



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

Editorial

Michael Lacy from Benaim China has completed a very productive two year term as AGS(HK) chairman. Following a visit by Keith Gabriel (chairman of AGS in the UK) in March 2003, AGS(HK) developed an 18 month "way forward" plan. Michael can be commended for his leadership during a period of significant change and for his role in pushing many new initiatives through to fruition. This included the setup of the various working groups and subcommittees which continue to be instrumental in giving focus and structure for AGS(HK) activities. All those who have been involved with AGS(HK) over the past two years would undoubtedly agree that Michael has done an outstanding job throughout his tenure and we thank him for his successful efforts towards strengthening the organisation. Michael continues his representation on the executive committee as immediate past chairman. Many thanks to Michael for all his past and future contributions.

2005 brings a new organization for AGS(HK). We welcome Joseph Lo of Maunsell Geotechnical Services who has taken over the reins as AGS(HK) chairman. Michael Hendy of Geotechnical Consulting Group has been nominated as Chairman-elect, Rajan Khemlyani (Jacobs Babbie) is acting as Treasurer and David Sein (Gammon Construction Limited) continues as Secretary.

AGS(HK) continues a busy schedule of new publications, ground forums, CPD courses and various industry initiatives. This issue of the AGS(HK) newsletter features a focus article on the legal aspects of *Enforcing Performance Bonds and Guarantees* contributed by C Y Choy of Jones Day who also participated as a speaker in the recent CPD Course on Geotechnical Risks Business Practices. This issue also includes reports on the ground forums on *TST Station Modification Works* and *Working in Mainland China*.

AGS(HK) is committed towards promoting the interests of its member organizations. Please contact us with your views on how AGS(HK) might better serve the geotechnical and geoenvironmental profession. Volunteers who wish to get involved or contribute towards AGS(HK) activities are also encouraged to do so.

Hope you enjoy the newsletter.

Comments

Please feel free to send comments to :
Mr David Sein (Administrator and Editor)
The Association of Geotechnical and Geoenvironmental Specialists
(Hong Kong)
c/o Gammon Construction Limited
28/F Devon House, TaiKoo Place, 979 King's Road, Hong Kong
Fax: 2516 6352
e-mail: david.sein@gammonconstruction.com

Newsbites

New Ground Investigation Guidelines (GIGs)

The AGS(HK) GIG Working Group recently issued two further Ground Investigation Guidelines; namely GIG04.6 *Soft Ground Tunnelling* and GIG04.7 *Karst* in Hong Kong. These two documents concluded the series (Chapter 4) on design guidelines. The next GIG will feature Supervision and responsibilities for SI operations and will cover statutory, professional and contractual issues. A supplementary guideline of practical site and equipment checks is also planned.



GIG04-6 and GIG04-7 were distributed to the profession in December 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.

Further GIGs featuring geo-environmental issues are also programmed for publication during 2005. The GeoEnvironmental Working Group plan to provide two GIG's in the first half of the year. The first one will look at legal aspects of contaminated land and follows on from the CPD day last year. The second GIG will cover the analysis of laboratory testing using current HK methods. The Working Group is also planning both lab visits and a site visit to Tsing Yi Shipyard site.

We are pleased to note that formal recognition of the AGS(HK) GIG guidelines was given by Geotechnical Engineering Office, CEDD in their latest GEO Technical Guidance Note No 24 (TGN 24) on Site Investigation for Tunnel Works, making reference to both GIG 4.3 (Deep Excavations) and GIG 4.4. Rock Tunnels.

Acknowledging Contributions to AGS(HK)

The first GIGs were published In September 2003. Feedback has generally been very positive and appreciative with many copies having been distributed into the reference libraries of the geotechnical and geoenvironmental profession.

