Many Employers consider that passing all risks to the Contractor provides certainty of price albeit at possibly a much higher price than may be desirable. This is not the case in the Hong Kong context

where particularly in the past the competitive nature of the industry and the lowest price tender evaluation policy have meant the contractors' risks are seldom properly priced by the winning tenderer. A market structure that results in the underpricing of risk leads to an adversarial contract relationship with a fertile environment for claims and disputes. Courts and arbitrators will often seek to provide a remedy for a party faced with unduly onerous contract terms.

An unbalanced allocation of risk also jeopardizes the quality of the construction product. Less reputable contractors who have not property priced the risk are much more likely to attempt to take short cuts to save time and cost.

We must consider how many of the large and costly disputes and quality problems (such as the short piling scandal) could have been avoided if more equitable sharing of contract risk had been adopted.

When considering risk in the construction industry context, emphasis is normally placed on the conditions of contract as the primary mechanism for allocating risk. Standard Forms of Contract are only revised infrequently. However the risk apportionment is often revised using special conditions introduced for a particular project but these are retained without proper consideration for future contracts.

The progressive transfer of risk to contractors in the geotechnical industry in recent years has been achieved using other contractual tools such as the project specification and the pricing document.

A few examples of onerous risk being placed on the contractor in the context of ground investigation contracts will be examined to illustrate the strong desire of Employers to place all risk on the Contractor.

There has been an increasing trend for Employers to place the responsibility for negotiating possession of the site to perform ground investigation works with the Contractor even though they have negligible negotiating power in these circumstances. It is never possible to determine the cost of gaining access to private lands at the time of tender and therefore the Contractor takes a significant financial and programme risk. Most Standard Forms of Contract place the obligation to provide possession of the site for the Contractor on the Employer. Ground Investigation works by virtue of their nature as an early task in the project life cycle and their use in feasibility studies means that they are often commissioned well in advance of resumption of land etc. Too often it appears that obligations are placed on the contractor and risks transferred as a matter of administrative convenience for the Employer.

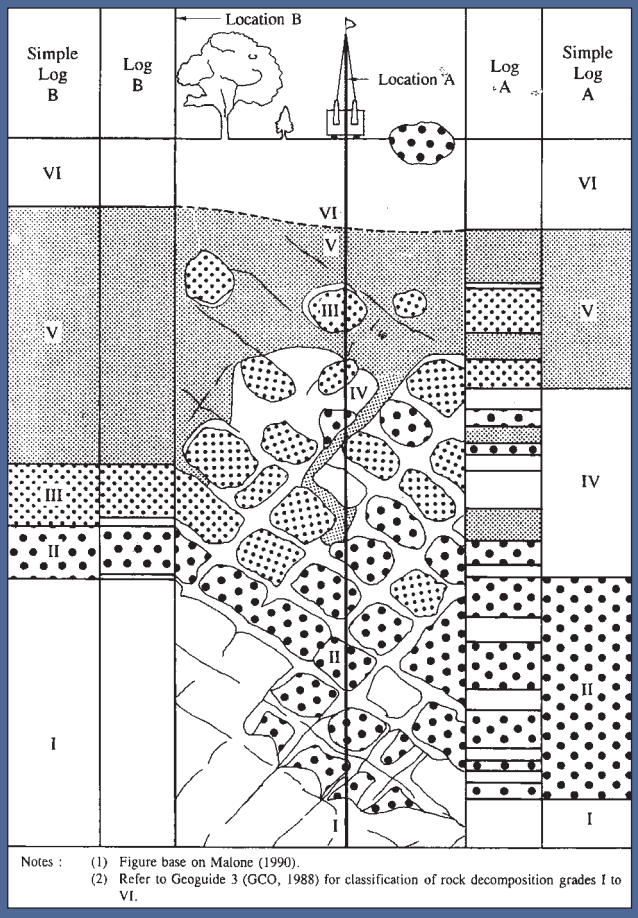
Requirements for founding rock quality in Hong Kong are typically very strict and risks of variable rockhead and weak seams can have an enormous impact on construction costs.

1 July 2003 – Tunnelling Works for Shanghai Metro caused massive subsidence and structures requiring demolition.

1 April 2004 – Collapse of building caused by construction of Shanghai Metro.

20 April 2004 - As a result of the Nicoll Highway collapse in Singapore the contractual tendering process is under scrutiny with possible implications on risk sharing.

