

AGS (HK)

# 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

Welcome to a further edition of the AGS (HK) Newsletter.

The New Year has seen the continuation of a relatively dry construction market in Hong Kong to which contractors and consultants alike have continued to turn to Macau and further a field to make up their turnovers. The industry eagerly awaits a resurgence of the private sector and the realisation of the HK \$29 billion a year earmarked by the government for infrastructure development.

The Association saw another active year in 2006, holding various events including keenly attended seminars on Tunnelling and the Observational Method of Design and jointly organising further seminars with fellow organisations. A number of these are described in the articles to follow. All members of last year's executive committee, subcommittees and working groups and the speakers of the various seminars are thanked for their hard work throughout the year.

In December 2007, the AGS (HK) published a new "GIG," or best practice guideline, No. 7.1 entitled *Land Contamination Investigation*. This covers practical issues related to intrusive contamination investigation. All GIGs published to date have now been uploaded to the website (see "Course Notes and Ground Investigation Guidelines (GIGs)" in the download area at [www.ags-hk.org](http://www.ags-hk.org)).

In recent weeks, the Association restructured its subcommittees and working groups with the aim of achieving tangible objectives in 2007 in terms of the publishing of GIGs and the holding of seminars and ground forums (see below for more details).

The Association thanks Michael Hendy for his continued tenure as Chairman in 2007 and conveys its heartfelt thanks to the hard work of Dr Alan Kwong, Dr Cyril Chan and Dr Y C Chan, whom have stepped down from the Committee. Several new members are welcomed to the Executive Committee (see below for details) and Dr Angus Maxwell is congratulated on his nomination to Chairman-elect for 2007.

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

We hope you enjoy the newsletter.

#### Comments

Please feel free to send comments to :

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#### New Faces

The Association warmly welcomes the following new faces to the Executive Committee:

##### Dr Jun Yang (Hong Kong University)

Dr Jun Yang takes over from Dr Alan Kwong as the HKU representative. Dr Jun Yang undertook a number of years of research in Japan and Germany before joining the University of Hong Kong in 2003. His research spans a spectrum of topics in geotechnics and earthquake engineering. Current interests include earthquake ground response, seismic performance of geotechnical structures, geomaterial behaviour and constitutive modelling, pile foundations, retaining structures and slopes.



##### Philip Daynes (Atkins China)

Philip Daynes is a Senior Engineer with Atkins China Limited. After graduating in Ireland, Philip joined a leading UK design-build geotechnical contractor, where he held a number of design and site management positions, working on projects throughout the UK and Ireland. This included secondment to a site investigation company. He subsequently worked in the United Arab Emirates for a UK-based consulting firm before joining Atkins.



### Dr Johnny Cheuk (Personal member)

Dr Johnny Cheuk obtained his PhD from Cambridge University. He joined City University of Hong Kong in 2005 as a Lecturer after a short service at Maunsell Geotechnical Services Limited. Dr Cheuk's major research interests have been offshore and slope engineering through the use of physical and numerical modelling techniques.



### Dr Sam K.C. Ng (Personal Member)

Dr Sam Ng gained his PhD in Geology from the University of Alberta in Canada. He joined the Geotechnical Engineering Office of the Hong Kong Government in 1994. Prior to that he practiced in the Cayman Islands and the United States. He is a Chief Geotechnical Engineer and heads the Planning Division, which focuses on geological survey, engineering geology, terrain evaluation and natural terrain related studies.



### Chris Lee (C M Wong and Associates Limited)

Chris Lee graduated from The University of Hong Kong in 1994. He initially worked as a graduate engineer and assistant engineer in Maunsell Geotechnical Services Ltd during which time he was involved in various private development projects and gained design and site experience in site formation, slope upgrading works and excavation and lateral support (ELS) works. He then joined C M Wong and Associates Ltd. in 2000 and is currently a Technical Director there. He is currently working as a Project Manager/ Deputy Project Manager for LPM Stage 2 and 3 studies for the GEO in addition to upgrading/improvement of slopes and retaining walls projects for HyD and DSD. He is also an RGE for numerous private development projects.



