THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Faculty of Construction and Land Use

FCLU News

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From Trade School to University

Contents

Message from the Dean

Welcome to the fourth issue of the FCLU newsletter. Firstly, we would like to thank you, our readers, for taking the time to respond to our survey questionnaire issued along with the last issue of the FCLU News. The survey shows that the Special Feature and the section on Technology Transfer and Research Developments were the most popular amongst readers. The popularity of the latter indicates that our readers are active professionals keen to keep abreast of the latest research and technological developments in their field. The former provides an in-depth report on a selected theme. Through this Special Feature, we hope to introduce, in greater depth, specific aspects of the Faculty's activity which we believe are noteworthy.

This year, the University celebrates its 70th Anniversary. The University started as the Government Trade School and Building was one of the three discipline areas which the Government Trade School offered when it started 70 years ago. The development of the Faculty therefore dates back to the founding of the Trade School and from the earliest days of the PolyU, construction has played an important role. Up to now the Faculty remains the only one amongst local universities, and probably one of the very few worldwide, devoted specifically to teaching and research in the construction field.

In the special feature of this issue, we try to build up the history and development of the Faculty by piecing together information dug up from archives and anecdotal evidence, some heart-warming, some amusing, as remembered by many of our alumni. I am sure these anecdotes will bring back sweet memories of the past amongst many of our readers.

We also try to see the development of the Faculty in the context of the social, economic and political development of Hong Kong because our history and development, in many ways, are integral parts of the development of Hong Kong. For 70 years, the Polytechnic University has educated young professional people for the building, civil engineering and construction related industries of Hong Kong. Many of our alumni are 'movers and shakers' in the construction, surveying, building and real estate industries and professions who helped built the success of Hong Kong today.

In addition to our proud history of producing graduates that contributed to the successful story of Hong Kong, the Faculty has also developed a substantial research dimension which has mushroomed since the early 90s. The data and graphs presented in the feature article show how fast and how much our research activities and outputs have developed in just over fifteen years. We have made significant contributions to the development of a research culture, not just within the University, but have also influenced the construction industry. As we have reported in the special feature articles in the earlier issues, we have made substantial progress with respect to collaboration between the construction industry and academia in the pursuit of technical excellence in the built environment. This will be one of our main directions of development in the coming years.

We end the special feature by highlighting many of the challenges that our graduates face. These are also challenges for Hong Kong. The Faculty has its roots in producing technical manpower required by Hong Kong at a period when Hong Kong was ready to start its evolution into a modern city. We will continue our tradition of contributing practical solutions that meet the needs of Hong Kong. Our story of success will go on, as we will keep pace with, and take the lead in developing Hong Kong into a world class city that its citizens can be proud of.

Lastly, I am very happy to be able to announce the appointment of Professor Jin-guang Teng, Chair Professor of Structural Engineering, as Dean of the Faculty with effect from September 2007. Professor Teng is also Associate Vice President of the University.

Ir Professor Andrew N. Baldwin
Dean of Faculty of Construction and Land Use

August 2007

From Trade School to University

Staff and students — THE LIFEBLOOD OF THE FACULTY

Social, economic and political conditions — THE MOTIVATOR

Extending the boundaries of knowledge — THE CHALLENGE

Milestones of Change

This article is written in praise of the lifeblood of the Faculty of Construction and Land Use (FCLU), our students and staff, past and present. It is not intended to be an academic tome, dealing with the pros and cons of what constitutes good education, management and other complex issues of policies and politics. Such an approach in the wrong arena can induce sleep, rather than enthusiastic interest!

It is a simple attempt to recall times when it was possible to drive around Central unimpeded by other vehicles and with the space and opportunity to park at will. Today we have the traffic density common to any cosmopolitan city…. a convenient excuse for students late for lectures! The intention is to try to recapture something of the spirit of the times and the relationship between social and political situations and the development of education for the construction industry, from the opening of the Trade School in 1937 through to the FCLU, as it is today, a span of 70 years.

To understand how the FCLU came about, one must go back to the establishment of the Government Trade School in 1937, because it was here that the first seeds were sown.

Education for the construction industry has grown from being little more than an idea before 1937 to being the large and comprehensive unit embodied in the Faculty of today. The development has paralleled the change of Hong Kong from a city dependent on trade and manufacturing, with poverty and poor housing or in some cases no housing for many, to a financial centre of international repute, with an elegant business district, some state of the art buildings and world class infrastructure and housing, and at least a visible absence of the poverty of such as the squatter settlements of the early years.

We offer brief memory snapshots from alumni across the years, of their time in technical education. Such memories illustrate the growth of what, in truth, today has become a dynamic family history of aims, opportunities and experiences. Through these memories, we can get a glimpse of what some might recall as the "best days of their life" and also something of the stalwart and resilient sprit and humour which has made Hong Kong what it is today. This, together with references to parallel social and political developments will show the close connection that was forged between social, political and economic influences, the different eras of technical education and the built environment of the Hong Kong we have today.

Yesterday's Hong Kong

Picture a Hong Kong of yesteryear, as described by one of our oldest alumni. Picture a thriving harbour packed with coastal junks, fishing vessels and sampans, all jostling for position among a variety of cargo ships of all sizes driven by sail and steam and with flags of all nations. Picture also the labour associated with this scene: mariners, carpenters, sail makers, tradesmen, builders, ship wrights, wheel rights and labourers. All were necessary to enable the world of the pre 1930s to operate. This was a world where the local economy was dominated by trade passing through Hong Kong to and from China. In 1921, exports through Hong Kong to China were HK$432.6 million in value. Activities not associated with the docks and the building industry were of marginal economic importance. In 1939, the trade figure of $432.6 had dropped to $90.3. In spite of an existing apprenticeship system, more and more technically trained people associated with such as building and maritime needs, including shipbuilding and repair, were needed to underpin these industries and also the emerging textiles industry.

The peak year for ocean going tonnage using the port was 1935 after which trade declined, affected by the "slump" of 1931 and Japanese aggression in China. The development of the textiles industry was significant of the changing times, as was Hong Kong's oldest industry, ship building and repair. Regarding the latter, two ships as large as 10,000 tons each, were completed at the Taikoo Shipyard in 1939.

Hong Kong was still in the process of being built, particularly in the area of affordable healthy housing and with the latter in mind government attention was given to improvements in living standards. For example, a new Building Ordinance provided for improved lighting and ventilation. The Urban Council was established to frame and operate bye-laws. Medical services expanded. The Kowloon Hospital was opened in 1935 and the Queen Mary Hospital, a government civic hospital, opened in Pokfulam, 1937. A Labour Officer was appointed to deal with general conditions of labour, strikes and organization of trade unions. The scene was being set for controlled growth and thriving prosperity.

At this time, the building industry was in a state of peak demand and short of trained technical personnel. Technical education was extremely limited and mostly in the hands of voluntary religious groups. What was needed most, was an efficient mechanism for providing people specially trained not only to meet these community needs but also to make available the dignity of having a job.

To do just that, in 1937, the first milestone in public technical education was established with the opening of the ***Government Trade School*** *in Wanchai.*

Over time, this institution, so begun, has constantly adapted to Hong Kong's needs which have altered in accordance with the external and domestic political, economic and social climates. Technical education under the umbrella of the Trade School acceded, not only to the pressures of industry and the availability of jobs but also to the aspirational needs of Hong Kong people, particularly the less financially privileged. However it was not easy to get into the School both in the early days and later. Full time day courses were heavily over subscribed. Fortunately, the spirit of the people was dominated by a determination, flexibility and energy to seek in whatever way possible, a means for individual and therefore family betterment and many persisted against substantial odds. A motivating factor, reported by many alumni, was the lack of social security and of public pensions of any kind. Hence it was necessary for offspring to get good jobs and fulfill parental obligations. The later opportunities for part time study were almost an answer to a prayer.

Our first snapshot of memory gives a typical image of the time and is offered by Mr. Ng Wing Hong, one of the first graduates of the Government Trade School. Like many alumni, he vividly remembers the grandeur of the red brick façade of the School and the energizing hope of betterment it offered its lucky first 30 entrants. Although poverty abounded for many, he remembers the time as tough but that people never lost a sense that "things could get better if effort was made and opportunities presented".

Classes in building disciplines ran from 9:00 to 5:00 on weekdays with Wednesday afternoon saved for site visits which also involved reports. Project work was conducted throughout the course and workshops also took place in the evening. The interest of many of the students was intense and optimistic, with very few dropping out. He and four classmates held voluntary Saturday gatherings to survey the work of the week and of course to enjoy a recuperative Yam Cha: the first murmuring of an alumni fraternity!

In his case he was driven to education, concurrent with helping his father, a sub-contractor by delivering tenders, in person, to prospective clients. He was "driven" because he realized that without building knowledge and/or education he was forced into a position where he had to agree to the counter bids of his father's prospective clients. Financial ruin would be the end product of that scenario!

Despite the obvious need for post secondary technical education, places at the time, were very limited. The

University of Hong Kong (HKU) catered mainly for wealthier students with ambitions in law and medicine, although civil engineering was offered. Technical training in all other building disciplines, took place when and where necessary "on the job" or through limited numbers of apprenticeships which often focused on the needs of "the master craftsman" rather than on imparting technical knowledge to the apprentice. Mr. Ng Wing Hong considered himself very lucky.

Interestingly, the idea of a Trade School was treated with a distinct lack of co-operation by many in the private sector, who no doubt felt "training on the job" or the old system of apprenticeship was sufficient for their needs. As a body, however, the construction industry responded to the huge and increasing need for skilled and appropriately focused manpower, with which to support Hong Kong's rapidly developing built environment. The carpentry and building skills taught at this time were the first stirrings of the Faculty we have today, 70 years later.

The Building Contractors' Association (BCA), however, had the instinct to "speculate to accumulate" both in its own long term interests and for those of the public good. The BCA took responsibility for building the Trade School at cost under the direction of an experienced and socially responsible builder, Mr. Tam Sui-hong. Interest in the school was maintained, both then and later. Surplus building materials, such as bricks and sand were sent free, for use in practical classes. One condition of the builders' compliance was that the sons of builders be allowed entry regardless of their qualifications! An interesting story is told about one builder's son who was not really of a technical nature. This boy was "nursed" through his course. Ultimately he became a Legislative Councillor!

Mr. Ng Wing Hong was typical of the ambitious young people of the time who seized every opportunity presented. After graduation, he taught at the School part time for 1 dollar an hour and eventually began a prosperous contracting business with his father, winning secure contracts with the British armed forces before and after the Japanese occupation. Before the war he secured a living good enough to buy luxurious very best quality clothes, a fortuitous investment. Later they were sold to keep him and his family from starvation during the war!

Mr. Ng Wing Hong, one of the first graduates of the Government Trade School

Government Trade School established in Wanchai in 1937

A Second though Negative Milestone in the History of Technical Education for the Building Industry was presented in 1941

In theory, the form of technical education, started by the Trade School, was the key to advancement and a more profitable life. However the effect of this first milestone was restricted by political, social and economic change.

Had the world been a perfect and stable place, education in building disciplines, from this point, could have seamlessly gone from strength to strength. The reality, however, was far from this ideal picture. The fall of Hong Kong to the Japanese on Christmas Day 1941 resulted in chaos in all areas.

The priority was to stay alive, come what may!

Many in Hong Kong left for China on scant rations and did not survive the journey. Others, who were connected with the British armed forces, were sent for protection to Macau. Poverty both in Hong Kong and also for those who had fled to China was intense to the extent that the value of a day's work was "a bowl of rice".

Food was never sufficient and daily necessities almost non existent. Charities, mostly associated with religious organizations, were one source of help, as were such as the Tung Wah and Kwong Wah Hospital Groups. One business organization, the Yue Ching Company, which had the monopoly on the sale of opium, with Japanese approval, donated regularly to funds to ease the hunger and poverty that dominated.

Schooling ceased except for a minority who were taught using the medium of Japanese. Those unlucky enough to be aged 5 at the outbreak of war did not start school until they were 10 years old, as was the case of the wife of Dr. Dan Waters who worked at the Technical College from 1955-69 and as Head of the Building Department in his last year. He then went on to become Principal of the Morrison Hill Technical Institute and later still Assistant Director (Technical Education) in the Government Education Department.

The Trade School closed in 1941 and anecdotal rumours suggest it became an opium factory!

