



THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

Faculty of Construction and Land Use

FCLU *News*





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Innumerable Good Wishes to Ir Prof. Jan-ming Ko, on the Occasion of His Retirement 同儕好友齊賀高贊明教授榮休之喜

The Faculty of Construction and Land Use (FCLU) staged a Farewell Dinner on 31 May 2010, at Regal Kowloon Hotel, in honour of Ir Prof. Jan-ming Ko, Vice President (Special Duties) and Chair Professor of Structural Engineering. Prof. Ko retired in October 2010, after having devoted himself to The Hong Kong Polytechnic University (PolyU) for 31 years.

服務理大長達三十一年之副校長（專責事務）兼結構工程學講座教授高贊明教授工程師，於本年十月榮休。

建設及地政學院為此於五月三十一日假富豪九龍酒店舉行惜別晚宴，出席的同事和嘉賓好友多達二百餘人。

The dinner kicked off with Ir Prof. Jin-Guang Teng, Dean of FCLU addressing a full house of more than 200 staff, alumni and good friends of Prof. Ko. He took the opportunity, on behalf of the Faculty, to express gratitude to Prof. Ko for his dedication and leadership in the Faculty over the years. Prof. Ko has successfully built up a Structural Health Monitoring research team at PolyU which is now well recognized and highly regarded worldwide. Under his leadership, the Department of Civil and Structural Engineering (CSE) as well as FCLU have made great strides in advancing their research capability and academic reputation. PolyU now boasts a Faculty FCLU with strong academic departments of international repute in areas related to the construction discipline.

In appreciation of Prof. Ko's tremendous contributions, the Faculty presented him with two tailor-made souvenirs: The first was a photo slide show which captured the significant moments of his time at PolyU. The second was a crystal photo frame featuring his key research projects - the Tsing Ma Bridge, the Guangzhou TV Tower, and the PolyU building. At the time of the presentation, the photo frame was entrusted with the photographs of four of FCLU's past and present Deans - respectively Prof. Michael Anson, Prof. Ko himself, Prof. Andrew Baldwin, and Prof. Jin-Guang Teng - to represent the Faculty's illustrious tradition under different competent leaderships.



晚宴由本院院長滕錦光教授的致辭揭開序幕。他代表學院感謝高教授多年來之領導和貢獻。由高教授一手創立的「結構健康監測」研究團隊，現已蜚聲全球，獲得國際學術界高度重視。在其領導下，土木及結構工程學系以至整個學院的研究能力和學術聲譽，都突飛猛進。時至今日，建設及地政學院各學系已在建築領域取得顯赫的國際學術地位，使理大引以為榮。

為了感謝高教授的貢獻，學院向他致送了兩份與別不同的紀念品，聊表心意：其一是一套捕捉了他在理大多個重要時刻的幻燈短片；另一份紀念品是一個水晶照片架，是飾以他曾經參與的重要研究項目，包括青馬大橋、廣州電視塔及理大本部大樓。致送時，照片架附著建設及地政學院四任院長－安禮信教授、高教授本人、博爾文教授和滕錦光教授的相片，象徵學院在歷任院長帶領下薪火相傳的傳統。



The high regard in which Prof. Ko is held is not only reflected in how well the dinner in his honour had been attended. Colleagues, both from the four departments of the Faculty, and from other departments of PolyU too, had not only showered Prof. Ko with good wishes, but had also chosen to separately present him with souvenirs, to betoken their sincere appreciation for the personal warmth which he always radiated, and his unflinching willingness to nurture others. Prof. Ko received gifts from Dr O'Brien, Director of Industrial Centre; Prof. Peter Yuen, Director of Public Policy Institute (PolyU), and his team; and Prof. Wallace Leung, Director of Research Institute of Innovative Products and Technologies.

Prof. Ko – as well as his guests – were clearly impressed by some of the souvenirs that were characterized by their unique thoughtfulness. Prof. Kam-tim Chau of CSE presented a plaque with a few poetic lines which he had specially chosen for Prof. Ko. Prof. Geoffrey Shen of Building and Real Estate (BRE) captured the happy faces of all his staff on a card; the dinner assembly roared with hilarity when Prof. Shen additionally presented to Prof. Ko a 'magic jacket' with the letters 'JM' (Prof. Ko's initials) on it which, Prof. Shen said, would enable Prof. Ko to gain access to all of BRE's facilities simply by donning it. Then again, Prof. Ko was clearly delighted to see the oil painting of himself against the background of PolyU, presented to him by the Department of Land Surveying and Geo-Informatics, just as he was very pleasantly surprised by the drawing done of him by Prof. Kam-tim Chau of CSE. Such was the high esteem which Prof. Ko enjoyed that Mr. Ng Wing Hong, one of the first graduates of PolyU's oldest predecessor – the Government Trade School, and now in his nineties, was also present at the occasion to present a tie to Prof. Ko.



高教授和藹可親，關心同事，更不忘扶掖後進。大家對他的敬意，從出席晚宴人數之多便可見一斑。本院屬下四個學系和其他學系的同事，紛紛為他送上祝福，還各自挑選了別出心裁的小禮物，以示謝意。當晚致送紀念品的理大同工包括工業中心總監區柏賢博士、公共政策研究所所長阮博文教授及其同事，以及創新產品與科技研究所所長梁煥方教授。

這些紀念品中，好些都使高教授和一眾嘉賓印象難忘。土木及結構工程學系周錦添教授致送的是一塊匾額，上面有他特別為高教授挑選的幾行詩句；建築及房地產學系系主任沈岐平教授預備了一張貼上學系全體員工笑臉的歡送卡，以及一件令在座嘉賓起哄的「神奇外套」——外套上有代表高教授英文名字縮寫的兩個字母 'JM'。沈教授笑說，只要高教授穿上這件外套，便可在學系內的所有設施來去自如。土地測量及地理資訊學系的禮物，是一幅以高教授為主角的油畫，而背景正是理工大學；另一幅由周錦添教授為高教授親筆繪畫的畫像，也叫主人翁驚喜交集。特別叫高教授感動的是，校友伍永康先生也是當晚的座上嘉賓。伍先生年逾九旬，理大前身——香港官立高級工業學院的首屆畢業生。





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Colleagues from various departments present souvenirs to Prof. Ko. They include Head of Building and Real Estate Department Prof. Geoffrey Shen (Picture 1), Head of Building Services Engineering Department Prof. Chow Wan-ki (Picture 2), Head of Civil and Structural Engineering Department Prof. Xu Youlin (Picture 3), Head of Land Surveying and Geo-Informatics Department Prof. Xiaoli Ding (Picture 4), Civil and Structural Engineering Department Prof. Chau Kam-tim (Picture 5), Director of Industrial Centre Dr Stephen O'Brien (Picture 6), Director of Public Policy Institute Prof. Peter Yuen and his team (Picture 7) and PolyU alumni Mr Ng Wing Hong (Picture 8).

多位部門同事致送紀念品予高教授，包括：建築及房地產學系系主任沈岐平教授(圖一)、屋宇設備工程學系系主任周允基教授(圖二)、土木及結構工程學系系主任徐幼麟教授(圖三)、土地測量及地理資訊學系系主任丁曉利教授(圖四)、土木及結構工程學系周錦添教授(圖五)、工業中心總監區柏賢博士(圖六)、公共政策研究所所長阮博文教授及其同事(圖七)及理大校友伍永康先生(圖八)



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In his address to the dinner assembly Prof. Ko expressed his immense pleasure to have been at PolyU for so many years. He mentioned in particular his gratitude to colleagues who had worked closely with him in his various capacities, at different times at PolyU; it was on account of their unflinching support that life on a day-to-day basis had always run so smoothly. He concluded by raising toasts to his guests in appreciation of their support over the years.

A farewell dinner, no matter how pleasurable an event it might have been, is conventionally a time to say goodbye. However, to colleagues, friends, and students of Prof. Ko, the whiff of sadness which often lingers after the event itself should be partially dispelled by the good news that the Senate had approved the conferment of the title of Emeritus Professor (Structural Engineering) on him. Moreover, Prof. Ko will also be staying on at PolyU, and will be affiliated to the Faculty to continue contributing his expertise to the forthcoming establishment of a research institute for sustainable urbanization. This is indeed wonderful news to all of us who know Prof. Ko and offer him our heartiest congratulations.

高教授致辭時指出，能夠服務理大多年，使他感到十分榮幸和愉快。他特別感謝在這段悠長歲月裡曾經與他緊密合作的各部門同事。正因為有了這個強大後盾，日常運作才可以如此順暢。最後，他向出席的嘉賓祝酒，以感謝大家多年來的支持。

惜別晚宴是為了歡送主人翁而設的，賓主即使如何盡興，總難掩不捨之情。不過，高教授的同事、好友和學生大可放心——教務委員會已核准向高教授頒授榮休教授(結構工程)的榮譽；另外，他也會留在理大，參與本院可持續都市化研究所的籌劃工作。對所有認識高教授的人來說，這是令人振奮的好消息。我們衷心祝賀高教授獲得「榮休教授」的殊榮。



Ir Professor Jan-ming Ko's Reflections on Thirty-one Years at PolyU

情牽理大半甲子 三十一載歲月細說從頭

專訪高贊明教授工程師



It is easy for one to take things for granted, and assume that what one today sees as a thriving research culture at The Hong Kong Polytechnic University (PolyU) in general, and in the Faculty of Construction and Land Use (FCLU) in particular, had always been in place since day one. This, indeed, was far from having been the case.

人們常把週遭的事物視為理所當然。今天，香港理工大學(理大)的研究風氣極盛，建設及地政學院在這方面的成績尤其突出；然而，大家認為順理成章的事情，往往都是經過一番辛勞的成果，絕非信手拈來。

An uphill journey

When Prof. Jan-ming Ko joined the then Hong Kong Polytechnic in 1979 as a Lecturer in the Department of Civil and Structural Engineering (CSE), he probably had no idea that what lay ahead of him was an uphill journey of having to introduce a culture of research to an academic department in an institution that had always seen itself primarily as a teaching institution.

In the early 1980s, Hong Kong underwent a process of economic restructuring as it shifted from a manufacturing to a knowledge-based economy. What this entailed was a need for quality enhancement in the local workforce, which translated in real terms into a demand to expand the local university education so that it would eventually accommodate about 18% of local students – a drastic escalation from the then mere 4% in the early 1980s. As one of the only three publicly funded tertiary institutions, the Hong Kong Polytechnic was faced with a mammoth task. Given that only a mere handful of the then serving academic staff members had PhDs, and therefore any basic training in conducting research, to elevate the teaching to move beyond the Higher Diploma level so that it would be on a par with the university level looked like something on the distant horizon.

In CSE then, only about five members of the academic staff out of a total of thirty or so had a doctorate. Prof. Ko is deeply appreciative of Dr. Howard Ward and Dr K. K. Wong, two Heads of CSE contemporaneous with his early years in the Department, both of whom recognized the urgency to enhance the Department's research capability. Their attempts to push for a breakthrough, though, had not exactly gone down well. To begin with, a research culture never prevailed. As a then British colony, local research was neither emphasized nor encouraged, for all necessary studies were transported to the United Kingdom, or Canada, or Australia. On top of this, at the Polytechnic, most of the staff members even at the level of Principal Lecturer were without a doctorate. It came as no surprise that even they were not keen to push forward a research culture. The situation, though, facilitated Prof. Ko's rapid rise within two years to a Senior Lectureship, and also to sit in committees which he otherwise would not have been entitled to play a part in. It was obvious to Dr K. K. Wong, then Head of CSE, that Prof. Ko belonged to a group of younger staff keen on research. However, passive resistance to research had remained widespread for a long time. Prof. Ko does not attribute this to his colleagues; he understands that it had never been on their agenda to stay behind 5.00 p.m., not to mention coming back to work on Saturdays and Sundays, all part and parcel of one's commitment to research. Moreover, research is something notorious for its refusal to return quick gratification. All things considered, to Prof. Ko, this period was the most difficult one in CSE.

迎難而上

時光回到1979年。高贊明教授剛加入香港理工學院土木及結構工程學系擔任講師，他大概還沒想到面前是一條極為艱辛的奮鬥之路。要在一向所來以教學為主的院校引進研究文化，困難自不待言。

上世紀八十年代初，香港經濟逐漸從製造業主導轉變為知識型社會。這意味著本地勞動人口的素質必需提升，簡而言之，就是擴充大學教育，使大約百分之十八的本地適齡學生可以接受高等教育入讀大學。當年，能圓大學之夢的莘莘學子僅有百分之四，這樣的增幅的確驚人。作為本地三所獲公帑資助的專上院校之一，香港理工學院面對的挑戰更是異常艱鉅。當時擁有博士資格的教員寥寥無幾，他們也缺乏進行研究所需的基本條件，要把教學素質從高級文憑提升至學位的水平，看來遙不可及。

當年土木及結構工程學系的大約三十位教員中，僅五人擁有博士頭銜。身為系主任的屈孝華博士和黃啟杰博士察覺到提升學系研究能力的逼切性。高教授對這兩位昔日上司十分感佩。二人雖然努力，效果卻未如理想。事實上，研究文化當時還未在香港盛行。香港回歸前是英國殖民地，所有重要研究都會移師英國、加拿大或澳洲進行，社會對本地研究工作既不重視，也不鼓勵。另外，在當年的理工學院，連首席講師在內的大部分教員都未獲取博士學位，他們不熱心推動研究文化，自然不足為奇。不過，這種情況卻創造了機會，使高教授在短短兩年內升任高級講師，甚至躋身一些原本未合資格參與的委員會。在系主任黃啟杰博士眼中，高教授是熱心支持研究的年輕教員。抗拒研究的風氣持續了好一段日子，但高教授沒將此歸咎別人。他明白同事向來都是準時下班的，要他們仿效研究人員在周末和周日回校工作並不容易。另外，研究之路漫長，回報卻慢，等待成果的日子更不好受。高教授認為，這可算是系內最艱難的時期。





What made matters worse was the lack of research funding - one must remember that it was not until 1989 that the Research Grants Council (RGC) came into being. Rescue relief though, came in the form of the Croucher Foundation, established in the early 1980s to promote China-United Kingdom-Hong Kong tripartite research, on the threshold of China's opening up after the Cultural Revolution. The Croucher Foundation's significant funding underpinned the first breakthrough. Under the guidance of Dr. K. K. Wong, who had a passion for research, CSE enjoyed a head start in collaborations with the Chinese mainland. A new culture kicked off in the Department, when in the middle 1980s it was handed a batch of projects ranging from wave research, to off-shore platform research, to solar collector research, to computer-aided education research which were meaningful to both Hong Kong and the Chinese mainland. These projects marked a turning point in CSE, and led subsequently in 1985 to another major project, 'Ambient Vibration Measurement of Tall Buildings', done in collaboration with Tsinghua University whose computational models had to be verified by tall buildings in Hong Kong - items then virtually non-existent in China. The series of projects also marked a turning point in Prof. Ko's career. Although he was then still relatively junior, Dr K. K. Wong had involved him in all the negotiations with the Chinese mainland. Prof. Ko calls him his first 'Bo Le' 伯樂.¹

The Croucher Foundation projects also helped identify the direction for future researches, leading to the formation of two research teams, respectively in coastal hydraulics & structural dynamics, which are now amongst the strongest in CSE. Relative to the situation in other institutions, both research teams have the biggest critical mass. The fact that there is expertise in the same teams to cover all areas has empowered them to handle an increasing number of projects which stretch beyond Hong Kong to the Pearl River Delta region.

令人更苦惱的事就是研究經費嚴重不足。眾所周知，香港研究資助局是在1989年才成立的；因此，在八十年代初創立並以促進中、英、港三方共同研究為宗旨的裘槎基金會，就成了科研人員的「及時雨」。當時正值文化大革命結束、中國對外開放的初期，壹筆可觀的經費支持使學系取得了首項突破。在熱心推動研究的黃啟杰博士指導下，土木及結構工程學系率先與內地合作。八十年代中期，學系獲委託開展一系列有關波浪、海上平台、太陽能收集器，以及計算機輔助教學的研究，一股嶄新的文化開始在系內形成。這些項目不僅對香港與內地的合作意義深遠，也是學系調整發展路向的起點。1985年，學系與清華大學合作進行名為《高層建築環境振動測量》的大型研究，利用香港的高樓大廈（當時國內並沒有這類建築）驗證提出的計算模型。這些研究項目對高教授的事業同樣意義重大。雖然他年資尚淺，黃啟杰博士已讓他參與所有和中國內地有關的磋商。高教授更直言黃啟杰博士是自己的首位「伯樂」¹。

裘槎基金會不僅提供資助，也幫助土木及結構工程學系確立了往後的研究方向，因此而成立的海岸工程及結構動力學兩個研究團隊，今日已成為系內的優秀研究隊伍。相對於其他團隊，兩者已集結了一定的研究力量。由於薈萃了不同學科的專才，團隊能處理的研究項目不斷增加，範圍也由香港延伸至珠江三角洲地區。

回首前塵，高教授對與同事克服重重難關，最終在學系內建立研究文化深感欣喜。當年不少同事都盡心竭力，使理工學院逐步達至大學水平。高教授坦言，在全職授課之餘兼讀博士學位，一點也不輕鬆。學系的研究能力得以提升，同事的堅持和毅力實在功不可沒。另外，他也十分感激系內技術人員的支持。一如前述，理大本以教學為主，以往從沒要求技術人員支援科研工作，偏偏工程研究卻向來倚重技術人員的全力支援。高教授鍥而不捨的溫言鼓勵，使學系內越來越多技術人員熱心支持高水平的研究工作。他毫不諱言，若缺少這塊堅實後盾，學系未必可以在1992年成功取得青馬大橋的項目。由他領導的團隊在芸芸對手脫穎而出，大概是因為眾人雖深知任務艱鉅，卻能無懼辛勞，為大學竭盡全力。青馬大橋項目得以成功，技術人員的支援實在居功至偉。他們須實地進行測試，工作繁重之餘，更要發揮合作精神：由於須了解大橋的動態特性，驗證不同的計算模型，工作人員要在多個時段實地收集數據。高教授回憶說，為了盡量延長收集數據的時間，隊員曾

¹ Bo Le is a legendary figure in Chinese literature, famed for his discernment. The saying goes that 「世有伯樂，然後有千里馬」, which translates as 'There are horses in the world capable of running one thousand li, because there is Bo Le.' Metaphorically, therefore, Bo Le is someone who is a good judge of talents.

¹ 伯樂是中國古代的傳奇人物，以眼光獨到見稱。古語有云：「世有伯樂，然後有千里馬」，後世即以「伯樂」形容知人善任，對發掘人才獨具慧眼之人。

At the end of a day's work at Tsing Ma Bridge.
於青馬大橋完成一天工作後，踏上歸途。



A quarter of a century on, Prof. Ko recalls with great personal satisfaction the innumerable hurdles he and his colleagues overcame in the process to kick start a research culture in CSE. Many of the then serving academic colleagues had put in strenuous efforts to keep in step with the Polytechnic's move towards university status. Prof. Ko understands perfectly that it could not have an easy task for them to pursue a doctorate on a part-time basis, while attending to a full-time teaching job. Their persistence played a crucial role in elevating CSE's research capability. In this regard, Prof. Ko is also deeply thankful to his technical staff who, to start with had never been required to support research when the Polytechnic was primarily a teaching institution. Technical support, however, has always been vital in engineering research. What began as repeated gentle persuasions on Prof. Ko's part to try their hands at research eventually motivated his technical staff into getting increasingly involved in high level researches. Without their dedication, Prof. Ko does not think CSE's bid for the Tsing Ma Bridge project in 1992 could have been so successful. His team out-competed other contestants probably because it was fully aware of the difficulties involved, but nonetheless dedicated itself to what it knew was for the good of the Polytechnic. His technical team, he says, was indispensable to the Tsing Ma Bridge project, for the academic field tests meant both teamwork and a massive workload: To identify the bridge's dynamic characteristics so as to verify different computational models had involved multiple stretches of time when his team had to collect data on site. Prof. Ko remembers with deep appreciation how repeatedly, for weeks in a row, his team would leave for the construction site on the first boat at 7.00 plus in the morning and returning on the last, so as to maximize the time for data gathering. The wife of one of his technical staff – who was herself a clerical staff member at the Polytechnic, 'complained' to Prof. Ko that by the time her husband got home Enjoy Yourself Tonight (a daily programme on TVB which commenced after 9 p.m.) was already on the air! Prof. Ko still feels apologetic that for all their toil, his staff got little overtime allowance or other monetary remuneration, on account of CSE's budget constraints in the project. The experience built up all those years ago also underpinned the expertise demanded of the team in the much more recent project of the Guangzhou New TV Tower.