A further new member to the Executive Committee is **Simon Pyle** of Fugro Geotechnical Services Limited.

## Working Groups

In early 2007, the Executive Committee unanimously agreed to restructure its working groups and subcommittees. This has allowed the various areas of responsibility to be more clearly defined and provides an improved level of focus to the groups for achieving real objectives in 2007.

Areas of responsibility such as membership and communication have been reassigned from standing committees to individuals within the Executive Committee and the number of groups has been streamlined from six to five as follows:

### 1. Geoenvironmental Working Group

This group, chaired by Michael Hendy of OnlyGeotechnics works to raise the profile of geoenvironmental engineering in Hong Kong and provide an authoritative voice on the investigation, remediation and design approaches to contaminated land and landfills. The group aims to improve awareness and understanding of the implications of contaminated land and landfills to industry and society and promote the consideration of both geotechnical and geoenvironmental issues in the assessment of land quality.

### 2. Ground Investigation Group

This group, chaired by Iain McGlen of Lam Geotechnics has a relatively long history in the Association and was responsible for the publication of the initial series of GIGs or good practice notes on ground investigation. These covered the planning and procurement of ground investigations, contract documentation and considerations for the design of ground investigations. The group will continue much in the same vein in 2007 and onwards with the review of ground investigation practice and the subsequent publication of further GIGs. It will review new and developing areas of ground investigation that may have not previously been covered in the existing GIGs. The group will further hold forums or seminars on areas of ground investigation where it considers young geotechnical practitioners require training and knowledge, where work practices need improvement or where clients or supervisory staff would take benefit from guidance.

### 3. Design for Safety Group

Designers have an important role to play in ensuring safety in foundation and geotechnical works, both in terms of design and planning measures to eliminate or mitigate risks and in ensuring designs are robust. This newly formed

group, chaired by Jonathan Li aims to explore this relatively “fresh” area of geotechnical engineering with the underlying objective being the improvement of safety on construction projects in Hong Kong. This will be achieved by raising awareness and promoting discussion on safety issues through ground forums and seminars and by promoting best practice through appropriate publications.

Preliminary objectives of the group are as follows:

- The carrying out of a survey of consultants and contractors on design for safety in terms of perceptions and practices. This will provide a useful tool for gauging the current situation in Hong Kong and will provide a solid platform for decision making by the group in the future.
- The holding of an evening ground forum with a “balanced” collection of speakers to promote dialogue and exchange experiences and ideas on the subject.
- The holding of a daytime CPD seminar on the topic to appeal to a wide audience of varying experience.

#### 4. Tunnelling Group

The Association has for some time now held seminars and forums related to tunnelling and this area of geotechnical work appears set to continue to be of great relevance to the development of Hong Kong’s infrastructure for the foreseeable future. The tunnelling group was formally established in 2007 under the leadership of Joseph Lo of Maunsell Geotechnical Services and has set its medium-term objectives as follows:

- The publication of a set of best practice guidelines named *Tunnelling Construction Guidelines* (TCGs). Likely topics for the first two TCGs include TBM selection for varying ground conditions and the sinking of vertical shafts (targeted for July 2007). Other potential topics include drill and blast tunnelling.
- Organisation of a technical seminar on tunnelling targeted for early 2008.

#### 5. Sustainability in Geotechnics Group

There is an increasing trend within society and the industry to set sustainable objectives for the good of ourselves and future generations. Sustainability should form the basis by which we all operate and do business. This recently formed group under the leadership of Mark Wallace of Arup aims to review and consider the issue of Sustainability within the Geotechnical and Geoenvironmental industry in Hong Kong and seeks to promote sustainable ideas and further the discussion on those ideas and concepts.