Post secondary technical education, along the lines intended with the formation of the Trade School, became a distant memory and further development an impossible dream.

Department of Building, Surveying and Structural Engineering was developed from the Building Department

Hong Kong Technical College

However, after the war and against what for many countries would have seemed impossible odds, Hong Kong people, with a resilience second to none, rose to meet the challenge of reconstituting their war ravaged homes and lives. The 1937 milestone in technical education, smashed so vigorously by external forces in 1941 was re-erected.

In 1947 the Trade School, damaged and devoid of equipment but with a determined clientele reopened and as if to fully advertise a new beginning, it was renamed, the **Hong Kong Technical College** and so it remained until 1972.

Site visits and practical and investigative teaching recommenced, tangentially with a life of rote learning, chalk and talk. The latter may have been tedious, but none the less appears to have been a successful foundation for the 30% of graduates who continued training overseas, where many obtained top class degrees, some working full time, some part time. The fabled poor English of engineers, in this instance, hardly proving to be an impediment!

It is reported by the alumni particularly those of the early years, that the Technical College was a treasured source of help in times of unrest, and insecurity. It provided one of the only means of self betterment and optimism for the future for the largest not so wealthy section of the population. It was, for its students, the college of choice, and not what to some may have seemed second best. The focus was on teaching practical skills rather than academic theory. Additionally, in the late 60s, a consideration, which governed student choice, was the availability of the use of the early computers, before the days of desk tops. In sixth forms of the time computer usage was not available. Students felt they had "fast track" tuition towards a career. In the interest of family security, time was not wasted on what, to them in a practical sense was unprofitable study. Over time, the College gained recognition and respect and a name to be proud of, based on the high performance of its graduates many of whom gained high positions in both public and private sectors.

Today, it is difficult to imagine what confronted Hong Kong in those early days. In the 50s, people were entering at the rate of 100,000 a month. The numbers of immigrants, as in the early 30s, put an immeasurable strain on housing, people were sleeping anywhere and in shifts. Hillside shacks proliferated as did disease. Food was in very short supply. People were living in crude shanty towns, on hillsides, rooftops and in stairwells. The strain on the public utilities and water supply was immense. The population, which at the end of 1946 had been 1,600,000, had risen to 2,360,000 by 1950 and 2,500,000 by 1956, 60% of which were under 25 years of age. The demand for housing, improved amenities and jobs was intense.

The first student association of Building Department was established in 1948

Among the flood of immigrants was what turned out to be "a pot of gold" for Hong Kong. It came in the form of entrepreneurs, from Canton and Shanghai fleeing the "coming of the Communists". The specifics of the "pot of gold" consisted of capital conveniently safe in overseas bank accounts, possession of industrial hardware, a commitment to the development of industry and a firm desire to protect their livelihoods and wealth from being swallowed by the Communist regime. 32% were textile industrialists and 13% had interests in building construction and real estate. Their wealth, experience and possession of equipment, effectively counterbalanced the albeit temporary state of local industrial impotence, which was the legacy left by the Japanese occupation. All tools, building equipment, industrial machinery and the like had been requisitioned and taken from Hong Kong to Japan. In addition war damage left its own psychological scar.

These entrepreneurs were also large employers and fostered an industrial ethos and drive which included seeking the means to provide the right training for the right job and the means to provide the right built environment, appropriate for keeping pace with the growing industrialization. A further important factor which contributed to sustaining the increasing industrial development and subsequent restoration of Hong Kong was that the Shanghainese and the industrialists from Canton, like the Hong Kong Builders in 1937, were willing to "speculate to accumulate" and were independent of such government policies that ensured "income met outcome". Their interest was in textiles and small manufacturing, both of which boomed and provided work and comparative prosperity for many.

The "knock on" effect was more money for the pockets of Hong Kong citizens and also for government coffers and thus a readiness, willingness and means to focus on the education of the labour required.

The industrial prosperity, stimulated by the immigrant entrepreneurs from Shanghai and Canton, invigorated the construction industry.

Alumni report that the Shanghainese, although not always popular with the native Hong Kong citizen, by virtue of their different cultural backgrounds and an inclination to form individual communities within Hong Kong, nonetheless provided the means to fuel the people's optimistic flexibility and "can do" spirit of survival.

Labour was cheap and plentiful. For instance some were willing to work for 2 bowls of rice a day and in the building industry such as female nail straighteners were paid 1.5 dollars a day and males 2.5 dollars a day until it was cheaper to provide new nails. Craftsmen received 5 dollars a day. The majority of workers were untrained and 90% were illiterate. Nevertheless, it was obvious that an expansion of technical education for the building industry and indeed all others, was essential to meet the needs of Hong Kong's growing prosperity.

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Technical Education was a Community Necessity and a Priority

In recognition of the above, the demand for skilled training in the form of Certificate, Higher Certificate, Diploma and Higher Diploma studies at the Technical College swelled. Much of the demand was from part time students. For example in 1947-8 there were 25 full time and 599 part time students. It was becoming obvious that the premises in Wanchai would soon be no longer adequate.

It was felt that a Technical College was needed on each side of the Harbour. Contractors such as John Poon, Wong Tin-sang, John Lok and Ho Yiu-kwong formed advisory committees. The example of the Building Contractors Association's generosity and foresight in 1947 was echoed by the Chinese Manufacturers Association (CMA) and one million dollars was offered to building a college in Hung Hom, provided the government matched it and provided a site. By the time the new premises were opened in Hung Hom, the numbers of full time students was 359 and part time students, 5,532. The example of the Building Contractors Association's generosity in 1947 was maintained and by the time the building in Hung Hom was finished in 1957, approximately 64% of the building costs had been donated. Philanthropy by alumni and interested tycoons continues to this day.

To see the background against which this technical education took place, we have a snap shot of memory of Hong Kong in 1955, offered by Dr. D.D. Walters, known as "Mr. Technical Education". He arrived in Hong Kong as a Government Education Officer. On the one hand the mid 50s was beginning to show evidence of financial growth, government revenue increased from $396,881,967 in 1954 to $2,489,657,388 in 1970 and to over 4 million in 1971. On the other hand, Hong Kong was massively over populated as indicated above. The demand for technical training in building skills, correspondingly, intensified. Apart from the growth in industry, people needed to be housed and an adequate infrastructure developed.

New industrial suburbs were being created such as North Point on the Island and To Kwa Wan in Kowloon. Complete industrial townships were built such as Kwun Tong, which was built on reclaimed land. Another example is Tsuen Wan which was added to Kwai Chung. Vast reclamation areas were formed: Central in 1962 is a notable example. The built environment took a further leap when the electronics industry was introduced in 1959 resulting in further job availability.

The impact of the above, together with the stable environment ensured by the government, resulted not only in a widening of good living standards, dreams and goals but also a degree of industrialization, that was eventually 15 years ahead of anywhere else in Asia.

A snapshot of the building professionals of the time is offered by the experience of Mr. Ng Wing Hong, mentioned at the beginning of this article, but now older and experienced. During the war, he had destroyed all pre-war relevant building contract papers relating to work with British companies, in the interests of personal security. Therefore all proofs of his skills and experience were lost. However, the need for building skills to restore the built fabric of Hong Kong was so great that many contractors were re-employed on the basis of trust. Mr. Ng felt that much of his success, at this time, was due to a Government Trade School education and in particular to his knowledge of English building terms. He was well prepared for the building explosion of the 60s and 70s.

New premises of Hong Kong Technical College opened in Hong Kong in 1957.

Industry Grew to Meet Market Demand and Technical Education Grew to Meet Industry Demand: A Symbiotic Relationship

The Hong Kong Technical College moved to a new and larger site in Hung Hom in 1957. The focus was strongly on Land Surveying and Building as it had been with its predecessors. A recognisable nucleus for the FCLU we have today was indeed strengthening.

Professor Peter Mok, a structural engineer who graduated in 1967, now recently retired from a high position in the construction industry (but busier than ever on a construction venture in Macau) gives an interesting insight into the ambitions of students of the time. He felt that their basic objective was to "make a living and seek a good life". Many were not necessarily driven by a passion for the construction industry but were simply stimulated by what they saw all around them in a world dominated by new buildings, demolition and rebuilds. They saw a means to comparative prosperity. As in 1937, many of these students did not really know what they were "letting themselves in for", either in terms of what constituted the disciplines of building or in the intensity of the course. It was often reported by staff that it was only after the first year that students began to understand the demands and intensity of their chosen profession.

The need for technical training in building disciplines did not have to be advertised, it was self evident! The College in Hung Hom continued to expand both in buildings and student numbers. The number of part time students, particularly increased, rising to a peak in 1990. At the opening of the Hung Hom premises, student entry level for the three year Diploma course was successful graduation at form 5 and for the part time students, successful graduation at form 4. Further courses were conducted which led to membership of British professional institutions such as the Chartered Institute of Builders (CIOB). Two-year courses were conducted for craftsmen and foremen.

A Further Milestone in the Journey to Faculty Status was Established when Discipline Streaming Began

In 1967 during the time Dr. Dan Waters was Head, each student year was divided into 3 class groups, each with approximately 30 students. A general building course was conducted for all classes in year 1. Specialisation took place in the second year with students opting for either Structural Engineering or Land Surveying or a General Course. The latter group graduated at the end of that second year. The structural engineers and land surveyors had to complete a third year training, before graduation.

The staff was well qualified in that most had degrees but according to some alumni lacked technical experience. This was quite different from the earlier days when many of the staff were technical practitioners. One structural engineer alumnus, himself with practical experience prior to College entry, was surprised to find certain classes were reliant on the dictated university notes of a newly graduated teacher! Students at the end of their courses often received some sort of sponsorship to study overseas. Both employers and academia found, in later years, that without doubt: Technical College students had "absorbed information for later application" in whatever field they chose. Maybe, despite the claims of modern education theory to the contrary, this could be a testimony to the value of a degree of rote learning!

The fundamental framework for the Faculty was well in place in the 60s, but it was almost as if the fates felt that Hong Kong was progressing too easily and so they introduced another brand of social and political difficulty. The metal of the Hong Kong citizen was tested yet again.

The words of the first line of the school song of the Victoria Technical School (VTS) (a secondary school occupying the former premises of the Hong Kong Technical College, after the latter moved to Hung Hom in 1957) *"Do your best, strive for the best"* well remembered by Professor Kenneth Pang, recently retired from a high position in the government and who graduated in 1967, must have become a strong mantra or on-going personal philosophy for all. Hong Kong citizens, although free of warfare were faced with one disaster after another.

There were heavy rainstorms, droughts, periods when water was on tap for only 4 hours every 4 days, and that was for those lucky enough to have piped water . The roof was blown off the Technical College during typhoon Wanda, 1964 and then there were the 1966 and 67 riots…. and all of the above was before global warming, el Ninos and the "War on Terror" had headline news!

The threat of bombs, was another issue to be endured, one even being found on the College campus. Professor Pang remembers well the stress of exam time. The difference between then and now, was that his exam time was heightened by first having to check the "bomb forecast" rather than the weather forecast as may happen today. He, like many of his classmates then had to make the 20-minute walk from the ferry to the Technical College fearing they could become the subjects of someone's target practice.

Despite all the above, the "movers and shakers", continued to follow a policy of "out with the old, in with the new" and enjoyed an economic boom time. Buildings such as the Trade School in Wanchai disappeared, as did many of the squatter settlements, particularly in potentially prime business districts. New buildings took their place. People were shifted to the new towns. The Central Business District began to take the shape we know today.

In the main, the buildings we see around us, are largely, a monument to those "grass root" students, the young engineers and teachers of the Technical College and the early Polytechnic days: the 60s and the 70s. Professor Peter Mok, confirmed that traditionally, in this period, the Technical College and Polytechnic graduates joined the Rating and Valuation Department, the Lands Department, the Buildings Department, the Architectural Services Department and the Housing Department to the tune of 80% in 1972, whereas the HKU graduates provided most of the "home grown" civil engineers until relatively modern times. The number of full time places for tertiary education, for those with family financial responsibilities and therefore without the means to complete the sixth form training necessary for university entrance both locally and abroad, was very limited. The Technical College offered a solution for this category, as not only could study be carried out part time, money could also be earned 2 years earlier. Many also chose the College because of the emphasis on practical application of knowledge. Professor Pang acknowledges that this era of students provided the lifeblood of the building and construction industries in that it provided engineers, surveyors, building professionals and technicians.