經連續多星期乘搭早上七時開出的首班船到工地進行測試工作，乘最後一班船回程時已是日落西山。其中一位同事的太太(本身也是理工學院的文職人員)甚至向他「投訴」，說丈夫每晚總要到《歡樂今宵》播映時段(無線電視當年逢週一至週五晚九時後播映的綜藝節目)才回到家中！談到往事，高教授既感欣慰，也覺歉疚。受經費所限，員工超時工作差不多是沒有補薪或津貼的。不過，當年的經驗十分寶貴，甚至對團隊近年參與廣州新電視塔的工程亦有裨益。



From Third Division League to First Division League

The eventual escalation in research publication in CSE was in large measure the fruit of Prof. Mike Anson's labour, who soon after his assumption of Headship in 1987, had begun to exercise repeated gentle pressure on colleagues to submit research proposals and journal papers. Working in tandem with Prof. Anson, Prof. Ko likewise adopted this approach which notably paid-off by the early 1990s when colleagues happily prepared research proposals on their own accord. Although research output in CSE had much improved, the outcome of submissions to RGC highlighted the inadequacies of the researches then undertaken. It was high time they focused on quality. One strategic move in this direction was to encourage participation in international conferences. Of course, a fact known to all was that conference publications count less than journal publications. Nevertheless, conference participation had the unique benefit of enhancing colleagues' interaction with their international peers, which would in turn broaden their research perspective. By the same token, attachment programmes – part of the initiatives for staff development – which posted members of teaching staff to universities overseas likewise elevated performance through peer comparison. Both conference attendance and attachment programmes, moreover, had the additional benefits of promoting recognition for PolyU and facilitating possible international collaborations. Prof. Ko's favourite analogy is that of football: It should most likely speed up the performance of a third division league if it mixes regularly with a first division league. Today, younger colleagues representing FCLU at international conferences probably have no idea that the Faculty has come a very long way since the earliest days when our delegates were often mistaken for ones from the Hong Kong University of Science and Technology. In the middle 1990s, the then infantile 'The Hong Kong Polytechnic University' was, well, next to unheard of.

The domain in which Prof. Ko is best recognized internationally is Structural Health Monitoring, which falls within Structural Dynamics. It involves quantifying the dynamic performance of structures and building mathematical models to reflect their behaviour. The concept itself had long been in use in mechanical and aerospace engineering but is more complicated in civil engineering as the structures are less well defined, with various noises mixing with the real signals. Previously, in the days without instrumentations, the 'health status' of a structure was determined by the human eye. Needless to say, Structural Health Monitoring with its sophisticated system of sensors affords more precision in routine monitoring, and is especially valuable in light of the present day emphasis on 'Life cycle cost'. The experience which Prof. Ko's team had built up through the Tsing Ma Bridge project later paid off in other ways: As the Chinese mainland prospered and stepped up its infrastructure development, the demand for long span bridges increased. The PolyU team frequently out-competed other mainland Chinese bidders on the strength of its excellent track record.

'A single blooming flower is not Spring; Spring is in the garden only when ten thousand flowers together flourish'²

Despite Prof. Ko's international renown in Structural Dynamics, he never self-aggrandizes, for to him the success of most projects is the result of teamwork. That is especially relevant, he points out, in respect of Structural Health Monitoring which oftentimes involves interdisciplinary collaborations – from Information Technology to Physics, to Electronic Engineering. Prof. Ko recalls a poignant moment when one of his technical staff remarked that he and his colleagues had not minded at all the hard work and long hours if they were good for the University. Prof. Ko felt touched. To him, a successful research culture presupposes the mentality of not being personally calculating, that

從丙組到甲組

土木及結構工程學系在研究和發表論文方面漸見成績，安禮信教授可謂居功不少。安教授在1987年接任系主任後，一直鼓勵同事提交研究建議書和發表期刊論文。高教授也秉持這種策略。到了九十年代初，成效漸見，同事間已然培養出自動提交研究建議書的風氣。「量」是改善了，但證諸研究資助局的審批結果，這些研究項目的「質」卻未符理想。為了補救這種情況，學系大力鼓勵同事參與國際性的學術會議。這一類論文的評級和份量，雖不能與在學術期刊上發表的相提並論，但同事能透過活動與海外教研人員直接交流，對開拓研究視野助益甚大。有異曲同工之妙的，還有為促進教研人員個人發展而設立的「短期交換計劃」，同事可到海外大學短期工作，借鏡同儕的長處，從而提升自己的水平。這兩項措施的另一好處，就是提升理工大學的知名度，打好日後進行國際學術合作的基礎。高教授最愛以足球作比喻：要在短時間內提升丙組球隊的成績，最有效的辦法是定期與甲組球隊作賽。今時今日，代表建設及地政學院參加國際會議的年輕教員，大概無法想像前輩走過的漫長道路。想當年，他們經常被誤認為香港科技大學的代表；在九十年代中期，幾乎可以用「寂寂無名」來形容剛轉型的「香港理工大學」。

高教授以「結構健康監測」方面的研究最為國際學術界稱道。「結構健康監測」屬於結構動力學的分支，涉及把結構的動態表現量化和建立數學模型，藉此反映結構的狀態。在機械及航空工程領域，上述概念其實沿用已久，但用於土木工程則較為複雜。這是由於土木工程結構本身的不確定性更大，真實數據不時混有各種各樣的「雜音」。在缺乏先進儀器的情況下，結構的「健康狀況」只憑肉眼決定。結構健康監測技術運用精密的傳感器系統，可以提高日常監測的準確程度，在強調「生命週期成本」的今天，格外顯得有用。高教授及其團隊在青馬大橋項目中累積的經驗，不久便發揮了效用：中國內地經濟起飛，基建發展如火如荼，對大跨度橋樑的需求大增。理大團隊憑著驕人往績，很多時都能在眾多內地的投標者中脫穎而出。



Prof. Ko and his team won a Gold Medal and the Grand Prize at the 37th International Exhibition of Inventions, New Techniques and Products in Geneva for their invention, the Mega-Structure Diagnostic and Prognostic System
高教授及其研究小組成員參與研發的「大型結構診斷與預測系統」獲第三十七屆日内瓦國際發明及創新技術與產品展頒發金獎及大會特別獎

「一花獨放不成春，萬花齊放春滿園」²

儘管是名滿國際的結構動力學專家，高教授卻從不自滿，謙稱大部分研究項目都是有賴團隊通力合作而得以成功，尤以結構健康監測為然。那是因為這門技術往往牽涉跨學科——如資訊科技、物理學、電子工程等專才的參與。他還記得有一位技術人員曾說，只要對大學有利，自己和同事都不介意勞心勞力。這一幕令他印象難忘，也非常感動。高教授直言做研究的人不能斤斤計較，也就是在研究過程中不應過於計較私利，而黃啟杰博士正是這項優良傳統的奠基者。早在八十年代初期，黃啟杰博士已頻頻與內地單位磋商合作事宜。他總是利用周末的私人時間往返，甚至自掏腰包支付有關開支。這種無私奉獻的精神，深深打動了不少同事。

1992年，高教授獲安禮信教授推薦，成為土木及結構工程學系系主任；事實上，他之前已獲安教授擢升為系內首位副系主任，創下學系的先河。高教授除了把事業上的成就歸功於安教授，也很感謝理大前校長潘宗光教授（他

2 「一花獨放不成春，萬花齊放春滿園」is a couplet in popular usage in the Chinese mainland. The quotation was mentioned by Prof. Ko himself.

2 「一花獨放不成春，萬花齊放春滿園」是中國內地非常流行的一首對聯，此處乃直接引述高教授的說話。

is, not heeding too much what one personally puts into a venture. Prof. Ko sees this good tradition as having been handed down by Dr. K. K. Wong, who, in those early days in the 1980s of frequent negotiations with the Chinese authorities over collaboration, invariably used his own time for such trips - often leaving on a Friday and returning on a Sunday - and even paying for various expenses out of his own pocket. Dr. Wong's shining example of selfless dedication had obviously rubbed off on many of his colleagues.

In 1992, Prof. Ko became Head of CSE, on the recommendation of Prof. Mike Anson - his second Bo Le - who had earlier already made him an Associate Head, an appointment without precedent in the Department. Prof. Ko attributes his career advancement not only to Prof. Anson, but also to the former PolyU President Prof. Chung-kwong Poon - his third Bo Le. Prof. Poon not only approved of his nomination for CSE's Headship, but also of his later nominations to become Dean of FCLU and an Associate Vice President, both in 2000. It was also Prof. Poon who hand-picked Prof. Ko to be a Vice President in 2003.

With his more active involvement in academic administration, Prof. Ko's schedule no longer always accommodated a hands-on approach to research, despite his passion for it. He could then only indulge his passion through discussions with his colleagues about their projects. It never bothered him that his position in research was now relegated - for he staunchly believed that a thriving research culture asked of each person to contribute his/her expertise, and then to pool together individual strengths. Prof. Ko saw himself as an initiator and a facilitator, or, metaphorically, a 'gardener' whose job was to make all the flowers flourish, for 'Spring is in the garden only when ten thousand flowers together bloom'.

Prof. Ko's readiness to support and nurture others explains the very cordial relations he has always had with his colleagues. This is something he is perfectly aware of himself. The warm regard in which he is widely held had been reflected, at least in part, in how well his farewell party on 31 May 2010 had been attended. Not only members of FCLU, but also those from other PolyU departments came to shower him with good wishes. Moreover, despite his preference for a low profile dinner gathering, his many friends from the construction industry also flocked to the occasion to celebrate his illustrious accomplishments over thirty-one years.

Prof. Ko has always seen closer ties with industry as pivotal in the advancement of engineering education and research in Hong Kong. In this respect, he has what might be considered an edge, as many structural engineers in Hong Kong, even those in senior government positions, have originated from PolyU. Throughout the years, CSE's alumni have given support of various kinds to their alma mater. In fact, it was also CSE's alumni who nominated Prof. Ko for his more active involvement in the committee activities of The Hong Kong Institution of Engineers (HKIE). Prof. Ko cultivated even closer links with industry when he became Chairman of HKIE's Accreditation Board from 2001 to 2006, during which tenure he oversaw the implementation of a system - crystallized as the Washington Accord - which enhanced the mutual recognition of all engineering degrees worldwide. Prof. Ko has also been a member of the HKSAR Construction Industry Council (CIC), ever since its establishment in February 2007. Once again, he sees his participation as instrumental in linking up the Council with research and development at the university level. Success in research, of



Prof. Ko receives the HKIE President's Awards 2006
高教授獲頒香港工程師學會會長特設成就獎2006



PolyU President Prof. Timothy Tong presents the Long Service Award to Prof. Ko
理大校長唐偉章教授頒發長期服務獎予高教授

的第三位「伯樂」的賞識。潘教授不但接納由高教授升任系主任的提名，又在2000年核准由他擔任建設及地政學院院長及理大協理副校長；到了2003年，更親自挑選他成為副校長。

由於須撥出更多時間處理大學的行政工作，高教授縱然熱愛研究，也無法繼續親身參與，只能通過與同事的討論享受當中樂趣。然而，他從沒有因「退居幕後」而不快！這是因為他堅信研究文化的精髓在於人人各展所長，然後合眾人之力做出成績。高教授說：「一花獨放不成春，萬花齊放春滿園！」——他以負責打理花園的「園丁」自喻，說自己的責任是提倡和培養研究風氣，直至這股文化「遍地開花」。

高教授樂意扶掖同事和後進，人緣極佳，不少人對他非常敬重。單看五月三十一日舉行的惜別晚宴是何等熱鬧，便可說明一切。除了建設及地政學院的同事，還有很多其他部門的員工來為他送上祝福。儘管他希望晚宴低調進行，但建築界的友好還是紛紛而至，與他一起慶祝三十一年來的卓越成就。

高教授向來認為提升本地工程教育及研究水平的關鍵，是在於與業界加強聯繫。在香港，不少結構工程師甚至政府高官都是出身理大，因此，他在這方面是頗佔優勢的。這些年來，土木及結構工程學系的校友以種種形式回饋母校：高教授能積極參與香港工程師學會多個委員會的事務，也是出於校友的提名。2001至2006年，他擔任香港工程師學會學術評審政策委員會的主席，與業界的聯繫更加密切，任內曾經監督推行全球所有工程學位互認的制度，以貫徹《華盛頓協定》的規定。另外，自香港建造業議會於2007年二月成立以來，高教授一直是該會成員。他把這項公職視為連繫議會與大學教研人員的一道橋樑。科研成果得來不易：研究不能缺少資金，而這正是應用研究所遇到的一大難題。事實上，對於有助解決業界燃眉之急的應用研究項目，研究資助局是少有撥款的。建造業議會成立後，轉機漸現，教研人員自此可以透過該會申請公帑進行有關建造業的研究。高教授認為自己在建造業議會的職責之一，就是進一步加強該會與研究機構的聯繫。時至今日，他仍視此為其中一項要務。



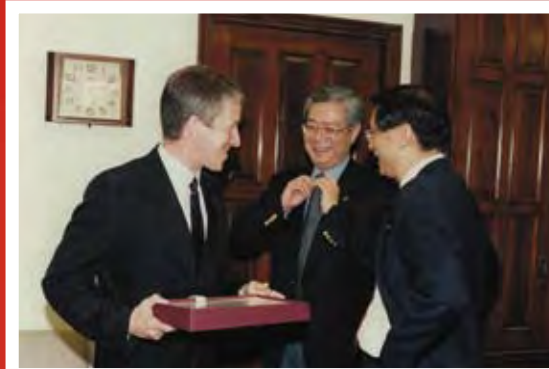
course, does not grow on trees; it takes considerable financial backing which poses a problem for applied research, since RGC does not readily support research which addresses the immediate needs of industry. The establishment of CIC heralded some much welcome changes in this respect, as it became possible through the Council to secure public resources for research and development in the construction industry. Prof. Ko sees his mission in CIC as further strengthening the link between the Council and research institutions. To date, this is still one of his major preoccupations.

On campus, from 2000 to 2005, Prof. Ko was Dean of FCLU. He always feels that he had not been very fair to the Faculty in his capacity as Dean, as he was also concurrently an Associate Vice President from 2000 to 2003. In retrospect, many of the administrative changes he implemented during his deanship could have been afterwards more closely monitored, but which, to his mind, he had failed to do on account of an overscheduled life in those years. Notwithstanding this, in his role as a research facilitator – or to use his metaphor – a ‘gardener’, RGC funding, citation record, and international recognition all flourished. One legacy from his deanship deserves a special mention – this is the Newsletter you are now reading, which was conceived not simply to keep Faculty members and alumni posted of current events, but more importantly to promote the Faculty’s image, so that FCLU could be better recognized within industry.

One needs to put one’s heart into a task

When Prof. Ko became Vice President in 2003, his domain was in research and development – he was ‘VP (RD)’. Two related measures he pushed through both raised the standard of research at PolyU. The first stipulated research to be a prerequisite for all academic staff if they were to be put on regular terms. With a few exceptions, this was inclusive of serving staff not hitherto bound by this requirement, and who were then given six years to prove their research competence. The second measure clarified what was meant by ‘applied research’ in the common perception. On account of PolyU’s nature as an institution with a practical orientation, almost all the researches undertaken by us are by necessity ‘applied research’, which, however, had previously been perceived as low-level research. Prof. Ko’s new measure stipulated that all research output must henceforth demonstrate academic and scientific value, to be benchmarked against publication in journals with high impact factor, or the acquisition of patents. ‘Applied research’ thus came to be redefined.

Towards the end of 2002, when Prof. Ko was still an Associate Vice President, he was handed the unpalatable task of ‘re-engineering’ – a euphemism for salary and staff cuts. In the bigger picture, of course, both public and private sectors had been stepping up outsourcing their services towards the turn of the century. On campus at PolyU, re-engineering called for additional impetus when the local economy spiraled downwards in 2003 because of SARS. One of the candidates to qualify for the surgeon’s knife was the then Estate Office, with its staff population of about five hundred. Prof. Ko, though, was personally averse to laying off staff, especially in such a bleak economic climate. At that time, Li Ka Shing Tower, Lee Shau Kee Building, and a student hall were all about to be constructed. If Prof. Ko had not remained unwavering in his empathy for his staff – and more importantly optimistic, he would not have seen in the several buildings-to-be possibilities for a ‘win-win solution’. This solution, in brief, pivoted on the concept of ‘increase in productivity’. It meant in real terms that some of the five hundred members of staff were to be re-deployed to serve also in the new buildings; as such, five hundred people would be doing the work of six hundred people, if not more. All concerned understood that to be a sensible solution; and it was one welcomed by all – except a few non-performers who justifiably did get the sack in the re-engineering exercise. As Prof. Ko watched the popular Korean drama ‘Dae Jang Geum’, about a kitchen maid in the imperial palace who made her career through sheer dedication to her job, it struck him that all undertakings, even the humblest, required of one to put one’s heart into the job. And of course he was right; new possibilities often crop up only if one remains steadfast. As far as the re-engineering crisis



高教授於2000至2005年擔任建設及地政學院院長，並在2000至2003年兼任協理副校長一職，他一直認為這對學院有欠公平。回想起來，當年任院長時推行的不少行政改革，都因自己過於忙碌而沒法更仔細監察，如果當年能多放點時間，效果定必更佳。儘管如此，他身為研究文化的倡導者（或套用其「園丁」的比喻），無論是爭取研究資助局撥款、增加論文獲引用的次數，或是提高學院的國際學術地位，都是成績斐然。高教授任院長時還有一項不得不提的建樹——就是各位正在閱讀的《學院通訊》！出版這本刊物，絕非只為向同事和校友報道學院動向，更重要的是提升學院的形象，增進業界對我們的認識。

以心做事 全力以赴

高教授於2003年晉升為理大副校長，專責科研發展，期間為了提升理大的研究水平，推行了兩項措施。其一是規定教員必須從事研究才可納入常額編制。除了少數例外個案，這適用於當時尚未受此規定影響的所有在職同事，但他們可享有六年時間證明自己的科研能力。其二是清楚說明「應用研究」的定義。作為一所從「實用」出發的高等院校，理大差不多所有研究都屬於「應用」性質。令人遺憾的是，這類研究一直被認為檔次不高。高教授建議的新措施規定：所有稱為研究的項目必須能體現學術及科學價值，而研究結果是否可以論文形式在「高影響力指數」的學術期刊刊登或者能否取得專利，就是衡量這些價值的準則。「應用研究」的定義從此明確。

在2002年底，高教授以協理副校長的身份獲委託負責另一項絕不討好的「重組工程」——減薪裁員。事實上，邁向二十一世紀時，公營與私營機構已陸續把服務外判。到了2003年，本地經濟因「沙士」肆虐而急轉直下，在理大推行「重組工程」可謂難上加難。當時「刀口」上的其中一個目標部門，是聘用了約五百員工的物業處。他本人並不願意裁員，何況當年的經濟環境十分惡劣。那時候，李嘉誠樓、李兆基樓和學生宿舍的建築工程正在或很快便要動工，若非高教授在同情員工之餘堅守立場、保持樂觀，就不可能從大局中看出「雙贏方案」。簡單來說，解決方案是以「提高生產力」為重點，亦即校方會重新調配這五百位員工兼顧新建的大樓的工作；如此，五百人就可以承擔最少六百人的工作。除了數個因表現未符理想而最終遭解僱的員工，所有受影響的員工都認為安排合情合理。記得電視曾播映大受歡迎的韓劇《大長今》，講述一位在王宮負責膳食的「內人」如何努力不懈地達到理想。高教授亦為劇集主角的毅力所打動。他堅信即使是最簡單不過的事情，也須用心才能做好。這的確是千古不移的至理，因為機會總是留給堅持到底的人。不



was concerned, the Associate Degree soon came into being and with it the demand for new campus buildings and thus extra labour force. One could not help but wonder: Could Prof. Ko have defused so satisfactorily the re-engineering crisis if he had not put his heart into the task? When the Estate Office subsequently split to become the Campus Development Office and Facilities Management Office, it was also on account of Prof. Ko's successful handling of the re-engineering crisis that he was given the duty to oversee both offices.

