Geotechnical Engineering Simulation of Hydraulic Fracture Growth in a Synthetic Rock Mass with the use of Discrete Element Method.

Micro-cracks

Pre-existing joints

Micro-joints to give anisotropy

Injection Fluid

$\sigma_{v,\text{max}}$

$\sigma_{n,\text{min}}$
Departmental Events

Seminar on Design of Steel Structures – Structural Hollow Sections

The full day seminar on Design of Steel Structures – Structural Hollow Sections organised by the Department of Civil Engineering, The University of Hong Kong was successfully held on April 1, 2011 at the Intercontinental Grand Stanford Hotel, Kowloon, Hong Kong. Eight prominent overseas and local academics, researchers and engineers shared their experiences on Steel Structural Hollow Sections. Dr. Ir C.M. Koon, the Chairman of the Joint Structural Division of HKIE & IStructE, was invited to deliver an opening address. The seminar was chaired by Professor B. Young.

The seminar was attended by over 110 engineers and researchers from various government departments, consultant firms, construction companies and universities. The seminar was supported by the Joint Structural Division of The Hong Kong Institution of Engineers & The Institution of Structural Engineers, and the Centre for Asian Tall Buildings and Urban Habitat (CATBUH), The University of Hong Kong. The sponsorship for this seminar, provided by the Nippon Steel & Sumikin Metal Products Co. Ltd., is gratefully acknowledged.

Scholarship Presentation Ceremony 2010-11

The Scholarship Presentation Ceremony for 2010-11 was held on April 12, 2011 in the Senior Common Room, HKU and the event was attended by recipients, parents, donors and teaching staff. There were a total of 27 recipients including B.Eng. and M.Sc. students. The Guest of Honour, Mr. Chan Chi Chiu, Director of Drainage Services, delivered a speech and presented souvenirs to sponsors, thanking them for their generosity in offering contributions to the cause of academic excellence. It was a chance not only for the students to thank their donors personally, but also for them to interact and exchange with prominent engineers from the industry.

Canadian Highway Pavement Management Workshop

Professor Ralph Haas, recipient of the Order of Canada, Fellow of the Royal Society of Canada, Fellow of the Canadian Academy of Engineering, Norman W. McLeod Engineering Professor and Distinguished Professor Emeritus in the Department of Civil and Environmental Engineering at the University of Waterloo and Dr. Li Ningyuan, Senior Pavement Management Engineer at the Ministry of Transportation of Ontario and Adjunct Professor in the Department of Civil Engineering at the University of Waterloo, Canada delivered the Canadian Highway Pavement Management Workshop on April 16, 2011. It was jointly organised by the Department of Civil Engineering and Institute of Transport Studies of The University of Hong Kong. The workshop was attended by 63 local practitioners and engineers of the industry.
Project WATERMAN Public Lectures

Starting from April 2011, the Project WATERMAN has organised a series of public lectures at the Hong Kong Central Library, covering topics related to beach water quality forecast, 3D environmental impact assessment, and fisheries management and red tide forecast.

The first and second public lectures were successfully held on April 26 and May 31 respectively. During the first lecture entitled “Real-time Beach Water Quality Forecast for Hong Kong”, Prof. Joseph Lee and the WATERMAN team gave an introduction of the forecast system and its underlying principles, as well as a demonstration of some key features and latest developments.

The second lecture on “3D Environmental Impact Assessment (EIA)” addressed the challenges of the EIA practices for the water environment in Hong Kong and introduced the major components in Project Waterman’s EIA system. It aroused keen interest of the general public and the lecture was well attended by over 200 participants.

The Third International Symposium on Innovative Design of Steel Structures

The Third International Symposium on Innovative Design of Steel Structures was a back-to-back Singapore and Hong Kong international symposium, jointly organised by the Department of Civil Engineering, The University of Hong Kong; Department of Civil & Structural Engineering, The Hong Kong Polytechnic University; Department of Civil & Environmental Engineering, National University of Singapore; Building and Construction Authority, Singapore; Singapore Structural Steel Society and The Hong Kong Institute of Steel Construction (HKISC).