The success of the GIGs can be attributed to the strong direction

of **Jeff James** of Lam Geotechnics who is chairman of the AGS(HK) Ground Investigation Working Group and also a long serving member on the AGS(HK) executive committee. The GIGs are a result of many extra-curricular hours donated by various individuals including the following:

- ▲ Jeff James (Lam Geotechnics) – Chairman
- ▲ Y C Chan (Geotechnical Engineering Office)
- ▲ Steve Parry (CEDD)
- ▲ Julian Tyson
- ▲ Leslie Swann (Jacobs Babbie)
- ▲ Iain McGlen (Lam Geotechnics)
- ▲ Patrick Cox
- ▲ Louisa McAra
- ▲ Greg Pinches
- ▲ Neil Ng (KCRC)
- ▲ Ian Muir
- ▲ Chris Rigby
- ▲ Malcolm Lorimer
- ▲ Graeme Jardine (Mott Connell)
- ▲ Chris Fletcher

In addition to the above, there were others who kindly offered their services to proofread, comment and edit the GIGs. AGS(HK) wish to gratefully acknowledge the efforts and input of all who have made the GIGs a success.

If you feel you could make a contribution to this working group, feel free to contact Jeff James at jeffjames@lamconstruct.com.hk.

Annual General Meeting 2004 and Chairman's Report



Michael Lacy (Benaim) presents his Chairman's Report for 2004 at City University of Hong Kong.

The AGS(HK) Annual General Meeting was held on 2nd December 2004 at City University of Hong Kong. The proceedings of the AGM were covered and Michael Lacy presented his Chairman's report which covered the following:

- ▲ AGS(HK) working groups have been very active including the **Ground Investigation Working Group** being the most productive having published various new Ground Investigation Guidelines (GIGs).
- ▲ The **Working Group on Communication** has published two newsletters during the year. AGS(HK) organised three forums and two CPD courses although attendance was lower than previous years possibly due to the current economic climate. The AGS(HK) website has also been kept up to date.
- ▲ The **Geo-environmental Working Group** developed a

new directive and arranged a highly informative CPD course on "Contaminated Land Evaluation". The group has also gotten involved in meetings with EPD.

- ▲ The **Business Practices Working Group** arranged an excellent CPD course on "Geotechnical Risks – Business Practices" covering design, insurance and legal aspects. This working group also contributed an article to the newsletter.
- ▲ The **Geophysics Working Group** has not progressed and has been disbanded.
- ▲ AGS(HK) sponsored and arranged distribution of Chris Fletcher's new book on "**Geology of Site Investigation Boreholes from Hong Kong**".
- ▲ AGS(HK) also provided representation on the **GEO Working Group on Guidance Document on Engineering Geological Practice in Hong Kong**.
- ▲ Other activities included a **Member's Evening** at the Hong Kong Football Club and a presentation made to **SSTRB**.
- ▲ AGS(HK) also continues to sponsor three separate HK\$10K **University Scholarships** at HKU, HKPU & HKUST.

Members Evening at Hong Kong Football Club

On 3rd November 2004, AGS(HK) invited authorised representatives of each member organisation to the first Members Evening at the Hong Kong Football Club.

This was a well-attended event with approximately 70% of the members and member organizations represented. The purpose of the evening was to provide an opportunity for representatives of the various member organizations to meet in a relaxed environment with the executive committee. We believe it is important that there is regular interaction between the member organisations and the committee and the Members Evening provided an opportunity to get some feedback about issues AGS(HK) should pursue in the future. Although many member organisations are represented on the committee, we felt that it would be a good idea to hold this evening to give all members an opportunity to have their say.

It is hoped that this get together will be held annually and that it will become a key event in the Association calendar.

Hong Kong University AGS(HK) Scholarship 2005



On 26 January 2005, Michael Hendy (GCG Asia) presented the HK\$10,000 AGS(HK) scholarship to Hong Kong University recipient Rex Ip Luk Yee on behalf of AGS(HK).

AGS(HK) provides HK\$10K scholarships to three universities, namely HKU, HKPU and HKUST.