Looking Ahead

Colleagues, alumni and Prof. Ko's friends are of course delighted with Senate's decision to confer on him the title of Emeritus Professor (Structural Engineering), on account of the length of his tenure as a Chair Professor, his academic and professional achievements at PolyU, and the external acclaims which he had won. In his capacity as Emeritus Professor, Prof. Ko will contribute to the forthcoming research institute for sustainable urbanization, an issue which has always been very close to his heart. Prof. Ko hopes to draw on the experience of Hong Kong and other instructive case studies, to bear on the phenomenal urbanization in the Pearl River Delta region, and the prospective development of the rest of China. It is his conviction that many of the problems spinning off from massive urbanization could be prevented with good planning and policy coordination. Another domain to compete for Prof. Ko's time and attention will of course be his work in the CIC. Then again, with his present membership of the Commission for Strategic Development, Prof. Ko also hopes to devote energy on the issue of the repositioning of Hong Kong. What is the direction which our city should take in the coming twenty years, so that we would not have befall on us the much talked about, and also much dreaded, fate of 'marginalization'? What are some of the required action plans if Hong Kong is to be transformed into an 'education hub' in southern China?

At Prof. Ko's farewell dinner, Prof. Jin-guang Teng made the observation that everybody who was anybody at PolyU must have been acquainted with Prof. Ko. Prof. Ko very modestly puts this down to his presence of three decades on campus. Everybody, though, who is at all acquainted with

Prof. Ko cannot fail to be impressed by the positive energy he radiates. No one, he rightly notes, can be without constraints, for at any moment in time one's performance is like that on a stage. While fully heeding what the stage setting delimits, one can - and should - put one's heart into one's performance, optimize the potentials of a given situation in order to generate the desired results. Prof. Ko's thirty-one years at PolyU are testimony to his having put into practice this philosophy, and perhaps more importantly, its efficacy.

久，校方開辦副學士課程，對新設施和人手的需求大增。我們不禁要問：要是高教授做事時毫不用心，重組危機還可以安然解決嗎？物業處後來分拆為「校園發展處」及「物業管理處」，由於高教授能成功重組物業處，故兩個部門都由他監管。

展望未來

高教授在理大擔任講座教授多年，無論在學術或專業領域，同樣成就非凡，對外亦聲名卓著；因此，教務委員會決定向他頒授榮休教授（結構工程）榮銜時，一眾同事、校友及其友好莫不拍手叫好。成為榮休教授後，他會為成立「可持續都市化研究院」貢獻所長。對於這個一向關心的議題，高教授期望參考香港的經驗和其他具啟發性的案例，審視珠江三角洲大規模都市化和內地其他省市的發展規劃問題。他深信良好的規劃和協調的政策，可以預防大規模都市化衍生的不少難題。另一項令他大費時間和精神的公職，當然是建造業議會的工作。另外，身為策略發展委員會委員，他也希望深入研究把香港重新定位的問題。未來二十年，香港應朝哪一個方向發展，才可擺脫眾人經常談論、令我們惶恐不安的「邊緣化」命運？如香港要轉型為華南的「教育樞紐」，又須制訂哪些實質計劃？

在惜別晚宴上，滕錦光教授有個有趣的發現：在理大工作的人，幾乎沒有不認識高教授的。高教授謙遜地說，這純粹是自己已在大學工作了三十餘年的緣故。雖說全是舊識，但人人還是給他的活力和朝氣所感動。正如高教授所言，無論何時何地，人就像舞台上的表演者，演出或多或少會受到限制；但在舞台設計所容許的情況下，我們總可以、也應該全力以赴，竭盡所能，為達到理想而奮鬥。證諸高教授在理大三十一年的悠長歲月，他的確所言非虛，並且身體力行，最終取得豐碩的成果。

Research and Technology Transfer 研究與技術轉移

Research Programme Funded by Sun Hung Kai Properties

The research programme funded by Sun Hung Kai Properties (SHKP) has now ended its fourth of the five years as originally planned. Funding has totaled HKD 20 million to date, and a further 5 million has been allocated to fund the 5th year. SHKP members and members of staff from The Hong Kong Polytechnic University (PolyU) have regularly come together to chart the progress of the research programme.

On 8th December 2009, led by Mr Mike Wong and Mr S.K. Au Yeung, six SHKP members attended an annual feedback meeting with the five project leaders at PolyU. The meeting was also attended by Prof. Jan-ming Ko, PolyU Vice President who initiated the programme more than five years ago, as the then Dean of the Faculty of Construction and Land Use (FCLU), Prof. Michael Anson, also a former Dean of FCLU who has been serving as the PolyU coordinator of the programme over the past two years, and Prof. Jin-Guang Teng, the current Dean of the Faculty.

The five projects are in the fields of 'Renewable Energy Source Technologies', led by Prof. H.X. Yang of the Department of Building Services Engineering (BSE); 'Energy Efficient Control for A/C systems', led by Prof. S.W. Wang of BSE; 'Durability of Concretes Made with Recycled Aggregates', led by Prof. C.S. Poon of the Department of Civil and Structural Engineering (CSE); 'Advanced Water Treatment Technologies' led by Prof. H. Chua of CSE; and 'The Characteristics of Customers for Housing in Southern China', led by Prof. C.M. Hui of the Department of Building and Real Estate. Below are more details concerning the individual projects.

Some of Prof. Yang's funding supports alternative energy demonstration projects; these are open to the public at Ma Wan Island Park. The funding also serves to support research into solar photovoltaic power generation technology ground coupled heat pumps and vertical axis wind turbines intended for installation on buildings. Prof. Yang reported his advances in these fields and also on his progress with dye sensitized solar cells, a research which he has undertaken in collaboration with the Sun Yat-Sen University.

新鴻基地產集團資助的研究計劃

由新鴻基地產集團資助的「五年研究計劃」已如期邁向最後一年。四年來，該集團捐贈的款項合共達到港幣二千萬元，第五年的五百萬元經費已於早前收到。新鴻基集團及理大代表會定期會面，跟進研究進展。

去年十二月八日，以黃植榮先生及歐陽肇強先生為首的六位集團代表，親臨理大出席一年一度的匯報會。與會者除了五項研究的負責人，還有五年多前以建設及地政學院院長身份促成是項計劃、時任理大副校長高贊明教授，過去兩年擔任我方計劃統籌員的前院長安禮信教授，以及本院現任院長滕錦光教授。

五項研究分別是由屋宇設備工程學系楊洪興教授領導的「可再生能源源頭技術」；屋宇設備工程學系王盛衛教授的「空調系統節能控制」；土木及結構工程學系潘智生教授的「再生骨料混凝土耐久性」；土木及結構工程學系蔡宏教授的「先進水處理技術」；以及建築及房地產學系許智文教授的「華南地區置業者特色」。現把各項目的內容簡介如下：

楊洪興教授所得的經費，部分是用於在馬灣公園供公眾參觀的替代能源示範項目，亦有用於關於太陽能光伏發電技術、地源熱泵，以及在建築物內安裝縱軸風電機組的研究。除了上述各方面的進展，楊教授也匯報了與中山大學合作開發的「染料敏化納米晶薄膜太陽能電池」的情況。

王盛衛教授長期研究能提升樓宇空調裝置效益的控制系統。有賴新鴻基地產集團資助，他得以走出實驗室，實地研究建築物內的空調系統。王教授以獨立節能顧問的身份為新鴻基屬下的環球貿易廣場工作，就該建築物的通風、製冷系統、和消除白霧及二氧化碳感應等技術制訂優化控制策略，結合樓宇全生命周期診斷，結果每年節能約七百萬千瓦時，相當於大廈空調系統總用電量約百分之十八。

潘智生教授的項目始於去年五月。他擅長研究再生物料的循環應用，經驗豐富。他研發的地磚是以再生物料製造，可吸收大氣中的污染物，現時廣泛用於香港各區。有賴潘教授和其他研究人員的努力，我們已對使用再生混凝土作骨料的結構及非結構混凝土的短期特性有一定認識，但其耐用性則有待探討。潘教授的研究將有助填補這片空白。另外，他亦會研究以再生細骨料替代砂生產砂漿的可行性。

Prof. Wang has long studied control systems for better utilization of air conditioning plant in buildings. His project under the SHKP funding scheme has enabled him to step outside of the laboratory, so as to work on real air conditioning systems in a real building. He has worked as an independent commissioning agent on the International Commerce Centre (ICC) building. Optimal strategies have been developed for pumps, fresh air control, cooling towers and plume abatement. CO₂ sensor technology is also deployed. The total energy saving resulting from the optimal strategies is about 7.0 million kWh per annum, or about 18% of the total energy consumption without such measures.

Prof. Poon's project is a relatively recent starter - commenced only in May 2009. He has a strong background in practically oriented research in the area of recycling and is the inventor of paving blocks now used all over Hong Kong, made from recycled materials and possessing also of the ability to take pollutants out of the atmosphere. Thanks to the work of Prof. Poon and others we already know quite a lot about the short term properties of concretes using recycled crushed concrete as aggregates in structural and non-structural concrete. However, there is still a lot to be learnt about its durability properties. Prof. Poon's SHKP funded work will help overcome this lack. The feasibility of using fine recycled aggregates to replace sand in mortar will also be investigated.

Like Prof. Wang and Prof. Yang, Prof. Chua is also indebted to SHKP funding and involvement, which have enabled him to combine laboratory research with field testing on real water features using his advanced TiO₂ treatment technologies. This year, his work has concentrated on water features common in building estates, such as fountains, swimming pools and water storage tanks. In previous years, Prof. Chua had made successful improvements on grease traps; his solutions are both more effective and cheaper than the common chlorine dosage techniques for disinfecting water features.

Working in a totally different and non-technological realm of Real Estate Economics is Prof. Hui. His research is to compare the characteristics of Hong Kong people, Guangzhou people and others in Guangdong province in the domain of property purchase decisions. He has produced a lot of data of direct value to the SHKP marketing professionals; on the academic front, the more direct involvement in the real estate world has produced new academic insights.

This year, members from SHKP and PolyU have again met. In the morning of 10 April 2010, a Saturday, a seminar was held in the Senate Chamber of PolyU to present some interim results of the projects. There was a healthy attendance of 150 people, some of whom followed the proceedings in a room filled beyond its original capacity.

Following the official welcome by Prof. J.M. Ko, Prof. J.G. Teng pleasantly surprised the audience with statistics illustrating just how strong and influential the Faculty's research was as at the moment. Among Hong Kong's many world class attributes, the audience was glad to know that the city also possessed a world class University Faculty in the field of Construction and Environment Research.

Prof. H. Chua, Prof. C.S. Poon, Prof. E. Hui, Prof. S.W. Wang and Prof. H.X. Yang again all gave presentations on the progress of their respective projects.



Prof. H.X. Yang
楊洪興教授



Prof. S.W. Wang
王盛衛教授



Prof. C.S. Poon
潘智生教授



Prof. H. Chua
蔡宏教授



Prof. E. Hui
許智文教授

In his closing speech for the seminar, Prof. Michael Anson, coordinator of the PolyU programme team, reminded the audience of the Henry Tang 2001 report, "Construct for Excellence", on the state of the Hong Kong construction industry. This SHKP/PolyU initiative was a good example of the much enhanced Industry / University research collaboration that the report called for. The Tang report went further, in fact, to call also for a culture of innovation throughout the Industry. Prof. Anson suggested that all present that day had the responsibility, at their jobs, to be constantly looking for and pushing for better technologies and processes. He hoped all had been stimulated by the five talks they had then just heard.

Prof. Anson had certainly touched on the heart of the matter. In general, any practically oriented research field moves faster when academics and the practical men of business can work together more closely. This research programme funded by SHKP certainly supports this thesis, and suggests that more programmes of this type would benefit Hong Kong greatly. The relatively newly created Construction Industry Council (CIC), which has been derived from the Construction Industry Review Committee (CIRC) report of 2001, should certainly take note. The report effectively required CIC to generate a research culture across the Hong Kong construction industry and not just within the academic community. This SHKP model is a good showcase of one way in which industry and academia can work hand in hand to the benefit of all involved.

跟王、楊兩位教授一樣，蔡宏教授也受惠於新鴻基地產的捐助與參與，使他實地測試其先進的光觸媒（二氧化鈦）處理技術，把實驗室的研究成果與現實環境結合起來。今年，他的工作目標集中在噴泉、泳池、貯水缸等屋邨中常見的盛水設施。之前幾年，蔡教授已成功改善隔油池的功能，相比於在盛水設施加入氯氣消毒的常見做法，其方案更加有效和價廉。

許智文教授研究的房地產經濟學，跟之前幾位專家埋首的科技世界截然不同。其研究主要是比較香港人、廣州人和廣東省其他居民的置業特點。他為新鴻基地產的市場推廣人員提供了很多極有用的數據；在學術層面上，直接接觸房地產業有助拓展學術視野，催生新的意念。

本年初，新鴻基集團及理大代表再次會面。於四月十日（星期六）上午，兩方代表聯袂出席在理大教務會議廳舉行的公眾研討會，發表雙方合作研究計劃的一些中期成果。出席的人士多達一百五十位，部分參加者甚至需要於場外另一房間觀看會議進行。當日，高贊明教授首先致辭；接著，建設及地政學院現任院長滕錦光教授介紹學院在科研領域的成就與影響力，並列舉了一連串統計數據，使出席者知道學院已在建設及環境研究方面的成績已屬世界一流水平。

蔡宏教授、潘智生教授、許智文教授、王盛衛教授和楊洪興教授先後在會上介紹各自的研究成果。統籌是項研究計劃的安禮信教授致閉幕辭時，提到時任立法會議員的唐英年司長於 2001 年提交了《建業圖新》報告書，當中談及本港建造業的情況。新鴻基地產與理大這個研究計劃，具體說明了業界與大學可如何加強合作。報告書除了極力提倡這一點，還呼籲業界培養創新文化。安教授認為在座各人都有時刻改善工作流程和提升技術的責任，並希望當日的五場講座對他們有所啟發。

安禮信教授的總結亦提及一個重要的課題，就是學術界若能與業界加強合作，必然可使以實用為本的研究較快取得成果。上述由新鴻基地產集團資助的研究計劃，正好證明這個道理，也說明了同類型的項目能使香港大大得益。2001 年建造業檢討委員會報告書明確指出學術界不應獨自負起科研的責任，最近成立的建造業議會，更應鼓勵本地建築業發展研究文化。新鴻基地產的例子，清晰地示範了業界與學術界其中一個可使所有人受惠的合作模式。

Civil Engineering Research at PolyU Ranked Number 3 in the World

The Hong Kong Polytechnic University (PolyU) has been ranked number 3 in the world in terms of the quality and impact of research publications in the area of civil engineering according to a ranking report published by the Higher Education Evaluation & Accreditation Council of Taiwan. At PolyU, most of the research publications in civil engineering are from the four departments within the Faculty of Construction and Land Use (FCLU). The two universities that come in front of PolyU are the University of California-Berkeley and the Swiss Federal Institute of Technology-Zurich. This excellent result demonstrates the high international standing and recognition of FCLU's world-class research on many important issues.

FCLU's research has also helped PolyU to rank well in the field of engineering. According to the QS World University Ranking, PolyU's ranking in the field of Engineering and Information Technology improved from the 91st place in 2009 to the 70th place in 2010. According to the Academic Ranking of World Universities 2010 released by Shanghai Jiaotong University, PolyU is among the top 75 universities in the world in the field of Engineering.

The excellent ranking achieved by FCLU has well demonstrated that the Faculty's pursuit of excellence in research is well recognized by the international scientific community. On the strength of the solid foundation which it has built over the years, the Faculty is well positioned to become one of the leading centers in the world in the areas of construction and environment.

German and PolyU Scholars Join Force in Pearl River Delta Research

Prof. Bo-sin Tang of the Department of Building and Real Estate, The Hong Kong Polytechnic University, is participating in a German-funded research project entitled 'Governance over Time: Spatial Differentiation & Temporal Change of Urban Development and Redevelopment Strategies in the Pearl River Delta'. The project is led by Dr. Michael Waibel of the University of Hamburg, Germany and is part of a major research programme funded by the German Research Foundation on 'Megacities - Megachallenge: Informal Dynamics of Global Change' involving researchers from Germany, Bangladesh and mainland China. The whole programme is designed to last for six years, with three phases each running for two years. In the first phase, nine inter-disciplinary projects will be carried out conducting research on the Pearl River Delta (China) and Dhaka (Bangladesh). The key research areas are the process dynamics of global change, mega-urbanisation, informal phenomena and their relationships and interactions.

The "Governance over Time" project is in its second phase of the programme. The main objective is to explore the relationship between multiple transitions,

A Major Fund for Prof. Geoffrey Shen and His Team

Prof. Geoffrey Q.P. Shen, Chair Professor of Construction Management and his team have recently received a grant of HKD2,076,000 from the Pneumoconiosis Compensation Fund Board in Hong Kong, to conduct a major study, entitled 'An evaluation of the effectiveness of current dust control practices in the construction industry in Hong Kong'. Prof. Shen can boast of a team of experts in the area, comprising of Prof. Li-Yin Shen and Dr Ann Yu from the Department of Building and Real Estate, in the Faculty of Construction and Land Use (FCLU), at The Hong Kong Polytechnic University (PolyU), Prof. Tao Wang from the Department of Civil and Structural

理大土木工程科研表現躋身全球三甲

台灣財團法人高等教育評鑑中心基金會的排名報告指出，以在土木工程領域發表的研究論文的質量和影響而論，香港理工大學(理大)在全球的高等學府中排名第三，僅次於美國柏克萊加州大學及瑞士蘇黎世聯邦理工學院。事實上，理大大部分有關土木工程的研究論文，都是出自建設及地政學院轄下的四個學系。這項理想成績說明我們對不少重要課題的研究已達到世界一流水平，獲得國際學術界重視和肯定。

另外，本院的科研工作亦有助提升理大在工程學範疇的排名。根據《QS世界大學排行榜》，理大在工程學和資訊科技學的分科排名，已從2009年的第九十一位躍升至2010年的第七十位。另外，上海交通大學公布的《2010世界大學學術排行榜》也顯示，理大是全球工程學水平最高的首七十五所大學之一。

建設及地政學院在多項排名榜上均名列前茅，充分證明我們精益求精的研究精神深得國際科學界認同。憑藉這個多年積累下來的穩固基礎，本院有信心發展為全球最優秀的建築及環境學科研究中心之一。

governance of urban development, redevelopment and informality in the mega-urban region of the Pearl River Delta. This project covers a study period from April 2009 to March 2011 and has received funding support of over 125,000 Euros from the German Research Foundation.

理大學者與德國專家攜手研究珠三角都市發展

建築及房地產學系鄧寶善教授正參與一項由德國資助、名為「基於時序的管治：珠江三角洲城市發展及重建策略的時間變異及空間區別」的大型研究計劃。這個計劃由德國研究基金會資助，是該會「大城市 - 大挑戰：全球變化中的非正式動態」大型研究計劃的一部分。項目由漢堡大學Dr. Michael Waibel主理，動員德國、孟加拉和中國內地學者參與。整項研究計劃預計為期六年，分三期進行，每期歷時兩年。在首階段，工作人員會在珠江三角洲和孟加拉首都達卡市展開九項跨領域研究，重點探討促成全球化和特大都市化的動態過程中出現的非正規現象，以及它們之間的關係與互動情況。

鄧教授參與的「時序管治」研究屬於上述大型計劃的第二期項目，目標是探討在珠江三角洲特大城市區域內的地區轉型、城市發展、重建策略，以及非正規現象之間的關係，研究期為2009年四月至2011年三月。這項目現時已獲德國研究基金會發放逾十二萬五千歐羅的經費。

Engineering of FCLU, and Mr Wong Yuen-Wah from the Department of Applied Physics at PolyU. Also belonging to the team is Dr Weisheng Lu from the Department of Real Estate and Construction at the University of Hong Kong.