The symposium was successfully held on June 30, 2011 at the Intercontinental Grand Stanford Hotel, Kowloon, Hong Kong. The opening address of the symposium was delivered by Ir Professor Paul Pang, Assistant Director of the Buildings Department. Eight prominent overseas and local academics, researchers and engineers presented and shared their experience on the latest developments and technology in the field of steel and composite structures. The papers were published in the symposium proceedings which were edited by the symposium chairman, Professors B. Young, J.Y. Richard Liew and Siu-Lai Chan. The symposium was attended by over 100 participants that included engineers from various government departments, consulting firms and construction companies. The sponsorships for this symposium from the Wo Lee Steel Co. Ltd., PMB Cyberwall Ltd., Hacely Facade Engineering Ltd., Tysan Foundation Ltd., Gammon Construction Ltd., Hsin Chong Construction Co., Ltd. and Paul Y. Engineering Group Ltd. are gratefully acknowledged.

The same symposium was also organised in Singapore on June 28, 2011 at the Hotel Furama RiverFront and over 140 industry practitioners attended the event.
Two-day Short Course on “Seismic Design of Buildings for Hong Kong Conditions”

Dr. R.K.L. Su and Dr. H.H. Tsang organised a two-day short course on “Seismic Design of Buildings for Hong Kong Conditions” on July 16 and 23, 2011 at Wang Gungwu Theatre of The University of Hong Kong. Dr. N.T.K. Lam of the University of Melbourne, Australia was also one of the speakers. The course was supported by the Joint Structural Division of HKIE and IStructE. Professor A.K.H. Kwan delivered the opening speech on the first day of the course, whilst Ir Y.K. Cheng, J.P., Vice President of IStructE, was invited to deliver a special speech on the second day. The course was attended by 96 participants from government departments, property developers, engineering consultant and construction companies.

Fellowships

Professor Willi H. Hager, ETH Zurich, visited the Department from June 16-21, 2011 under the auspices of the Environmental Hydraulics Visiting Fellowship. His seminar entitled “IMPULSE WAVES in the laboratory and in nature” was delivered on June 17, 2011. He also gave a public lecture entitled “HYDRAULIC EXPERIMENTATION: An overview” on June 20, 2011.
Awards

Professor Y.K. Cheung (pictured, right) was awarded the Hall of Fame 2010 by The Hong Kong Institution of Engineers. The award is dedicated to honour outstanding members who have made exemplary contributions and outstanding achievements to the Institution, the engineering profession and the community as a whole.

Dr. S.T. Smith has been promoted to "Associate Professor" on tenure terms effective from March 1, 2011. The promotion is a recognition of Dr. Smith's accomplishments and hard work over the years.

Professor S.C. Wong, Mr. W.L. Leung, Mr. S.H. Chan, Professor W.H.K. Lam, Dr. N.H.C. Yung, Mr. C.Y. Liu and Professor P. Zhang received the 2011 Best Paper Award (Editors' Choice, Outstanding Paper) for their paper entitled "Bidirectional pedestrian stream model with oblique intersecting angle" published in the Journal of Transportation Engineering, Vol. 136, No. 3, pp. 234-242 (2010), ASCE.

Activities

Dr. A.T. Yeung delivered the keynote lecture "Field-scale evaluation of non-destructive underground void detection techniques" at the 2nd International Conference on Utility Management and Safety held in Hong Kong on March 8, 2011.

Dr. A.T. Yeung was invited as Guest of Honor and served as member of the judging panel of the Bridge Building Competition for Secondary Schools 2011 on March 26, 2011. The competition was jointly organised by the Engineering Discipline of the Hong Kong Institute of Vocational Education, the Faculty of Engineering of The University of Hong Kong, and the Hong Kong Construction Association. The event was supported by the Development Bureau of the Hong Kong Special Administrative Region Government, and sponsored by the ASCE Hong Kong Section and the Chinachem Group. Other members of the Judging Panel included Ir Chi Sing Wai, Hon. Abraham Lai-him Shek, Ir Shing-see Lee, Dr. Paul M.Y. Chow, Ir Dr. Eddie Siu-shu Lau, Mr. Conrad Wong, Ir Thomas Ho, Ir Dr. Kie Chung Cheung, Dr. Carrie Willis, Ir Dr. K.K. Lo, and Ir Dr. Lawrence W.C. Chan.