The scholarship recipient from Hong Kong University, **Rex Ip**

Luk Yee, shared his thoughts on the scholarship with us.

"I am currently studying a part-time MSc Degree in Geotechnical Engineering. In addition to the numerous courses at HKU, I am studying the behaviour of rock-socket piles in my MSc research project under the supervision of Dr. J Yang. I am currently an HKIE Scheme 'A' Trainee (Geotechnical Discipline) with Geotechnical Engineering Office, HKSAR. My short-term career goal is to get charterhip in the coming years and in the future I hope to serve the community in the geotechnical profession. The AGS(HK) scholarship benefits my career with financial support for studies in my post-graduate courses and CPD courses and assists me to acquire knowledge in geotechnical design and construction. I thank AGS(HK) whole-heartedly for their kind support."



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.

Editorial Note :

The following report is reproduced from a winning book report written by graduate engineer, Sammy Yip. Sammy received a book prize to the value of HK\$500. Well done Sammy!



Ground Forum on TST Station Modification Works

The MTR Tsim Sha Tsui (TST) Station Modification Works involved deep excavation and pedestrian subway construction in a busy urban area. The excavation for the subway was as close as 1.5m above the crown of an operating MTR tunnel and the temporary retaining structures a similar distance from the side of the tunnels. The works were therefore associated with high risk. Risk management and mitigation became an extremely critical issue to the success of this project. The challenges and the experience gained in this project were discussed in this ground forum from three different perspectives.



Congested Site at busy Nathan Road (viewed from the Sheraton Hotel).

Project Risk Management

Julian Saunders (MTR)

Mr Julian Saunders kicked off the forum by briefly introducing the concept of risk, the ALARP (As Low As Reasonably Practicable) principle to balance risk and economy and the use of a risk matrix. He then described the approach adopted in the project risk management system. Contrary to the traditional, passive approach in which problems are usually dealt with when problems arise, the risks are dealt with in a more proactive manner. Teams of engineers were set up to identify new risks both inside and outside the construction site. Regular meetings were held to update the risk register in which new risks and new mitigation measures were noted. Ground movement, which is the most catastrophic risk for existing buildings and tunnel, was monitored closely by numerous instrumentations. The resulting risk matrix identified 348 risks, among which only about 100 were foreseen before the construction commenced. The value of insurance claims is \$284,000, which is relatively low for such a high-risk project, and is only 55% of tender allowance on risk mitigation cost. The results showed the importance of a proactive approach in risk management, particularly in such a high-risk project. Finally, Julian commented on the high cost of construction insurance and proposed that if good risk management were implemented by all, a case could be put forward to the insurance industry to reduce premiums.



Nathan Road Site (viewed from the Hyatt Hotel).

Risk Assessment and Prediction - Designer's perspective

Michael Lacy (Benaim)

In the second presentation, Mr Michael Lacy explained the importance of considering real construction situations for designers. As the deep excavation temporary works designer, the main concern was ground settlement, which is caused by installation of wall, excavation and dewatering. Settlement due to wall installation can only be assessed by experience, while that due to excavation and dewatering were predicted by FLAC modeling and seepage analysis respectively. The design was optimized by considering various wall options and construction sequences. In the end, the final design was a combination of pipe piles and sheet piles with toe grouting. As the geotechnical parameters are always subjected to uncertainty, sensitivity analyses were carried out to predict a possible range of ground movement. Instruments were installed to monitor the movements, which were found to be less than predicted.