沈岐平教授領導的研究團隊獲大額資助

由建設管理講座教授沈岐平教授領導的研究小組，最近獲香港肺塵埃沉著病補償基金委員會撥款港幣二百零七萬六千元，展開一項名為「香港建造業現行塵埃控制措施成效評估」的大型研究。研究團隊的成員皆為有關領域的專家，計有建築及房地產學系申立銀教授及余映芸博士、土木及結構工程學系王韜教授、理大應用物理學系黃元華副教授，以及香港大學房地產及建設系呂偉生博士。

Water Quenching Effect on Reinforced Concrete Structures Under Fire

The China Harbour Engineering Co. Ltd has donated HK\$1,052,000 to the Faculty of Construction and Land Use, The Hong Kong Polytechnic University (PolyU), in support of a research sub-project entitled, 'Water Quenching Effect on Reinforced Concrete Structures Under Fire', led by Principle Investigator Dr Yuk Lung WONG of the University's Department of Civil and Structural Engineering. The sub-project is part of the Niche Area Project of 'High-Performance Structures' headed by Principle Investigator and Dean of the Faculty, Professor Jin-Guang TENG.

Building/tunnel fire is one of the main disaster areas that cause substantial loss to the economy and human lives. The most widely used materials such as concrete and steel reinforcing bars are non-combustible. However, both of them exhibit strength degradation under and after fire, which leads to building/tunnel collapse in extreme circumstances. Hence, the performance of reinforced concrete under fire is an issue of major concern for the development of fire design codes of reinforced concrete structures, and the assessment and repair of reinforced concrete after a fire.

Studies of the fire resistance performance of concrete can be dated back to the 1920's. Through the decades, there have been extensive studies on the mechanical and damage properties of concrete after heating, and many of the findings were used to develop fire design codes or residual strength analyses. However the test data previously obtained was based on heating concrete, then testing the samples under a specified temperature or after gradual cooling. The water quenching effects during fire fighting were seldom considered.

Only recently there was a technical paper reporting that both the residual strength and stiffness of concrete decreased significantly as the cooling rate increased. Data from tests considering the water quenching effects on normal strength concrete are rare. This kind of data on high strength concrete are virtually non-existent, yet remains a vital missing element considering the fact that high strength concrete has been increasingly used in building/

tunnel construction, particularly in Hong Kong. In addition to these crucial factors, it has been recognized that the fire resistance of high strength concrete is inferior to that of normal strength concrete. This and the foremost mentioned, prompted the urgent formation of the collaborative research programme between the China Harbour Engineering Co. Ltd and the Faculty of Construction and Land Use to conduct comprehensive research into the missing areas.

消防冷水對火災中鋼筋混凝土結構的驟冷效應

中國港灣工程有限公司早前慷慨捐出港幣一百零五萬二千元，支持建設及地政學院進行一項名為「消防冷水對火災中鋼筋混凝土結構的驟冷效應」的研究。項目由土木及結構工程學系黃玉龍博士擔任首席研究員，屬於本院「高性能結構」專長領域研究計劃的一部分，而統領後者的首席研究員，就是本院院長滕錦光教授。

樓宇或隧道起火，往往造成巨大的經濟和人命損失。混凝土及鋼筋等最常用的建材雖不易燃，但兩者的強度在起火時和火災後都會衰減，情況嚴重的話，甚至會令樓宇或隧道倒塌。因此，無論是制訂鋼筋混凝土結構的耐火設計規範，或在火災後評估和重修有關結構，都必須先了解鋼筋混凝土結構在起火後的性能。

針對混凝土耐火性能的研究，其實可追溯到上世紀二十年代。多年來，有不少研究都是關於混凝土在受熱後的力學性能及損傷特性，所得結果亦已廣泛用於制訂耐火設計規範或剩餘強度分析。然而，研究人員一般都是把混凝土加熱後，在特定溫度或樣本逐漸冷卻後進行測試和採集數據，少有考慮火時冷水對混凝土產生的驟冷效應。

直至最近，才有一份技術報告指出混凝土的剩餘強度和剛度會因冷卻率加快而大幅衰減；至於冷水對普通混凝土所產生的驟冷效應，有關的測試數據仿如鳳毛麟角；高性能混凝土方面，相關資料更是付之厥如。今時今日，高性能混凝土已成為興建樓宇和隧道的主要材料，情況在香港尤其普遍，這片空白實在不容忽視。另外，高性能混凝土的耐火能力已確定較普通混凝土遜色。以上種種，促使中國港灣工程有限公司與建設及地政學院攜手進行全面的研究，以補現時的不足。

ECF Funding for Air Pollution Research

Professor Tao Wang and his team of researchers from the Department of Civil and Structural Engineering, The Hong Kong Polytechnic University (PolyU) has recently been granted government funding for their project "Study of photochemical air pollution in Hong Kong".

The Environment and Conservation Fund (ECF) has approved a funding of \$13 million in March 2010 to support two scientific studies on air pollution by local universities. The other awardee for the funding was the Hong Kong University of Science and Technology. Established under the Environment and Conservation Fund Ordinance, the ECF provides funding support for education, research, technology demonstration and other projects or activities in relation to environmental and conservation matters.

The PolyU's project aims to enhance understanding of the formation of photochemical smog pollution in Hong Kong, and is to last for about four years. It aims to strengthen understanding of the nature and sources of fine particles as well as the formation of the photochemical smog pollution in Hong Kong. Coupled with the data of the air quality monitoring network of the Environmental Protection Department (EPD), the findings of the study will contribute towards the formulation of an effective control strategy to tackle the particulate and photochemical smog pollution problems – currently predominant air pollution issues in the Pearl River Delta region. Heretofore unavailable real-time data covering a wide range of air pollutants will be measured for comprehensive data analyses, in order to locate the sources and key chemical pathways leading to the formation of particulates, visibility impairment and photochemical smog pollution in Hong Kong.

The PolyU project is a new partnership between the academia and the government to improve air quality locally and in the Pearl River Delta Region. The ECF Committee welcomes research proposals from local tertiary institutions which seek funding support. Interested parties can visit the ECF website for more details (www.ecf.gov.hk/en/home/index.html).

環境及自然保育基金資助理大空氣污染研究

由土木及結構工程學系王韜教授領導的研究小組，早前獲政府資助進行「香港的光化學空氣污染研究」。

本年三月，環境及自然保育基金批出港幣一千三百萬元，資助香港理工大學及香港科技大學展開兩項有關空氣污染的研究。該基金乃根據《環境及自然保育基金條例》成立，旨在資助與環境及保育有關的教育、科研、技術示範項目或活動。



理大的研究預計需時約四年，目標是加深了解光化學煙霧污染在香港的成因，微粒的特質和源頭，以及光化學煙霧污染的形成過程。把研究結果結合環保署空氣質素監測網絡所提供的數據後，大大有助制訂有效的管制策略，解決微粒和光化學煙霧所引起的污染這一珠三角當前面對的主要環境問題。工作人員會量度各類空氣污染物的實時數據，以作全面分析，從而找出引致形成微粒、能見度降低，以及香港出現光化學煙霧污染的源頭和主要化學路徑。

上述研究是學術界與政府為了改善本地及珠江三角洲空氣質素而進行的新合作計劃。環境及自然保育基金委員會歡迎本地專上學府提交研究建議書，申請資助。有興趣者可登入委員會網頁 www.ecf.gov.hk/en/home/index.html 查閱詳情。

Results of the RGC General Research Fund 2010/11

The General Research Fund (GRF) which is formerly known as the Competitive Earmarked Research Grants (CERG) is a well established research funding scheme of the Hong Kong Research Grants Council supporting research across a wide spectrum of subject areas in the higher education sector. The application results of 2010/11 were announced on 30 June 2010, and the funding results of the Faculty's 81 proposals are listed below:

| Department 學系 | No. of Proposals Submitted 提交的建議書數目 | No. of Successful Proposals 獲批撥款的申請宗數 | Funding Awarded (HK\$) 獲批總額 (港幣) |
|--|--|--|-------------------------------------|
| Building and Real Estate Department 建築及房地產學系 | 21 | 4 | \$2,215,857 |
| Building Services Engineering Department 屋宇設備工程學系 | 19 | 2 | \$1,794,379 |
| Civil and Structural Engineering Department 土木及結構工程學系 | 28 | 7 | \$6,434,868 |
| Land Surveying and Geo-Informatics Department 土地測量及地理資訊學系 | 13 | 4 | \$3,805,957 |
| Total 總計 | 81 | 17 | \$14,251,061 |

In the Civil Engineering, Surveying, Building and Construction disciplines of the Engineering Panel, PolyU has ranked number 1 over the past 7 years in terms of both the number of CERG/GRF projects supported and the total grant value won, receiving consistently more than 40% of all CERG/GRF grants allocated in these disciplines. In this round, the Faculty won 17 grants (or 43%) out of the 40 GRF grants awarded in the Civil Engineering, Surveying, Building and Construction (CESBC) disciplines. The distribution of the amounts of GRF funding in the 2010/11 round among different universities is shown in Figure 1.

研資局 2010/11 年度「優配研究基金」申請結果

優配研究金(前稱角逐研究用途補助金)是香港研究資助局(研資局)支援高等院校在各個學科範疇進行研究工作的資助計劃。研資局於六月三十日公佈了2010/11年度「優配研究金」的撥款結果。以下是本院的申請結果:

工程學學科小組的審批範疇包括土木工程、測量學、建築和建設。過去七年，無論是成功申請「角逐研究用途補助金」/「優配研究金」的次數或撥款總額，理大都獨佔鰲頭，穩佔這些學科的成功申請撥款宗數四成以上。在今次獲批的四十項土木工程、測量學、建築和建設領域申請中，本院佔了十七項(百分之四十三)。各大學於2010/11年度獲批「優配研究金」的情況如下:

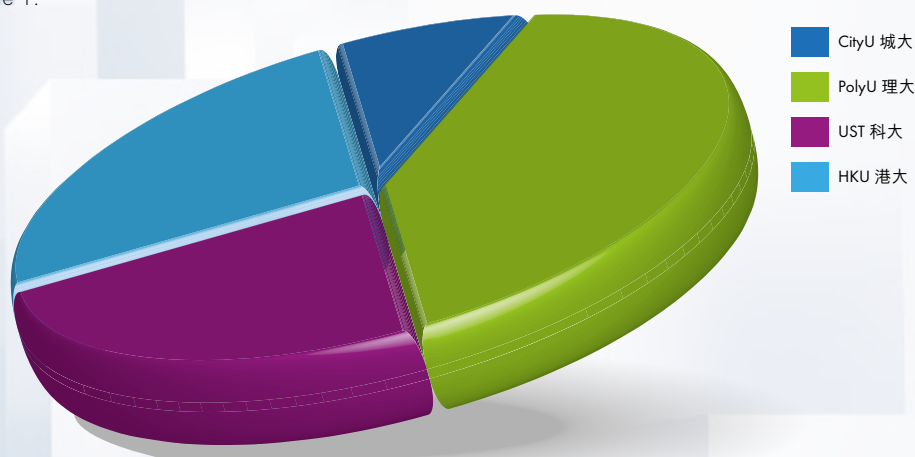


Figure 1 Distribution of GRF Funding in the CESBC Disciplines among Institutions in the 2010/11 Round
圖一：各大學於土木工程、測量學、建築和建設範疇獲批2010/11年度「優配研究金」的情況

CSE Staff Playing a Part in the 863 Programme

Prof. Yi-Qing Ni, Dr Yong Xia and Prof. Jan-Ming Ko from the Department of Civil and Structural Engineering of The Hong Kong Polytechnic University (PolyU), are in collaboration with researchers from Shanghai Construction Group, Tongji University, and Shanghai Jiaotong University, to work on the project "Technologies for condition monitoring and reliability control of super-tall buildings during construction", under the National High-tech Research and Development Programme (863 Programme).

This collaborative research aims to enhance the safety and reliability of super-tall buildings during their construction stage. It will establish a comprehensive closed-loop construction control system with capabilities of prediction, realization, monitoring, assessment and control. The PolyU team is responsible for the sub-project "Real-time monitoring and condition assessment of super-tall buildings during construction". Through field monitoring of environmental factors, external loadings, internal forces, and displacement of super-tall buildings, this sub-project will develop a realtime system integrating monitoring, wireless transmission and remote control, data processing and analysis, and system identification. It provides fundamental information for other sub-projects regarding structural reliability assessment and construction control.

土木及結構工程學系學者參與863計劃

土木及結構工程學系倪一清教授、夏勇博士和高贊明教授，正連同上海建工集團、同濟大學及上海交通大學的研究人員進行「國家高技術研究發展計劃」(863計劃)下的一項研究，名為「超高層建築施工期間的狀態監測及可靠性控制技術」。

上述研究旨在提升超高層建築在施工期間的可靠性及安全水平，並建立一套具備預測、實施、監管、評估及控制功能的閉環施工控制系統。理大學者負責的子項目名為「超高層建築施工期間的實時監測及狀態評估」，目標是透過現場監測環境因素、外荷載、內力及超高層建築的位移，開發一套合監測、無線傳輸、遠程控制、數據處理與分析，以及系統辨識功能的實時系統，為其他與結構可靠性評估及施工管理有關的子項目提供基礎信息。



(from left) Prof. Jan-Ming Ko, Prof. Yi-Qing Ni and Dr Yong Xia
(左起) 高贊明教授、倪一清教授和夏勇博士

A New Book by Prof. Shengwei Wang

The Faculty of Construction and Land Use, The Hong Kong Polytechnic University, would like to extend the warmest of congratulations to Prof. Shengwei Wang, Chair Professor of Building Services Engineering, on the publication of his new book *Intelligent Buildings and Building Automation* by Taylor and Francis.

Intelligent building (IB) and building automation (BA) systems play an essential role in most sophisticated modern buildings. Monitoring and automatic control of building services systems are important to ensure that the design objectives are met in operation. Drawing on his many years of experience in teaching students in the disciplines of building services engineering and of facilities management, Prof. Wang is convinced of the absence of a comprehensive reference book addressing IB and BA systems, the associated technologies, as well as their implementation - specifically from the perspectives of engineers in building services, or in heating, ventilating and air-conditioning (HVAC), as well as of facilities engineers and managers.

Intelligent Buildings and Building Automation explains the state of art in IB/BA systems and technologies. It addresses the following key issues:

- Progress and state of the art in IB/BA systems, and their configuration and integration.
- BA network, including wired/wireless local area networks (LAN) and Internet, communication protocols and standards as well as their applications.
- The interfacing and integration of BA subsystems with building services systems.
- Process control and tuning of local control loops.
- The control and optimization as well as the operational characteristics of typical HVAC systems, including air-conditioning systems and central chilling systems.

The automation systems for lighting- system control, security and access control, and fire safety control.

Intelligent Buildings and Building Automation is not a handbook listing all of the systems and technologies, but, as the above list indicates, is

primarily intended as a reference text for engineers and students in building services engineering. It is to provide them with a clear understanding of IB/BA systems, the associated technologies and the issues concerning their applications. Because of these considerations, Prof. Wang has given priority to readability and effectiveness in the selection and organization of his materials to assist the reader's learning.

Congratulations to Prof. Wang again for bringing out a work which fills a gap in the teaching and learning of IB/BA systems and technology.

王盛衛教授新作面世

屋宇設備工程講座教授王盛衛教授的最新力作 —《智能建築與樓宇自動化》已經出版，我們謹此致賀。

今時今日，絕大部分新型建築物都會採用智能建築技術(IB)與樓宇自動化(BA)系統；而樓宇啟用後能否貫徹最初的設計目標，跟屋宇設備的自動控制和監測系統有很密切的關係。王教授從事屋宇設備工程和設施管理教學多年，感到學術界中缺少了一本全面探討IB/BA相關科技及應用情況的參考書籍，更遑論從屋宇設備、空調系統及設施管理工程師或經理的角度檢視問題。

《智能建築與樓宇自動化》一書由Taylor and Francis出版，講述的就是當今最先進的IB/BA系統及科技，重點探討的範疇包括：

- 智能建築／樓宇自動化系統的進展、現況、結構與整合；
- 樓宇自動化網絡 - 包括有線／無線局域網(LAN)及互聯網；通信協議、標準及其應用；
- 樓宇自動化子系統與屋宇設備系統的接合和整合；
- 流程控制及局部控制環的調節；
- 典型空調系統(包括空氣調節及中央製冷系統)的控制、優化及操作特性；
- 自動照明系統 - 系統控制、安全及開關控制，以及消防安全控制。

此書並非開列有關系統及技術的手冊。從上文提及的重點研究範疇可見，這是為屋宇設備工程師和學生編寫的參考書籍，好讓他們對IB/BA系統和相關科技的本质及應用有清晰的理解。因此，王教授篩選和編排資料時最重視其可讀性和效用，務求使讀者易於理解。

王教授這本新作填補了IB/BA系統及科技教學上的空白，確然可喜可賀！

Hong Kong PhD Fellowship Scheme 2010/11

The Hong Kong PhD Fellowship Scheme was established by the Hong Kong Research Grants Council (RGC) in 2009, to attract the best and the brightest students in the world to pursue their PhD programmes in Hong Kong. A total of 135 PhD Fellowships were made available by the RGC for the 2010/11 academic year.

The four departments of the Faculty of Construction and Land Use (FCLU) of The Hong Kong Polytechnic University (PolyU) received around 150 applications from over 25 countries around the world for the Fellowship Scheme, out of the total of 620 received by the University. Most of the applicants of the Faculty were from East and Southeast Asian countries, viz. 46% from the Chinese mainland, 10% from Pakistan and 8% from India.

The four departments of the Faculty nominated 16 applications to the University for further consideration, including 3 from BRE, 7 from BSE, 3 from CSE and 3 from LSGL. Out of the 16 applications, the PolyU Selection Panel shortlisted 14 applications for submission to RGC, including 3 from

BRE, 7 from BSE, 2 from CSE and 2 from LSGL. In terms of the academic qualifications, 97 CLU applicants (56%) possess a Master's degree or above.

2010/11 年度香港博士研究生獎學金計劃

香港研究資助局於2009年設立「香港博士研究生獎學金計劃」，藉此吸引世界各地的尖子在香港修讀博士學位；核准的2010/11學年申請共有一百三十五份。

香港理工大學合共接獲的申請有六百二十份，當中約有一百五十份申請入讀建設及地政學院轄下的四個學系。這些申請者來自約二十五個國家，大部分屬東亞及東南亞地區，居首位的中國內地佔百分之四十六，其次是巴基斯坦（百分之十）及印度（百分之八）。

獲本院推薦予大學考慮的申請共有十六份，建築及房地產學系，土木及結構工程學系與土地測量及地理資訊學系各有三份，其餘七份由屋宇設備工程學系推薦。理大的評審委員會從中選出了十四份上呈研資局，建築及房地產學系（三份）與屋宇設備工程學系（七份）的申請全數入圍，至於土木及結構工程學系與土地測量及地理資訊學系，亦各有兩份申請入選。值得一提的是，建設及地政學院有九十七位申請人（百分之五十六）持有碩士或更高學歷。

Statistics on the Application No. and Result 獎學金申請情況及結果

| Department 學系 | Chinese mainland 中國內地 | Hong Kong 香港 | Other countries 其他國家 | Total no. of applications 申請總數(份) | Nominated by Dept 獲學系推薦的申請(份) | Shortlisted by PolyU 獲理大推薦的申請(份) | Offers (Final awardees) 成功申請份數 (領取獎學金的實際人數) |
|--|--------------------------|-----------------|-------------------------|--------------------------------------|----------------------------------|-------------------------------------|---|
| Building and Real Estate Department 建築及房地產學系 | 10 | 2 | 16 | 28 | 3 | 3 | 0 |
| Building Services Engineering Department 屋宇設備工程學系 | 8 | 1 | 10 | 19 | 7 | 7 | 3(2) |
| Civil and Structural Engineering Department 土木及結構工程學系 | 35 | 0 | 40 | 75 | 3 | 2 | 1(1) |
| Land Surveying and Geo-Informatics Department 土地測量及地理資訊學系 | 16 | 0 | 11 | 27 | 3 | 2 | 2(2) |
| Total 總計 | 69 | 3 | 77 | 149 | 16 | 14 | 6(5) |

RGC offered the Hong Kong PhD Fellowship to 18 out of the 49 nominations (36.7%) put forward by PolyU, including 6 nominations from FCLU (BSE: 3; CSE: 1; LSGL: 2), accounting for 33.3% of PolyU's successful applications. As some applicants declined the offer, the number of final awardees for PolyU is 15 out of the 115 final awardees for all UGC institutions. Five awardees are from FCLU, which also account for 33.3% of the PolyU awardees.