The principle objectives of the group are to:

- Raise the awareness of sustainability issues for the industry.
- Research the current status of government policy and approach to sustainability in Hong Kong and China.
- Prepare guidance documents and inform our members through the newsletter, seminars and articles.
- Prepare a questionnaire to send out to the industry to gauge current sustainability trends and approaches.
- Consider a seminar / CPD course in late 2007 to cover sustainability within the industry, local government and developers.

### 2006 Annual General Meeting and Ground Forum on Baseline Reporting

On the 13th December 2006, the AGS (HK) held its Annual General Meeting and, in conjunction with the Tunnelling Society, a ground forum on geotechnical baseline reporting at the Hong Kong Football Club.

The AGM included the presentation of the Chairman’s report by Michael Hendy. Michael summarised the activities of the Association during 2006, thanked the outgoing members of the Executive Committee for their hard work during their service and welcomed new members. Michael further congratulated Dr Angus Maxwell for his appointment to Chairman-elect for 2007.

The ensuing Ground Forum on geotechnical baseline reports (GBRs) as related to tunnelling was a lively affair with a balanced mix of views presented. Speakers included Dr Angus Maxwell of Maxwell Geosystems Ltd., Bob Frew, whom is a Technical Director of Maunsell Geotechnical Services Limited, Hans Sundstrom whom is the Construction Manager of the ongoing Ocean Park Tunnel and Site Formation works and Adrian King, a professional insurance broker with 45 years of experience. Sincere thanks must also go to David Salisbury of Ove Arup and Partners for chairing the session.

GBRs originated in the United States following the publication in 1974 of a landmark report, *Better Contracting for Underground Construction* by a panel of the National Academy of Sciences (NAS). The panel was formed to address the high and uncertain costs of tunnelling in relation to risks of subsurface conditions. In total, seventeen recommendations were made in the report, of which the emphasis was on the uncertainty and associated risks of natural and man-made subsurface conditions.

Ronald Smith, in his paper *Geotechnical Baseline Reports: State of the Practice* (2001) describes GBRs as “non-typical

geotechnical investigation reports” and “neither are they pre-bid evaluation reports developed for a contractor preparing a bid for a specific project.” Smith cites their main function as the portrayal of a realistic interpretation of the subsurface conditions that are anticipated in the proposed construction. They should include not only the mean conditions of ground behaviour and groundwater conditions anticipated during construction, but should also address the range of variances that is expected in these relevant geotechnical characteristics. The purpose of a GBR is to establish a realistic and common basis for all contractors to use in preparing their bids and subsequently a basis for evaluating any contractor claims for differing site conditions that develop during construction. The value of GBRs has been a topic of highly varied opinion in the industry since their conception.

Specific issues discussed at the forum were the need for GBRs in Hong Kong, the implications on insurance and which parties would benefit and which would be disadvantaged.

Following the Ground Forum, attendees were invited to complimentary drinks and snacks provided by the Association.

### Seminar on Managing Contaminated Lands in Hong Kong

The AGS (HK) supported this seminar that was held on 9th February this year and organised by the Chartered Institution of Water and Environmental Management Hong Kong (CIWEM HK). Michael Hendy (Onlygeotechnics) and Iain McGlen (Lam Geotechnics), both from the Geoenvironmental Working Group of the AGS (HK) presented case studies on site investigation in contaminated land, considering both theory and practice.



*Michael Hendy and Iain McGlen receiving gifts from Damien Ku, the International Vice President of CIWEM following their presentation at the CIWEM HK seminar on Managing Contaminated Lands in Hong Kong*

### Site Visit to Kowloon Southern Link

A visit by AGS (HK) members to the site of KCRC Contract KDB200 was held on the 12th August 2006. This is a design and build contract covering the new West Kowloon Station and railway tunnels running southward from the West Kowloon reclamation along Canton Road, then past the Peninsula Hotel and YMCA building to connect to East Tsim Sha Tsui (East TST) Station. This forms an integral part of the KCRC Kowloon Southern Link (KSL) project, linking the West Rail and East Rail lines between Nam Cheong Station and East TST Station. The contract was awarded in July 2005 to the Leighton – Balfour Beatty – Kumagai – John Holland Joint Venture, later renamed the “Link 200 Joint Venture.” The approximate contract sum is HK\$2 billion.