Dr. A.T. Yeung visited the ASCE Taiwan International Group in Taipei, Taiwan on March 27, 2011 in his capacity of ASCE Region 10 (International) Director. He also visited the Accreditation Council of the Institute of Engineering Education Taiwan on the same day. He was invited by the Ministry of Transportation and Communications of Taiwan to attend the International Forum on Construction Technologies for Highways under Complicated Geological Conditions in Taipei, Taiwan on March 28, 2011 as a member of the Panel of International Experts.

Dr. A.T. Yeung attended the Outstanding Projects and Leaders Gala of ASCE at National Harbor, Maryland, U.S.A. on March 31, 2011 as a member of the ASCE Board of Direction. He attended the ASCE Board of Direction Meeting at National Harbor, Maryland, U.S.A. from April 1-2, 2011 and at Rapid City, South Dakota, U.S.A. from July 30-31, 2011 in his capacity of ASCE Region 10 (International) Director.

Dr. J. Yang presented an invited panel discussion on seismic landslide hazard assessment at the special session on Geotechnology for Natural Hazard at the 14th Asian Conference on Soil Mechanics and Geotechnical Engineering held in May 2011.

Dr. J. Yang was one of the invited speakers at the Tall Buildings Asia 2011 conference this July. His talk was about new developments and technologies for deep foundations.
Professor B. Young presented a Seminar on "Excellence in Teaching = f(x); What is f(x)?" organised by the Faculty of Engineering on May 13, 2011. The Seminar was well attended by 95 teaching/research staff and students.

Professor B. Young delivered a Keynote Speech on "Design of Cold-Formed Lean Duplex Stainless Steel Concentrically Loaded Compression Members" at the 7th International Conference on Steel and Aluminium Structures (ICSAS11) during July 13-15, 2011, Malaysia.

News

Dr. K.H. Law (pictured) joined the Department of Civil Engineering as Teaching Consultant in March 2011. Upon graduation from The University of Hong Kong with a First Class degree, Dr. Law embarked on her engineering profession at Arup, Hong Kong before pursuing her MSc degree at Imperial College London, specialised in Structural Steel Design, in a year of leave of absence to further consolidate her knowledge in steelworks. After which she continued her professional training at Arup, Hong Kong and was involved in various prominent multi-disciplinary projects providing integrated structural designs and is particularly specialised in steel, composite and earthquake resistant structures and optimisation of structural designs to provide cost-effective and sustainable schemes. In 2007, she commenced her research study at Imperial College London on structural behaviour and reliability of steel structures utilising experimental, numerical and analytical approaches. She was awarded a PhD in 2010.

Dr. Law is a Chartered Structural Engineer and her professional experience in the industry substantially enriched her knowledge in structural engineering and equipped her with strong engineering basis, inter-personal and managerial skills for undertaking research and teaching in this profession.

Professor S.C. Wong was re-appointed as a member of the Road Safety Council, The Government of HKSAR, for two years with effect from June 1, 2011.

Professor S.C. Wong was re-appointed as a member of the Road Safety Research Committee, The Government of HKSAR, for two years with effect from June 1, 2011.

Professor S.C. Wong was elected as the Vice-chairman of the Chartered Institution of Highways and Transportation (Hong Kong Branch) for the term 2011-2012.

Professor S.C. Wong was elected as a member of the Civil Division Committee of the Hong Kong Institution of Engineers for the term 2011-2012.

Professor S.C. Wong was appointed as a member of the Civil Discipline Advisory Panel, Logistics and Transportation Discipline Advisory Panel, and Education and Examinations Committee of the Hong Kong Institution of Engineers for the term 2011-2012.

Dr. S.T. Smith was elected Vice President of the Hong Kong Chapter of Engineers Australia for the term 2011-2012.

Dr. S.T. Smith was elected Fellow of the Institution of Engineers Australia (also known as Engineers Australia).