The Faculty's success in this important competitive bidding exercise was the result of members' strenuous efforts. The Faculty will continue to work together towards even greater success in the future.

在理大呈交研資局的四十九份申請中，成功的有十八份（百分之三十六點七），建設及地政學院佔了六份，即三分之一。六份申請中，半數來自屋宇設備工程學系，土木及結構工程學系與土地測量及地理資訊學系則分別有一份及兩份。由於部分申請人放棄獎學金，理大領取獎學金的博士生最終有十五人，來自本院的有五位，也佔全校總數的三分之一；而總計所有獲大學資助委員會撥款的院校，就有一百一十五人獲得獎學金。

全賴員工眾志成城、上下一心，建設及地政學院今次才可取得如此佳績。我們定必繼續努力，精益求精。



Awards and Achievements

優秀學者 成績斐然

Prestigious National Award for Prof. Chau Kwok-wing of CSE

This year four distinguished scholars from tertiary institutions in Hong Kong have been bestowed with the State Science and Technology Awards (SNSA) organized by the State Council; one of them was Prof. Chau Kwok-wing, Professor of the Department of Civil and Structural Engineering, The Hong Kong Polytechnic University. The selection process was highly competitive; more than 120 entries had been received for this national honour which aimed to recognise excellence in basic and applied research in natural science.

Prof. Chau won a SNSA second-class award on the strength of a joint research project "Multiobjective decision making and rainfall-runoff prediction theories for complex flood control system for reservoirs", which had been nominated by Liaoning Province. Prof. Chau had worked in collaboration with Prof. Cheng Chun-tian of Dalian University of Technology and Prof. Li Deng-feng of Dalian Naval Academy. Together they have developed a sophisticated theory which takes into consideration different factors related to the prediction of rainfall and flooding. Apart from analyzing massive data, they have made use of fuzzy logic sets, pattern recognition theory and the uncertainty principle in developing this new theory which underpins an optimal model of flood control system for reservoirs.

This ground-breaking theory also provided the solid foundation for the subsequent development of a reservoir flood control operation system, which has also been pioneered by Prof. Chau and his team. Taking 60 reservoirs and four river basin floodwater forecasting systems in the Chinese mainland as models, new technology is applied to this invention which emphasizes practicability and efficiency in the prevention of floods.

The newly invented flood control management system is capable of analysing and forecasting floodwater level based on the knowledge of the decision-makers, historical flood control cases and real-time information. This will in turn formulate flood control proposals and facilitate timely decisions. Due to its expandable nature, this system has

proved to be effective and highly practicable, with an accuracy in forecast of higher than 90 per cent.

The system has been successfully applied to the flood control system centred at the Three Gorges Reservoir for flooding system planning, and at the Liao River, Hun River and Tai River for real time operation of reservoirs. Enabled by this breakthrough, the authorities concerned can now control flooding effectively and plan ahead for generation of hydroelectricity as well. This novel system is also installed in 100 medium to large-sized reservoirs in the Chinese mainland.

周國榮教授喜獲國家自然科學獎

今年，香港有四位傑出的高等院校學者獲國務院頒發「國家自然科學獎」，其中一位是來自土木及結構工程學系、獲頒二等獎的周國榮教授。這項全國性獎項旨在表揚和嘉許在自然科學的基礎和應用研究上有卓越表現的人員，今年就有逾一百二十個項目競逐殊榮，競爭非常激烈。

周教授奪獎的聯合研究項目是由遼寧省推薦，名為「複雜防洪調度系統的多目標決策及徑流預報理論」。他與大連理工大學程春田教授及海軍大連艦艇學院李登峰教授合作，根據與預測降雨量和洪水有關的各種因素，研發出一套精密的理論。在研究過程中，他們除了分析大量數據，更應用了模糊邏輯集、模式識別理論及不確定原理，務求找出最理想的水庫洪水調度模型。

這套創新理論為其後研發的水庫洪水調度運作系統奠定了穩固基礎。周教授和研究人員以內地六十座水庫和四個流域洪水預報調度系統為原型，把新技術應用於新系統，在防洪中強調效率和可行性。

新的洪水調度管理系統可以根據決策者的知識、以往的案例和實時數據分析及預測洪水水位，好讓有關部門制訂防洪建議和及時的決策。由於系統可以擴充，其成效非常顯著，而且十分實用，預報的準確程度達百分之九十以上。

該系統現成功應用於以三峽水庫為中心的庫群防洪系統規劃，以及遼河、渾河、太河流域的水庫實時洪水調度系統。有了這項嶄新技術，當局便能有效地防洪和研究以水力發電。另外，內地已有一百座中、大型水庫安裝了這個系統。



Ministry of Education Awards

The Centre for Science and Technology Development of the Ministry of Education had announced the list of winners for the Ministry of Education Awards 2009. A Natural Science Award (Second Class) went to the Department of Civil and Structural Engineering of The Hong Kong Polytechnic University, for a project entitled 'Research on tropospheric ozone pollution and processes in China'.

This project was undertaken by Prof. Tao Wang, Dr Aijun Ding, and Mr Steven C.N. Poon. Ozone in the lower part of the atmosphere influences air quality, ecosystems, and climate. It is the principal pollutant in photochemical smog in Hong Kong and in other major cities around the world. Since 1995, the project team has undertaken studies to investigate the impact of rapid industrialization and urbanization in Asia on air quality; and to study the sources of emission, chemical transformation and meteorological transport affecting ozone and related air pollutants, in order to provide scientific support to the development of control strategies. It is believed that the project would also contribute to the HKSAR government in its formulation of policies to mitigate photochemical ozone pollution.

土木及結構工程學系學者獲國家教育部獎項

國家教育部轄下的科技發展中心已公布2009年的獲獎名單，土木及結構工程學系以「我國對流層臭氧污染及過程研究」勇奪自然科學二等獎。

參與上述項目的學者包括王韜教授、丁愛軍博士及潘振南先生。大氣層底部的臭氧會影響空氣質素、生態系統和氣候。在香港和其他國際大都市，臭氧是形成光化毒霧（光化學煙霧）的主要污染物。團隊於1995年開始研究高速工業化和都市化與亞洲空氣質素的關係、臭氧及相關空氣污染物的排放源頭、化學轉化及傳輸過程，為制訂控制策略提供科學基礎。是項研究相信亦有助特區政府制訂舒緩光化臭氧污染的政策。



PolyU Researchers Strike Gold in China International Industry Fair

The Hong Kong Polytechnic University (PolyU) won the coveted Gold Prize at the 2009 China International Industry Fair held in Shanghai, for its "Mega-structure Diagnostic and Prognostic System" which made its debut appearance at the Fair.

The national event has showcased more than 5,000 innovations of 1,860 exhibitors from 19 countries and territories. Among them, only four Gold Prizes were selected for outstanding innovations with unique design concept, breakthrough in technology and autonomous intellectual property. It was the first time that the national event presented a Gold Prize to a tertiary institution from the Hong Kong SAR.

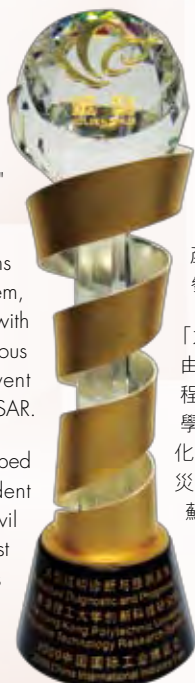
The "Mega-structure Diagnostic and Prognostic System" was developed by an inter-disciplinary project team led by former Vice President Prof. Ko Jan-ming and Prof. Ni Yi-qing of the Department of Civil and Structural Engineering. The system can identify at the earliest stage the structural damage accumulated over time and assess structural health immediately after natural disasters. It is now being applied on the Sutong Bridge crossing the Yangtze River and the Guangzhou TV Tower - the highest TV tower in the world.

理大科研成果於中國工博會奪金

香港理工大學憑本院土木及結構工程學系研發的「大型結構診斷及預測系統」，於上海的2009中國國際工業博覽會勇奪金獎。

這項盛事展示了來自十九個國家和地區、約一千八百六十家企業的五千多項新發明／項目，當中只有四項可獲金獎殊榮。發明是否具備獨特的設計意念，科技上有否突破，以及發明者是否擁有自主知識產權，都是大會的評選準則。「大型結構診斷及預測系統」今次乃首度參加工博會，也是香港的高等院校首次在會上奪金。

「大型結構診斷及預測系統」的研發小組，是由理大前副校長高贊明教授和土木及結構工程學系的倪一清教授領導，組員來自多個學系。它能在早期偵測出結構的損壞和退化情況，避免災難性問題的產生，並於天災後立即評估結構的安全。橫跨長江的蘇通大橋和廣州新電視塔（全球最高的電視塔）都使用這套系統。



Highly Commended Award at the Literati Network Awards for Excellence 2010

Dr Patrick Fong, Associate Professor of the Department of Building and Real Estate, The Hong Kong Polytechnic University (PolyU), has been chosen as an awardee in the category of papers which qualified as 'Highly Commended' at the Literati Network Awards for Excellence 2010. This is on the merit of his article entitled "Acquisition reuse and sharing of knowledge in property management firms" published in Facilities, Vol. 27, Issue 7/8, 2009.

Every year, Emerald Group Publishing Limited, a leading independent publisher specializing in business management and research, would invite the editorial teams of different journals in the related fields to nominate what they believe to have been the most outstanding paper and up to three 'Highly Commended' papers from the previous 12 months in respect of the awards. Dr Fong's paper was included for consideration for the latter category, on account of the fact that the editorial team of Facilities, made up of eminent academics or managers, regarded it as one of the most impressive pieces of work it had seen throughout 2009.

方識華博士大作獲「文人網絡2010年度高度評價獎」

建築及房地產學系副教授方識華博士，最近憑其論文《物業管理公司中的知識獲取、重用和分享》成為「文人網絡2010年度卓越表現獎」之優秀論文－高度評價獎的得獎者。其得獎論文獲刊載於2009年的第二十七卷七／八月份《設施》期刊。

專門出版商業管理及研究書籍的獨立大型出版商Emerald Group Publishing Limited每年都會邀請各期刊的編輯人員，從過去十二個月出版的文章裡提名最優秀的論文和最多三篇屬於「高度評價」的文章競逐「文人網絡2010年度卓越表現獎」。由著名學者和管理人員組成的《設施》編輯小組認為方博士的論文是2009年令他們印象最深刻的作品之一。



BRE Staff Shared the Glory of the National Excellent Papers Award with Tsinghua Scholars

A team of researchers from Tsinghua University and The Hong Kong Polytechnic University won a National Excellent Papers Award for their paper "Risk allocation in infrastructure Public-Private Partnership (PPP) projects". The Award is conferred by the Architectural Society of China on a biennial basis and involves a rigorous three-tier assessment process. The Award is recognised as the highest honour and achievement for national research in Construction Economics and Management.

The paper is co-authored by Mr Yongjian Ke and Prof. Shouqing Wang of Tsinghua University, and Prof. Albert Chan, Associate Head of the Department of Building and Real Estate of The Hong Kong Polytechnic University. Prof. Chan has won similar best research paper awards from the UK, Australia, and Hong Kong since the middle 1990s. Prof. Wang is a professor at the Department of Construction Management, School of Civil Engineering, Tsinghua University. He completed his PhD at The Hong Kong Polytechnic University in 1991 under the supervision of Prof. Michael Anson, now Emeritus Professor. Mr Yongjian Ke is expected to complete his PhD from Tsinghua University under the joint supervision of Prof. Wang and Prof. Chan.

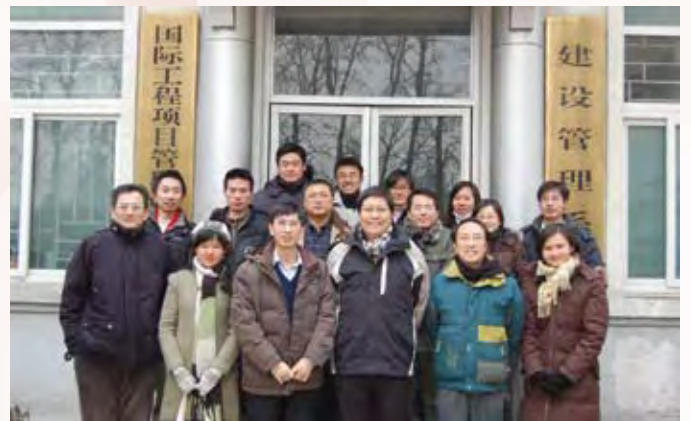
The award winning paper is one of the deliverables generated from a research project jointly funded by Research Grants Council (RGC) in Hong Kong and National Science Foundation Council Research Grant (NSFC) in China. The research project has aimed to develop an equitable risk allocation mechanism for delivering PPP projects in the People's Republic of China, and is co-led by Prof. Albert Chan and Prof. Shouqing Wang.

建築及房地產學系學者與清華大學專家合著論文奪全國建築經濟優秀論文獎

由清華大學與香港理工大學學者合著的一篇論文，最近獲中國建築學會評選為「全國建築經濟優秀論文」。此獎每兩年頒發一次，經三重嚴格評審，是全國建築經濟學與管理理論研究的最高榮譽。

得獎論文題為「公私合營基礎設施項目的風險分擔」，作者包括清華大學柯永建先生和王守清教授，以及本院建築及房地產學系副系主任陳炳泉教授。今次並非陳教授的論文首次獲獎，九十年代中起，他已先後在英國、澳洲及香港獲頒同類型的獎項。王守清教授任教於清華大學土木水利學院建設管理系，1991年在理大取得博士學位，當時的導師是本院前院長安禮信榮休教授。柯永建先生是王、陳兩位教授的高足，現時於清華大學修讀博士學位。

論文所建基的研究項目，獲得香港研究資助局及國家自然科學基金委員會資助，由陳炳泉教授及王守清教授共同領導，目的是研發一套在中國內地開展公私合營基礎設施項目的合理風險分擔機制。



Tewkesbury Fellowship Awarded to Prof. Xiaoli Ding

Prof. Xiaoli Ding, Chair Professor of Geomatics and Head of Department of Land Surveying and Geo-Informatics, has been recently awarded a Tewkesbury Fellowship by the University of Melbourne, Australia. Supported by the Tewkesbury Bequest Fund, the Fellowship will bring Prof. Ding to the University of Melbourne for an academic visit and to deliver the 2010 Tewkesbury Lecture.

The Tewkesbury Bequest began in 1953 when Pearson William Tewkesbury generously allowed for funds in his will for the School of Engineering, the University of Melbourne. The bequest is to be used towards the achievement of best practice in teaching and research, the encouragement of research collaboration, and the establishment of benchmarking parameters by providing support for visits and exchanges of staff.

丁曉利教授榮獲杜克斯伯里訪問學人獎

地學信息講座教授兼土地測量及地理資訊學系系主任丁曉利教授，最近獲澳洲墨爾本大學頒發「杜克斯伯里訪問學人獎」。丁教授獲邀到該校進行學術性訪問，並為「2010年杜克斯伯里講座」擔任主講嘉賓。

「杜克斯伯里訪問學人獎」是由於1953年開始運作的「杜克斯伯里遺產基金」撥款設立。富商皮爾遜·威廉·杜克斯伯里在遺囑中指明把部分遺產捐贈墨爾本大學的工程學院，以獎勵教學和研究的成果，鼓勵合作研究，並資助學者互訪及交流，以促進對卓越教學和研究水準的追求。



Presidential Citation Award for Prof. Geoffrey Shen

Prof. Geoffrey Q.P. Shen, Chair Professor of Construction Management and Head of Department of Building and Real Estate, Faculty of Construction and Land Use, The Hong Kong Polytechnic University, has received the Presidential Citation Award from SAVE International for his "energetic and engaging effort to enhance value research and education". SAVE International is the premier international society devoted to the advancement and promotion of the Value Methodology (also known as Value Engineering, Value Analysis, or Value Management). Value Methodology is recommended by the HKSAR Government in major public projects in Hong Kong.

沈岐平教授獲SAVE International 頒發特別獎項

建設管理講座教授兼建築及房地產學系系主任沈岐平教授，最近獲SAVE International頒發Presidential Citation Award，以表揚他對「推廣價值管理研究和教育的卓越貢獻」。SAVE International是致力推動及宣傳「價值管理方法學」的國際性機構。香港特區政府不少大型公共工程都採用這套科學管理方法。



International Eureka Contest of Brussels Innova

The Faculty of Construction and Land Use (FCLU) of The Hong Kong Polytechnic University (PolyU) has brought home a Silver Medal for its GPS technology for landslide monitoring, from the International Eureka Contest of Brussels Innova 2009. Several other faculties at PolyU were also honoured with awards at this event.

The long-standing International Eureka Contest has put together some 450 inventions from more than 30 countries and territories this year. The winners were selected by a panel of judges comprised of senior members from both academia and industry. The prestigious awards were strong proofs of the international recognition which PolyU innovations now enjoyed, for their relevance to safety and quality of life in the community.

The award winning project entitled 'Multi-Antenna GPS Structure Monitoring System' was led by Professor Xiaoli Ding, Chair Professor and Head, Department of Land Surveying and Geo-Informatics (LSGI), and involved an inter-disciplinary team comprised of the following key members: Professor Yongqi Chen (LSGI), Professor Jianhua Yin of the Department of Civil and Structural Engineering; and Mr Wentao Yang (LSGI). The project has also benefited from collaborations with researchers in China and Australia.

This multi-antenna GPS technology has been developed for applications such as landslide monitoring and warning, tracking of deformations of mega-structures such as dams and bridges, and measurement of ground subsidence. This technology makes use of special GPS data management and processing algorithms, hardware and software to enable one GPS receiver to work with multiple antennas so that the deformations of all

the points equipped with the antennas can be closely monitored. This breakthrough technology not only reduces the overall cost of GPS hardware for such applications as compared to standard GPS systems, but also greatly enhances the capacity of GPS for monitoring deformations and irregularities of structures.

布魯塞爾世界創新科技博覽會

建設及地政學院憑全球衛星定位系統 (GPS) 監測斜坡安全狀況的技術，在 2009 布魯塞爾世界創新科技博覽會贏得銀獎。同時獲獎的還有理大數個學系。

布魯塞爾博覽會的歷史悠久，今年有超過三十個國家和地區參加，展出多達四百五十項發明。得獎項目是由資深學者和業界菁英組成的評審團選出。



Prof. Xiaoli Ding
丁曉利教授

這次奪得銀獎的「多天線全球衛星定位系統結構監測系統」，是由一支跨學系的團隊研發，該團隊由土地測量及地理資訊學系講座教授兼系主任丁曉利教授帶領，成員有同學系的陳永奇教授和楊文濤先生，以及土木及結構工程學系殷建華教授。小組與中國內地及澳洲學者合作的研究，對監測系統的研發裨益甚大。

系統應用多天線全球衛星定位技術，可監測和預警斜坡崩塌，追蹤水壩、橋樑等大型結構的變形程度，以及測量地表沉降的情況。它採用特別的 GPS 數據處理和運算方法及軟硬件，用一個接收機接收多條天線的信號，從而嚴密監察所有裝上天線的觀測點的變形情況。這項嶄新技術不但使監測系統的成本較標準的 GPS 系統降低，而且大大增強了 GPS 系統監測結構變形和異常變化的能力。

BSE's Innovations Honoured in Geneva's Invention Expo

Under the patronage of the Swiss Federal Government and the City Government of Geneva, the 38th International Exhibition of Inventions of Geneva was held from 21 to 25 April 2010. The event this year was unique, in that it took place against the standstill in air traffic arising from the volcanic eruption in Iceland. The exhibition hence recorded a drop in visitors by 15% to 52,000, as compared to 72,000 visitors last year, in the wake of cancellation of innumerable flights. PolyU researchers who had originally planned to attend the event had been likewise affected. It is therefore particularly heartening to know that those who managed to go have brought home six awards: two Gold Medals, three Silver Medals and one Bronze Medal. Amongst the awardees was Professor Niu Jianlei of the Department of Building Services Engineering (BSE), who won a Gold Medal with Jury's Commendation, for his project "Micro-Encapsulated Phase Change Material (MPCM) Thermal Storage System".

