All civil engineering undergraduate students have to complete 8 weeks of summer industrial training as part of the Bachelor of Engineering Civil Engineering degree programme. Apart from within Hong Kong, the Department has been striving to provide training opportunities in the past, in places such as Singapore as well as the Yangtze Three Gorges Project site in Yichang and Daya Bay in Mainland China.

In the summer of 2003, with strong support from the Association of Engineers in Society Ltd. and the Liaison Office of the Central People's Government in the HKSAR and the co-ordination of the Chinese Association of Science and Technology in Beijing through the China Civil Engineering Society, the Department was able to extend the arrangement of placements with the Beijing construction industry. Students received on-the-job training at design institutes in Beijing and Shenzhen. 12 students went to Beijing and 3 to Shenzhen. Generous donations from alumni and friends of the Department also made such arrangements financially feasible.

In 2004, a record total of 141 placements were arranged of which 42 were in Mainland China. Local placements were held with government and private organisations. Those on the Mainland included Beijing, Shanghai, Shenzhen and for the first time, a special project in Guangxi (廣西). The Guangxi project was initiated by Dr. and Mrs. Nicholas Yeung (1971 graduate) and his friends, who proposed to finance the redevelopment of a primary school in Da Lang Village, Rongshui County, Guangxi (廣西,融水縣,大浪鄉). They invited our Department's students to be in charge of the project. Initially, a group of 18 students and several teaching staff volunteered to be involved in the project. At the beginning a total of three trips were made to the village, the first being in April 2004, for inspection of the site and school. These were followed by site surveys and geotechnical information investigation in June 2004. Designs were drawn up with the help of professional architects and approval was obtained in September.

In May 2005, the construction of the school finally commenced and in mid-June 2005, the sixth group of 3 students travelled with Dr. D.J. Guo, Training Manager to the village for training and carrying out site supervision for a period of 20 days. During this period they witnessed the completion of the construction of the school's ground floor. They are expected to go back in mid-August to inspect the site. The building should be completed by September and the opening ceremony will take place on the 1st of October 2005. The building will be named 《明德樓》 and there will be a calligraphic inscription, hand-written by the renowned scholar and artist, Professor Jao Tsung-I 《饒宗頤教授》.

Not only were the students involved with the project in the Mainland, but they also organized a fund-raising event in June locally, for buying teaching materials and equipment, books, and furniture for the school. Within two weeks, they managed to successfully raise over HK$14,000 and more money is expected to come in. Teachers have also agreed to donate money.

This project was a significant and unforgettable event. Not only did it provide students with invaluable experience in Mainland China and an insight in the management of a construction project, but also taught them the selfless spirit of helping those less fortunate than themselves. Despite living and working under poor conditions, the feedback received from students has been extremely positive and surprisingly heart warming. The following are extracts from a few of the students’ reports:

“This was quite a memorable trip. Dr. Guo taught us many things, from the design phase to the construction phase. Apart from the site experience gained, I experienced something that is rare to confront in HK. The electricity supply in the village we stayed was not stable at all. There is no electricity supply when there was a thunderstorm. During the first few days there, it was raining and there was no electricity supply. It affected us in many ways. As it was raining and there was no electricity supply, the site would stop its construction. There would be no lights in our house and no fans. We could not turn on our notebooks to make calculations. Our digital cameras did not work. Despite living and working under poor conditions, the feedback received from students has been extremely positive and surprisingly heart warming. The following are extracts from a few of the students’ reports:

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The new school building under construction in June 2005

Our students with the village school children

>> Continued on the next page
The construction industry is considered one of the main pillars of Hong Kong’s economy. There are over 23,500 registered construction organisations in this sector in Hong Kong, of which more than 98% are Small and Medium Contractors (SMCs). SMCs carry out most of the actual construction works, as main contractors on small projects and subcontractors on large projects. However, they often suffer from a lack of continuous work and tough price competition. On the other hand, they also suffer from inadequate “information”, suitable knowledge management frameworks and tools, lack of time and resources for self-improvement and technological upgrading. Without sound information & knowledge management they can hardly improve their competitiveness and performance levels. These shortfalls spotlight the urgent needs for an SMC-friendly system for improved information & knowledge management, in order to improve the performance and competitiveness of our construction industry itself.