Vertical screed for casting of concourse wall

Risk Management – Contractor’s perspective

Phil Gunning (Kumagai Gumi)

In the last presentation, Mr Phil Gunning reviewed the major risks. These are tunnel deformation, tunnel flotation if the cofferdam was flooded and building settlement. Regarding construction, Giken Press-In piling method and Gammon Closed Loop Pipe Pile System were chosen to install sheet piles and pipe piles respectively to minimize noise, vibration, ground disturbance and water ingress into the cofferdam. The Closed Loop System was also compared with the conventional Down the Hole Hammer. To prevent flotation and deformation of the existing tunnel, ballast was maintained above the tunnel at all times during excavation. Because of the high risk, extensive instrumentation was installed to monitor the tunnel and ground continuously. Despite the huge amount of data, spreadsheets were used to analyze the data automatically. A maximum tunnel deformation of 9mm (upwards) was measured at the tunnel crown and was less than the alert level of 12mm. Maximum building movement recorded was 4mm, which is satisfactory. Despite one flooding incident, the instrumentation indicated that trains can still operate safely in the tunnel. This highlights the importance of having adequate instrumentation, otherwise, the MTR tunnel might have to stop service during a very busy time. There were not many problems and the work was finished ahead of schedule.



Casting concourse extension base slab below Nathan Road excavation (MTR Tsuen Wan Line Tunnel in close proximity below).

Conclusion

In this forum, invaluable experience from three different perspectives – designer, contractor and project manager - were

shared with the audience. This ground forum covered the identification, monitoring, assessment, mitigation and management of risks at MTR TST station modification works. This was followed by a question and answer session. Many questions were raised by the audience. One of these addressed whether the existing tunnel's lining can be modified to reduce its sensitivity to the nearby deep excavation works. It was suggested that precast concrete segmental lining might be strengthened by a 200mm layer of grouting. Another view was to avoid damage by making the tunnel lining more flexible, for example, by releasing some bolts and installing a compressible washer at the joints. Julian Saunders' comments on construction insurance were also revisited and discussed.

To conclude, this ground forum successfully encouraged a sharing of experience and knowledge, and provided a good overview of risk management for young engineers.

Sammy Yip, Graduate Engineer



CPD Course on Geotechnical Risks – Business Practices

On Saturday 25th September 2004, AGS(HK) held a 1 day CPD Course on Geotechnical Risks – Business Practices at the Mariners' Club. Several short presentations were carried out by Mr Tom Henderson, Mr Steve Hencher, Mr C Y Choy, Mr Nigel Wood, Mr Phil Jones and Ms Deanna Seow.

Mr Tom Henderson and Mr Steve Hencher covered 'Best Practice in Planning, Investigation, Design and Implementation of a Project' and 'Unexpected Ground Conditions and How to Avoid Them' respectively. These lectures covered more practical issues associated with the role of Geotechnical Engineers in project teams, identification of geotechnical risk, and communication between all parties regarding geotechnical risks. There was an interesting summary of case studies discussing where identification of risk should of been 'foreseen' or 'unforeseen'.

Mr C Y Choy, Mr Phil Jones and Ms Deanna Seow covered 'Risk of Ground Conditions – Current Legal and Contractual Issues', 'Expert Witness Experience and Practice from an Engineer's Perspective' and 'The Resolutions of Construction Disputes – Some Issues and Reflections' respectively. These lectures looked at the contractual and legal issues associated with geotechnical risk, the role of an expert witness and some interesting case studies. The general consensus was that 'risk should be allocated to the party best placed to undertake them commercially'.

Mr Nigel Wood covered 'Insurance and Risk Mitigation'. The lecture covered the current position of insurers when looking at premiums for civil engineering contracts and the move towards the preparation of risk registers and general risk management as a way of lowering escalating insurance premiums for Contractors and Consultants.

The lecture was well attended with representatives of different levels from a range of different professions (Legal, Insurance, Consultants and Contractors). Overall the CPD course was very successful and well attended.