Thermal storage systems are commonly found in modern buildings and skyscrapers. Such systems typically use inexpensive off-peak electric power, solar energy or waste heat, or cooling tower to meet energy storage requirements. With the sophisticated use of "New Thermal Energy Storage (TES) material" replacing water or ice-slurry, Professor Niu and his team have greatly improved the performance of modern thermal storage system and thus achieve a higher level of energy efficiency.

The MPCM Thermal Storage System developed by Professor Niu thrives on the use of a nanotechnology-based thermal energy storage material known as the "Micro-Encapsulated Phase Change Material". When it is mixed with water, milky slurry is formed, which can function as thermal energy storage and heat transfer working fluid to replace plain water or ice-slurry now commonly used in building cooling systems. Depending on local climatic conditions, the new material can also eliminate the use of electricity-driven chillers, which consume the most electricity in current air-conditioning systems.

This breakthrough invention is the fruit of interdisciplinary research collaboration amongst BSE, Institute of Textiles and Clothing of PolyU, Tsinghua University, and Delft University of Technology in the Netherlands. This research is supported in Hong Kong by the Government's Innovation and Technology Fund and Competitive Earmarked Research Grant of the Research Grants Council.

屋宇設備工程學系科研成果揚威日內瓦發明展

獲瑞士聯邦政府及日內瓦市政府贊助的第三十八屆國際發明展，已於四月二十一至二十五日舉行。由於冰島火山爆發引致歐洲航空交通癱瘓，今年的入場人次較去年的七萬二千下跌了百分之十五，只有五萬二千。雖然部份原定計劃出席的理大研究人員因此受到影響，但能夠順利出席的同事仍能贏得兩金、三銀、一銅共六個獎項，實在令人鼓舞！其中一位金獎得主是憑「微膠囊相變材料蓄熱系統」獲評審團讚揚的屋宇設備工程學系牛建磊教授。

現有的建築物一般採用冰蓄冷系統，或水蓄熱系統，利用非繁忙時間的低價電、或太陽能，儲存冷熱能量應付空調或日熱水需要。牛教授及其研究團隊以得獎的「新蓄熱材料」替代水或冰漿，大大改進了現代蓄熱系統的性能，節能效果亦因而更加理想。「微膠囊相變材料蓄熱系統」中的「微膠囊相變材料」，是應用納米技術發展而成的，與水混合後，便會變成牛奶狀漿液，可以用作工程上所需的蓄熱及傳熱流體，取代現時常用於建築物製冷系統的清冷水或冰漿。在某些氣候適合的地區或過渡季節，應用新物料後就無需再倚賴以電力推動的製冷裝置（現代化空調系統中用電最多的機組）。這項突破性發明是理大屋宇設備工程學系、紡織及製衣學系、清華大學，以及荷蘭代爾夫特理工大學聯手進行跨學科研究的成果。這項研究獲香港政府的創新及科技基金和研究資助局的「角逐研究用途補助金」撥款。目前，牛教授及其研究團隊正進一步研究將該技術用於太陽能熱水及汽車空調。



PTeC's Outstanding Professional Services and Innovations Award

The award presentation ceremony for the PTeC's Outstanding Professional Services and Innovations Award 2009 took place on 29 January 2010. There were over 20 awards to pay tribute to various departments and staff for their contributions in the 2008-2009 Financial Year. The Faculty of Construction and Land Use (FCLU) is delighted that numerous awards have gone to the departments and staff under the Faculty. The awards are as follows:

Departmental Awards 學系獎項

The PTeC Most Active Department Award went to the Department of Civil and Structural Engineering (CSE), on the strength of it having been the department with the highest aggregated invoiced value of HKD13.51 million during the FY08/09, for consultancy projects undertaken via PTeC.

「最活躍學系獎」由土木及結構工程學系蟬聯。在2008/09財政年度，該系透過理大科技及顧問有限公司承接多項顧問工作，涉及的专业服務合約總值合計高達港幣一千三百五十一萬。

理大科技及顧問有限公司「傑出專業服務及創新獎」

理大科技及顧問有限公司成立的「傑出專業服務及創新獎」2009年度頒獎禮已於本年一月二十九日隆重舉行。大會今次頒發了逾20個獎項，以嘉許在2008/09財政年度作出傑出貢獻的學系和教研人員，當中不少都是建設及地政學院的成員。現簡介如下：



FCLU got both the Maximum Staff Participation Award and the Maximum Staff Participation Award (Merit). The former went to the Department of Land Surveying and Geo-Informatics (LSGI), and the latter went to CSE. The awards were given on the merit of the departments

having had the highest percentage of academic staff participation in consultancy projects during FY08/09. LSGI had a participation rate of 57.9%, and CSE's figure was 43.2%



「最多部門員工參與獎」的大獎及優異獎分別由土地測量及地理資訊學系與土木及結構工程學系奪得。此獎是以系內教員在08/09財政年度參與顧問項目的百分率為評選準則。土地測量及地理資訊學系的教員參與率達百分之五十七點九，土木及結構工程學系亦有百分之四十三點二。

Individual and Team Awards 個人及團隊獎項

Dr Wing-gun Wong of CSE won the Most Active Consultant Award (Merit). This award was given to the individual with the highest aggregated consultancy income earned during FY08/09.

土木及結構工程學系黃永根博士榮獲「最活躍專業服務顧問優異獎」。此獎是頒發予在08/09財政年度獲取最多顧問收入的教員。



Prof. Francis Wai-hung Yik of the Department of Building Services Engineering got the Highest Growth Award (Merit), on the basis of his having been the highest ranking individual in terms of i) the absolute growth in income earned and ii) the percentage of growth compared to the previous fiscal year.

屋宇設備工程學系易偉雄教授獲得「個人最高增長優異獎」。此獎是頒發給顧問收入增長最高的教員，考慮的準則有二，一為顧問收入的實數增長，二是比照上個財政年度的增長率。

Dr Wing-tat Hung of CSE led his team to win the Multi-departmental Participation Award (Merit). Dr Hung's team also comprised of Mr Jason C.Y. Lau of CSE, and Dr Chun-shun Cheung, Dr Tat-leung Chan, Mr Chris Kwong-shing Tsang, all from the Department of Mechanical Engineering. The criterion for this award was that the contract value of the project must not be less than HKD300,000, and that it must have involved the collaboration of at least two departments. Dr Hung's team won the award on the merit of the project "Testing of Taxi and Diesel Goods Vehicles with Gross Vehicle Weight between 3.5-5.5 Tonnes Using Portable Emission Measuring Systems (PEMS) for Measuring Gaseous Pollutants and Particulate". The contract value for the project was HKD405,000.

由土木及結構工程學系熊永達博士牽頭的團隊奪得「跨部門合作優異獎」。成員除熊博士外，還有該學系的劉卓賢先生，以及機械工程學系的張鎮順博士、陳達良博士及曾廣成先生。獲獎團隊提供的合約服務總值須不少於港幣三十萬，並最少由兩個學系合作。他們今次的得獎項目名為「車輛總重量介乎3.5-5.5噸及使用便攜排放物量度系統計量氣體污染物和微粒的士及柴油貨車測試」，合約總值為港幣四十萬五千元。



The Faculty extends the warmest congratulations to all of the above award recipients, who have excelled in their fields of expertise and contributed towards the University's commitments to technology and knowledge transfer.

本院謹此恭賀所有得獎同事。他們不但在自己的專長領域拓展所長，還身體力行地活用科技成果和知識，協助大學實踐對社會的承諾。

PTES Made a Winner at Hong Kong ICT Awards

The Public Transport Enquiry Service (PTES) co-developed by the Department of Land Surveying and Geo-Informatics (LSGI) of The Hong Kong Polytechnic University, and the Transport Department, won the Silver Award of the 'Hong Kong Information and Communications Technology (ICT) Awards 2009: Best Public Service Application (Website) Award'. The annual awards are organized by The Hong Kong Institution of Engineers (HKIE) – Information Technology Division. The awards presentation ceremony took place on 19 January 2010.

First launched in 2006, the ICT annual award is a result of the fruitful collaboration amongst industry, academia and the Government. Through showcasing the winning ICT innovations, and by recognising the outstanding achievements of local ICT professionals and organisations, the event has helped promote the development of the industry and nurture local talents. The winning ICT practitioners and businesses are all to be commended as their creative solutions have contributed significantly to improving people's daily lives, to enhancing operational efficiency in the industry and commerce sectors, as well as to driving economic and social development.

PTES is an Internet-based one-stop multi-modal public transport enquiry and point-to-point route search system for pre-trip planning. For route search, once the user selects the origin and destination (via keywords, pull-down menu or map-routing), the system will provide a range of possible public transport routes, with optional sorting by fare, journey time and preferred transportation mode. Moreover, the interchange locations between different transport modes are also displayed for the user to have a clear picture of the suggested route.

The comments from the panel of judges were highly encouraging. They thought the system is simple and user-friendly. It is supported by a complex search engine that would provide the route search amongst most of the available transportation modes in Hong Kong. They were impressed that the returned information could consider the options of fare, journey time, preferred transportation mode, and interchange between the same or different transport

companies. Given that PTES is capable of considering 1300 routes with over 7500 stops in Hong Kong, its usefulness to local citizens and visitors is not hard to imagine. Interested parties are invited to visit the following website for more details: <http://ptes.id.gov.hk>

「公共交通查詢服務」獲香港資訊及通訊科技獎

由土地測量及地理資訊學系與運輸署合作研發的「公共交通查詢服務」，在本年一月十九日的「2009香港資訊及通訊科技獎」頒獎禮上獲頒「最佳公共服務應用(網頁)獎」銀獎。

這項始於2006年的盛事，是由香港工程師學會資訊科技分部舉辦，每年一次，彰顯了業界、學術界與政府三方合作所取得的豐碩成果。它使得獎項更廣為人知，也肯定了本地資訊科技專才和機構的傑出成就，對促進業界發展和培育本地人才裨益甚大。得獎者和得獎機構的創新發明，不但大大便利了市民的日常生活，也提升了業界的工作效率，有助經濟及社會發展。

「公共交通查詢服務」是一套網上多式公眾聯運查詢及「點到點」路線搜尋系統，以「一條龍」方式提供資訊，利便市民策劃行程。使用者只需選擇起點和終點(輸入關鍵字，或使用下拉式選單或地圖)，系統會即時提供多條公共交通路線。另外，市民更可根據車資、交通時間，甚至首選的交通工具進一步選擇路線。系統也會顯示不同交通工具的轉乘地點，讓市民對有關的路線一目了然。

各評審員對系統評價甚高，認為它簡單易用，搜尋範圍涵蓋香港大部分交通工具；而系統可根據車資、交通時間和乘客首選的交通工具，以及同一或不同公共交通機構的轉乘地點提供額外資訊。「公共交通查詢服務」可提供一千三百條路線，涉及的站頭超過七千五百個，無論對本地居民或遊客都十分有用。有興趣者可登入 <http://ptes.id.gov.hk>。



Dean's Award for Outstanding Achievement in Academic Programme Development 2010

2010年院長特設卓越表現獎(課程發展)

The Dean's Award for Outstanding Achievement in Academic Programme Development is a formal recognition for the outstanding achievements of academic staff of the Faculty of Construction and Land Use (FCLU) at The Hong Kong Polytechnic University, for their outstanding contributions in developing, promoting and/or managing academic programmes. In order to qualify for the award, a staff member should have demonstrated outstanding contributions in at least one of the following areas in the three consecutive academic years immediately before the year of the award:

- Initiation and/or management of the development of an academic programme.
- Successful development of new subjects or enhancement of subjects that help to enhance an academic programme.
- Pro-active promotion of academic programmes to potential students.
- Successful implementation / development of innovative approaches to teaching and learning.

The following have been selected to receive the Dean's Award for Outstanding Achievement in Academic Programme Development 2010. Each individual or team award includes a cash prize of HK\$10,000. Award certificates will be presented at the Faculty Congregation and Prize Presentation Ceremony 2010 in November.

「院長特設卓越表現獎(課程發展)」是頒發予在課程設計、推廣及/或管理方面作出貢獻的本院教員，藉此表揚他們對本院課程發展作出的卓越成就。得獎人在獲獎前的連續三個學年裡，至少在下列其中一方面作出了重大貢獻：

- 創辦及/或管理一個課程；
- 推出新科目或改進既有科目的內容，提升有關學術課程的素質；
- 積極向有潛質入讀的學生推廣課程；
- 成功實施或研發新的授課及學習模式。

2010年院長特設卓越表現獎(課程發展)的得獎同事名單如下。個人獎項及團隊獎項的獎金皆為港幣一萬元。獎狀則會於本年十一月舉行的學院畢業典禮暨頒獎典禮上頒發予各得獎者。

Team Award:

MSc/PgD Project Management
Department of Building and Real Estate

This postgraduate programme has been on offer for over 10 years with strong demands from applicants. The programme has always been well managed by a dedicated team of academics and support staff, with very encouraging feedbacks from students, graduates as well as both local and overseas external examiners. It was accredited by three professional bodies, both locally and overseas, including the Royal Institution of Chartered Surveyors, the Chartered Institute of Building (CIOB) in the UK and the Hong Kong Institute of Project Management. Specifically, the CIOB has awarded a total of 3 QEII Jubilee Scholarships to students since 2005, and a Certificate of Excellence to yet another.

Most of the programme's core subjects are delivered during the weekends on a full-day basis. Properly formatted study guides written in-house and reading materials (with copyright clearance) are provided to students enrolled on core subjects, either in the form of hard copies or on-line. In addition, there is also a wide range of elective subjects offered by BRE or its sister departments in the Faculty, from which students can choose.

Since 2006/07, the programme team has comprised of 31 academic and support colleagues with 19 staff members bearing designations as subject leaders or similar roles. As team teaching is adopted, co-ordination at the subject and programme levels is very important.

Apart from day-to-day teaching, colleagues involved in the programme also take an active part in programme promotion activities, including the Postgraduate Info Day, briefing seminars, exhibitions and talks on the Chinese mainland.

團隊獎項：

項目管理理學碩士 / 深造文憑課程
建築及房地產學系

這一碩士課程已有逾十年歷史，申請入讀者眾。負責的教員和後勤人員合作無間，使它贏得學生、畢業生，以至本地和海外校外評審員的一致好評。課程獲得三個專業團體——英國皇家特許測量師學會、英國特許建造學會，以及香港項目管理學會的認可。特別值得一提的是，英國特許建造學會自2005年起，曾三度向該課程的學生頒發「伊利沙伯女王二世銀禧獎學金」，另有一人獲「卓越表現獎狀」。

課程大多數核心科目是在週末日間授課。所有修讀核心科目的學生，都會獲發由學系自行編撰的學習指引和已釐清版權的參考資料，部分是硬本，部分則有網上版本。另外，課程亦提供一系列由建築及房地產學系或本院其他學系開辦的選修科目，大大提高了同學選科的靈活性。

2006/07年度起，參與授課和管理該課程的團隊，合共有三十一位教學及後勤人員，當中十九人為學科主任或擔當相關的職能。由於課程採用團隊教學模式，科目之間和課程整體的協調和合作是非常重要的。

除了日常的教學工作，團隊也積極參與該課程的推廣活動，如協辦研究生資訊日、簡介會、展覽和到內地舉辦講座。

Individual Award:**Dr Aron Kwok, Programme Leader****BSc(Hons) Environmental and Occupational Safety and Health
Department of Civil and Structural Engineering**

Five years into the launching of the BSc in Environmental and Occupational Safety and Health (EOSH) - a special featured degree programme in the Department of CSE, Dr Aron Kwok, as its pioneer programme leader, still has vivid memories of the hurdles he had had in finding employment for the programme's first batch of graduates. This was despite the society's growing emphasis on occupational safety and health. One of the initial setbacks was employers' unfamiliarity with the degree programme, and they were used to recruiting only diploma and certificate holders to fill their safety and health vacancies. Dr Kwok found himself involved in prolonged, face-to-face explanations with potential employers, to make them see the cost-effectiveness of recruiting degree holders.

The EOSH has come a long way since 2005. In a recent PolyU-wide study, Outcome-based Assessment Project: Employer Survey on Student Learning Outcomes in Science, Engineering and Technology Disciplines, one of the responding employers claimed that 'Graduates from PolyU's featured programme, such as environmental and occupational safety and health, have dominated the corresponding job market.' EOSH graduates have been able to find suitable jobs, even in a period of economic downturn. This is not an easy accomplishment, and additionally marks the programme's success in bridging CSE-PolyU and industry in promoting occupational safety and health in Hong Kong.

Dr Kwok is justifiably proud of the programme's achievements, which he has attributed to the efforts made by practitioners in the field, and his fellow teaching staff who have designed both an 'outcome-based learning approach', used in conjunction with a student-centred approach. In real terms, this means that both academic and practical competencies are required of the students. Relevant generic competencies are presented to them to benchmark a proper level of performance both for their university study and for their summer work placement. As part of the process of integrated learning, outside experts in the field are invited to seminars to give advice and comment on topical environmental and occupational safety issues. The students' conceptual horizon is further broadened by visits to construction sites and utility plants. In 2006, the 'Venture Track Programme' was set up, to enhance the students' outreach to outside organizations.

Dr Kwok's Dean's Award for Outstanding Achievement in Academic Programme Development testifies to EOSH's scholastic standing, and its recognition by experts in the field, and by students. It also testifies both to Dr Kwok's success as a programme leader and his experience as a teacher. In a personal statement on the EOSH, Dr Kwok has spoken of his insistence on an 'ideology of teaching', but modestly did not claim a lot of success for his 'student-orientated approach', precisely because he recognized that no two persons were the same. This has made him careful not to assert too strongly his own viewpoint, sometimes at the risk of making the students feel unsure what he has actually wanted them to do. Despite this 'dilemma', he has resolved not to be a 'traditional teacher'. It was a delicate balance, to ask of the students to follow him, to do 'what is told but not copying'. To Dr Kwok, the most gratifying moments were those when his students, without even being too conscious of it, demonstrated their own initiations in their class activities.

Dr Kwok still regularly gets postcards from students as they travel. Some of them have also invited him to their wedding banquets. Although he jokingly said he has found such invitations a financial burden, as is always the case, it is the kind of burden that only a teacher well loved by his students has the privilege of shouldering.