The renaming of the Hong Kong Technical College and the subsequent birth of the Hong Kong Polytechnic in 1972, brought about a corresponding development of education designed to meet the growing needs of the building and construction industries.

Before we continue with academic milestones, now is a good opportunity to get a glimpse of the lighter side of student life through more snapshots offered by alumni.

The Basketball Court Construction: A Test of Skill, Energy and Initiative Student Style

During this period the Technical College did not appear to be over burdened by the dictates of higher management regarding campus planning, although of course plans must have existed. However, one simple activity occurred, which some alumni may remember and which would be unimaginable in the university of today.

The students of the 60s suffered from a lack of facilities for play and had to move around Kowloon and Hong Kong for football pitches, tennis courts, basketball courts and the like.

Being ever productive, energetic and innovative, the 1967 final year students requested and sought permission to exercise their building, surveying and teamwork skills to create a basketball court out of the lawn in front of the old library. Today the only equipment we see students carrying are books, pens, laptops and theodolites. However these guys wanted to solve a problem and put skills learnt to the test, so, for 2 months they toiled with spades, wheelbarrows and measuring equipment to dig the foundations of a basketball court. A large hole, the dimensions, indeed, of a basketball court was created…. and there it remained, for quite a considerable period of time, the "builders" having left as the semester ended, to continue their careers; 30% overseas and unreachable. This was project work, not exactly to the design of the curriculum but nevertheless a test of skill, endurance and investigative skills and which perhaps illustrates the freedom and confidence of the time! The hole they left is another story!

The Original Keswick Hall

A Meeting Place of All Aspects of College Life

The original Keswick Hall demolished during the rebuilding over the years, was another asset which Building Department alumni of the 60s and 70s will remember with affection. It had a multipurpose function providing workshops and other accessories for classes, a canteen, indoor sports facilities and the like. Perhaps its most well remembered asset was the space provided for the weekly dance arranged in turn by the different departments. The Building Division may well remember the popularity of the Commerce Department at such functions, as they had only one female classmate among their own number.

Before we return to the renaming of the Technical College, it is important to note the change and development of government policy as quite obviously this can either make or break both the spirit of the people and also impede or encourage progress.

The emergence of a new Hong Kong spoken about optimistically by Sir Man Kam Lo as early as 1946, in the Legislative Council was indeed coming to fruition, both in terms of identity and direction.

The likes of Sir Mark Young, Sir Alexander Grantham and Sir Maclehose, promised Hong Kong citizens a fuller and more responsible share in the management of their own affairs. Functions of government were transferred to the municipal councils. The Young plan ensured that the fullest account be taken of the views and wishes of the inhabitants of Hong Kong. As a consequence the Chinese element increased in the Legislative Council to the point of having the majority of the Council's 16 members. More significant was the introduction of local recruitment to the Civil Service in 1961. Local officers were sent abroad to gain qualifications to fit them for higher posts. Sir Robert Black, in 1964, ensured that although Britain still exercised sovereignty she did in fact restrict herself more to only the control of Hong Kong's external affairs.

This liberating optimism felt by Hong Kong people was further reinforced by three important government initiatives:

1. the establishment of the Independent Commission Against Corruption (ICAC),
2. the 10-year public housing policy,
3. strong focus on education for industry.

The result of such initiatives can be summed up in the words of Nelson Boswell: *"the most important step towards success is the feeling we can succeed"*.

This was indeed the case for the people of Hong Kong. They felt more strongly that the key to a secure future and betterment was within their grasp. The strengthening of focus on education in line with the needs of the construction industry was just one of the many examples presented.

It is logical to expect that the greater the control people have over their destiny, the more education becomes a matter of subject choice rather than simply a means to an end. Possibly to a large extent, the startling change in Hong Kong's built landscape enticed students to become part of the construction industry out of interest rather than as was more likely before, a convenient means to an end.

There was a widespread move towards Polytechnic education in Britain and other Commonwealth countries. Three years before the edict to adopt this tertiary education medium came from Britain, it had already been spoken about in the Legislative Council, by S.Y. Chung as a means both to meet local societal demands for more access to education and also to respond to such as the emergence of the new technologies evident globally. It was felt that Hong Kong was already nicely placed to become a world player and would therefore benefit from the development of a research culture that such a move would imply.

The Emergence of the Polytechnic was a Significant Milestone

However, pivotal steps such as the above, in the evolution of the Faculty, and as confirmed by Professor J.M. Ko, were not always spontaneously or happily received by staff. Just as there was some resistance to the change from Trade School to Technical College, so there was again, regarding the change to Polytechnic status in 1972.

It was felt that the earlier technical establishments had served society well and in accordance with people's and industry's specific needs. Many staff felt that the original principles embodied in technical education would be betrayed in the move to Polytechnic status, and that the change would inhibit the establishments' traditional task of offering a wide variety of vocational courses. Staff also suspected that apart from being distracted from teaching, their chosen vocation, more might be expected of them. Both lecturers and technicians alike were not enamoured with the idea of losing working hours that were predictable.

The staff were teachers first and foremost and in so being focused on imparting technical skills. Learning experiences for students were enjoyed in the form of orientation camps, site visits, twice yearly training in industry with no pay, the latter may not have been so appealing to the students! For a short period, second and third year Land Surveying students enjoyed week long camps in Yuen Long, staying in army bungalows which were remotely situated. Professor Esmond Mok speaks of the scariness of the trek which coincidentally followed the route taken by funeral processions. The task of humping heavy technical equipment uphill can be imagined as can 24 hours of field measurements. It certainly made physical education unnecessary! This camp soon contracted into a day trip!...a fact that was not necessarily happily received by the students. Hard labour, no electricity, having to collect water was thought to be a small price to pay for the freedom of the camp and the camaraderie it produced.

Alumni of the 60s speak of companionable camaraderie enjoyed together by staff and students. Dr. Dan Waters speaks of joint games of kicking shuttlecocks, X'mas Day cycling trips around the New Territories via Sheung Shui and climbing Ma On Shan. Convivial "yam chas" were also enjoyed to the extent that Dr. Waters still has a monthly gathering with alumni at the So Jit Restaurant.

Dr. Dan Waters kicking shuttlecock

Monthly alumni lunch group

However, in line with education around the world, development of research was implicit in new government policy both to enhance Hong Kong's global eminence and also to underpin degree studies. By about 1985 a "breeze of change" was beginning to be felt. By the 90s, this breeze had become a "wind of change" as the Polytechnic became a university. Many older staff retired, motivated partly by the social and political uncertainties of the 80s due to fears regarding the "Hand Over" to China. Many left Hong Kong to secure residency in Singapore, Canada, Australia and New Zealand.

The staff who remained, divided themselves, in accordance with professional preference, into teachers "only" or "mainly" and some embraced research wholeheartedly. All were able to teach in their specialty area, which according to Professor J.M. Ko had not always been possible in the past!

From **Slide Rule** to **Computer**

A notable difference in the style of education at this time and which began in the 70s, was brought about by the advent of the "mini" and then the "personal" computer.

Prior to the 70s, equipment compared to that of today, was primitive, both within the teaching establishments and on site. Only staff had access to the few main frame computers available in the 60s and regarding building sites, one alumnus was recommended to do site training for a particular sub-contractor because he used wheel-barrows on his sites! Students' calculating equipment initially consisted of an abacus and slide rule followed by the hand held calculator of the 70s. Engineering drawings were made by hand.

However increasingly, on site and more especially in the design office, "time was money". Faster calculation abilities were one way of improving productivity. Use of the computer would allow more complex accurate design calculations to be performed, enabling the tackling of more sophisticated and economical structures. The task of the Division, later the Faculty, was to teach professionals to be master of the computer.

Initially in the 60s, computer usage, based on batch processing, was the mode of computer use. Only the Government had a Main Frame, the Hong Kong Bank had an IBM360 and the China Light had an old Japanese computer using 5 hole paper tape for a signal. Dr. Kwan Lai of the Department of Civil and Structural Engineering (CSE), reported that within the FCLU, the CSE Department was the first to have a 4k Wang mini computer system and Hewlett Packard desktops followed. Today of course, things are very different for example, practitioners can graphically simulate actual construction in the computer to find where design or management problems might lie, before the project physically begins. Palm held computers connect site engineers to the design data base.

An obvious effect of computer usage was that much teaching material became outdated. Alumni taking the Council of Engineering Institutions (CEI) Part 3 Exams, remember their surprise when told to jettison the text books used by other education establishments which taught the long accepted approximate solution methods. In the computer age such methods had become obsolete. Dr. Kwan Lai who was responsible for the CEI Part 3 Exams, wrote and used his own teaching material, based on personal "hands on" computer experience gained from both industry and academia. The format of this teaching material was ahead of its time and together with the hard work of very special young people, was reputedly responsible for the Faculty students gaining First prize in international exams within the Commonwealth, not once, but every year for quite a while. His teaching material used for the CEI Part 3 Exam preparation in the Polytechnic was unique.

The Establishment of Divisions in 1977 Marked a Move Towards Specialisation

"Divisions" were created across the whole Polytechnic in 1977. The two which marked a milestone development in the journey towards the FCLU we have today were the Division of Applied Science which contained the Department of Building and Surveying under R. Stringer and the Division of Engineering which contained the Department of Civil and Structural Engineering (CSE) under H.S. Ward. Each Division was under an Associate Director, respectively, F.W. Ayscough and D.J. Peake. These Divisions remained in place for 6 years. The **Division of Construction and Land Use** was created under the Associate Director H. Ward. Such was the range of expertise then available that the new Division

was composed of 3 Departments, the Department of Building and Surveying, the Department of Building Services Engineering (BSE), the Department of Civil and Structural Engineering, and one Centre, the Centre of Land and Engineering Surveying. This Division was the immediate forerunner of the Faculty we have today.

A notable milestone of further change came about with the conferring of honours degrees and with a strong focus on research. The first batch of honours degree students graduated in 1988 from the CSE Department. The first research degree student graduated in 1989 from the BSE Department.

In the Division after 1985 (the forerunner of the Faculty), the stimulus for research was driven initially by Associate Director, Howard Ward, supported by the then Director John Clark. Dr. Ward had previously been Head of the CSE Department and a research start had already been made in that Department by a small hard core of staff during the early 80s, work which continued under the succeeding Head Dr. K.K. Wong. The BSE Department under Dr. Marsden had also started doing research in the 80s. The embryo Faculty was sufficiently ambitious to recognize that becoming more "outward" looking via research was the pathway to realizing its potential in the international arena. In this respect, Keith Legge, Director from 1975-84, recognized early the importance of forging links with China and determined to lay a strong foundation in readiness for the time when China and Hong Kong would be one country.

Coincidentally and conveniently, the above need to forge links with China was likewise recognized by a Hong Kong philanthropist, Croucher who established a foundation in his name. Importantly, it was tripartite, encouraging collaboration between Hong Kong, where Croucher lived, China from where he made his money and the United Kingdom, in which he was born. Fortunately there was political encouragement, in that by this time China's "open door policy" had been begun by Deng Xiaoping in December 1978.

A Construction Research Culture in Hong Kong Before 1990 was Virtually Non-existent

However, the Division, as described above and true to its commitment to serve the construction industry had begun to make appropriate research a priority. Of valuable assistance in this regard were our alumni who made available research sites and data. Additionally, research leadership, particularly in the CSE Department was particularly strong and also in the BSE Department under A.M. Marsden, to a lesser extent enabled the research culture to quickly become established and which has now become endemic across the whole Faculty.

The Division, partly for strategic reasons, focused its research interests in areas comparatively untouched by other research institutions. In the CSE Department, emphasis was placed on coastal and structural engineering. It has subsequently gone on to be a world leader in structural dynamics, and remains strong in the modeling of coastal waters and estuarine flows.

One of the first collaborative research examples was driven by Dr. K.K. Wong (fluid mechanics), Dr. Howard Ward (structural dynamics) and Dr. Kwan Lai, a Structural Engineer, with specialized knowledge of offshore drilling in the North Sea and Persian Gulf. A National Conference was organized with Mainland Universities on offshore structures, motivated by the oil crisis in 1980. This conference was one of the first examples of collaborative work and was followed by collaborative contacts with the South China Sea Institute of Oceanology. The aim was to design and create investigation equipment for work on waves in the South China Sea.