9 August 2004 – Underground construction of Kaohsiung MRT in Taiwan caused sinking buildings.



Founding risks such as represented in Figure 2 of GEO publication No.1/96 are often borne by the Contractor.

Financial risk can be passed to contractors in the item coverage adopted in Bills of Quantities. It is relatively common place for example on significant ground investigation contracts that the degree of effort to gain access to a site investigation station can vary greatly from say simple winching to use of helicopters. The Bills of Quantities often provide only a single rate for moving to the investigation station. Subsequent revision of the positions of investigation stations can render the initial tender assumptions inappropriate leading to under or over recovery of risk. Engineers are often reluctant to recognize that this is a Variation and value accordingly. The preparation of comprehensive Bill of Quantities is a time consuming and expensive exercise. Project time frames in Hong Kong perhaps do not allow such comprehensive preparation before calling for tender but the consequence is the transfer of additional pricing risk to the Contractor.

Recent years have seen an increasing use of inclusive rates, where the rate is to include cost components not properly measured by the unit selected for the rate. Where quantities differ greatly from the Bill estimates a substantial under or over recovery of cost can result. Although using all inclusive rates is an expedient technique to allow quick preparation of tender documents, drafters of such documents must recognize their professional responsibility to prepare Bills of Quantities and Schedules of Rates that properly reflect the work to be performed.

At project inception, the Employer and his professional advisers are urged to consider the issue of equitable risk apportionment. A better balanced risk profile between parties to the Contract will result in increased value and quality and the improved working environment necessary to secure the development and success of the industry.

By Ray Wood

Book Launch

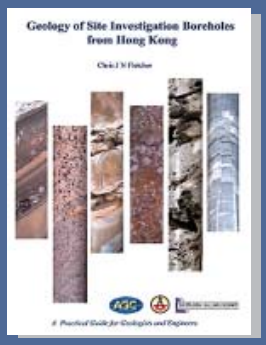
Editorial Note :

On the evening of Tuesday 18 May 2004, AGS(HK) organized a gathering of colleagues at Delaney's Pub in Wanchai for the launch of Prof. Chris Fletcher's book entitled "Geology of Site Investigation Boreholes from Hong Kong". The book is probably the most comprehensive illustrated guide to the geology of Hong Kong ever produced and was prepared under the auspices of the Applied Geoscience Centre of the University of Hong Kong. Funding for preparation and publishing of the book was sponsored by AGS(HK) and HKCA(SICC). A review of the book follows.

BOOK REVIEW

"Geology of Site Investigation Boreholes from Hong Kong"

Prof. Chris J N Fletcher



Geology of Site Investigation Boreholes from Hong Kong, published in May 2004, is a book by Chris Fletcher, which draws on his broad geological experiences in Hong Kong, first as Head of the Hong Kong Geological Survey of GEO, CED and latterly, prior to his recent departure from Hong Kong, as both a consultant (Arrow Geoscience Limited) and Director of the Applied Geoscience Centre (AGC), in the Department of Earth Sciences of The University of Hong Kong (DES, HKU). The book is cosponsored by the AGC, the Hong Kong Construction Association (Site Investigation Contractors Committee), and the Association of Geotechnical and Geoenvironmental Specialists (Hong Kong).

Described by the author as 'A Practical Guide for Geologists and Engineers', the book is the first of its kind, in concentrating on illustrations, and geological interpretations, of samples of rock and soil obtained from boreholes from throughout Hong Kong. A generally consistent format is used throughout with all of the main groups of rocks and many of the individual rock types present in Hong Kong being covered in terms of composition, distribution, geological setting, and site examples. Hydrothermal alteration, deformation, and weathering are also addressed, and there are sections on superficial deposits and karst.

The book is clearly intended to be user-friendly and achieves a considerable success in this regard, being lavishly illustrated, and setting a very high standard in layout and visual impact. The text is comparatively brief, and partly in bullet point form where referring to Diagnostic Features, Key Points, Geological Importance and Engineering Significance.

Although many of the illustrations are of common features, the book includes several features that have either not been illustrated previously, or have not been illustrated well, such as some of the structures. As many of the illustrations are of uncut rock core, a practical limitation, as emphasized by the author, is the distortion of the features illustrated. There are also problems on a few of the core photographs with uneven focus and illumination, but most are of good quality and they comprise a very useful resource overall. The illustrations of soil samples are generally of split samples, with little distortion other than that caused during sampling and some, for example those of laminated silt and clay (Section 16.6.3), are particularly fine.