A $2.4m R&D initiative to address the above was proposed by a team from the Faculties of Engineering and Architecture of The University of Hong Kong. The Small and Medium Enterprises Development Fund of the Trade and Industry Department of the HKSAR, accepted this proposal to develop a system to help in the “Strategic Management with Information Leveraged Excellence” (SMILE) for “Small and Medium Contractors” (SMCs), i.e. SMILE-SMC. The core project team is led from the Centre for Infrastructure & Construction Industry Development (CICID) based at the Department of Civil Engineering and includes members from other Departments and the eBusiness Technology Institute at HKU.

The Hong Kong Construction Association Ltd. (HKCA), Construction Industry Training Authority (CITA), General Building Contractors Association Ltd. (GBCA), Hong Kong Construction Sub-Contractors Association (CSA) and the Hong Kong Federation of Electrical and Mechanical Contractors Ltd. (HKFEMC) are collaborating in and supporting this SMILE-SMC project, which also received strong support from the Provisional Construction Industry Co-ordination Board (PCICB) of the HKSAR. Five overseas universities research bodies - from Australia, Singapore and the UK - are also providing valuable suggestions based on their own R&D thrusts into comparable areas. Moreover, 17 local industry “Partners” are actively helping in identifying needs, and in developing and testing the SMILE-SMC system.

The aim of the SMILE-SMC project is to empower the continuous improvement of construction contractors in general and SMCs in particular, by providing an SMC-friendly framework and innovative tools for continuous improvement in boosting productivity, quality and image, through strategic information & knowledge management. The system will provide services through six major zones as in the Figure: Member Zone, Wanted Zone, Available Zone, Information Library, Discussion Forum and Performance Improvement Zone. These zones include SMC-friendly information & knowledge management platforms and tools e.g. for efficient information access, materials management and “electronic information exchange” for boosting their business and operational processes.

These are being developed based on findings from an initial pilot “needs analysis” survey conducted with PCs, followed by a structured questionnaire survey across the industry, “workflow analyses” with the site staff and senior management of PCs, monthly brainstorming “Team Meetings” arranged with industry collaborators, one Development Workshop, two Dissemination Workshops (up to now), and one Training Workshop. These exercises highlighted the many diverse needs, but enabled prioritisation of areas of particular concern, that are feeding into the development of the SMILE-SMC system.

This R&D project commenced in November 2003 and is now in its last development phase, before testing, trial runs and opening up for full-scale operation. Operational modalities (including nominal fees to be paid by SMILE-SMC members, in order to fund the system up-dating and maintenance) will be publicised in December 2005. Should you be interested in knowing more about the potential services, you may please notify your interest to any of the following: Dr. Mohan Kumarawamy at mohan@hkucc.hku.hk or Dr. Thomas Ng at tsthng@hkucc.hku.hk; or the project R&D Manager Dr. Motiar Rahman at mmrahman@hkucc.hku.hk.
A Virtual Tour at the DHL Central Asia Hub

The Department of Industrial and Manufacturing Systems Engineering (IMSE) has successfully developed a virtual reality-based visualization system for DHL Aviation (HK) Limited for the interactive visualization of the express cargo operation at their Central Asia Hub (CAH) at the Hong Kong International Airport at Chep Lap Kok. The system provides an innovative and effective means to vividly visualize the operations of the DHL Central Asia Hub. This is highlighted by the provision of animation of the dynamic movement of the automated equipment, and the operation processes through an attractive graphical display so as to demonstrate the strengths of the overall system of the Hub. In addition, the system can be used for staff training, virtual touring, and process analysis.