*Ongoing TBM assembly works*

A delegation of 15 people gathered at the site office, located within the Canton Road Government Offices at 9am on the morning of the 12th. An interesting introductory presentation on the project was made by the JV’s tunneling manager, Mr David Hake. David explained the overall project and its various aspects including the challenges and constraints that needed to be tackled.

In brief, a twin tunnel will be constructed between the proposed West Kowloon Station and the existing East TST Station using a Herrenknecht 8.0m diameter slurry Tunnel Boring Machine (TBM). The tunnels run beneath Canton road, where the two will be stacked and will then turn into Salisbury Road beneath the former Marine Police Headquarters. The connection to East TST Station lies in front of the Sheraton Hotel. Open excavation works include the launch shaft adjacent to the site offices, the extraction shaft and two Emergency Egress Points (EEP) along Canton Road.



*Pre-cast TBM Segments*

Constraints on the project include: geological difficulties such as mixed ground conditions, the proximity of the two large diameter tunnels to one another, traffic diversion arrangements, tight movement controls on existing buildings and utilities, congested working space, environmental controls, proximity to key businesses and residential communities and a tight construction programme, all of which provide interesting challenges for engineers on the project. The delegation was also introduced to the real-time visual monitoring system installed on top of the site offices, which was made available for viewing during the visit. We were impressed by the time-lapse construction sequence shown to us.

Following the presentation, the delegation visited the site where the final stage of the TBM assembly was ongoing. Other activities such as diaphragm wall installation were observed. The various equipment and plant associated with a slurry TBM were inspected such as the three-stage slurry treatment plant and the precast tunnel segmental linings. Unfortunately, due to the operations taking place at the time of the visit the delegation was unable to descend into the launch shaft to inspect the TBM.

We thanked David Hake and David Sein for showing us the site and making the visit highly interesting and informative.

Article by **Freda Chu** (Ove Arup and Partners)

## AGS (UK) Members' Day, London

This year I was invited to attend the Members' Day of the United Kingdom AGS, which was held on 21st March 2007 at the Royal Geographical Society, South Kensington, London. The day commenced at 10am and was well attended by senior members of the geotechnical community. The event was generously supported by contracting, consulting and government organisations. The AGS in the UK is buoyant and approximately three times the size of its sister Hong Kong branch.

A series of lectures were presented during the day that included sessions of probing questions. Following our last Ground Forum in Hong Kong on Baseline Reporting, it was with interest that I listened to the talk given by Derek Egan titled: 'How useful is the typical geotechnical report – an evaluation by the Federation of Piling Specialists.' What was surprising to learn was that piling companies were frequently expected to price projects on the basis of minimal geotechnical information, sometimes with only limited copies of borehole logs and without even a plan of exploratory holes. It made me consider, that possibly in Hong Kong we are more organized than I had previously believed. Any of our contracting colleagues who are interested in holding a Ground Forum on a similar topic should contact me at [hendycm@netvigator.com](mailto:hendycm@netvigator.com) or contact one of our committee members.

Other talks in the morning included a case study of a small project on a contaminated site that went seriously wrong for the consultant due to a lack of care in the reporting - a lesson to all. After-lunch talks included a fascinating theory on Silbury Hill – a famous Archaeological site in the vicinity of Stonehenge, an assessment of the impact of Eurocode 7m which is due to find implementation in the UK this summer and a talk on the geological aspects of radioactive waste management.