While broadly consistent with current practice in soil and rock description, as contained in the industry standard of good practice - Geoguide 3, the book also reflects the author's personal views on certain topics, which practitioners using the book should appreciate. Most notable, for example, are the descriptions and examples of weathered sedimentary and metamorphic rocks, and the items listed as being of 'Engineering Significance'. The issue of weathering of sedimentary and metamorphic rocks is particularly problematic from the logging point of view, as recognized in Geoguide 3, and has to be dealt with on a case-by-case basis. The items of engineering significance are not definitive, but they were presumably not intended to be so, given that the author has described many in general terms, such as 'may be' or 'can be'.

In conclusion, the range of lithologies and materials addressed is extensive, and the illustrations in particular comprise a very valuable resource for geologists and engineers working in Hong Kong. Although practitioners using the book should bear in mind that it presents the author's personal view of interpretation of samples obtained in site investigation boreholes, the book is recommended to anyone interested in the geology of Hong Kong.

By Diarmad Campbell

How Do I Get a Copy?

If you would like to obtain a copy of the book, there are a number of options available as follows.

Option 1 : Download the mail-order form from www.ags-hk.org and post to the address shown on the order form. The cost is HK$180 + HK$20 (for postage and handling fee) and the book will be mailed back to your chosen address. Cheques only.

Option 2 : The book is available direct from Double Helix Books in Happy Valley for HK$180 (no postage and handling fee). Opening hours are 10.00am to 8.00pm every day of the week except Tuesdays.

Double Helix Books
1/F Shop A
151 & 153 Wong Nai Chung Road
Happy Valley
Hong Kong

Option 3 : Subject to availability, the following contacts have copies for direct purchase and collection. Cost is HK$180 (no postage and handling fee). Cash or cheque is accepted. Please call in advance to arrange collection.

Michael Lacy (ph: 2527-0233)
Benaim (China) Ltd
25th Floor, SUP Tower
75-83 King's Road
North Point, Hong Kong

Joseph Lo (ph: 2302-1013)
Maunsell Geotechnical Services
20/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, New Territories, Hong Kong

Jeff James (ph: 2839-5639)
Lam Geotechnics Ltd
2304-6 World Trade Centre
285 Gloucester Road
Causeway Bay, Hong Kong

C K Lau (ph: 2893-0444)
Fong On Foundation Limited
Unit 2608-2610, Wing On House
71 Des Voeux Road
Central, Hong Kong

David Sein (ph: 2516-8534)
Gammon Construction Limited
28/F Devon House
TaiKoo Place 979 King's Road
Quarry Bay, Hong Kong

All cheques should be made payable to "AGS(HK) Ltd"

Ground Forum on Microtunnelling in the Urban Environment

Editorial Note :

On 12th May 2004, AGS(HK) held a ground forum on Microtunnelling in the Urban Environment at the University of Hong Kong. Several short presentations were provided by Mr Jim Benson, Mr Alan Thorburn and Mr Boyd Merret followed by an open forum for discussion amongst the participants.

The AGS(HK) offers a book prize valued at HK$500 from Swindon Bookshop for best ground forum notes. The award for a report on this forum was won by a joint submission between Ms Ansie Wong and Ms Jacqueline Wong of Maunsell Geotechnical Services Ltd. An abridged version of Ansie & Jacqueline's report is reproduced below (the complete report can be found on the AGS(HK) website).

A pipejacking machine suitable for rock excavation is entering a reception shaft through a watertight collar in the UK.

Background

Trenchless techniques offer a means of underground pipe installation without the need for temporary open excavation. As a result, this technique significantly minimises the disturbance to the surrounding areas during construction. Pipe jacking or microtunnelling can be used to bore the required underground alignment using a variety of tunnelling shields. Such techniques are not entirely free from open excavation, with the operation requiring a temporary launch and reception shafts at the two ends of the chosen alignment.

Designer's Consideration on Pipe Jacking / Microtunnelling

Mr Jim Benson of Mott Connell Limited reviewed some design considerations of pipe jacking/microtunnelling. He emphasised the importance of ground investigations and their interpretation. Mr Benson recommended that designers should gather sufficient information from both desk studies and GI works to generate reliable longitudinal sections along the proposed tunnel alignment. The data should be carefully studied to determine the possible types of soil or rock that may be encountered in the course of the tunnelling operation. The designer should then take into account

the effect of material properties, thickness and permeability of each geological stratum, as well as the occurrence of corestones, rockhead levels, rockmass characteristics and groundwater tables. In addition to geological information, archival "As-Built" drawings should also be studied to understand the existing foundation and underground utilities along the proposed alignment.