Dr. A.T. Yeung was elected Senior Vice President of the Community & Construction Professionals Development Centre 2011-2013.
NEWS FROM CICID (CENTRE FOR INFRASTRUCTURE AND CONSTRUCTION INDUSTRY DEVELOPMENT)

Brainstorming Workshop with Delegation from Ministry of Public Works, Indonesia on Construction Industry Development on March 10, 2011
A brainstorming workshop with a delegation from Ministry of Public Works, Indonesia was arranged by CICID on March 10, 2011. Participants included Professor Dr. Ir Danang Parikesit, Special Adviser for the Minister of Public Works, Ir Danan Krisnandar, Dr. Ir Akhmad Suraji and Ir Budi Setiawan from The Directorate General of Construction Development, Ministry of Public Works in Indonesia and Hong Kong industry and academia representatives.

Public Seminar - Some pleasant surprises about the performance of recycled construction materials by Professor Charles T. Jahren from the Iowa State University, USA on March 17, 2011

Brainstorming Workshop on: Latest Developments in PPPs in Asia led by Mr. Alex Wong of Hogan Lovells, Singapore on March 17, 2011
Mr. Alex Wong, a Partner at Hogan Lovells’ Singapore office conducted this workshop that was attended by around 20 participants. Mr. Wong’s opening presentation on the latest developments in PPPs covered recent developments, projects and trends in many countries in Asia. This was followed by intensive Q&A and brainstorming.

Q&A session in the seminar

Professor Charles T. Jahren sharing insights on the use of recycled materials in Iowa State

Second row: workshop delegates
First row (from left to right): C.M. Yang (delegate), Professor Dr. Ir Danang Parikesit, Dr. Ir Akhmad Suraji, Ir Danan Krisnandar and Ir Budi Setiawan

Discussion in the workshop

Q&A session in the workshop

Alex Wong engaging participants at the brainstorming workshop
UTM Visit to HKU & ProMaRC Meeting IV
A group of senior academic guests including Professor Muhd Zaimi Abd Majid (Dean, Research Alliance Innovative Construction), Professor Salihudin Radin Sumadi (Director, Construction Technology & Management Centre), Dr. Latif Saleh (Deputy Dean, Faculty of Civil Engineering), Dr. Arham Abdullah (Deputy Director, UTM Innovation and Commercialisation Centre) and their colleagues from the UTM University, Malaysia, visited our CICID Centre and Department of Civil Engineering on June 9, 2011. An academic exchange session chaired by Professor S.T. Tan (Associate Dean, Faculty of Engineering) and Professor A.K.H. Kwan (Former Head, Department of Civil Engineering) was organised to explore further joint research opportunities between HKU and UTM. This was followed by a presentation by Versitech Ltd. (a HKU wholly-owned subsidiary) introducing successes in technology transfer from our university to local industries. Following on from recent collaboration within a specially set up 4-University Project Management Research Collaboration (ProMaRC) forum, a post-lunch ProMaRC Research Forum co-chaired by Professor Muhd Zaimi Abd Majid and Professor M.M. Kumaarawamy (Executive Director, CICID, HKU) was conducted to share knowledge on selected current research projects at HKU and UTM. These sessions were deemed valuable and successful by the over 30 faculty members and students who participated.

New International Journal – BEPAM
The 1st issue of Built Environment Project and Asset Management (BEPAM), has been published by Emerald, from the UK. BEPAM is supported by our Dept. of Civil Engineering and driven by our ‘Centre for Infrastructure and Construction Industry Development’ (CICID). The 2nd issue will be available in late 2011.

This timely new international journal addresses interfaces between ‘project management’ and ‘asset management’ of building and civil engineering infrastructure. It focuses on cutting edge research and development in construction project management and ‘infrastructure asset management’, e.g. arising from infrastructure life-cycle and sustainability imperatives.

Extracting and paraphrasing some pointers from the Inaugural Editorial:
• The BEPAM vision is to provide the missing links between built environment project management and asset management, and to attract researchers and practitioners from hitherto compartmentalised sub-sectors to engage with, learn from and improve each other in a common mission to efficiently deliver and sustain better built infrastructure worldwide.
• Much has been said, but much less has been achieved, in translating high-level sustainability goals into practice in our built environment. Much of this shortfall may be traced to persisting disconnects between ‘planning, design and delivery’ (in the ‘project management’ phase) and ‘operation, maintenance and overall management’ (in ‘asset management').
• In championing a cause of integrating the domains of ‘Project’ and ‘Asset’ Management, BEPAM is doing nothing more than recognising emerging realities. Both domains within themselves, have arguably not seen much recently, in terms of breakthrough concepts or dramatic performance gains. On the other hand, the global sustainability imperatives demand integrated approaches, as well as enable significant synergies and joint added value for all stakeholders, of course including the end-users.