個人獎項：**郭經裕博士****環境及職業安全與健康(榮譽)理學士學位課程課程主任
土木及結構工程學系**

環境及職業安全與健康(榮譽)理學士學位(EOSH)，是土木及結構工程學系在2005年推出的本科生課程。身為「開荒牛」的首位課程主任郭經裕博士，對當年如何幫助首屆畢業生求職仍然記憶猶新。儘管公眾日益重視職業安全與健康，但僱主對這項新辦的學位課程所知不多。多年來，只要持有相關的文憑和證書，便可應徵這些空缺。因此，郭博士往往需要費盡唇舌與僱主面談，才能使他們明白聘請學位畢業生的好處。



這幾年的路並不好走。不過，理大最近進行了一項名為「僱主對科學、工程及科技範疇學生學習成果評價」的調查，其中一位回覆的僱主表示「在環境及職業安全與健康等領域，理大特色課程培養的畢業生已主導了相關就業市場」。即使在經濟環境轉差的時期，該課程的畢業生仍能找到合適工作。這樣的成績殊非僥倖。同學順利就業自然可喜可賀，但當中的另一層意義，就是課程成功把土木及結構工程學系與業界聯繫起來，共同為促進香港的職業安全與健康而努力。

郭博士理應為課程的成果自豪；不過，他卻把成就歸功於業界的努力和同事的心思。負責此課程的教學人員設計了一套「成果主導學習策略」，與「學生為本策略」一併使用；簡而言之，就是要求同學做到理論與實踐並重。學生需要學習一般的技能，以確保他們在大學修業和暑期實習時能達到一定的基準；而在綜合學習的過程中，校方會邀請外界的專家出席研討會，就熱門的環境和職業安全話題發表意見。另外，同學會獲安排參觀建築工地和電廠，藉此拓展視野。在2006年，課程更設立「商校夥伴計劃」，藉此增加同學到校外機構參觀和實習的機會。

這個獎項彰顯了EOSH課程的學術水平和業界及學生對它的認同，對身為課程主任和老師的郭博士而言，更是一種莫大的肯定。在一篇談到該課程的感想裡，郭博士提到自己所堅持的「教學理念」，但卻謙稱其「學生為本」的策略並非課程的成功關鍵。這是因為他理解到世上並無完全相同之人，不應過於堅持自己的觀點。不過，學生有時也許會因此而無所適從，掌握不到老師的要求。縱使面對這「兩難」之局，郭博士還是堅持走出傳統框框。他要求學生跟從他的方法，卻不希望他們「搬字過紙」，要在兩者間取得平衡，一點也不容易。對郭博士來說，最欣慰的莫過於見到學生在堂上自自然然的顯露自己的創意。

時至今日，郭博士仍不時收到學生從外國寄來的明信片，有些更邀請老師出席自己的婚宴。他打趣的說，這些「紅色炸彈」多得差點令他囊空如洗。毫無疑問，這種榮幸並非人人可有，如非深得學生愛戴，才不會有此資格呢！

Dean's Award for Outstanding Achievement in Research Funding 2010 2010年院長特設卓越表現獎(科研經費)

The Dean's Award for Outstanding Achievement in Research Funding is a formal recognition for the outstanding achievements of academic staff of the Faculty of Construction and Land Use (FCLU) at The Hong Kong Polytechnic University, in securing major external competitive research grants, such as those from the Research Grants Council (RGC), or the Environment and Conservation Fund (ECF). In order to qualify for the award, a staff member would also need to have successfully secured at least 4 research grants as a Principal Investigator in the past 5 calendar years, or at least 3 research grants as a Principal Investigator in the past 3 calendar years.

Each awardee received a cash prize of HK\$10,000 and a research grant of HK\$200,000. The award certificates will be presented to them at the Faculty Congregation and Prize Presentation Ceremony 2010 in November.

The following academic staff members of FCLU have been selected to receive the Dean's Award for Outstanding Achievement in Research Funding 2010:

「院長特設卓越表現獎(科研經費)」的宗旨，是表揚向香港研究資助局(研資局)、環境及自然保育基金等校外機構成功爭取科研經費的建設及地政學院教研人員。得獎者必須以首席研究員的身份，在最近五年內最少取得四項研究資助，或最近三年內最少獲得三項研究撥款。

每位得獎者將獲獎金港幣一萬元及二十萬元的研究資助。獎狀則會在本年十一月舉行的學院畢業典禮暨頒獎典禮上頒發。

2010年的「院長特設卓越表現獎(科研經費)」得獎同事如下：

| Department 學系 | Awardee 得獎人 | Research Grants Secured 取得的研究撥款 |
|--|-----------------------------------|---|
| Building Services Engineering Department 屋宇設備工程學系 | Prof. Simon Shiming DENG 鄧仕明教授 | RGC General Research Fund, 2007/08 研資局「優配研究金」(2007/08年度) |
| | | RGC General Research Fund, 2008/09 研資局「優配研究金」(2008/09年度) |
| Building Services Engineering Department 屋宇設備工程學系 | Dr Vivien Lin LU 呂琳博士 | Environment and Conservation Fund, 2009 環境及自然保育基金(2009年) |
| | | Environment and Conservation Fund, 2008 環境及自然保育基金(2008年) |
| Building Services Engineering Department 屋宇設備工程學系 | Dr Vivien Lin LU 呂琳博士 | Environment and Conservation Fund, 2009 環境及自然保育基金(2009年) |
| | | ITF Guangdong-Hong Kong Technology Cooperation Funding Scheme, 2008/09 創新及科技支援計劃轄下的粵港科技合作資助計劃(2008/09年度) |
| Civil and Structural Engineering Department 土木及結構工程學系 | Dr Hai GUO 郭海博士 | RGC General Research Fund, 2007/08 研資局「優配研究金」(2007/08年度) |
| | | RGC General Research Fund, 2009/10 研資局「優配研究金」(2009/10年度) |
| Civil and Structural Engineering Department 土木及結構工程學系 | Dr Hai GUO 郭海博士 | Environment and Conservation Fund, 2009 環境及自然保育基金(2009年) |
| | | Natural Science Foundation of China (NSFC)/RGC Joint Research Scheme, 2009/10 國家自然科學基金委員會/研資局聯合研究計劃(2009/10年度) |
| Civil and Structural Engineering Department 土木及結構工程學系 | Dr Agachai SUMALEE | RGC General Research Fund, 2007/08 研資局「優配研究金」(2007/08年度) |
| | | RGC General Research Fund, 2008/09 研資局「優配研究金」(2008/09年度) |
| Civil and Structural Engineering Department 土木及結構工程學系 | Dr Agachai SUMALEE | RGC General Research Fund, 2009/10 研資局「優配研究金」(2009/10年度) |
| | | RGC General Research Fund, 2007/08 研資局「優配研究金」(2007/08年度) |
| Land Surveying and Geo- Informatics Department 土地測量及地理資訊學系 | Prof. Janet NICHOL | RGC General Research Fund, 2008/09 研資局「優配研究金」(2008/09年度) |
| | | RGC General Research Fund, 2009/10 研資局「優配研究金」(2009/10年度) |
| Land Surveying and Geo- Informatics Department 土地測量及地理資訊學系 | Prof. Janet NICHOL | RGC Public Policy Research Grant (PPRG) Scheme, 2009/10 研資局公共政策研究資助計劃(2009/10年度) |
| | | RGC General Research Fund, 2007/08 研資局「優配研究金」(2007/08年度) |

Prof. Simon Shiming Deng

The three externally funded projects by Prof. Deng Shiming from the Department of Building Services Engineering (BSE) are all related to improving the energy efficiency of different air conditioning and/or heat pump systems through mathematical modeling and developing novel control algorithms. In Hong Kong and elsewhere, much energy is currently used in buildings on account of heating, ventilation and air-conditioning systems for maintaining thermally comfortable indoor environments. Therefore, it is of vital importance to advance technologies to ensure the highest possible energy efficiency when operating these systems, so as to contribute to low-carbon living and sustainable development.



The first of Prof. Deng's projects was funded in 2007 by RGC through its General Research Fund. It studies a novel reverse cycle defrosting method for air source heat pumps (ASHPs) which is energy-saving and environmental friendly for building cooling and heating, and which has been used worldwide in recent decades. However the heat pumps are subject to periodic defrosting requirements during heating at low ambient temperatures, when insufficient heat is available for defrosting, which would then prolong a defrosting process when no heating is provided, adversely affecting the indoor thermal environment. The novel reverse cycle defrosting method developed is thermal energy storage based, which helps both to reduce defrosting energy consumption and the time for defrosting; this in turn ensures that the thermal comfort of occupants would not be significantly degraded during defrosting. The outcome of Prof. Deng's project would encourage wider use of ASHPs, for their advantages to be fully realized.

Prof. Deng's RGC funded project in 2008 is for developing a mathematical model and novel control algorithms for multi-evaporator air conditioners (MEAC). MEAC have offered building owners many advantages over conventional chilled water based air conditioning installations, such as higher energy efficiency and flexibility in design and installations. However, it was noted that although MEAC units worth billions of dollars have been sold worldwide, the technical details for capacity control in an MEAC unit were not readily available in the public domain, mainly due to commercial confidentiality. Prof. Deng's project would help improve the MEAC technology and pave the way for its further application by providing a simulation tool of MEACs and an openly available capacity control strategy.

Prof. Deng's project funded by The Environment and Conservation Fund in 2009 deals with developing a novel low-cost residential humidity control technology, based on a previously successfully developed control algorithm. The project is a good example of applying theoretical research outputs to practical applications. Prof. Deng's research would help reduce the energy use for residential air conditioning and improve indoor thermal comfort in Hong Kong, at a low cost.

This would help encourage the general public to set indoor air temperature at a high level, e.g., 25.5°C, as recommended by the Hong Kong SAR Government. It is expected that the project outcomes would help change the local perception of air conditioning as setting the indoor temperature to a very low level.

鄧仕明教授

鄧仕明教授是屋宇設備工程學系的傑出學者，其三項校外資助研究都是藉著研發新的數學模型和控制算法，來提升不同空調及／或熱泵系統的能源效益。在香港以至世界各地，為了保持室內溫度舒適，往往耗用大量能源來運作暖通空調系統。因此，若要減少碳排放、達致持續發展的目標，必須研發新的技術，使這些系統在運作時盡量節能。

鄧教授首項相關研究在2007年獲研資局的「優配研究金」計劃資助，目的是研發適用於空氣源熱泵(ASHPs)的嶄新逆循環除霜法。空氣源熱泵能為建築物供熱和製冷，近數十年已廣泛在世界各地應用，有節省能源、保護環境的好處。然而，若熱泵在低溫環境下供熱，必須定期除霜，如除霜所需的熱能不足，便會延長除霜過程，嚴重影響製熱量和室內溫度。新的逆向除霜法採用蓄熱原理，有助減少除霜所耗用的能源、縮短除霜時間，亦即確保除霜過程不會嚴重影響室內的熱舒適度。鄧教授的研究成果相信會鼓勵更多建築物採用空氣源熱泵，其優點亦將為更多人認識。

2008年，鄧教授獲研資局撥款研發適用於多蒸發器空調系統(MEAC)的數學模型及新控制算法。與傳統的水冷式空調比較，MEAC的能源效益較高，設計與安裝亦較為靈活。雖然多蒸發器空調系統在世界各地的銷售額以十億元計，但有關機組容量控制的技術細節卻屬商業秘密，缺乏公開的資料。鄧教授的研究有望改良多蒸發器空調系統的技術，透過提供MEAC的模擬工具和公開的容量控制策略，為其進一步發展鋪路。

至於在2009年獲環境及保育基金撥款的項目，是希望以之前成功研發的控制算法為基礎，開發一套新的低成本家居濕度控制技術。這是把研究結果應用到實際環境的上佳示範，有望減少家居空調系統的耗電量，以低成本改善香港的室內熱舒適度。

研究完成後，相信會鼓勵市民把室內空調的溫度調高至特區政府提倡的攝氏25.5°C，改變公眾一向認為必須把溫度調得極低的觀念。

Dr Vivien Lin Lu

Dr Vivien Lin Lu, from BSE was selected for the Dean's Award on the strength of having secured ECF grants from the Environmental Protection Department (EPD) and the Innovation and Technology Fund (ITF) grant in the past 2 years for the following projects:

In 2008, Dr Lu secured \$130,000 for the ECF project 'Investigation on the feasibility and enhancement methods of wind power utilization in high-rise buildings of Hong Kong'. This project, which had been completed, investigated the feasibility of wind power utilization in high-rise buildings in Hong Kong and proposed the enhancement methods of wind power utilization in high-rise buildings.

In 2009, Dr Lu was granted \$1,371,950 for the ITF project 'Investigation and development of large-scale (MW) grid connected thin film photovoltaic power stations integrated with buildings'. In this project, large-scale (MW) grid connected thin film photovoltaic power stations are being studied and



developed when they are integrated with buildings in urban area. The proposed power station can generate clean electricity directly from the sun to meet the annual power consumption of thousands of homes with zero greenhouse gas emissions. This project is still on-going.

In 2009, Dr Lu again secured \$406,000 for the ECF project 'Environmental payback time analysis of building-integrated photovoltaic (BIPV) applications in Hong Kong'. This project studies the environmental payback times of different types of BIPV applications in Hong Kong, including energy payback and greenhouse gas emission payback. The outputs will provide local community and other researchers with informative and useful indicators of BIPV applications. This project is still on-going.

All three projects have significantly solved the building-integrated applications of wind power and Photovoltaic (PV) technologies, and have made valuable contributions to the renewable energy (RE) industry, putting Dr Lu and her research team in a leading position in the research and development in the RE area.

呂琳博士

屋宇設備工程學系的呂琳博士獲獎，是因為過去兩年分別得到環境保護署的環境及自然保育基金，以及創新科技署的創新及科技基金資助下述研究項目：

2008年，呂博士獲環境及自然保育基金撥款十三萬元，展開「香港高層建築中風能利用的可行性及改善方法」的研究。此項目，研究了香港高層建築中風能利用的可行性，並提出如何改善高層建築風能應用的措施和建議。項目目前已經完成。

翌年，創新及科技基金撥出一百三十七萬一千九百五十元，資助呂博士進行「兆瓦級光伏薄膜建築一體化並網光伏電站關鍵技術研究、設備研製及工程運用」的研究。工作人員的目標是研究如何在市區樓宇內設計和安裝MW級並網薄膜光伏發電站。這些發電站可以直接利用太陽能生產潔淨的電能，應付數以千計家庭整年的電力需求，卻不會排放溫室氣體。本項目的主要研究

目的包括：MW級BIPV並網電站設計和建設技術研究；100kVA以下系列與低壓電網並網的控制逆變設備研究；控制設備的性能優化；BIPV用多種類型光伏構件研製及其安裝技術研究。研究光伏構件的最佳傾角，不同朝向對發電的影響。項目現時仍在進行。

除了創新及科技基金，呂博士在2009年繼續獲得環境及自然保育基金撥款，展開「香港建築光伏一體化（BIPV）應用的環境成本回收期」研究。這次的資助額為四十萬六千元，旨在研究香港不同建築光伏一體化應用技術的環境成本回收期，包括能源成本回收及溫室氣體排放成本回收。公眾及其他研究人員預計可從研究結果中獲取有關BIPV的有用資訊和各類指標。這項項目尚未完成。

以上三項研究都有助解決在建築物中風能應用和光伏技術應用所遇到的技術問題，對促進可再生能源產業有很大的貢獻，亦使呂博士及其團隊在研發可再生能源方面穩站領導地位。

Dr Agachai Sumalee

Dr Agachai Sumalee of CSE secured a RGC General Research Fund 2007/08 for the project 'Advanced Model for Optimal Implementation Path and Phasing of Road Pricing Scheme Design'. The project was inspired by the long standing interest of the HKSAR in the road pricing policy; in fact, the Government had already commissioned two major feasibility studies in 1983 and 1994. However, the proposals resulting from both studies, based on a charging cordon system, were both turned down. The studies conducted, so far, for Hong Kong and in general have focused mainly on the "one-shot" implementation which does not allow for the modification of the scheme over time. Dr Sumalee's project investigates the modeling and optimization framework for evaluating and designing a practical road pricing scheme which would evolve over time. On the modeling side, the project proposes an innovative framework of urban transport network model to render the evolution of transport and land use changes over time. The model is then integrated with the optimization framework to design the time-dependent road pricing scheme. The project provides a new perspective in designing an urban road pricing scheme to enhance its acceptability and effectiveness.



Dr Sumalee again secured the RGC General Research Fund in 2008/2009, this time for the project 'Dynamic Transport Network Reliability and Vulnerability Analysis'. The concern over network reliability has been on the increase both in Hong Kong and in other countries, especially when the system operates very near to, or over its capacity. A case in point was the incident on 9th May 2005 which involved a rainstorm and subsequent incidents on three roads in both Kowloon and Hong Kong Island, causing extended traffic congestion. This incident made apparent the 'fragility' of our urban transport system in coping with such uncertainties. The aim of Dr Sumalee's project has been to advance the analysis of the effect of uncertainties on the performance of the transportation network. The key contribution is the introduction of within-day dynamic elements of demand and supply uncertainties into the reliability and vulnerability analysis of the traffic system. The dynamic elements would cover the flow/congestion propagation in the network and temporal demand. This dynamic representation would also allow for the introduction of the time dimension of uncertainties (e.g. incident period, occurring time, and time-dependent link degradation level), and the propagation of their impacts through space and time in the network.

Dr Sumalee secured yet again the RGC General Research Fund in 2009/10, for his project toward an optimal transport network and land use design under climate change: model and algorithm'. The project targets at how extreme weather and the effects of climate change have impacted the service quality and reliability of the transport system. Climate change

affects transport both in the short term and in the longer term, and across the modes. For the short term, the impacts may range from reduction of highway capacity, to the increase in discomfort for pedestrians and public transport users, and to the increase in the vulnerability of the system, as for instance due to local flooding. The longer term impacts will involve the decrease in land availability, the increase in the natural hazard risk, and the deterioration of transport infrastructure. Although many studies have examined the potential impacts of climate change on broad sectors of economy such as agriculture and forestry, few have studied its impacts on transportation. Dr. Sumalee's project is to fill in this gap. In addition, a network and land-use design model is also proposed to suggest an optimal transport and land-use policy for sustainable and efficient development.

Dr Agachai Sumalee

土木及結構工程學系的Dr Agachai Sumalee在2007/08年度成功申請研資局的「優配研究金」，展開名為「道路收費計劃優化實施途徑及定相改進模型」的研究。道路收費計劃在香港其實已非新事，早於1983及1994年，香港政府曾兩度為此進行大規模的可行性研究，但兩次研究建議採用的「擁擠區域收費」原則並沒得到採納。在香港以至其他地區，這方面的研究向來只專注於如何落實計劃，卻未考慮計劃推行後應怎樣與時並進。Dr Sumalee的目標就是建立一個模擬及優化框架，因應時日轉變來評估和設計實用的道路收費計劃。他提出了一個創新的市區運輸網絡模型，可以顯示交通和土地用途隨時日的演變，再把此模型結合優化框架，設計出一個隨時間而調節的道路收費計劃。其研究從嶄新角度審視市區道路收費系統的設計，既提高了收費計劃的成效，也使它較易為公眾接受。

翌年，Dr Sumalee再次獲得「優配研究金」資助，開展「動態交通網絡可靠性及弱點分析」。在香港以至其他國家，公眾越來越重視交通網絡的可靠性，尤其是那些承載能力已接近或超越極限的網絡。在2005年5月9日發生的一連串事件，更突顯了這個問題的迫切性。當日連場暴雨，加上在九龍及港島區三條道路發生的幾宗相關事故，導致廣泛地區交通擁塞，清楚反映了市區運輸系統在應付這些突發事故時是如何「脆弱」。Dr Sumalee的研究旨在深入分析這類突發事故對運輸網絡的影響，其主要貢獻是在進行交通系統可靠性及弱點分析時，加入了影響供求不確定性的即日動態因素，包括網絡流量、擁塞情況的擴散及時間需求。另外，工作人員還可以在分析過程中加入與時間有關的不確定因素（如事故維持的時間、事發時間，以及受時間影響的連繫減弱程度），研究這些因素如何藉時空擴散而影響有關的運輸網絡。

在2009/10年度，Dr Sumalee繼續獲研資局批出「優配研究金」。今次的項目名為「氣候變化下的優化運輸網絡及土地用途設計：模型及運算方法」，目標是探討極端天氣和氣候變化如何影響運輸系統的服務質素和可靠程度。氣候變化對運輸系統有短期和長期的影響，範圍涵蓋各類交通工具。短期而言，它或會減弱公路的承載能力，降低行人和公共交通乘客的舒適程度，使運輸系統變得脆弱（如因局部地區水浸）；至於長遠的影響，就包括減少土地供應，增加自然災害的風險，以及削弱運輸基建。學術界雖然已有不少研究探討氣候變化對農林業等主要經濟環節的潛在損害，但卻鮮有以運輸系統為重點。Dr. Sumalee的項目可望填補這片空白。另外，他還會研發一個網絡及土地用途設計模型，建議一套可達致持續及高效發展的理想運輸及土地用途政策。

Dr Hai Guo

Dr Hai Guo of the Department of Civil and Structural Engineering (CSE) was funded \$1,459,238 by RGC General Research Fund, 2009/10 for the project "Contribution of biogenic VOCs to the formation of photochemical oxidants and secondary organic aerosols under the influence of mesoscale circulation in subtropical Hong Kong: Field observations and model simulations". Dr Guo has embarked on this project because Hong Kong and the Pearl River Delta are heavily impacted by photochemical ozone (O₃) and secondary organic aerosols, which greatly affect human health, agriculture, and tourism. Volatile organic compounds (VOCs) are produced by both anthropogenic and natural sources. The highly reactive biogenic VOCs (BVOCs) play a major role in photochemical oxidant production at concentrations significantly lower than those of anthropogenic VOCs (AVOCs). In Dr Guo's project a comprehensive field measurement will be carried out, followed by a thorough analysis of the chemical database using a combination of statistical analysis of field observations, mesoscale meteorological simulations, diagnostic and prognostic box models, and chemical transport models. This study will significantly improve our understanding of photochemical formation and transport mechanisms for subtropical coastal regions with complex coupling of meteorology and chemistry. This will contribute to our overall knowledge of the ozone science and have wide implications for other subtropical coastal cities and regions. The study results will provide a benchmark for assessing the impacts of BVOC emissions on the urban and regional environment. The scientific findings will also have direct policy implications for reducing O₃ pollution and visibility degradation in subtropical southern China.