Iain McGlen (Lam Geotechnics Limited)



Enforcing Performance Bonds and Guarantees: Ways to Avoid the Risk of Duplicate Proceedings

Abstract

Insolvency is a particularly real risk within the construction industry. For this reason, employers typically require main contractors to furnish performance bonds to secure their performance during the construction and maintenance periods. In the case of a conditional bond, as the employer must prove that it had incurred damages occasioned by main contractor's default(s) to call on the bond, employers typically do so only after they obtain an award against the main contractor. The recent case of Weltime Hong Kong Ltd v Cosmic Insurance Corp Ltd [2004] 2 HKC 155 however demonstrated that, in the absence of "special agreement", the employer cannot rely on an award against its main contractor as evidence to enforce a conditional bond against the financial institution.

Although this case sends a clear message to employers that they assume the risk of careless drafting in performance bonds for their benefit, the underlying principle cuts both ways. The main contractor who relies on a parent guarantee from a big-name listed developer to do business with its two-dollar company subsidiary likewise faces the same consequences should the guarantee fail to cover its award against the subsidiary. For those who presently hold conditional bonds that do not contain any "special agreement" or arbitration clause, in the event of a dispute with the developer or the main contractor, they should evaluate whether it would be in their best interests to first institute court proceedings against the financial institution rather than proceed against the main contractor in arbitration.

Introduction

Most employers recognize that the risk of insolvency is particularly elevated within the construction industry and that safeguards are required to protect them from the consequences of the main contractors' insolvency. This is why in construction contracts of any kind there are almost invariably provisions requiring the main contractor to furnish a performance bond (usually for a percentage of the tender price) by an approved financial institution within a certain period of time of the award of the contract to secure its performance during the construction and maintenance periods.

A performance bond in the construction context is essentially a deed whereby the financial institution promises to pay the employer a cash sum in the event of default by the main contractor. The two types of performance bonds commonly used in the Hong Kong construction industry are the "conditional" and "on-demand" bonds. The difference between the two lies in the evidential requirements which have to be satisfied before the financial institution is obliged to make payment to the employer:

- ▲ If the performance bond is an on-demand bond, the employer is not required to prove that the contractor is in breach of its obligations under the construction contract. Typically, all the employer has to do to call on the bond is to:
 - ☐ state that there has been default by the main contractor under the construction contract;
 - ☐ prepare in good faith a statement of damages arising from the main contractor's default(s); and

- ☐ comply with any formalities or procedures specified in the bond for the call on the bond.

- ▲ In contrast, in the case of a conditional bond, the employer must prove that it had sustained damages occasioned by main contractor's default(s) (see the English House of Lords' decision in *Trafalgar House Construction (Regions) Limited v General Surety and Guarantee Company Limited* [1995] 3 All ER 737). If the employer succeeds, it can make a call upon the bond up to the amount of the damages proved in accordance with any formalities or procedures specified in the bond.

Due to its evidential requirements, employers often call on a conditional bond only after obtaining an arbitral award against the main contractor. Many employers are however unaware that the financial institution is actually not bound to regard an award against the main contractor as proof of the main contractor's default(s) unless otherwise stated in the bond itself. The recent decision of the Court of the First Instance of the High Court of Hong Kong in *Weltime Hong Kong Ltd v Cosmic Insurance Corp Ltd* [2004] 2 HKC 155 confirmed that, in the absence of agreement, the employer cannot rely on an award against its main contractor as evidence of the findings of fact or the conclusions of causation to enforce a conditional bond against the financial institution. An employer may therefore be faced with the unhappy prospect of having to retry its claim(s) against the financial institution in court should the financial institution choose to resist its call on the conditional bond, even though the employer already has an award against the main contractor.

It should be noted that the above is not a new concept or "risk" facing employers or contractors. It was highlighted as long ago as 1881 when the English case of *Re Kitchin* (1881) 17 ChD 668 decided that unless the guarantor has explicitly agreed otherwise, a judgment or award obtained by the creditor against the debtor does not bind and is not evidence against the guarantor and the creditor must prove the debtor's liability against him.