It was a full programme for the day but space was made available for us to present an update of what we are doing in the Hong Kong AGS. The open day was followed by an invitation to the Rankine Lecture, which turned out to be another fully attended event. I was able to meet the out-going AGS (UK) Chairman – Jim Cook – and the incoming Chairman – Jonathan Gammon, who many of you will probably know as well as other committee members. I believe Jonathan will be passing through Hong Kong in late May this year and we are planning to hold an evening meeting for that event.

Finally, I would like to thank again the AGS (UK) for the invitation and I trust that we will be able to forge closer links over the coming years.

**Michael Hendy**  
Chairman AGS (HK)

## Seminar and Workshop on the Observational Method

On Saturday 18th November 2006, the AGS (HK) held a morning seminar and afternoon workshop on the Observational

Method in conjunction with the Hong Kong Geotechnical Society, the Geotechnical Division of the Hong Kong Institution of Engineers and the University of Hong Kong.

The Observational Method of design or OM in ground engineering can be described as the continuous, managed and integrated process of design, construction control, monitoring and review which enables previously defined modifications to be incorporated during or after construction as appropriate. All of these aspects have to be demonstrably robust. The objective is to achieve greater overall economy without compromising safety. The method's origins date back to the late 1940s. In the recent 20 years, the method has had somewhat of a renaissance and there has been a noticeable increase in its use and the extension of its principles. The OM has been recognised as a design method in design codes such as Eurocode 7 (BSI 1995) and CIRIA R185 (1999).

The seminar speakers included Alan Powderham of Mott MacDonald Group (UK), David Sein of Lambeth Associates (Gammon Construction), James Sze of Ove Arup and Partners, Dr Noppodal Phienwej of the Asian Institute of Technology (Thailand), Zay Zay Aye of Seafco Public Company Limited (Thailand) and Ian Solomon of Fugro Geotechnical Services.

Alan Powderham is a Director of Transportation of the Mott MacDonald Group and has received various accolades for his contribution to construction and ground engineering including the Quality in Construction "Champion of the Decade" award and the ICE Gold Medal. He is well recognised as a pioneer of the OM's renaissance, having applied the method successfully to a number of major deep excavations. Alan discussed the history of the OM and key learning points from his application of the method in the United Kingdom.

Alan commented that a key ingredient of the OM of "modifying the design to suit the actual site conditions" is generally missed in geotechnical design. He also suggested that the OM had been "hijacked by the geotechnical community," where it in fact should have the close collaboration of structural engineers due to most problems involving soil-structure interaction.

Alan highlighted that the OM operates outside convention, it addresses uncertainty, works with nature and encourages innovation. He discussed the need for planned contingencies, a traffic light system with which to track behaviour and close communication/a good rapport between site staff and the designer. Alan recommended the avoidance of information overload with a focus on critical observations.

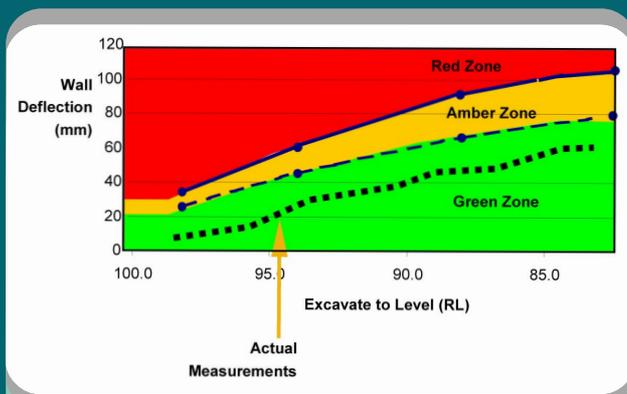


*Alan Powderham presenting on the Observational Method*

In a case study presented by Alan of a deep excavation for the cut-and-cover construction of train tunnels through Gault Clay, one to two layers of temporary steel strutting were able to be safely deleted following observations of the excavation behaviour.