A more recent example of collaboration with China is seen in the Fire Research Centre, jointly established by the PolyU and the University of Science and Technology of China on the latter's campus. The Centre has been highly commended by the Chinese Academy of Sciences. Another example is the collaborative study on Acid Rain in Research Area 4, under China's National Basic Research Programme.

The establishment of the **Faculty of Construction and Land Use,** with Professor Mike Anson as Dean, finally occurred in 1992, 2 years before the inauguration of the Polytechnic as a university. This change of name was a progress leap in that it gave notice of the appropriate scholarly status now developed in construction disciplines in the Polytechnic. The already established structure of the Departments remained the same, with the Centre of Land and Engineering Surveying developing into the Department of Land Surveying and Geo-Informatics (LSGI) and the Department of Building and Surveying, being renamed the Department of Building and Real Estate (BRE) in 1993. The signal given by the change of name, indicated parity with the international academic world. Professor Anson draws attention to the fact that this quality had already been well grounded in the preceding years of the Division, as a result of the research efforts of a hard core of staff, co-operation of alumni and a sensible restructuring of Departments and all in line with the changing requirements of industry. Since the establishment of the Faculty, that leap has been firmly

HEADS and ACTING HEADS of CONSTRUCTION DEPARTMENTS and COORDINATORS of CENTRE

Building Department (before 1967)
Department of Building, Surveying and Structural Engineering (1967 - 73)

J. Clarey
* D.D. Waters
S.H. Ng (Acting)

Department of Building and Surveying (1973 - 93)
Department of Building and Real Estate (1993 - now)

* R.D. Stringer
R.W. Couchman (Acting)
* J.S. Ratcliffe
* D. Scott
M. Anson
A.N. Baldwin
F. K.W. Wong


D. Scott


F.K.W. Wong

Department of Civil and Structural Engineering (1973 - now)

M.C. Wong (Acting)
D.J. Peake
H.S. Ward
* K.K. Wong
K.H. Lai (Acting)
M. Anson
* J.M. Ko
* Y.S. Li
Y.L. Xu


Y.S. Li


Y.L. Xu

Department of Building Services Engineering (1981 - now)

* A.M. Marsden
* J. Burnett
J.D. Gilleard
S.W. Wang (Acting)


J.D. Gilleard


J. Burnett


S.W. Wang

Centre for Land and Engineering Surveying (1982 - 92)
Department of Land Surveying and Geo-Informatics (1992 - now)

* C. Heathcote
A.J. Brimicombe
* Y.Q. Chen


Y.Q. Chen

DIVISIONAL CHAIRMEN and FACULTY DEANS

Division of Construction and Land Use (1982 - 1992)
Faculty of Construction and Land Use (1992 - now)

Chairmen of Division
* H.S. Ward
R.D. Stringer
J.S. Ratcliffe

Deans of Faculty
* M. Anson
* J.M. Ko
A.N. Baldwin
J.G. Teng


R.D. Stringer


M. Anson


J.S. Ratcliffe


J.M. Ko


A.N. Baldwin


J.G. Teng

* Denotes service of 5 years or more

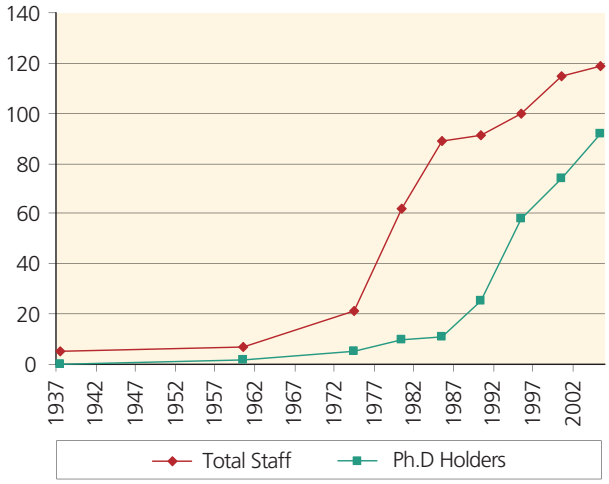
cemented in place with growth in the number of research areas covered and the spread of a research culture to all corners of the Faculty.

Alumni may be interested in seeing precisely where their own technical education era and hence their personal contribution fits in the structural development of the Faculty. The above shows how the Faculty developed and how it has been spawned from the original single Department of Building to the present.

In keeping with the aim to keep this article "light", and in keeping with the effectiveness of graphs and tables, interesting changes that have occurred during the period of time stretching from Technical College days until recent years, are presented graphically, including

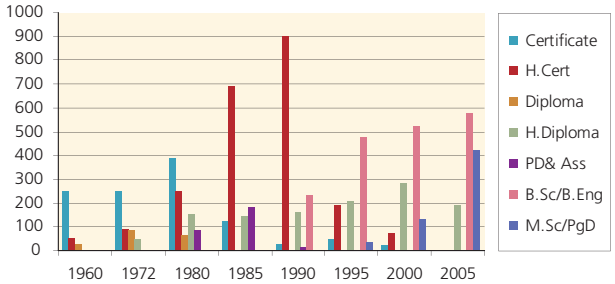
1. number of staff and number of those with a Ph.D
2. number of graduates by type
3. yearly outputs of research graduates
4. number of Competitive Earmarked Research Grant (CERG)
5. changes in laboratories in the CSE Department

Figure 1: Academic Staffing in the Construction Discipline Areas (full time)



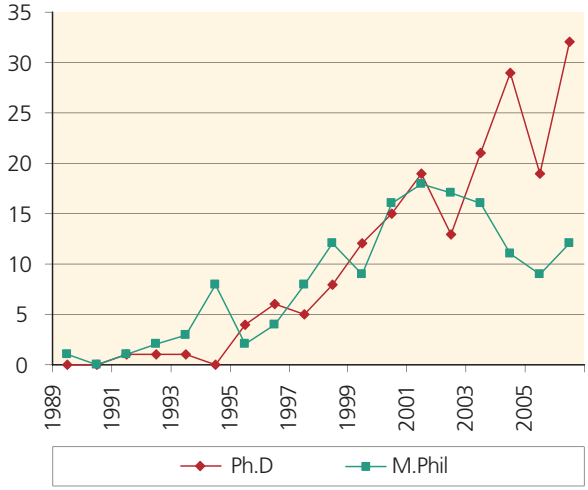
The graph, Figure 1, shows the growth of construction staffing over the years. Noticeably, the number of staff increased up by 450% between 1972 and 1990. Ph.D holders strengthened over the period 1985-95, a period in which the Polytechnic overlapped with the Polytechnic University. A deliberative drive was made in this direction from 1990.

Figure 2: Graduates by Type



The bar chart, Figure 2, shows we produced Certificate, Higher Certificate and Diploma students only in the early days. Numbers were also relatively small. The scarcity of technical education places for the construction industry into the 70s was severe. Hence the calibre of student was extremely high. The most dramatic increase was in the number of Higher Certificate holders in the 80s. Practicing engineers provided part time evening teaching to cope with the huge numbers.

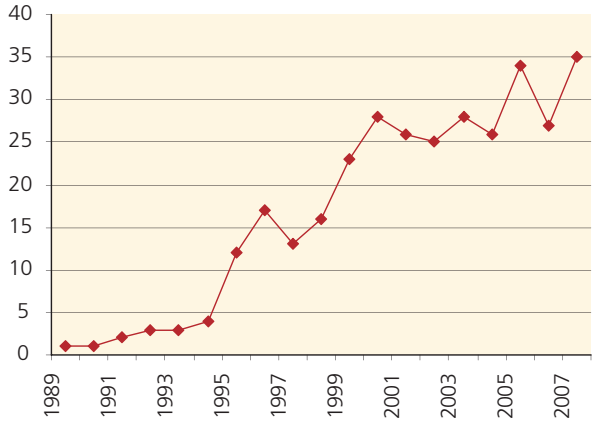
Figure 3: Annual Ph.D and M.Phil Graduates



The graph, Figure 3, shows the yearly outputs of research graduates also indicating the research growth. The annual output number of research graduates could be counted on one hand in 1992 and today stands at about 40.

An interesting observation is that whereas staff and students were more likely to limit their ambitions to M.Phil degrees up to 1995, the last 5 years have seen a reduction in its popularity. This is more than made up for by the increase in the number of Ph.Ds. Ph.D students today outnumber M.Phil students by two to one.

Figure 4: No. CERG AWARDS



The graph, Figure 4, shows the increase in CERG grants awarded by the Research Grants Council (RGC) of the University Grants Committee (UGC) over the last 15 years or so. There is an annual competition open to all staff in Hong Kong universities. Over the last 10 years, in the construction disciplines, the FCLU has consistently won about half the awards shared amongst all the Hong Kong universities.

Technician Assistance

Unfortunately it is impossible to sufficiently calculate the importance to the staff of technicians to research success. We can only say that without it, research progress would be slow to virtually impossible.

Technical assistance has increased as laboratories have advanced in size and scope in all departments. In the old days, the technicians mostly assisted staff with student standard demonstrations. Today, on the evidence of students' final year project reports, technical staff are extremely important contributors to the learning process. Additionally the technicians' assistance and contributions in all areas of research studies is of vital importance. Without it, research development could not possibly have been as rapid.

The chart, Figure 5, supplied by CSE Department illustrates the changes in activity and the growth in technician strength which occurred throughout the Faculty.

Figure 5: Changes in Laboratories – Department of Civil and Structural Engineering

1980-82	1983-90	1990-2007
• 8 labs, 13 technical staff • Laboratory activities for programmes only	• 10 labs, 15 technical staff (combined Environment Centre and CSE in Baptist University) • Laboratory activities: • Programmes • Student projects • Research • Consultancies • Established supporting team: • Research • Student projects • Research activities: • in PolyU • Mainland China	• 16 labs and a workshop, 23 technical staff • Laboratory activities: • Programmes • Student projects • Research • Consultancies • Research activities: • in PolyU • Mainland China

Challenges for Today's Graduates

The graduates of the 60s and 70s can say "we built a Hong Kong of which we can be proud". New buildings and infrastructure have been the priority. Today that is not so much the case and demolition of historic buildings is not welcomed. Preservation of our heritage is much talked about (e.g. LSGI has been responsible for the 3D scanning of St. John's Cathedral), maintenance and refurbishment of old housing, control of heat islands, cleansing of the air and cleansing of our waters, the establishment of healthy and energy efficient buildings, efficient construction management and ease of maneuverability around Hong Kong is the order of the day. If the spirit so evident in the early days can be maintained by our recent graduates and those yet to come, and they can truly bring about an innovative culture within the construction industry, then hopefully they will create their own monuments and feel the same pride in their contributions to the urgent matters named above. Maybe, in the future, we will owe to them a city that is famous for its clean air, state of the art efficiency and good housekeeping.

The Building Alumni Group Established in 1974

Before thinking about the future direction of the Faculty, the work of our Alumni Association needs to be recognized because of its contribution to the success of the Faculty. The bond shared by people involved in the same interests and with the same aims are similar to that shared by a family and for many the ties of loyalty are just as strong. We are lucky to have our Alumni Association as part of our family.

The friendships that were sealed by Mr. Ng Wing Hong mentioned at the beginning of this article and who still has an active interest in the Faculty today, is an example of the mutual help and support, which is naturally, informally, yet automatically extended by students both then and to this day. In 1974, graduates from the 60s

Mr Ng Wing Hong and Professor Andrew Baldwin

through to the mid 70s, banded to form the Building Association Alumni group. Its purpose was initially for social and mutual technical support. Mr. Johnny Fan who graduated in 1972 was, and still is, a leading light in this venture. He is now responsible for the co-ordination of all the University Alumni Associations, under the title of "The Federation of The Hong Kong Polytechnic University Alumni Associations".

Professor Francis Wong confirms that an institution's success lies in the public's perception of its "identity". Professor Peter Mok adds that "identity" is judged by the success of graduates as seen in their career progress, both by the public and the building and construction industry itself. The "identity" of that institution, so established, encourages the public to want to take on its prestige as a means of self betterment, development and prosperity. The aim of the Faculty, of which all must be aware, is to produce graduates who are industry's first choice. The huge number of alumni, both in the public and private sectors is of almost incalculable value both in the confirmation of the Faculty's "identity" but also in the realm of technology transfer and collaborative research.