Detailed journal information is in www.emeraldinsight.com/bepam.htm
Our Editorial team is currently assessing papers for inclusion in forthcoming issues. We welcome high quality submissions within BEPAM scope and criteria. For more information on BEPAM expectations and on how to submit papers, please see the author guidelines in the above.

To be notified about future issues, you are welcome to register for ‘contents alerts’ at www.emeraldinsight.com/2044-124X.htm.

Please feel free to pass on above message to any of your colleagues, friends and any networks who may be interested in BEPAM.
Mr. Au Jim Shing Jason (2011 graduate) was awarded the Centenary Prize.

2010-11 Year 1 BEng students:
- Mr. Chan Chak Hin
- Mr. Chan Cheuk Hei Jevons
- Miss Chan Ho Ting
- Mr. Chan Ki Sum
- Mr. Chan Man Chun
- Mr. Cheung Tsz Yeung
- Mr. Chu Wai Chun
- Mr. Chung Horace
- Miss Ho Wing In
- Mr. Hon Ho Ting
- Mr. Huen Ka Yu
- Mr. Kwong Ka Wing
- Miss Lam Yuk Ying Peggy
- Mr. Leung Hong Yin
- Miss Lo Man Ting Alice
- Miss Wai Tsz Yan
- Mr. Wan Ho Yin
- Mr. Wong Cheuk Lun
- Mr. Wong Wai
- Mr. Wong Wai Keung
- Mr. Yip Hoi Tung
- Miss Yip Kai Ling

were awarded the Engineering Outstanding Students Scholarship 2010-2011.

Mr. Huang Shengcheng (2010-11 Year 2 BEng student, pictured) was awarded the Water Conservation Design Competition, Tertiary Education Student Group by the Water Supplies Department.

Miss Pelin Ikiz (2010 graduate, pictured, left), Mr. Kwok Long Him (2010 graduate, pictured); and Miss Zou Wei (Jan. 2011 graduate, pictured) won the Award of Merit at the Institution of Civil Engineers (ICE) Papers Competition 2010.

Miss Su Meini (PhD student, pictured, left) won the Best Paper Award at the Institution of Civil Engineers (ICE) Papers Competition 2010.

Mr. Liang Zefeng (2010-11 Year 2 BEng student, pictured) was awarded The Providence Foundation Outward Bound Training Awards 2010-11 by the Providence Foundation Ltd.

Mr. Wong Chak Man (2010-11 Year 2 BEng student, pictured) was awarded the YS and Christabel Lung Undergraduate Scholarship for Engineering Students 2009-2010.

Mr. Shui Chin Sum (2010-11 Year 2 BEng student) was awarded the Chun Wo Foundation Scholarship 2010-11.

Mr. Jun Yin (MPhil student), Professor S.C. Wong and Dr. N.N. Sze received the Best Paper Award for their paper entitled “Optimization of housing allocation and transportation emissions using continuum modeling approach” presented at the 9th International Conference of Eastern Asia Society for Transportation Studies, June 19-23, 2011, Jeju, Korea.
Activities

Summer Training at Construction Sites on Dams at Jinsha River (金沙江)

With kind support of the China Three Gorges Corporations, our training program at the Three Gorges site has been extended to Jinsha River sites for three years. This year, 27 undergraduates of the department joined in this program. They have a very good opportunity to look in close distance at new dams building up along Jinsha River, of which one of them will be the highest arch-dam in the world.