The case of *Weltime v Cosmic Insurance* however is a timely reminder to the Hong Kong construction industry that both employers and contractors should draft the terms of their performance bond carefully.

THE CASE: WELTIME HONG KONG LTD V COSMIC INSURANCE CORPORATION LTD

The Facts

In *Weltime v Cosmic Insurance*, a property developer, had engaged a main contractor for its residential development in the New Territories, Hong Kong. As required under the contract, the main contractor procured a conditional bond for HK\$29,900,000.00 from an insurer, in favor of the developer to guarantee the main contractor's contractual obligations.

Disputes arose between the developer and the main contractor during the execution of the works. These disputes were duly referred to arbitration in accordance with an arbitration clause under the contract, and in due course, the arbitrator awarded the developer damages in the amount of HK\$17,102,218.97 for the main contractor's defaults in its performance of the contract.

The main contractor failed to honor the award. The developer, as expected, then proceeded to serve on the insurer a demand for payment under the conditional bond. The insurer asserted that it had been unaware of the arbitration proceedings and the award until the demand was served on it and refused to pay the developer.

The developer then commenced court proceedings against the insurer and applied for summary judgment for the sums due. The developer contended that the arbitral award constituted conclusive evidence of the main contractor's defaults and of the developer's consequential loss and damage for which the insurer was liable as surety.

The Decision

The court dismissed the developer's application on the basis of its finding that the arbitral award had no evidential value in the developer's proceedings against the insurer. The court held that:

"The [developer] needs to establish against the [insurer] afresh at the trial of this action the defaults on the part of [the main contractor] and the loss and damage that it had suffered as a result."

The grounds for the court's decision are as follows:

- ▶ There is a well-established common law principle that in the absence of "special agreement", the general words in a conditional bond guaranteeing the due performance of all the obligations of the main contractor do not mean that the financial institution is bound by an award between the employer and the main contractor;
- ▶ This principle applies even in cases where the award arises out of an arbitration clause in the contract containing the obligations guaranteed by the financial institution;
- ▶ Serious injustice could occur if the financial institution were bound by the award of an arbitration to which it was not a party, for example, where:
 - ❑ the main contractor fails to argue or plead relevant points which would disentitled the employer to some or all of the amounts awarded; or
 - ❑ the main contractor makes admissions in the course of the arbitration without the financial institution's approval; and
- ▶ The mere fact that insurer knew at the time it granted the conditional bond that any disputes between the developer and the main contractor would be conclusively resolved by arbitration did not amount to a "special agreement", on the part of the insurer that it accepted the award as conclusive evidence binding on it when the developer sought to enforce the conditional bond in some other proceedings.

Discussion

There is sound basis for the court's decision in *Weltime v Cosmic Insurance*. First, as an arbitrator is appointed by the parties and as his authority derives from the arbitration agreement, it follows that the legal effects of his award are restricted to the relationship *inter partes*. Moreover, there is a legitimate concern that serious injustice may occur if third parties which have not had an opportunity to participate in the arbitration proceedings and be heard, are held to be bound by the arbitral award.

In practical terms however, there is no doubt that following this decision, employers in Hong Kong who rely on conditional bonds only as a last resort when they are unsuccessful in enforcing awards against their main contractors, may run the risk, in the absence of some "special agreement", of re-litigating the entire dispute in court. Worse, there is no assurance that the same favorable findings made in the arbitration would similarly be made in court.

One may speculate whether the decision would have been different if the insurer had been informed about the arbitration, and even attended the hearing. In the case of an award against

a two-dollar subsidiary, would there be a "special agreement" imputed if the directors of the big-name developer are also directors of the two-dollar subsidiary and/or are running the project in question? These questions remain untested by the courts.