Of importance, too, is our alumni's contribution to the training of the FCLU students. Help is given in the provision of Summer Training and Sandwich year placements. In the BRE Department, as pointed out by Professor Kenneth Pang there is also the mentorship programme established by Professor Barnabus Chung. Professor Esmond Mok speaks of LSGI having an alumni liaison officer to organize such as mock interviews, social activities, employment opportunities and also a mentorship system. All feel that interaction of alumni with students can only be of value.

One of the specific missions laid out by the University is to have a dedicated partnership with business, industry and the professions. Undoubtedly our alumni has influence not only on promoting the Faculty's image and recognition but also on ensuring learning is relevant to the needs of the buildings of Hong Kong and the wider world.

Future Directions

Throughout this article we have illustrated the synchronous relationship between the needs of society and the development of technical education for the construction industry. Attention must now be given to the needs of today as suggested above.

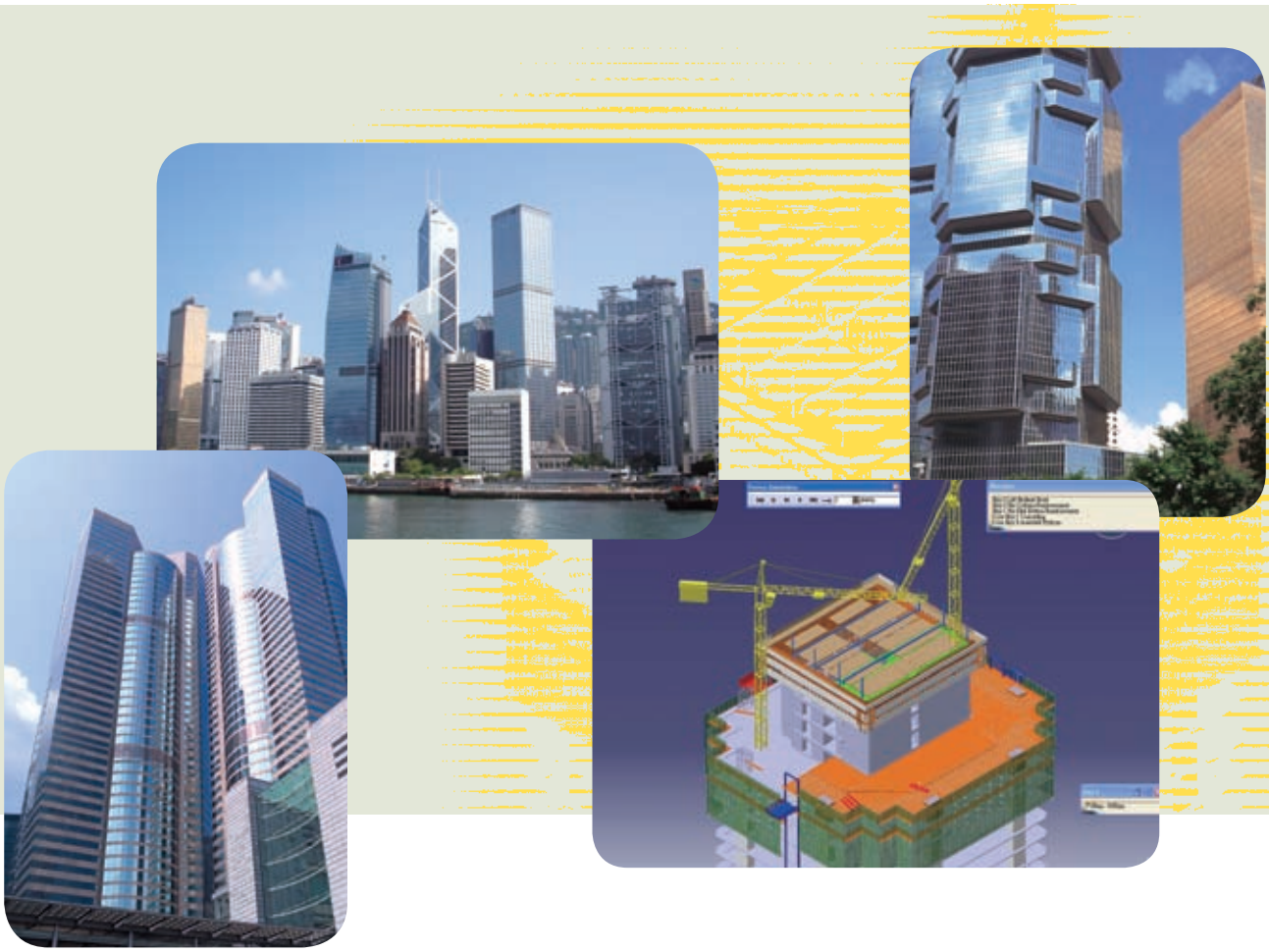
Housing is still not adequate for many citizens. Hong Kong has numerous substandard old buildings. Global warming concerns demand a reduction of energy consumption in our buildings. About half of all energy consumption in Hong Kong occurs in its buildings. There is a demand for a greener city. Energy consumption is only one component of this desire, pollution control being an important other. The people of Hong Kong demand a city which remains at the international forefront i.e. maintenance of the world city which our alumni have helped in large part to create.

A non exhaustive list of some current Faculty strengths are in the areas of GIS applications, healthy indoor environments, structural health monitoring, advanced structural design and fire design simulation software, advanced construction activity simulation, waste treatment techniques, pollution dispersion monitoring and modelling and the study and understanding of effective management procedures. Two results affecting the daily lives of the people of Hong Kong today are, the remote sensing the daily degree of air pollution and the development of an Intelligent Transport system. Information Technology pro-activeness underlines all of the above research areas.

The Faculty is ready to be more active in using its expertise, in investigating whole building solutions as appropriate for Hong Kong. Whole solutions consider internal health and environmental comfort for users, investigation of such as retrofitting strategies to save energy, use of appropriate materials, usable space, safety standards, including fire in particular, along with economic and social consequences. The findings of such research would be of value to Hong Kong policy makers. The Faculty does not yet serve society in this fashion, despite its pool of academic expertise.

For example, 10,000 buildings in the private sector are occupied by the less well off and many of these buildings are in a bad state of repair. They need replacement or refurbishing and replacement versus refurbishment criteria requires study.

Building life cycle costs need much more consideration than has been traditional i.e. both initial and lifetime operating costs. Both need to be considered at the outset to any project. In parallel, a concentration on energy reduction could be singled out for a focused study, recognizing too that most buildings which already exist will still exist, 30 years from now. Environmental strengths from across the whole Faculty could be gathered to produce a powerful unit providing practical policy advice on pollution issues.



In conclusion, the strength, resilience and astonishing adaptability of Hong Kong people has been mirrored by the different milestones of the growth of the Faculty.

Since Mr. Ng Wing Hong was taken as an example of the earlier graduates, we will conclude with a story of a graduate of modern times.

The story shows the same strength and application. It tells of a student who gained a Higher Diploma, began a job in the construction Industry and then to the dismay of his boss left because he felt that only further education could enable him to fulfill his dreams. He joined the degree programme in the CSE Department, whilst at the same time having a part time job, and progressed to a postgraduate degree. With the encouragement and help of his postgraduate supervisor, he launched his own company based on a state of the art product involving recycled glass, a product central to his postgraduate studies. Recently, he received 3 awards:

1. the Eco – Products award 2006 organised by the Business Environment Council.
2. the Green Building Award 2006 (merit) given to Professor C.S. Poon's research team (of which the Graduate was part), organized by the Professional Building Council
3. the Live Wire: Gold Award awarded by Shell to the newly established company.

In keeping with the philosophy of the Trade School days and subsequently maintained, the Faculty remains true to the mission of: remaining closely attuned to the needs of the Hong Kong construction industry, by undertaking research in many areas at leading international levels and educating students in the innovative stimulating environment thereby created.

Alumni of the early years look with pride at the development of their alma mater and some, also wonder how much greater their own personal achievements might have been, if they had been beneficiaries of the educational opportunities in place today.

(The Editor would like to thank the following for their valuable and essential help in the preparation of this article.

Mr. Ng Wing Hong, Dr. Dan Waters, Professor Kenneth Pang, Professor Peter Mok, Mr. Johnny Fan, Dr. K.H. Lai, Dr. S.L. Tang, Professor John Burnett, Professor J.M. Ko, Professor Francis Wong, Mrs. A. Cheung, Professor Esmond Mok, Professor W.K. Chow, Professor K.T. Chau, and Professor Mike Anson)

Technology Transfer & Research Developments
技術轉移與科技發展

A Step Forward In Real Time Traffic Information Dissemination
實時交通信息發放向前邁進一步

Speed map

A Speed Map for the main roads in Kowloon and New Territories South has recently been launched on Hong Kong Transport Department's homepage http://rtis.td.gov.hk/rtis/index.php. It was developed jointly by The Hong Kong Polytechnic University and Autotoll Limited. The traffic flow speeds are deduced: (i) directly from real-time traffic data from Autotoll; and (ii) indirectly by integrating Autotoll's data with Hong Kong Annual Traffic Census data of Transport Department. This map aims to enable drivers to make route choice decisions based on a combination of the revealed traffic speed information and their own driving experience.

Professor William H.K. Lam (Email: cehklam@polyu.edu.hk)
Department of Civil & Structural Engineering

Interdisciplinary Research Breakthrough: Thermal Energy Storage Using Micro-encapsulated Phase Change Materials
跨學科合作研究帶來科技突破

New TES material

In an attempt to address the problem of global warming, the Department of Building Services Engineering (BSE) Research Centre for Building Environmental Engineering, led by Associate Professor Niu Jianlei, is working on the development of New Thermal Energy Storage (TES) material to realize low-energy building cooling and heating. One of the technologies developed is that of nano-technology based, micro-encapsulated phase-change material. When this material is mixed with water, a milky slurry is formed, which can function as a TES and heat transfer working fluid to replace the plain water or ice-slurry now commonly used in building cooling systems. Depending on local climatic conditions, TES can eliminate the use of electricity-driven chillers, which consume the most electricity in current air-conditioning systems.

In the research community, efforts to develop TES material can be dated back to the energy crisis of the 1970's. Dr Niu, Principal Investigator of the project, attributes the breakthrough to the interdisciplinary research collaboration with PolyU's Institute of Textiles and Clothing, Tsinghua University, and Delft University of Technology in the Netherlands. At this moment, research results about the flow and heat transfer characteristics are in press with the authoritative International Journal of Heat and Mass Transfer. With the support from the Government's Innovation and Technology Fund and a Competitive Earmarked Research Grant from the Research Grants Council, the research team is working on building up a demonstration air-conditioning system, which is expected to be completed by September 2007.

Dr. Niu Jianlei (Email: bsjlniu@polyu.edu.hk)
Department of Building Services Engineering

A New Lighting Laboratory for BSE
屋宇設備工程學系 全新照明實驗室

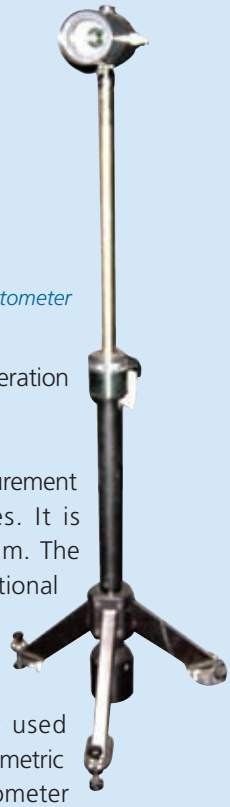
The success of the Department of Building Services Engineering's (BSE) work in the area of lighting engineering has made clear the necessity for the energising establishment of a new laboratory in order to capitalise on current achievements, and ensure that these achievements do not simply plateau, but gather momentum and further develop. This has indeed taken place with the development of the new BSE Lighting Laboratory housed in FJ001-002. The laboratory possesses two important facilities: an integrating sphere spectrophotocolorimeter and a goniophotometer, for the measurement of lamp and luminaire photometrics as required for the design of lighting systems. Means are now firmly in place for quantitative lighting design to meet requirements on visual task performance, comfort, aesthetics and energy efficiency.