The interior of the Central Asia Hub showing the conveyor systems and the express air cargo

A Birds eye view of the virtual DHL Central Asia Hub as animated by the visualization system
The degree programme in Medical Engineering is the youngest in the Faculty of Engineering. It was launched in 2002 as a joint undergraduate program offered by the Faculty of Engineering and the Faculty of Medicine. The programme is about an exciting new subject, in which the professional practices of clinicians and engineers are combined to produce a new kind of expertise. Biomedical Engineering is one of the 21 strategic research themes of the University of Hong Kong. In its short history, Medical Engineering is among the top three programmes in three consecutive years out of a total of 15 engineering programmes, and has been admitting a good number of students under the Early Admission Scheme.

**Accreditation by the Hong Kong Institute of Engineers**

The BEng (Hons) Degree in Medical Engineering has been granted provisional accreditation by the Hong Kong Institution of Engineers to students who graduate in 2005. The Accreditation Board has offered Full Accreditation consideration for a period of 5 years which is exceptional, reflecting the quality of the programme. The normal practice by the institution is to give provisional accreditation for 2 years, after which a new submission has to be made, requesting a 5 year Full Accreditation period.

**First batch of graduates**

The first class of BEng (Medical Engineering) graduated in July 2005 with top honors at a level above that of other departments. While 1/3 of the class will pursue graduate study, others are planning for employment. One student has already gone for his PhD training at Johns Hopkins University which is attached to the Johns Hopkins Medical School. The placement prospects look promising from both the industry and government sectors – we have graduates already recruited by international companies such as Siemens Medical; Electrical and Mechanical Services Department of the HKSAR (EMSD); Automatic Manufacturing Ltd, and some other companies.

**Outgoing and new Programme Director**

Professor Brian Duggan, who is the founding Programme Director since the very beginning, has retired from the position as of June 30, 2005. Under his leadership, the programme has emerged as one of the flagship programmes in the Faculty of Engineering.

Coming in as the new Programme Director is Dr. Paul Cheung. Dr. Cheung is no stranger to many of our alumni and friends. He has been with the University of Hong Kong for over 20 years and was the Dean of Engineering at HKU from 1994-2000.

**Summer intern experience**

An important pre-requisite for graduation from the medical engineering program is to undertake industrial training for about 8 weeks in the summer between years 2 and 3. The students receive training in relevant industries including, but not limited to, medical device manufacturers, government, research institutions, hospitals and clinics, in or outside of Hong Kong.

This year, we have one student, April Chow, having her training in Beth Israel Deaconness Medical Center (BIDMC), which is a teaching hospital affiliated to Harvard Medical School. As we prepare this Newsletter, April is still in Boston enjoying every bit of her training and cannot wait to share her experience with us. She finds medical doctors there do not just diagnose, but also work to improve on the quality of clinical stuff with other researchers. April’s project is on the parameters affecting image quality when people are performing coronary MRA. Talking to medical doctors and her supervisor helps her to get to know that the role of a medical engineer is to act as a bridge of traditional engineers and medical doctors.

April not only finds the project stimulating, but also the location of BIDMC and the people she meets fascinating. BIDMC is situated in an area called Longwood Medical and Academic Area where there are 4 hospitals and the Harvard Medical School. “I’m sure every Biomedical Engineer or Medical Engineer will feel very excited here where biomedical engineering opportunities are abound”, says April. “I make new friends and have even met some people from Hong Kong who are working on kt-BLAST which is a fast imaging method of MRI in the National Institutes of Health. They talk and share their experience with me which I find very educational.”

**BUSINESS MINOR OPTION**

A minor option in Business or Economics is available to students admitted to first year study of any of the 12 B.Eng programmes of the Faculty of Engineering, The University of Hong Kong, in the academic year 2005/2006 and thereafter.