Whilst the court did not specifically define what would constitute a "special agreement" to bind a financial institution to the arbitral award of an arbitration between the employer and the main contractor, one can reasonably infer from two aspects of the decision that nothing less than a clearly worded provision in the conditional bond or a separate undertaking by the financial institution in clear terms would ensure that this risk is avoided:

- ▶ the court's reliance on the English Court of Appeal's decision in *Re Kitchin* (1881) 17 ChD 668 where James LJ held:

"... It is contended that [the surety] is liable to pay any sum which an arbitrator shall say is the amount of the damages. The guarantee must be expressed in very clear words indeed before I could assent to a construction which might lead to the grossest injustice..." (emphasis added); and
- ▶ the court's finding that there was no "special agreement" on the facts based on a review of the terms of the bond in question and the extrinsic evidence adduced.

The Aftermath

To avoid the risk of duplicate proceedings, employers should consider inserting a provision to stipulate:

- ▶ that the financial institution will honor an award of an arbitration between the employer and the main contractor even though it is not a party to that arbitration; or failing agreement to this provision,
- ▶ that any dispute which may arise between the financial institution and the employer in connection with the bond is to be referred to arbitration.

The earlier provision may enhance the prospect of making the arbitral award conclusive evidence of the main contractor's defaults and of the employer's consequential loss and damage as against the financial institution, whilst the latter provision (a distant second choice and only if the first option is rejected) may enable the employer to simultaneously commence arbitration proceedings against both the financial institution and the main contractor with a view to applying (where possible) for a joinder of proceedings, or at least seeking to appoint the same arbitrator in respect of both proceedings.

For those employers currently holding conditional bonds which do not contain any "special agreement" or arbitration clause, in the event of a dispute with the main contractor, the best chance of recovering compensation for the main contractor's default(s) may well be to first commence court proceedings against the financial institution directly. This would especially make sense if its estimated claim amount is less than or equal to the bond amount or if the main contractor is insolvent.

FURTHER INFORMATION

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Readers are urged to consult their regular contacts at **Jones Day** or the authors of this article, **Choy Chee Yean** (telephone: 65.6233.5550; e-mail: cychoy@jonesday.com) or **Howe Pin Yit** (telephone: 65.6233.5509;

e-mail: pyhowe@jonesday.com), concerning their own situations or any specific legal questions they may have. General e-mail messages may be sent using our Web site feedback form, which can be found at www.jonesday.com.

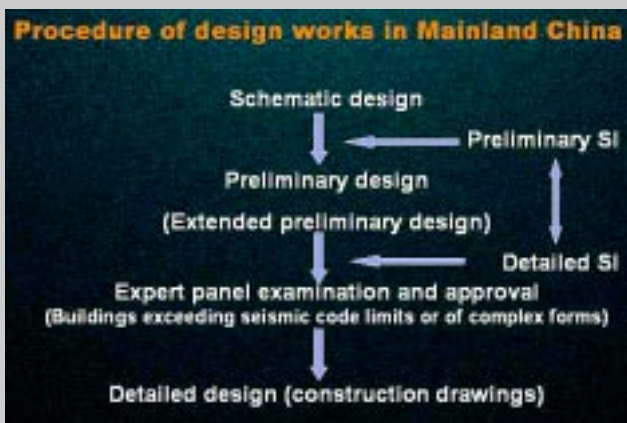
Ground Forum on Working in Mainland China

On 2nd December 2004, AGS(HK) held a ground forum on "Working in Mainland China" at City University of Hong Kong. After the 7th Annual General Meeting was officiated by our Chairman, Mr Michael Lacy, four short sessions of presentation were provided by Mr L M Mak, Dr Gary Ge, Mr Mark Choi, Dr Morgan Yang and Mr Joseph Lo. Over 70 members attended the talks and were able to share in some valuable experience of working on the Mainland.



L M Mak shares his valuable experience on Mainland China projects.

The first session was presented by Mr L M Mak and he focused on a couple of Mainland projects and a project carried out in Macau. He referred to basement development projects and pointed out the major differences in handling Mainland projects, such as complex geology, various engineering approaches, and codes of practice, etc. His discussion topics provided the audience with some brief ideas on how to run a design project outside HK.