The integrating sphere spectrophotocolorimeter provides measurements of the lumen output, colour temperature and colour rendering index of light sources. It can also analyse the spectral power distribution of a light source in wavelength intervals of 1 nm or 5 nm. Currently the facility consists of two integrating spheres of diameters 1.5m and 0.3m. An electronic ballast analyzer is also included for the measurement of electrical characteristics and waveforms of electronic ballasts, enabling the choice of energy efficient control gear with good power quality in the operation of fluorescent lamps.

Equipment in the BSE Lighting Laboratory

Sensor of the goniophotometer

Goniophotometer



The goniophotometer is a facility for the measurement of the intensity distribution of luminaires. It is housed in a dark room of about 11 m by 3 m. The goniophotometer conforms with the International Commission on Illumination (CIE) with A class accuracy. It can be used for measurements using the CIE C-γ or B-β systems. The former coordinate system is the most commonly used photometric system, while the latter is the photometric system used for floodlights. The goniophotometer provides electronic data files which can be used directly in computer lighting design programmes such as DIALUX, AGI32 and Lumen-Micro. The output data files can also be converted for use by the advanced lighting simulation programme RADIANCE.

The new lighting laboratory enhances students' understanding of photometric and colorimetric measurements and the use of photometric data in lighting design. The laboratory also provides facilities for undergraduate and postgraduate research projects. The laboratory also provides consultancy services to various parties in the industry. For example, the provision of photometric data can be used by luminaire manufacturers in the marketing of their products. Lighting designers and lighting consultants can also make use of the laboratory to produce data for use in their lighting design projects.

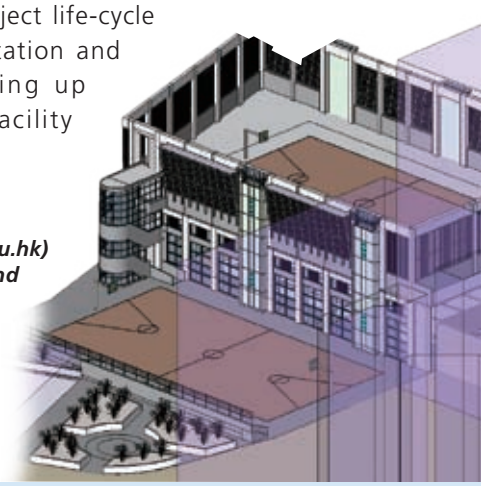
Dr. T.M. Chung (Email: betmchng@polyu.edu.hk)
Department of Building Services Engineering

Building Information Modelling (BIM): a New Chapter of Building Industry

建築訊息模型於工料測量的應用

The Hong Kong Polytechnic University has undertaken a consultancy project to provide project management and quantity surveying services in connection with the construction of a secondary school swimming pool in Hong Kong. The project led by Dr. Andy Wong as the Project Director with the assistance of his PhD student Mr. Kenny Tse, was conducted using an innovative approach in which building information modelling (BIM) was applied by the project team. The intentions of the research were two fold: (i) to equip the project team with BIM techniques, and (ii) to study the use of BIM in quantity surveying measurement for contract procurement. The main challenges came from acquainting the construction team with BIM techniques and building the model within a tight project timeframe and budget control. In June 2007, the project won the award of "BIM - A new chapter of building industry" from Autodesk.

The project's key findings relate to the differences between BIM quantities and bills of quantities (BQ), subject to the Standard Method of Measurement (SMM). A better understanding of BQ quantities for facilitating measurements in quantity surveying has been derived from the use of the BIM model in this project. The advent of BIM has led to new thoughts and practices in IT applications to project life-cycle from design, documentation and construction processing up to maintenance and facility management.



Dr. Andy Wong
(Email: bskdwong@polyu.edu.hk)
Department of Building and Real Estate

Indoor Environmental Quality (IEQ) Assessment of Elderly Homes operated by the Hong Kong Society for the Aged (SAGE)

為長者家居評估室內環境品質

As a response to the show case for community service learning projects organized by PolyU's Student Affairs Office, the Department of Building Services Engineering (BSE) has performed an Indoor Environmental Quality (IEQ) assessment for the elderly homes operated by the Hong Kong Society for the Aged (SAGE) from April to August 2006. 19 community centres, day care centres and hostels located in Hong Kong East, Kowloon East and Kwai Tsing and Tsuen Wan operated by SAGE were investigated. Thermal comfort, indoor air quality (IAQ), visual comfort and aural comfort of elderly people were investigated along with personal interviews. Table 1 is a brief summary of the results. Results show that most of the occupants expressed satisfaction with the indoor environment of the centres. Our measurement (omitted for simplicity) has confirmed the reliability of the results.

Table 1

Overall view of the acceptability of four comfort parameters in three districts

	Thermal comfort	IAQ	Visual comfort	Aural comfort
Hong Kong East				
Acceptable	185	188	188	183
Unacceptable	2	3	0	4
Kowloon East				
Acceptable	104	107	107	105
Unacceptable	0	0	0	0
Kwai Tsing Tsuen				
Acceptable	148	125	125	125
Unacceptable	1	0	0	0

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Department of Building Services Engineering

BRE Academics Engaged by MTR Corporation to work on a **PPP Consultancy Project** funded by the Asian Development Bank

理大學者獲地鐵公司邀請**參與顧問項目**

A Department of Building and Real Estate (BRE) team has been engaged by MTR Corporation Ltd. to work with them on a consultancy project – "Application of Public-Private Partnerships (PPP) in Urban Rail-Based Transportation Project in the People's Republic of China (PRC)". The consulting project is funded by the Asian Development Bank (ADB) at a total cost estimate of US$625,000 equivalent. The Ministry of Finance of the PRC is the Executing Agency of the consultancy project, with technical support from the National Development and Reform Commission (NDRC).

The development of mass rapid transit (MRT) public transportation has been recognised by the Government of the PRC in the 11th Five-Year Plan as a key transport mode in mega cities. However, the extremely heavy burden of MRT investments may constrain the development of MRT projects due to limited municipal government budgets. PPP is considered an effective means in attracting private sector finance for the expansion of urban rail systems. As a result, the Government of the PRC has requested the ADB to provide technical assistance (TA) to propose appropriate PPP financing modalities for urban rail-based transportation system. The aim of this TA is to develop a workable solution for the application of PPP in PRC urban rail projects.

Six international consulting firms were shortlisted for this TA. Two were from the United Kingdom, two from Australia and one from the United States. The MTR Corporation was the only shortlisted firm from Hong Kong. The MTR Corporation, with a strong background in the investment, financing, planning, design, construction and operation of urban rail based transportation projects both in Hong Kong and the PRC, invited a complementary BRE research team to join them in a consortium, as international consultants, to work with the Beijing Urban Engineering Design and Research Institute (BUEDRI). The Institute of Investment (IOI) of the NDRC was to be the national consultants. BUEDRI and IOI were to provide local urban rail implementation "know-how" and expertise, respectively, in policy making. The MTR Consortium was eventually selected to execute the 18-month consultancy project, which commenced on 12 March 2007. The BRE team is led by Professor Albert Chan, and other members include Dr. Daniel Chan, Dr. Y.H. Chiang, Dr. Patrick Lam, and Dr. B.S. Tang.

Professor Albert Chan (Email: bsachan@polyu.edu.hk)
Department of Building and Real Estate

Signing ceremony of the consultancy study

Awards

學者學生　成績斐然

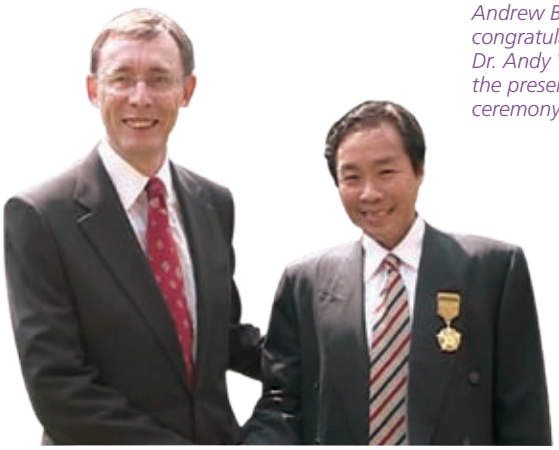
Bronze Bauhinia Star Award for Dr. Andy Wong

王金殿博士獲頒銅紫荊星章

Dr. Wong Kam-din Andy, Associate Professor of the Department of Building and Real Estate was one of the 47 candidates awarded the Bronze Bauhinia Star this year. The 2006 Honours List from the HKSAR Government was published in the Government Gazette on 1 July 2006. The Chief Executive has accorded awards to 277 people in this year's Honours List.

The award was in recognition of Dr. Wong's long and meritorious public and community service, particularly in Eastern District. In 1991, Dr. Wong was appointed as Eastern District Appointed Councillor and was the youngest appointed in the history of Eastern District. During his service to the Council, he participated in, and contributing to committees and taskforces involving district housing, civil education and infrastructure developments, details of which are given in his personal web site.

Dr. Andy Wong receiving the Award from the Chief Executive Donald Tsang Yam-kuen



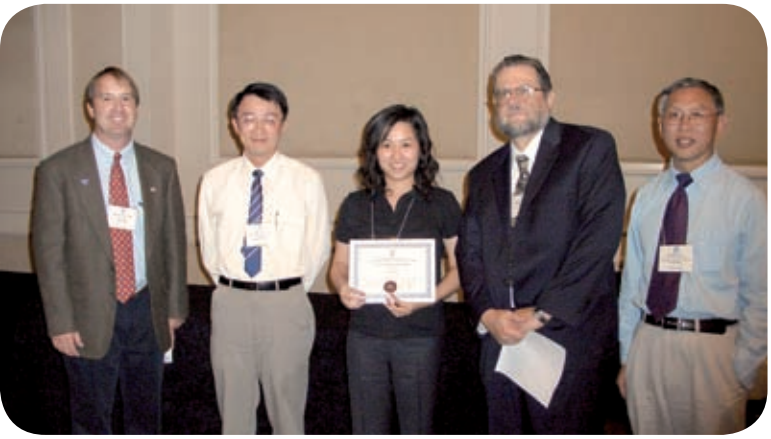
Professor Andrew Baldwin congratulating Dr. Andy Wong at the presentation ceremony

Dr. Wong was appointed as a Member of Corruption Prevention Advisory Committee for Independent Commission Against Corruption (ICAC) in 2000, serving the Construction Panel, and was further appointed as the Chairman of the Construction Panel for the period 2003 to December 2006. From 1998 to 2006, Dr. Wong served the HKSAR Government on a number of significant legislative committees relating to real estate and infrastructure development including the Town Planning Appeal Board, Transport Department Railway Development Hearing Panel and the Estate Agents Ordinance Appeal Panel.

Dr. Wong's research interests are in construction project management, contract administration and use of information technology in construction. He is dedicated to the principle of the University's motto, "To learn and to apply, for the benefit of mankind."

Young Scientist Paper Award from American Academy of Sciences in ICEST 2006

美國科學學會
青年科學家論文獎



Dr. Chu Wei and Dr. Ada Chan (second and third from the left) receiving the Award

The Young Scientist Paper Award offered by the American Academy of Sciences, at the 2nd International Conference on Environmental Science and Technology (ICEST) held in Houston, Texas, USA, from 19 to 22 August 2006, was given to Dr. Chan Kwai-hing Ada, Postdoctoral Fellow, and Dr. Chu Wei, Associate Professor from the Department of Civil and Structural Engineering. There were 55 technical sessions and over 500 platform and poster presentations from all over the world at the ICEST 2006.

The winning paper was entitled "Transformation Mechanism of the Degradation of EDC by Photo-Induced Fenton's Process". The winning paper successfully demonstrated and compared different treatment processes involving photo-induced catalytic oxidations on a selected endocrine disrupter chemical (EDC). EDC is an environmental issue currently well researched in the field of environmental engineering, owing to its world-wide impact to the aquatic life forms and public health.

Professor Shengwei Wang Received the **First Prize on Science and Technology Development of the Ministry of Education** on Building Energy Research and Applications

王盛衛教授等建築節能研究榮獲教育部**科學技術進步一等獎**

Professor Shengwei Wang and his Award Certificate

Professor Shengwei Wang, Department of Building Services Engineering (BSE), received the (2007) First Prize on Science and Technology Development of the Ministry of Education. The award is in recognition of joint research work achievements of "The Research and Applications on Building Energy Efficiency Principles and Air-conditioning Technology" coordinated by Hunan University. Professor Wang was an overseas collaborator in the joint research project. His major contributions were in the development of fault diagnosis methods of building air-conditioning and control systems, and the system identification method for building dynamic models.