“This new minor option satisfies the call for engineers with business skills, as it sharpens the competitive edge of our students with business training in addition to their technical expertise” said Professor T.S. Ng, Dean of Engineering.
WESTERN EXPANSION PROJECT views from Engineering students

In mid April to early May, the Engineering Society, HKUSU, held an exhibition at Haking Wong Podium and Union Floor, to raise Engineering students’ concerns on the Western Expansion Project. In mid June to early July, we conducted an online survey, seeking Engineer-
ing students’ opinions and comments on the changes the plan will bring about. 151 Engineering students completed the survey and this feedback was analyzed. Results will be submitted to the relevant parties in charge.

The plan for campus expansion was launched in 1990, and originally named the Millennium Master Plan. After continuous investigations, the plan was adapted to extend the western part of the campus, to the area near St. John’s College, hence the name change to the Western Expansion Project. Part of the main goals of the project is to: 1) offer students a more comfort-

able studying environment by providing them with a more spacious campus; 2) prepare for the adoption of a complex research basis in the University; 3) accommodate the increase in student population in a decade’s time; 4) aim at being a green campus; 5) blend into the region; 6) provide more teaching and learning space in view of the 3-3-4 education reform.

From our survey analysis, it was concluded that the school campus can be improved in a few aspects to suit the needs of our students.

Firstly, students think that there was insufficient space for self studying in the main campus. It seemed that there was little choice left other than the library or the Student Learning Centre; both these places are packed with students in periods near examinations. Students also think that there is little indoor and outdoor space for resting and relaxing; the few tables and chairs outside the Student Union Office being a case in point. The long benches outside CYC-A were also too distant from one another to provide a gathering and studying place for students.

In respect to leisure and amenities, students think that having only one drama theatre (CYM303) in the main campus is inadequate, while other lecture halls and theatres are fully booked most of the time. Most large-scale shows are held at the Haking Wong Podium in order to accommodate large audiences, and this shortfall retards further development in areas of cultural entertainment.

Regarding sports, most students commented that there is a deficiency in the current provision of sports grounds, which were also un-user-


friendly. Students must walk quite a distance to reach the Flora Ho Centre, and transportation provided both publicly and by the University were inconvenient and infrequent. Students claimed that their intentions for sports were badly affected by this inconvenience.

Students also think that the campus is lacking of shops. As the University is located on the hills, students must shop for urgent necessities near the East Gate.

It is also reflected that there should be a greater number of canteens in the main campus. The existing three are crowded during lunch hours. Many students then prefer calling for take-aways, thereby producing many lunch boxes and wasted utensils.

In terms of campus security, students think that the problem of theft and other security problems will worsen as the University further develops for the open public; and are inadequate.

Regarding the Faculty of Engineering, students believe that developing a Research Composite Building, and investing a greater amount of capital on increasing the number of available degrees (i.e., MPhil and PhD degree vacancies), can assist the development of the faculty, by increasing the research output. Despite the fact that the current curriculums can meet the needs of the community, students expressed their interests in suggesting the additions of aerospace engineering and energy engineering.

From our survey results, it is observed that students have great expectations from the Western Expansion Project, wishing that it will bring about a fully equipped campus with well developed facilities for future students, enhanc-

ing their development in different areas of interpersonal growth and interests.


The Engineering Society HKUSU was founded in 1913, and is one of the earliest students’ organizations affiliated to the Hong Kong University Students’ Union. We serve as the official students’ body and students’ representative of the Faculty of Engineering, and have a wide communication web with other external Engineering related organiza-
tions. The society is dedicated to connecting engineering students of different departments to promote common interests in academic, social, cultural and sports.

The name of the cabinet of Engineering Society, H.K.U.S.U. Session 2005 – 2006 is ZENITH. It means that we aim for the highest point. It also stands for “Zeal Echoes Notions In Triggering Harmony”. We believe that the achievement of goals is through enthusiastic devotion and the stride towards changes and unity.

One aspect that this society holds of great importance is their close contact with the students. So do let us know any comments, questions or concerns you may have and we will serve as the bridge between students and the faculty.