Examples were provided for different situations: a tunnel-boring machine (TBM) with earth pressure balanced mode can be selected for clay to medium sand stratum having permeability less than 10^{-7}m/s; for the case of medium sand to rock stratum with permeability more than 10^{-7}m/s, a slurry type of TBM can be used.

Settlement may occur as a result of excavation through pipe jacking. To reduce the sensitivity of the ground to settlement, various types of ground treatment works can be implemented including jet grouting, silica/cement grouting, grouting using tube-a-manchettes, dewatering and ground freezing.

Tunnelling at shallow depth may intersect contaminated ground and this may compromise the safe working environment and lead to spreading of the contamination outside the immediate area. The Designer should research historical maps, previous ground investigations and "As-Built" drawings to investigate the depth and lateral extent of any contaminated ground.

A 300mm ID jacked concrete coated ductile iron water pipe being launched in Singapore.

A tell-tale sign of excessive settlement around shafts can be 'making up' the ground as can be seen here with the fresh concrete screed adjacent to a shaft in Singapore.

Contractor's View on Challenges and Solutions with Pipe Jacking and Trenchless Works

Mr Alan Thorburn of Fine Projects Limited presented challenges faced by a contractor during pipe-jacking and microtunnelling construction with reference to projects that his Company had undertaken in Hong Kong. On the construction of pipelines at Gloucester Road and Java Road available working space was limited by traffic, pedestrian access and congested utilities. Challenging ground conditions may also be encountered. It is therefore essential to identify a suitable construction method, an appropriate choice of equipment, carefully chosen location of shafts together with skilled operators and crew.

In the course of this presentation, Mr Thorburn shared his experience on how reclaimed land has posed significant challenges on projects. In particular, the variability of fill material including the occurrence of boulders, underground voids or old seawalls which may not be identified during desk study or site specific ground investigations. This was further emphasised by the pipe-ramming project below Harcourt Road in Admiralty that experienced four months delay due to the encountering of old timber piles at the former shoreline. In a recent project involving the use of micro-tunnelling (slurry method) at Gloucester Road Wanchai, machinery encountered unexpected localized underground voids causing a substantial loss of slurry into the surrounding soil.

The final case shared by Mr Thorburn was the installation of a132kV cable at Ap Lei Chau. This involved the construction of a 420m long twin 1800 diameter cable tunnels and associated trenching works. From the information supplied by the Client/Engineer prior to commencement of the works the local geology was shown to compose of predominately Volcanic Tuff with an average strength of 200MPa. However, unconfined compressive strengths of up to 300MPa were encountered in several of the tunnel drive sections. An Herrenknecht AVN 1800T micro TBM was adopted which included a purpose built rock cutting head in a slurry shield. Although progress was slow in the very strong ground the correct choice of machine meant that the tunnel could be completed.

Mr Thorburn described how unforeseeable conditions may result in programme and cost overrun on trenchless tunnelling works. It was suggested that the risks presented by the variable nature of the ground and the limited access for ground investigation might best be shared with the Designer and/or Client through some form of partnering.

This pipejacking machine in Singapore hit a boulder and because it had no cutting discs a rescue shaft needed to be excavated in order to then relaunch the machine.

In Singapore a shaft collapse can be seen adjacent to a canal which in turn induced flooding in the shaft.

DSD's Wanchai-North Point Project

Mr. Boyd Merrett of Leighton Asia Limited shared his experience on the construction of Wanchai East to North Point Sewerage Works for DSD. The project involves an extensive network of pipe jacking in variable ground conditions. Owing to the congested environment, a significant section of the new sewers were installed by trenchless techniques that included 3.1km of 1800-diameter sewers, 770m of 1200-diameter sewers and 58m of 600-diameter sewers.