The work has taken place over the last four years, during which, key contributors from Hunan University, such as Professor Chen Youming, have worked jointly with Professor Wang and his research group in The Hong Kong Polytechnic University as post-doctoral researchers to conduct other aspects of the research leading to the above award.

A Bronze Medal Award in Geneva's Invention Expo for BSE

科研成果獲日內瓦國際發明展銅獎

The Hong Kong Polytechnic University (PolyU) has been awarded a record number of awards in the International Exhibition of Inventions, New Techniques and Products held from 18 to 22 April 2007 in Geneva. The exhibition put together some 1,000 inventions and 775 exhibitions from 45 countries, drawing more than 75,000 visitors from all over the world. Among the awards is the Bronze Medal: **Personalized Ventilation Device Integrated with Seats,** awarded to Dr. Niu Jianlei and his team. Dr. Niu is an Associate Professor in the Department of Building Services Engineering.

In air conditioned spaces, ventilation air is usually distributed via overhead high-velocity air diffusers and nozzles. This method is ineffective regarding the reduction of the risk of air-borne infectious disease transmission. Such risk is ever present and was evidenced in the person to person transmission during the SARS outbreak in 2003. The new air supply device, developed by Dr. Niu, consists of a flexible air supply nozzle, integrated with an individual seat, adjustable to suit the user's body position. When using the device, air inhaled will be 80% less polluted than external air, thus both reducing the respiratory intake of air pollutants and the risk of catching airborne infectious diseases.

The device can be integrated with seats in settings such as auditoriums, cinemas, aircrafts, train compartments and buses. Such seat integration would be particularly appropriate for bus or taxi drivers, emigration officers and many other seated professions who have higher risks of occupational exposure to emerging infectious diseases and indoor air pollutants. The significance of the invention, particularly in Hong Kong, a tourist city, cannot be over exaggerated.

The invention was granted both US and China patents in 2005. During the technology development process intensive computer simulation analyses were undertaken, and the modeling methods developed are now internationally recognized as new generic, cutting edge research tools for indoor environment technology development.

The technology is now ready for application following collaboration with the Industrial Centre at the PolyU, during which two generations of prototypes were manufactured and extensively tested in the laboratory.

Personalized Ventilation Device Integrated with Seats

HKAUW Thomas HC Cheung Outstanding Postgraduate Scholarship

香港大學婦女協會研究生獎學金

The Hong Kong Association of University Women (HKAUW) wishes to express its gratitude to individuals for their generous contributions throughout the years.

Scholarships are awarded to encourage and aid women students in their chosen academic endeavours. Selections are based on the excellence of their attainments as well as their contributions to the community.

Miss Grace Lee receiving the Certificate at the presentation ceremony

Miss Grace Lee presenting her research project

There are two categories of scholarships awarded each academic year by the HKAUW. They are Undergraduate Scholarships and Postgraduate Scholarships.

Postgraduate Scholarships are awarded to postgraduate students with interesting and original research projects, who have demonstrated leadership in team work and have made contributions or shown clear potential as achievers in their chosen disciplines.

In 2006, there were 5 postgraduate scholarship award winners. The HKAUW Thomas HC Cheung Postgraduate Scholarships of HK$20,000 was awarded to each of 4 postgraduate students, and the HKAUW Thomas HC Cheung (Outstanding) Postgraduate Scholarship of HK$30,000 was awarded to Miss Grace Lee of the Department of Building and Real Estate.

BRE Students Won Top Prizes in the Student Paper Competition at International Value Management Conference

國際價值管理會議學生論文獲獎

An International Conference "Delivering Value Today and Tomorrow" was held on 14 and 15 September 2006 in Brighton, United Kingdom, organised by the Institute of Value Management in the UK on behalf of SAVE International of the US, and the European Governing Board of the Value Management Training and Certification System. Two postgraduate students from the Department of Building and Real Estate (BRE), Mr. Lin Gongbo and Mr. Fan Shichao, won prizes at this conference. The former won First Prize in the student paper competition for his paper entitled "Developing a Performance Measurement Framework for Value Management studies in Construction" which presented the structure of his PhD research study with a summary, to date, of his research findings. The latter received the First Runner-up award, in the same competition for his paper entitled "Improving Value Management Workshops in Construction: A Group Decision Support System (GDSS) Approach".

Mr. Lin Gongbo receiving the First Prize

LSGI Students won **Community Service Award**

土地測量及地理資訊學系學生獲**傑出社區服務獎**

The students of the Department of Land Surveying and Geo-Informatics (LSGI), competing with various other departments won two awards given by the Community Service Learning Awards 2005/06 Campaign organized by the University's Student Affairs Office. The Awards given on 10 November 2006 were for the following projects:

- The Organizing Committee of the Tai Po District Dragon Boat Race held on 31 May 2006 for the Tuen Ng Festival, invited LSGI students to set up the routes, starting and finishing lines using modern survey methods for the race. Their knowledge of Geometrics helped improve the previous arrangements. The project was both helpful to society and meaningful in that the students were able to apply what they have learned.

- Students' skills were used in an additional project at the request of the Hong Kong Playground Association to conserve a historical stone structure after the reconstruction of Silvermine Bay Outdoor Recreation Camp. These historical stones were recorded, based on a topographic map surveyed by the students, between June and July in 2006, and transferred to a newly constructed platform.

The Tai Po District Dragon Boat Race project

The Hong Kong Playground Association project

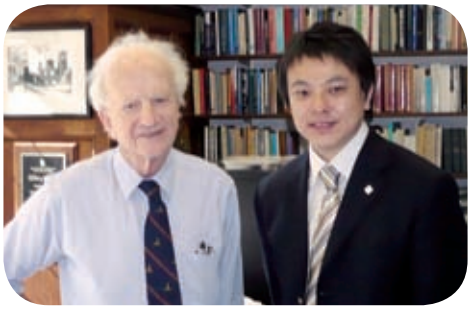
LSGI students applied what they have learned in the projects

Dr. Lennon Choy Appointed as Visiting Scholar by the George Stigler Center, Graduate School of Business, The University of Chicago

理大學者任芝加哥大學**訪問學人**

Dr. Lennon Choy from the Department of Building and Real Estate was appointed as a Visiting Scholar, by the George Stigler Center, Graduate School of Business of The University of Chicago from 6 to 12 May 2007. This award aims to bring into the Center overseas distinguished scholars to conduct collaborative research. During the visit, Lennon met and lunched with three Nobel Prize Laureates - Professor Ronald Coase, Professor Gary Becker and Professor Robert Fogel. Research proposals were discussed with the faculty members, including Dean Edward Snyder, Professor Sam Peltzman, Professor Steven Levitt and Professor John List at the School of Economics and Graduate School of Business. The areas discussed included new institutional economics and real estate economics.

Meeting with Professor Robert Fogel (1993 Nobel Laureate)



Meeting with Professor Gary Becker (1992 Nobel Laureate)

Meeting with Professor Ronald Coase (1991 Nobel Laureate)

Alumni Awarded HKIE Civil Engineering Paper of the Year Award 2006

校友獲香港工程師學會2006**土木工程論文獎**

Professor K.T. Chau (first from the right), Ms. Chan Wai Yin, Dr. Tommy Chan (first from the left) and other guests at the HKIE Civil Division Annual Dinner 2006

Recent Events
活動剪影

Establishment of a Partnership for Work-Integrated Education by BRE
建築及房地產學系與業界建立伙伴關係

Work–Integrated Education (WIE) is a placement programme which fulfills a curriculum requirement of all full-time undergraduate students at The Hong Kong Polytechnic University. During a "placement", students' generic learning is enhanced by connecting classroom theory with practical workplace applications and also by the acquisition of professional specialization in the student's area of potential career choice.

The Department of Building and Real Estate (BRE) has signed a Memorandum of Understanding (MOU) with two companies: Levett & Bailey Quantity Surveyors Limited and Goodwell Property Management Ltd. with the objective of establishing long-term collaboration with relevant industrial partners. Based on the MOU, the two companies will provide a total of nine placements each year for BRE students to undertake WIE. This strategic link is expected to be mutually beneficial to all parties involved and go far in providing preferred graduates who are fit for purpose.

A Successful Training Seminar for Guangdong Nuclear Power Group
中國廣東核電集團培訓研討會

From 10 to 11 February 2007, the China Business Centre and the Department of Building and Real Estate (BRE) of The Hong Kong Polytechnic University held a seminar for the Project Office of the Guangdong Nuclear Power Group (GNPG). The title of the seminar was "Training for the Practical Techniques of Construction Management". The speaker was Dr. Andy Wong, Associate Professor of BRE Department. The topic covered contract administration with case studies, site management, progress control, cost control, quality assurance and the use of information technology in construction

management. Around 30 management staff from the Engineering Department, Contract Department and Quality Control Department of GNPG attended the seminar.

Keynote Speech: Prediction Methods for Flow-generated Noise in Ventilation Systems at **Annual Meeting and 19th Symposium of Acoustical Society of Taiwan**

屋宇設備工程學者參與台灣聲學研討會

Dr. C.M. Mak from the Department of Building Services Engineering attended the annual meeting and 19th Symposium of Acoustical Society of Taiwan in Tainan on 24 November 2006, and gave a keynote speech on "Prediction methods for flow-generated noise in ventilation system". Speakers presented their papers on various aspects of acoustics, at the symposium, enabling both members of industry and academic institutes to share knowledge on the latest development in the field of acoustics. Relationships of mutual benefit with the possibility of collaborative work were developed. Visits to the Architecture and Building Research Institute of the Interior Ministry of Taiwan were also arranged for those attending the symposium.

Dr. C.M. Mak presenting his keynote speech in the symposium

The Chairman of Taiwan Acoustical Society presenting a souvenir to Dr. C.M. Mak for his keynote speech in the symposium

PMI Research and Standards Working Sessions in Hong Kong

項目管理協會研究計劃工作會議

Spirited group discussions, facilitated by four separate breakout sessions, took place among the participants of a Project Management Institute (PMI) Research Working Session. Dr. Hiroshi Tanaka of Japan led a distinguished panel of business leaders and academics including Dr. Chris Stevens, PIAP of Australia; Mr. Bryan Clifford of Hong Kong; Dr. Patrick Fong of The Hong Kong Polytechnic University; and Mr. Michael Sypsomos, PMP, from Thailand. The sessions were enjoyed by a good representation of attendees from the Asia Pacific region.

Participants defined challenges and needs, specific to project management professionals who practice in the Asia Pacific region. They also suggested solutions to those challenges. Ms. Jenny Law, PMP, from Hong Kong, found the session "very informative and useful in addressing and providing an understanding of the problems and issues currently faced." In addition, several practical papers illustrative of the above, were presented to provide valuable information.

Current and Potential Applications of **Earth Observation Technology** and Recommendations for its Use in Urban Areas – A Two-day Workshop

對地觀察**科技應用**工作坊

Prominence of the Department of Land Surveying and Geo-Informatics (LSGI) in the area of Earth Observation (EO) for Urban Planning and Management was demonstrated in a two-day workshop held on 20 and 21 November 2006 at the Harbour Plaza Metropolis Hotel.

The aim of the workshop was to provide a forum for international researchers and scientists, specializing in EO, to interact with practitioners working in different aspects of city planning. Critical issues were examined with Hong Kong being the point of reference. Delegates comprised an international group of researchers, and practitioners from Hong Kong government departments (Figure 1), providing a mixture of top-down demonstrations and case studies, with bottom-up feedback from user groups.

The workshop addressed four major application areas in the light of recent technological developments in EO including high resolution, multi-sensor systems, and advances in computer speed and graphics capability. The application areas were: **environmental monitoring, land use/land cover mapping, planning, and geotechnical monitoring.**

The workshop concluded:
that with the exception of thermal modeling, the impediments to wider use of EO data in urban planning and management are educational and institutional, not technical; that the technology for image data acquisition is available and its wider utilisation in cities generally, and especially in Hong Kong, is mainly dependent on increased awareness of its availability among

Figure 1. Speakers and delegates attending the workshop

practitioners, cost reductions, and easier integration into existing work procedures.