Zhengdong Kindergarten comes to completion

After spending two years on design and one year on construction, the third project of our Mingde Projects has finally been completed this summer. The project team has played several visits to the site during the past months. In the 27th visit held in late July, Ir Professor C.K. Mak has joined with 14 undergraduates of the department to inspect the project. He shared with our students his valuable experience in project management as the HKSAR’s Team Leader of Sichuan Reconstruction. During the 28th visit held in late August, the team members were very pleased to see that the new kindergarten was near completion. Some of the supporting partners including Dr. Nicolas Yeung, Dr. K.S. Louie (Secretary of Lee Hysan Foundation) and the volunteer architects, Mr. Vinco Mung and Mr. Alex Lu, also joined the trip and shared in their joy.

Imperial College London and The University of Hong Kong Joint PhD Programme

(This article is reproduced with permission from Apple Daily March 31, 2011)

港英合辦聯合哲學博士課程

聯合課程增添學位機會

蘇萊曼獲聯合學位學術管理員高級主任表示，他們的課程可讓學員於一年內，完成倫敦大學倫敦學院的學士課程，及完成香港大學的學士課程，全部課程需於一年內完成。
Clinton Global Initiative University (CGI U) Meeting 2011 - Project Mingde

Clinton Global Initiative University (CGI U) was launched by former United States President Bill Clinton since 2007 to engage the leaders of next generations on campuses around the world to devise and implement innovative solutions to the world’s most pressing problems. It hosts a meeting each year to invite students and national youth organisations for participation.

This international meeting was held at the University of California, San Diego (UCSD) from April 1-3, 2011 with the involvement of nearly 1,200 attendees focusing on the aspects of the Education, Environment & Climate Change, Peace & Human Rights, Poverty Alleviation, and Public Health.

The Project Mingde (明德工程), initiated by the Department of Civil Engineering, The University of Hong Kong was one of the groups invited to participate the CGI U 2011. The Project Mingde is committed to create inspiring, pragmatic and sustainable education infrastructural development for rural areas of China so that children can unlock their full potentials in societies which respect their dignity and basic rights.

Our student representatives team included Mr. W.L. Wong, William, Mr. N.F. Wong, Ivan and Miss X.C. Sun, Demi (2011 graduates). They participated in discussions on the areas of education and poverty alleviation. Their aim was to share the core value of Project Mingde, which is “building for a year; nurturing for a generation”, with other young leaders. Their belief is that the time for building a school premise may take a year, but its effects on nurturing children can last for a whole generation.

In the conference, our team made an effort to spread out the core values of Project Mingde by introducing the completed school premises in Guangxi and the on-going reconstruction project in Sichuan. Many of the participants showed great appreciation of the professionalism and continuous dedication of Project Mingde to the society. The team explained how the project was driven by students with the support of professors and alumni for the projects to other participants.

By exchanging ideas with different participants and receiving a resonating speech from the former US President, Bill Clinton on the global topics like climate change, human rights and poverty alleviation, they brought back a greater motivation and momentum to devote these professional specialty to the community for confronting urgent social challenges from now and continue after graduation.

Along the conference, the team and other participants worked in the San Diego Food Bank, packing fruits, cans, and vegetables into boxes and distributing them to families in need.
Visiting the family of Mr. Chao Kuo Liang (趙國梁) at Beijing

Recalling that when Professor Li Jing (李竟) returned to the campus early this year, he introduced the family of Mr. Chao Kuo Liang who was a graduate of our department in 1922. The family lives in Beijing now. In mid June, accompanying our 17 undergraduates to Beijing for their industrial training this summer, Dr. D.J. Guo payed a visit to the family. Mr. Zhao Yun Ping (趙允平) and Ms. Zhao Yun An (趙允安), the son and daughter of Mr. Chao, talked to Dr. Guo a lot of stories about their father. It is interesting to know that Mr. Chao was the brother in law of the famous General Zhang Xue Liang (張學良), as Chao’s younger sister was the late wife of Zhang. The family has thus been involved in some historic events. At the end of the visit, Dr. Guo was presented by the family a set of rulers in imperial scales which was said to be a prize of the university to Mr. Chao for his good achievement in academic study then. This valuable giving is now kept in the University Archives.

To view the electronic version of this Newsletter, please visit our Department website on http://www.hku.hk/civil, or if you prefer to receive the electronic version of this Newsletter by email, please send notification to civdept@hkcc.hku.hk.