Difficulties encountered during construction have included: complex utility diversions, the presence of unexpected voids behind inserted sheet piles at shaft locations leading to flooding and high face pressures and obstructions to TBMs that have disabled the cutter-head's advancement. To optimise advance rates Leighton employed an automated lubrication system around the pipe and closely monitored the build up of friction making adjustments to the lubricants where necessary. Interjacks can also be implemented at locations where difficulty in advancement is experienced. Mr Merrett recommended that grouting records be reviewed regularly since any susceptible increase in grout volume can be an indication for underground voids ahead. Site supervision and daily logging is also essential, since the excavation rates in voided areas should also be continuously controlled. TBM operation parameters such as rpm should also be frequently reviewed to ensure the equipment and cutter-head is suitable for advancement.

In conclusion, the Ground Forum provided an excellent opportunity for engineers and other geotechnical professionals from various backgrounds to understand the benefits and problems of pipejacking and micro-tunnelling methods in the urban environment.

By Ansie Wong and Jacqueline Wong of Maunsell Geotechnical Services Ltd

CPD Course - Contaminated Land Evaluation and Legal Issues

Michael Hendy (Geotechnical Consulting Group) introduces the seminar

On 26 Jun 2004, the Geoenvironmental Working Group held a one day seminar on "Contaminated Land Evaluation and Legal Issues". The speakers, practicing professionals from the field, shared their invaluable experience in contaminated site assessment, investigation and associated legal implications.

Mr Michael Hendy introduced the seminar with an overview defining contaminated land, where to find signs of contamination, foreign laws and regulations. Subsequently Mr Mark Badger introduced local laws and regulations relating to contaminated land and cleanup. The applicability, enforcement parties involved and hindrance of current legislations in HKSAR was discussed.

Moving to technical and field procedures, Mr Graeme Jardine offered his local and international experience in desktop / initial field surveys, intrusive ground investigation, various other investigation techniques and health and safety concerns of field personnel. He also suggested improvements to local field techniques and practices.

To ensure contaminated land investigation is carried out in a cost effective manner, good planning is required. Ms Laurence Genée presented her extensive local and Mainland experience in conducting investigations on potentially contaminated land. Also, survey and design considerations for investigation and subsequent remediation were covered.

Accurate result interpretation cannot go without quality laboratory analyses. Mr Carlton Hall discussed his viewpoint on how crucial field sample handling and sample preservation are in obtaining meaningful and accurate laboratory results. Various laboratory analytical techniques, equipment, quality assurance / control schemes (eg HOKLAS) and tips on how to obtain good quality laboratory results (ie. early involvement of laboratory) were presented.

Question and answer sessions were chaired by Mr Noël Preston. Interaction and interflow between audience and speakers on current land contamination and cleanup issues, liabilities, personnel qualifications and expectations among other interesting questions, made the event very lively.

Over one hundred participants attended; the seminar was well received and feedback positive.

Reported by Harry Lee

Diary Dates (Information on upcoming events is updated regularly on our website at www.ags-hk.org)

Event	Date	Time	Venue	Contact/Registration
Member's pre-AGM social gathering (member invite only)	3 November 2004	18:30-20:30	HK Football Club	Michael Lacy michael.lacy@benaimgroup.com
AGM & Ground Forum on "Geotechnical Engineering in Mainland China"	2 December 2004	18:00-20:00	Mariners' Club TST	Michael Lacy michael.lacy@benaimgroup.com
Updates on GEO Geoguides (Lunchtime Seminar - member invite only meal inclusive)	To be announced	12:30-14:30 (tentative)	Kowloon Cricket Club (tentative)	Angus Maxwell angusmaxwell@coffey.com.hk

Letters – Opinions

The AGS(HK) encourages discussion on issues affecting the Association and the industry and the editor will be happy to publish letters from readers on relevant topics. Letters may be sent by email or postal mail to David Sein (contact details refer front page). Authors should indicate their intention for their letter to be published.

AGS(HK) Member Organisations

The University of Hong Kong
Hong Kong University of Science and Technology
Hong Kong Polytechnic University
Hong Kong Technical College (Tsing Yi)
Atkins China Ltd
Au Posford Consultants Ltd
Babtie Asia
Bachy Soletanche Group
Benaim (China) Ltd
CIS Insurance Brokers Ltd
Coffey Asia Limited
DrilTech Ground Eng. Ltd
DYWIDAG-Systems International Far East Ltd
Earth Products China Ltd
EGS (Asia) Ltd
Fong On Foundation Ltd
Foundation Techniques Ltd.
Fugro Geotechnical Services Ltd
Gammon Construction Limited
Geotechnical Consulting Group (Asia)
Geotek Ltd
Halcrow Asia Partnership Ltd
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LMM Consulting Engineers Ltd
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