The workshop recommended that case studies resulting from academic research in areas such as 3D city modeling and land use mapping from high resolution images be used to demonstrate planning and management possibilities.

Researchers were especially encouraged to work with end users to develop realistic local solutions. For example, Hong Kong planners require 3D city models at LOD3 (Figure 2) due to the layered complexity of the city. Thus semi-automation of data processing algorithms which use knowledge-based models, and permit end-user interaction must be better developed. This entails a degree of change in workplace methodologies, which can best be facilitated by demonstrations by the academic and research community, of how EO technology can make peoples' jobs more efficient and productive.

A policy document detailing the current and potential applications of EO technology, and recommendations for its use in urban areas has been produced to encapsulate these conclusions.

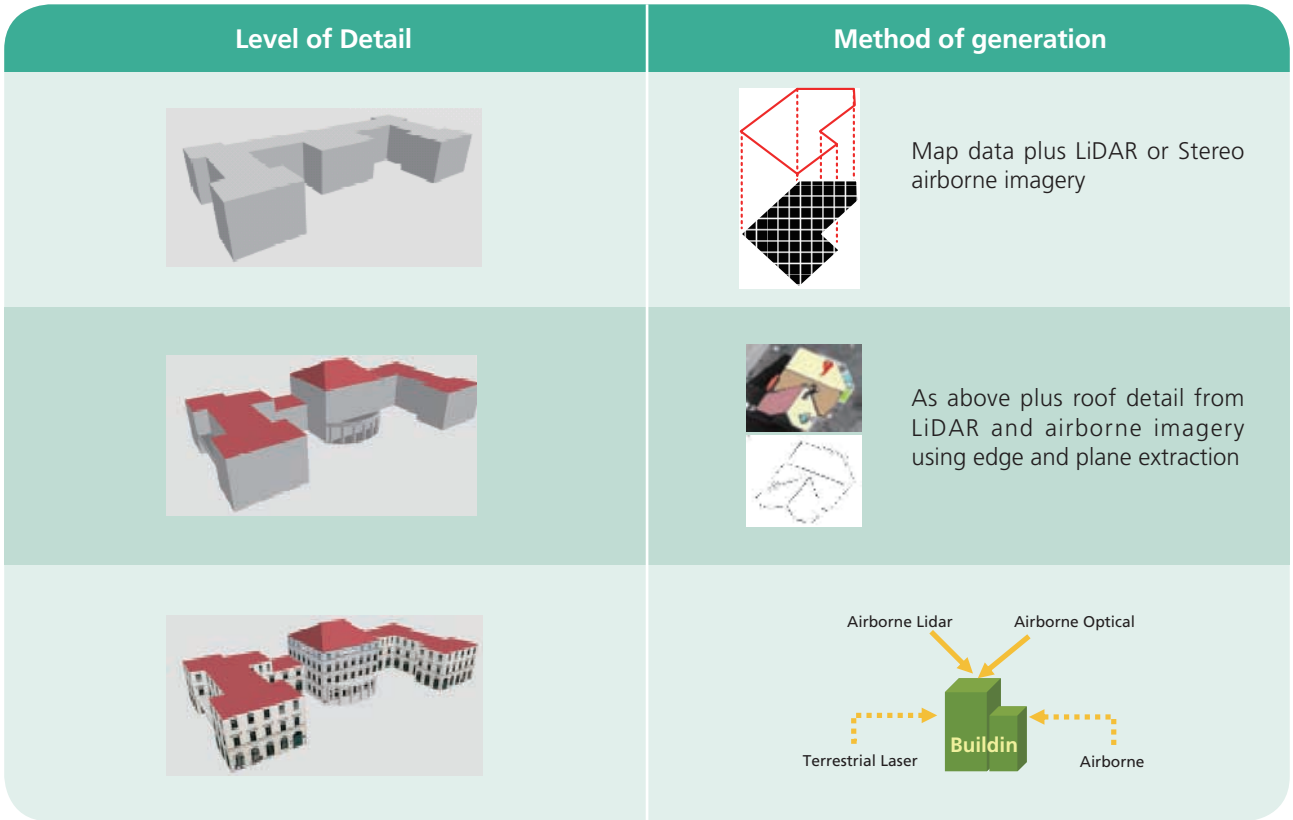


Figure 2. Levels of detail for building reconstruction, showing methods of generation

Presentation Ceremony for **Dean's Honours List** and **Outstanding Students** 2006

學院優異生榜及卓越學生獎 2006

The Faculty of Construction and Land Use (FCLU) held its annual Presentation Ceremony on 28 October 2006 in the The Hong Kong Polytechnic University, Jockey Club Auditorium, to give recognition to students who have achieved outstanding academic performances in the 2005/2006 academic year. More than 100 outstanding FCLU students were elected to the Dean's Honours List and were presented with awards at the Ceremony. Among them, four students, one from each of the Faculty's four Departments, were awarded the Most Outstanding Student Award in recognition of excellence in both academic and personal development. Secondary school principals and families were invited to share the joy of the Ceremony.

The four outstanding students are:

Leung Cheuk Hin,
Department of Building and Real Estate

Tang Hin Nam,
Department of Building Services Engineering

Zhu Li Ying,
Department of Civil and Structural Engineering

Chan Yuk Ying,
Department of Land Surveying and Geo-Informatics

Awards recipients and their teachers posing for a group photo

Faculty Distinguished Lecture on "Virtual London: 3D GIS, Multimedia and Public Participation in a World City"

學院傑出學人講座 — 虛擬倫敦

Professor Michael Batty, Bartlett Professor of Planning, University College London, was invited to talk about "Virtual London: 3D GIS, Multimedia and Public Participation in a World City" on 24 October 2006. The lecture presented the model, how it was built, and the many ways in which it can be used.

Professor Michael Batty receiving a souvenir from Professor Andrew Baldwin

Faculty Postgraduate Research Conference 2006

建設及地政學院 研究生學術會議2006

The Faculty held the first Faculty Postgraduate Research Conference on Saturday, 4 November 2006 at The Hong Kong Polytechnic University. The purpose of the conference was to provide a forum for postgraduate students, working in the areas of construction and land use, to present their latest work, to gain experience in conference presentation, and to publicize the research of the Faculty for the benefit of local industry. Professor Peter Brandon from the University of Salford, United Kingdom gave a keynote speech on "Research as a Catalyst for Change in the Construction Industry".

Professor Peter Brandon giving his keynote speech

INYS Conference

國際青年科學家網會議

Since the year 2004, the British Council Hong Kong and the universities in Hong Kong have co-organised several educational exchange programmes entitled 'International Networking for Young Scientists (INYS)'. The programme is held every January for post doctorates and academics from Hong Kong and the United Kingdom. This year, Professor Edwin H.W. Chan of The Hong Kong Polytechnic University (Faculty of Construction and Land Use, and Public Policy Research Institute) was invited to lead the event and chair the Organizing Committee.

The theme of the INYS programme 2007 was Sustainable Built Environment policy issues. Both a conference and discussion workshop were held on 24 and 25 January 2007.

Faculty Distinguished Lecture on "From Science to Regulation: **California's Air Quality Programme"**

學院傑出學人講座 — **加州空氣質素計劃**

Professor Robert F. Sawyer, Chair, California Air Resources Board and Class of 1935, Professor of Energy Emeritus, University of California at Berkeley; was invited to talk about "From Science to Regulation: California's Air Quality Programme" on 2 April 2007.

Professor Robert F. Sawyer (third from the right)

Wu Zhi Qiao Seminar

走出象牙塔，始於無止橋

In a poor and remote village in Gansu, a primitive wooden plank bridge was the only crossing for village children to go between school and home. They endured dangerous journeys day after day. Professor Edward Ng of The Chinese University of Hong Kong initiated the "The Bridge Too Far" project. With the help of volunteers, professionals and students, the first "Wu Zhi Qiao" was built in July 2005. At the seminar, Professor Ng talked about

- The initiative of Wu Zhi Qiao
- The establishment of Wu Zhi Qiao (Bridge to China) Charitable Foundation
- The development of Wu Zhi Qiao Chapters in local universities.

Volunteers, professionals and students building the Wu Zhi Qiao

The Faculty is now working on setting up a Wu Zhi Qiao PolyU Chapter. Those who are interested are welcome to contact Miss Liz Lau of the Faculty Office at clliz@polyu.edu.hk.

Website: *www.bridge2china.org*

Village children crossing the bridge

FCLU 70th Anniversary **High Table Dinner**

建設及地政學院 七十週年**高桌晚宴**

The Faculty of Construction and Land Use (FCLU) organized its first High Table Dinner, which provided a chance for students to interact with prominent industry leaders, on 19 April 2007. The event also celebrated the University's 70 years of proud history in educating professionals for the building, engineering and construction industries.

The dinner was joined by about 300 industry leaders, students, alumni and faculty members, including Mr. Marco Wu Moon-hoi, Vice Chairman of Hong Kong Housing Society and Awardee of PolyU Outstanding Alumni 2007; Ir. Professor Ko Jan-ming, PolyU Vice President (Research Development) and Dean of FCLU (2000-2005); Professor Michael Anson, First Dean of FCLU; and Professor Andrew Baldwin, incumbent Dean of FCLU.

Professor Andrew Baldwin expressing his appreciation to the sponsors

Mr. Marco Wu Moon-hoi, one of the PolyU Outstanding Alumni Awardees 2007, delivering his speech

Kickoff of the memorable occasion

Forthcoming Events

Date	Event	Venue	Organizer	Enquiries
26-27 October 2007	**The 5th Beijing, Hong Kong and Macau Geomatics Conference**	Chiang Chen Studio Theatre, PolyU	**Organizers:** Department of Land Surveying and Geo-Informatics The Hong Kong Institution of Engineering Surveyors (HKInstES) The Hong Kong Institute of Surveyors (HKIS)	Dr. Conrad Tang Department of Land Surveying & Geo-Informatics Tel: 2766 5963 Fax: 2330 2994 Email: *lstang@inet.polyu.edu.hk* Website: *http://www.lsgi.polyu.edu.hk/BHM2007*
5, 6 November 2007	**FCLU Graduation Ceremony**	Jockey Club Auditorium, PolyU	**Organizer:** Faculty of Construction and Land Use	Miss Liz Lau Tel: 2766-5031 Fax: 2362-2574 Email: *clliz@polyu.edu.hk*
8-10 November 2007	**The 4th International Symposium on Location Based Services and TeleCartography** This Symposium aims to provide a platform for academics, professionals and practitioners in the fields of Surveying and Mapping, Cartography, Geo-information, Computer Sciences and Telecommunications to share their experiences and address different topics related to the latest research, development and applications of Location Based Services.	Chiang Chen Studio Theatre, PolyU	**Organizer:** Department of Land Surveying and Geo-Informatics **Co-Organizers:** Cartography and Engineering Gedoesy Research Groups, The Vienna University of Technology International Cartographic Association Commissions on Maps & Internet and Ubiquitous Cartography International Association of Geodesy Working Group 4.1.2 On Indoor and Pedestrian	Professor Esmond Mok Department of Land Surveying & Geo-informatics Tel: 2766 4350 Fax: 2330 2994 Email: lsgi.*lbs2007@polyu.edu.hk* Website: *http://www.lsgi.polyu.edu.hk/lbs2007*

改善房屋　惠澤社群

Improving HOUSING for SOCIETY

香港房屋協會
HONG KONG HOUSING SOCIETY

With the Compliments of 恒基兆業地產集團 HENDERSON LAND GROUP

Towngas Aims at a Greener Future

We conduct our business with environmental responsibility in mind - for a greener future, for our younger generations.

As a Hong Kong-based public utility company, Towngas is committed to environmental protection. Our early environmental initiatives date back to the '70s, when we began using naphtha rather than heavy oil to produce town gas, greatly reducing the emission of sulphur dioxide and contributing to the prevention of acid rain. In recent years, we have succeeded in utilising landfill gas for gas production purpose – further lowering carbon dioxide emissions. Towngas has also ventured into the green auto business by providing the liquefied petroleum gas that is a cleaner fuel for Hong Kong's taxis and mini-buses – helping improve the air quality for all of us. Beginning in 2006, we introduced natural gas as an additional feedstock beside naphtha in an attempt to further improve the environment.

Towngas

The Hong Kong and China Gas Company Limited

www.towngas.com

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