David Sein spoke on the application of the OM on a deep excavation in Singapore while Dr Noppodal Phienwej and Zay Zay Aye presented on key factors in the use of the OM in Bangkok. James Sze discussed the use of field observations in the design of a reclamation project in Macau and Ian Solomon summarised instrumentation techniques for using the OM in Hong Kong.

The afternoon workshop featured a series of case histories presented by Alan Powderham followed by a discussion in which questions were fielded to a panel, representing a cross-section of the industry. This included Alan Powderham, Dr Noppodal Phienwej, Zay Zay Aye, Dr Richard Pang of the Geotechnical Engineering Office, Y C Lee of Buildings Department, Dr Charles Ng of the HKUST and Ian Askew of Lambeth Associates.



*Tracking wall deflections of a temporary cofferdam against a traffic light system of trigger levels*

Questions at the workshop were raised regarding how the OM could be applied to small projects in Hong Kong and whether contingencies should be predefined or whether a method of progressive modification is preferred and Victor Li (Victor Li and Associates) shared some examples of attempts

to apply the OM in Hong Kong. A further question was raised on the effects of temperature on strut forces. Much of the discussion was centred on how the OM could be applied in Hong Kong within the current regulatory framework of Buildings Department.

Overall, the event was a successful one with an obvious interest in the topic expressed by the audience. All of the speakers, participants and organisers are thanked for their hard work.

## Update on Assessment of Contaminated Land

During recent months, the EPD has presented a set of new risk-based standards to replace the old Dutch B-levels for assessing contaminated land. The AGS has been invited to attend two meetings and has been represented by Michael Hendy and Iain McGlen from the AGS (HK)'s Geoenvironmental Working Group.

The three consultation sessions held in November 2006 were split into separate sessions for stakeholders sharing a common interest for which the proposal was circulated to stakeholders beforehand. The AGS (HK) responded to the proposal with a written reply with the assistance of CIRIA in the UK. The Hong Kong Waste Management Group has taken the lead in the discussion during the consultation with technical representative societies. There was a significant exchange of views during the consultation. Following receipt of responses, the EPD has undertaken a thorough review of the draft document and subsequent to the consultation undertook additional work to address the concerns that were raised. We, at the AGS (HK) as well as our colleagues in the Waste Management Group were invited to be present on 3rd April 2007 for a meeting to discuss the revised proposal.

One of the key issues to arise from the discussion is that the revised values will be used as a control on whether or not remediation is required, irrespective of the specific attributes of a site. It will be a blanket control and non-site specific. EPD has used risk-based methods to consider risk to human health and has adopted conservative parameters. EPD has not been tasked with using risk-based methods to consider a tiered approach to investigation and exceptions apart, a tiered approach is not currently being considered. When viewed globally, this raises some rather strange anomalies with other international standards because of the differences in approach and it seems likely that some education of those using the new system will be required. There was some strong debate during the recent meeting and it was finally conceded that EPD would issue the guideline but those present requested

that it be subject to a review period. EPD agreed to consider this.

The Risk-based Remediation Goals criteria are expected to be published in the reasonably near future following endorsement by the Advisory Council on the Environment.

## Recipients of the AGS(HK) Scholarship

AGS(HK) regularly provides scholarships to universities in Hong Kong, typically for the study of postgraduate degrees in geotechnical engineering and earth sciences. A \$10,000 scholarship for 2006-2007 was awarded to **Karen Ho** of the Hong Kong University and a further \$10,000 scholarship was shared between **Jin Hui Li** and **Jeremy Man Kit Tse** of the Hong Kong University of Science and Technology. The awardees have provided a few words on themselves below.

### Karen Ho

I am very delighted and honoured to be awarded the AGS (HK) Scholarship 2006-2007 for my part-time MSc degree in Geotechnical Engineering at The University of Hong Kong. Through the MSc course, my basic knowledge in geotechnical engineering has been reinforced. I have also acquired a more in-depth knowledge in the field, which has helped me overcome the challenges I have encountered throughout my professional training.