The second session of the forum was jointly presented by Dr Gary X W Ge and Mr Mark K M Choi under the topic of "Deep Foundation Design in Mainland China & Projects in Beijing". Their presentation focused on the determination of loading combinations, bearing capacity checking and settlement analysis for pile foundation. Formulas extracted from different codes of practice were clearly illustrated and discussed. The comparison of different allowable foundation deformation in accordance with National, Beijing and Shanghai codes was briefly discussed. According to the speakers' experience, in cases of contradiction amongst the different national or local codes, the most stringent

analysis should be adopted. Mr Choi also described other design issues and shared his experience on some major building projects in Beijing.

After a detailed discussion on the building foundation design in China, the forum turned to another topic on infrastructure – "Tunnel Construction in China" by Dr Morgan W W Yang. Dr Yang gave us a brief summary on the increasing trend of highway tunnels in China. Up to 2002, there were 1782 highway tunnels in China with a total length of 704km. The current national trunk road development planning indicates that five large scale north-south highways and seven east-west highways will be constructed in the near future. Furthermore, there are some other Metro underground railway systems in Chinese large cities already under construction or planning. The combined number of national trunk roads and Metro projects involve a tremendous number of tunnel construction projects. Dr Yang also discussed the recent development of TBM construction in China including the typical TBM construction techniques and challenges. In the

presentation, he shared his experience and presented brief highlights of some mega-scale TBM projects in Shanghai, Wuhan and Nanjing. Last but not least, Dr Yang introduced a new Chinese TBM machine, 先行號 which was developed by a Shanghai manufacturer.



View of the largest tunnel under construction in Mainland China.
上中路隧道

To conclude this forum, Mr Joseph Lo identified the major difficulties that Hong Kong engineers may likely anticipate if they are involved in Mainland projects. Joseph covered differences in communication, relationships, ethics and engineering practice. By referring to his practical experience, Joe advised our members on how to prepare themselves to be competent working in Mainland China, under a working environment with a different culture and technical background.

Mr Y C Lam (Maunsell Geotechnical Services)

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 e-mail or postal mail to David Sein (contact details refer front page). Authors should indicate their intention for their letter to be published.



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

Event	Date	Time	Venue	Contact/Registration
Ground Forum on the Future of the Geotechnical Industry	19 May 2005 (Thu) (tentative)	18:30 – 20:00 (tentative)	To be announced	Mark Wallace mark.wallace@arup.com
CPD Course on Site Investigation	28 May 2005 (Sat) (tentative)	09:30 – 12:30 (tentative)	HKUST (tentative)	Barry Sum barry.sum@maunsell.aecom.com
Ground Forum on Geotechnical Failures and How to Prevent Them	23 June 2005 (Thu) (tentative)	18:30 – 20:00 (tentative)	To be announced	Mark Wallace mark.wallace@arup.com
CPD Course on Ground Contamination	2 Jul 2005 (Sat) (tentative)	09:30 – 12:30 (tentative)	To be announced	Mike Hendy mike@gcgasia.com.hk
Ground Forum on Cost Effectiveness of Instrumentation	18 Aug 2005 (Thu) (tentative)	18:30 – 20:00 (tentative)	To be announced	Angus Maxwell asm@maxwellgeosystems.com
CPD Course on Tunnelling	9 Sep 2005 (Fri) (tentative)	09:30 – 17:00 (tentative)	To be announced	Joseph Lo joseph.lo@maunsell.aecom.com



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)
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 Au Posford Consultants Ltd
 Babbie Asia
 Bachy Soletanche Group
 Benaim (China) Ltd
 CIS Insurance Brokers Ltd
 Coffey Asia Limited
 DrillTech 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
 KCRC
 Lam Geotechnics Ltd

LMM Consulting Engineers Ltd
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