We also work towards providing students with a wider diversity of services and welfare items. With the provision of different leisure facilities, the Society aims to provide her members with a truly relaxing place down at the Society Common Room, at LG101 Composite Building. Please feel free to drop by.

Further Enquiries:
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tions. The society is dedicated to connecting engineering students of different departments to promote common interests in academic, social, cultural and sports.
STAFF NEWS, HONOURS & AWARDS

Department of Civil Engineering

Professor A.K.H. Kwan
Appointed as a member of the Accreditation Advisory Board of the HKSAR Government;
Elected as a member of the Structural Division, HKIE, and co-opted as council member of HKIE 2005 for two years.

Professor C.F. Lee
Fullbright Distinguished Scholar, U.S. State Department;
Silver Bauhinia Star, 2005 HKSAR Government Honours

Professor J.H.W. Lee
Naming of Croucher Laboratory of Environmental Hydraulics

Dr. S.C. Wong
Appointed as a member of the Road Safety Council of the HKSAR Government and reappointed as a member of its Road Safety Research Committee from June 1 2005 for two years.

Department of Electrical & Electronic Engineering

Professor F. Wu
Endowed Professorship, Philip KH Wong Wilson KL Wong Professor in Electrical Engineering, inaugurated from April 26, 2005

Department of Mechanical Engineering

Dr. A. T. Chan
Best Teacher Award 2004-05 (By Faculty of Engineering, HKU)

Department of Computer Science

Dr. W. W. L. Cheung
The Centre for E-Commerce Infrastructure Development (CECID) has been honoured with the Grand Award in Infrastructure Building and Communication Application of Hong Kong Linux Business Award 2005

STUDENTS’ AWARDS

Bronze Medal – 29th World Finals of the Association for Computing Machinery International Collegiate Programming Contest

Liu Chi Man, Tam Siu Lung and Tse Chi Yung from the department of Computer Science outshine competitors from internationally acclaimed universities such as the Massachusetts Institute of Technology (MIT), Tsinghua University, University of Texas at Austin, University of British Columbia and University of Tokyo at the 29th World Finals of the Association for Computing Machinery International Collegiate Programming Contest held in Shanghai in April 2005. The HKU team solved 10 computer programming problems within five hours.

1st Place Winner of Microsoft Imagine Cup 2005 in software design

Wing Wai Kwong (PhD in CS) and Yu Yan (BSc (CSIS)) have won the 1st Place Winner of Microsoft Imagine Cup 2005 Competition in software design. Their team “Interaction” has developed an interactive and collaborative suite for knowledge delivery.

Zhu Kezhen Prize

Ken T.M. Wong Ph.D. graduate from the department of Civil Engineering has been awarded the Zhu Kezhen Prize by the Hong Kong Meteorology Society for his Ph.D. thesis entitled “Red tides and algal blooms in subtropical Hong Kong waters: field observations and Lagrangian modeling” in July 2005. The Prize was awarded because of Dr. Wong’s important observations on the relationship between red tide occurrences and meteorological condition, and for the application side of utilizing meteorological information on red tide prediction.

Before this, Dr. Wong and his supervisor, Prof. J.H.W. Lee, have already been awarded the Best Paper Award in the 14th APD Congress (Asia and Pacific Division) of the International Association of Hydraulic Engineering and Research for their article entitled “A vertical stability theory and model for red tide forecasting”.

1st Runner-up Robocon 2005 Hong Kong Contest

The HKU team “alpha-squared” has won the Robocon 2005 Hong Kong Contest in the 1st runner up position.

The team comprised 9 students:
2 from EComE: So Chik Man, Lai Ming Fai
7 from Mechanical Engineering: Kwok Tsun Fung, Lee James Shing Hin, Fung Dat Fai Victor, Lam Shang King, Lee Ming Yan, Lee Lai Kwan and Lam Chun Kit

Faculty of Engineering Newsletter

October 2005 Issue

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