The award gives testimony to my postgraduate study and certainly provides encouragement towards my future career. I would like to take this opportunity to thank the AGS (HK) once again and I aspire to contribute to the geotechnical community and the society by putting my technical knowledge to good use.



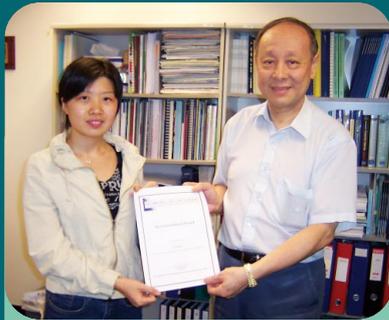
*Karen Ho, receiving a HK\$10,000 AGS scholarship from Chairman, Michael Hendy to study a part-time Master of Science in Geotechnical Engineering at the University of Hong Kong*

### Jin Hui Li

I am honored to receive the 2006-2007 scholarship from the AGS (HK). I want to take this opportunity to express my deep gratitude to the AGS (HK), which has made me more confident in my studies.

I am a research student in the Department of Civil

Engineering at The Hong Kong University of Science and Technology. My research topic is "water infiltration through cracked soils and its influence on the stability of cracked soil slopes". The topic involves in-depth knowledge in both geotechnical and geoenvironmental subjects. It is interesting but not an easy task. Many efforts have been made in the last two years with the support of Prof. L M Zhang. However, more effort is required to achieve the objectives of the research. The AGS award provides great encouragement to me to devote all my efforts to my task. Thanks again AGS (HK) for the kind support.



*Jin Hui Li (left) and Professor Moe Cheung (Head of Department). Jin Hui received a HK\$5,000 AGS scholarship for her research at the Hong Kong University of Science and Technology*

### Jeremy Man Kit Tse

It is my honour to receive the AGS (HK) Scholarship 2006-2007 and I would like to express my sincere gratitude to the Association.

I joined the Hong Kong University of Science and Technology for the programme of Master of Philosophy in Civil Engineering in 2005.

As early as my undergraduate studies, I was already highly interested in the geotechnical discipline, particularly on slope stability issues. I have thus extended my interest to this research degree and my research focus is on the hydraulic properties of unsaturated soils and coupling effects of surface and subsurface flows on slope stability.



*Jeremy Man Kit Tse (left) and Professor Moe Cheung (Head of Department). Jeremy received a HK\$5,000 AGS scholarship towards his Master of Philosophy at the Hong Kong University of Science and Technology*

I believe that the research is not only valuable to the research world but would be also of practical significance on slope stability analysis practice in the future.

This is now my second year of study. Though the expenses for the programme are not too high compared with studying abroad, the scholarship from AGS (HK) has definitely provided significant financial help and recognition of my hard work. The award motivated me to continue to work at my best in my remaining studies as well as my future career in the geotechnical discipline. Once again, I would like to say thank you to the AGS (HK) for the scholarship.

### Joint Meeting between SSTRB and Professional Bodies

The Slope Safety Technical Review Board (SSTRB) is an international body that was appointed to advise the Hong Kong Government on technical aspects of slope safety. On 5th December 2006 the board met with representatives of professional bodies including the Geotechnical Engineering Office, the Geotechnical Division of the Hong Kong Institution of Engineers, the Institute of Materials, Minerals and Mining, the Hong Kong Regional Group of the Geological Society of London, the Hong Kong Geotechnical Society, and the AGS (HK).

Mark Wallace, representing the AGS (HK) gave a presentation on the role and activities of the Association and discussed slope-related issues that were of particular interest to the Association. These include the quality of ground investigation, instrumentation, the increased demand of ground investigation, value for money for the industry and slope inspection safety.



*Attendees of the Joint Meeting of the SSTRB and Professional Bodies*