After an extremely strict review by both the National Natural Science Foundation of China (NSFC) and the Hong Kong Research Grants Council (RGC), Dr Guo had also successfully secured the NSFC/RGC Joint Research Scheme 2009/10 for the project "Atmospheric halogenated hydrocarbons in the Pearl River Delta region" with a grant of HK\$780,735 for Hong Kong side plus Y350,000 for the Chinese mainland side. This project, by grid-sampling simultaneously at 45 sites over the whole PRD and long-term monitoring at 3 representative sites in the region, studies spatiotemporal patterns of atmospheric halocarbons and explores their variation trends in comparison with historical data obtained in the past. Based on the field measurement results, the project also aims to highlight hot spots of halocarbon emissions in the region with extensive meteorological analysis, to make source apportionment of major halocarbons using receptor models, and to estimate the emission amounts of halocarbons through their correlations with carbon monoxide or by inversion models.

Another project led by Dr Guo is entitled "Quantitative measurement of acidic ultrafine particles in the atmosphere", which has been funded

HK\$1,279,360 by the Environment and Conservation Fund in 2009. The research originated because atmospheric particulate pollution is a major public concern in Hong Kong. Particulate matters are closely related to human respiratory health, visibility reduction, eco-environmental damage and global climate change. Accumulated evidence suggests that the number of acid-containing ultrafine particles is closely related to mortality, morbidity and hospital admissions on account of respiratory diseases. However, to date, reliable measurement techniques for obtaining the number concentrations of acidic ultrafine particles are still lacking. Dr Guo's project will address this lack by developing new technologies to obtain highly efficient collectors of particles with lower count-associated uncertainties, with the longer term aim of developing an efficient approach for the measurement of acidic ultrafine particles in the atmosphere.

郭海博士

在2009/10年度，土木及結構工程學系郭海博士獲研資局的「優配研究金」計劃撥款一百四十五萬九千二百三十八元，開展名為「中尺度環流影響下生物源揮發性有機化合物如何有利於在亞熱帶香港形成光化學氧化物及二次有機氣溶膠：實地觀察及模型仿真」的研究。郭博士選擇這項專題，是因為光化學臭氧和二次有機氣溶膠已嚴重影響香港和珠三角地區，對區內居民的健康、農業和旅遊業造成打擊。揮發性有機化合物(VOCs)可分為天然和人造兩類。由於生物源揮發性有機化合物(BVOCs)的活性極高，即使其濃度遠遠低於人為的揮發性有機化合物(AVOCs)，也能形成大量的光化學氧化物。郭博士及其研究團隊會進行全面的實地測量，對透過實地觀察、中尺度氣象模擬模型、診斷及預報箱式模型，以及化學輸送模型所取得的化學數據，進行深入的統計分析。這項研究相信大大有助我們了解光化學氧化物是如何在氣象和化學狀態複雜的亞熱帶沿海地區形成和輸送，並加深對臭氧的認識；對其他亞熱帶沿海城市和地區來說，也是意義重大。另外，研究結果可提供基準，以評估BVOCs排放對市區以至整個區域環境的影響，對制訂政策，減少華南地區的臭氧污染和提高能見度，也有直接關係。

郭博士在2009/10年度獲得的第二筆資助，源自國家自然科學基金(NSFC)及香港研究資助局的聯合資助計劃。該計劃的審批過程極為嚴謹，郭博士獲得資助的項目名為「珠三角地區的大氣鹵代烴研究」，港方及內地的撥款額分別為港幣七十八萬七百三十五元及人民幣三十五萬元。工作人員透過在珠江三角洲四十五個站點同步採樣，以及在三個代表性站點進行長期監測，研究大氣鹵代烴的時空分佈特徵，又比照以往採集的數據，探討其演化趨勢。計劃的其他目標還包括根據實地量度結果確定鹵代烴的熱門排放地點，通過全面的氣象分析，借助受體模型找出不同排放源的排放比例，以及通過鹵代烴與一氧化碳的相互關係或反演模型，估算鹵代烴的排放量。

另一個由郭博士牽頭的項目，也在2009年獲環境及保育基金撥款港幣一百二十七萬九千三百六十元。該研究名為「大氣中酸性超細顆粒的定量測定」。在香港，公眾越來越關注大氣顆粒物所造成的污染，因為這些顆粒不但影響人體呼吸道的健康，還會降低能見度，損害環境生態，令全球氣候轉變。很多證據顯示酸性超細顆粒的數目，與呼吸系統疾病的死亡率、發病率和入院率關係密切；然而，現時卻欠缺可以測量酸性超細顆粒濃度數值的可靠技術。有鑑於此，郭博士希望研發製造高效顆粒採集器的新技術，減少與計數法有關的不確定性，並在這個基礎上制訂測量大氣酸性超細顆粒的有效策略。

Prof. Janet Nichol

The success of Prof. Janet Nichol of the Department of Land Surveying and Geo-Informatics (LSGI) in securing numerous research grants in the past three years has been on account of the support she has received from the Remote Sensing Research Group in LSGI. The Group is active in research and publication on urban and rural environmental monitoring in Hong Kong. Over the last 5 years it has established two Aerosol RObotic NETwork (AERONET) stations as part of a 10-year collaboration with The National Aeronautics and Space Administration (NASA), and is currently establishing an (Micropulse Lidar Network) MPLNET Lidar, which will place FCLU among only 11 co-located AERONETS and MPLNETs worldwide. All this work would establish FCLU as a leading centre for research on remote sensing of air quality both within Asia and globally. Prof. Nichol has been awarded the following grants from 2007 to 2009:



- RGC General Research Fund, 2007/08 Validation of Aerosol Optical Depth Retrieval Using CHRIS/PROBA Multiple Look Satellite Images
- RGC General Research Fund, 2008/09 A Remote Sensing Study of the Causative Factors of Hong Kong's Urban Heat Island
- RGC General Research Fund, 2009/10 Multi-sensor Estimation of Biomass Carbon in Regenerating Sub-tropical Forest
- RGC Public Policy Research Grant (PPRG) Scheme, 2009/10 Impacts of Climatic Warming on High Density Living in Hong Kong Using Remote Sensing and GIS Modelling

All of the above funded projects have significance to environmental monitoring in Hong Kong, specifically in the areas of air quality and climate change. In fact, the issues have received extensive coverage in the local media. Poor air quality and hot summers have given rise to complaints about high density buildings which restrict ventilation in inner districts, such as Mongkok and Shamshuipo in Kowloon. One of Prof. Nichol's funded project uses thermal satellite images mainly from NASA's Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) sensor, to examine the causes of Hong Kong's urban heat island in terms of those aspects of the built environment which can be controlled by enlightened planning policies. Another project uses archived images to model changes in urban air temperatures in relation to past urbanization. The trends are then projected into the future to predict air temperatures in Hong Kong over the next two decades under a climate change scenario. Yet another project studies the mitigation of climate change by the use of forests as carbon sinks. This uses radar and visible wavelength images from Japan's recently launched Advanced Land Observing Satellite (ALOS) to estimate the carbon

amount in Hong Kong's vegetation. This work is currently on-going with the generous help of the Agriculture, Fisheries and Conservation Department (AFCD), which has helped to harvest 75 trees as part of their on-going tree-thinning program. After drying and weighing the trees to obtain biomass, models are built to represent the relationship between forest biomass and satellite observations. The results will enable accurate reporting of carbon amounts and sequestration rates, which are mandatory for countries which have ratified the Kyoto Protocol on climate change.

The Faculty would like to extend the warmest of congratulations to all the awardees and their teams for their research excellence.

Prof. Janet Nichol

土地測量及地理資訊學系的Prof. Janet Nichol三年來屢次取得校外的研究資助，這與她得到學系內「遙感研究小組」的全力支援實有莫大關連。該小組有不少針對香港市區及郊野環境的研究，並曾多次發表報告。過去五年，小組根據與美國太空總署(NASA)的十年合作計劃，在港設置了兩個「氣溶膠自動觀測網」(AERONET)站點，現時則在籌備安裝一個隸屬「全球微脈衝激光雷達觀測網」(MPLNET)的激光雷達。建設及地政學院將成為全球十一個同時設有AERONET及MPLNET站點的處所之一，並晉身亞洲以至全球以遙感技術研究空氣質素的中心。在2007至2009年，Prof. Nichol獲得的研究資助如下：

- 2007/08年度研資局「優配研究金」：應用CHRIS/PROBA多角度衛星圖像進行氣溶膠光學厚度檢索驗證
- 2008/09年度研資局「優配研究金」：香港市區熱島效應成因遙感研究
- 2009/10年度研資局「優配研究金」：以多重傳感器估量更新亞熱帶森林的生物量碳
- 2009/10年度研資局「公共政策研究資助計劃」：使用遙感及地理信息系統模型研究氣候暖化對香港高密度住宅區的影響

以上各項研究對監測香港的環境非常重要，與空氣質素和氣候變化的關係尤其密切。事實上，有關情況已為本地傳媒廣泛報道。空氣質素欠佳，加上夏季天氣炎熱，令市民越來越關注「屏風樓」嚴重阻礙旺角、深水埗等內區通風的問題。Prof. Nichol的其中一項研究，就是利用美國太空總署的「先進星載熱排放及反射輻射計」(ASTER)傳感器所提供的熱衛星圖像，從建築環境分析香港市區出現熱島效應的原因(這些因素可透過較佳的規劃政策控制)。她另一項研究則應用檔案圖像來模擬市區氣溫因應都市發展所出現的變化，再根據這些趨勢預測香港未來二十年的氣溫。Prof. Nichol還有一項關於借助森林吸碳來延緩氣候變化的研究。團隊根據由日本最新研發的「先進陸地觀測衛星」(ALOS)所提供的雷達及可見光圖像，估計香港植被中吸存的碳含量。這項工作得到漁農自然護理署鼎力協助，現時仍在進行中。漁護署已利用該署「長期疏減樹木計劃」為此種植了七十五棵樹木，待烘乾和稱量樹木，以及取得其生物質的數據後，研究人員便會建立模型，顯示森林生物質與衛星觀測結果之間的關係。有關結果有助準確匯報碳的含量和吸存率，而這正是所有《京都議定書》確認有關國家必須履行的承諾。

本院謹此恭賀所有得獎者及其研究團隊，並對他們的卓越成就致敬。

Events 活動剪影

Generous Donation from Euro-Asia to LSGI

The Department of Land Surveying and Geo-Informatics (LSGI) of The Hong Kong Polytechnic University is thankful for the generous donation of a set of Trimble Surveying Equipment from Euro-Asia, a surveying equipment and systems company specialising in information mapping and digital China. With a strong corporate sense of social responsibility, Euro-Asia has established close relationships with surveying education communities, pioneered educational funds and established equipment donation campaigns.

The donated equipment will greatly enhance teaching and learning, research activities and the Community Service Learning Programme (CSLP) in LSGI. The equipment can also be used in applied research in respect of the needs of the local surveying and mapping related professions. In fact this equipment has been used for research and supporting activities related to the Sichuan Earthquake relief and re-construction of earthquake stricken areas. One such activity is the CSLP "Wu Zhi Qiao" bridge building project where LSGI students worked with students from other disciplines to construct a bridge for residents of a remote village in south-western China.

The entire department of LSGI - staff, students, and everybody involved in land and engineering surveying topics, will certainly greatly benefit from Euro-Asia's generous donation.



土地測量及地理資訊學系獲歐亞集團捐贈儀器

土地測量及地理資訊學系非常感謝歐亞環球企業有限公司早前慷慨捐出一套「天寶測量系統儀器」。歐亞集團是信息映射技術測量器材及系統的專家，多年來致力回饋社會，履行企業的社會責任，與測繪專業教育機構有極密切的合作關係，不但率先成立教育基金，也熱心推動儀器捐贈的活動。

上述儀器不但對學系的教學、科研和「社區服務實踐計劃」裨益甚大，亦可配合本地測量和繪圖等相關專業的應用研究。事實上，學系早已把儀器用於科研，支援與四川大地震有關的救援及災後重建工作，當中包括「無止橋」建橋項目。在「無止橋」項目中，土地測量及地理資訊學系同學，需要與其他學科的學生合作，為中國西南部一條偏遠鄉村的居民修築橋樑，以利出入。

學系上下，無論是教員、學生，以至所有參與土地及工程測量的研究人員，都會因歐亞集團這次慷慨捐助而獲益良多。



Naming Ceremony of the Joint Laboratory of Urban Environment and Health

In order to strengthen the collaborative research and technology transfer on sustainable urbanisation in Hong Kong and the Chinese mainland, The Hong Kong Polytechnic University (PolyU) and the Institute of Urban Environment, Chinese Academy of Sciences (IUE-CAS) signed a memorandum of understanding on research collaborations between the two organizations in January 2009. Since then, two Joint Laboratories on Urban Environment and Health have been set up, one in Hong Kong and the other one in Xiamen. On 27th January 2010, the naming ceremony for the Joint Laboratory of Urban Environment and Health in Hong Kong took place at the Research Centre for Environmental Technology and Management of the Department of Civil and Structural Engineering, PolyU.

The collaborative researches come in the wake of the last three decades of rapid industrial development and urbanisation in the Chinese mainland. Such an unprecedented pace in urban development in the region has entailed significant environmental problems. However, looking on the good side, these present us with great opportunities to conduct researches on the rapid processes of urban development. These studies will not only help us understand the current urban development and the associated environmental issues, but also provide policy makers with vital information to deal with the problems at various stages of development, and to clarify the long-term goals for sustainable development in the region.

On the strength of our research experience in the last few decades in Hong Kong and the southern region of the Chinese mainland, the joint facilities are expected to become a world-class establishment on urban environmental research and technology development in the coming years. To mark the special occasion of the naming ceremony of the Joint Laboratory in Hong Kong, the Faculty of Construction and Land Use of PolyU hosted a public seminar "Towards Sustainable Urbanization" delivered by Prof. Y.G. Zhu, the Director General of IUE-CAS. The seminar focused on the general aspects of urbanization and environmental change on a global scale, as well as the important issues related to urbanisation in China.

Conference on "Spatial Data Infrastructure (SDI) Hong Kong"

The Conference entitled "Spatial Data Infrastructure (SDI) Hong Kong", co-organised by the Department of Land Surveying and Geo-Informatics of The Hong Kong Polytechnic University (LSGI, PolyU), Chartered Institution of Civil Engineering Surveyors (ICES), Hong Kong Institute of Surveyors (HKIS) and Hong Kong Institution of Engineers (HKIE) was held on 18 March 2010.

The objectives of the conference have been to embrace a sustainable development of SDI in HK, as there is a need to facilitate better interactions between framework of technologies, data, policies and institutional arrangements. There were thus sharings from the perspectives of policies, institutional & management issues, data capturing, visualization and interoperability, access and discovery. The enhancement of a sustainable development of SDI also calls for the working hand in hand of all levels of government, commercial sectors, academia & professions.

Dr Lilian Pun, Associate Professor and Associate Head of LSGI, PolyU gave a presentation on the 4 'W's of SDI – what is SDI, why it is necessary, who is responsible and the way forward.

城市環境與健康聯合實驗室開幕儀式

為促進香港與內地對「可持續城市化」的科研合作及技術轉移，香港理工大學與中國科學院城市環境研究所於2009年一月簽訂了合作備忘錄，議定在香港及廈門分別成立兩所「環境與健康聯合實驗室」。港方實驗室的開幕儀式，已於本年一月二十七日在土木及結構工程學系的「環境科技及管理研究中心」舉行。

過去三十年，內地的工業發展一日千里，城市以前所未見的高速崛起。這雖衍生不少環境問題，但也是研究急速城市化的良機。相關研究不但有助我們瞭解現時因都市發展而引起的環境問題，還可為決策者提供重要資訊，以處理在不同發展階段出現的各種難題，釐清可持續發展的長遠目標。

無論在香港或華南地區，理大都已累積數十年的研究經驗。憑著這優勢，假以時日，上述聯合實驗室相信可達至世界一流水平。為記念這次開幕儀式，建設及地政學院特別舉辦了一個題為「朝可持續城市化邁進」的公眾研討會，邀請中科院城市環境研究所所長朱永官教授致辭。研討會的焦點包括城市化的概況、全球環境變化，以及與中國內地城市化有關的重要議題。



(from left) Prof. Jin-Guang Teng, Prof. Yongguan Zhu, Prof. Jan-Ming Ko, Prof. Youlin Xu (左起) 滕錦光教授，朱永官教授，高贊明教授，徐幼麟教授

「香港的空間數據基礎設施」研討會

土地測量及地理資訊學系連同土木工程測量師學會、香港測量師學會及香港工程師學會在本年三月十八日舉辦了一個以「香港的空間數據基礎設施」為題的研討會。

會議旨在探討空間數據基礎設施在香港的可持續發展。與會者認為有需要促進技術框架、數據、政策及制度安排之間的互動。他們從政策、制度管理，以及數據的採集、可視化、互通性和存取等角度各抒己見。香港若要持續發展空間數據基礎設施，實有賴政府上下、商界、學術界和相關專業人士通力合作。

土地測量及地理資訊學系副教授兼副系主任潘淑貞博士亦有在會上發言。她談到空間數據基礎設施的四個「何」－即「何」為空間數據基礎設施？為「何」有此需要？「何」人需要負責？這方面的發展應「何」去何從？



The Joint International Conference on Theory, Data Handling and Modelling in GeoSpatial Information Science

The Joint International Conference on Theory, Data Handling and Modelling in GeoSpatial Information Science, organized by the International Society for Photogrammetry and Remote Sensing (ISPRS) and International Geographical Union (IGU) was successfully held at The Hong Kong Polytechnic University (PolyU) from 26 to 28 May 2010. It was co-hosted by PolyU, Hong Kong Baptist University, The Chinese University of Hong Kong, The University of Hong Kong, and Chinese Academy of Sciences. The aim of the conference was to bring together scholars and professionals from the international community of GeoSpatial Information Science (GISc) to present the latest achievements and to share experience in GISc research. The conference featured keynote speeches delivered by leading GISc scholars, technical sessions with reports of the latest research outcomes, a student forum which facilitated the students to meet with icon figures in GISc, and a commercial exhibition on the latest development in GISc technology.

The conference was marked by a good start. In the morning of 26 May, more than 300 researchers and over 150 local government officers congregated at the Jockey Club Auditorium to hear a few wonderful welcoming addresses, which included amongst them one by Prof. Timothy Tong, PolyU President, and another one by Mr Cheuk Fai Leung, Deputy Director of Planning Department of the HKSAR. Five top scientists also gave keynote speeches on the opening day.

The Joint International Conference on Theory, Data Handling and Modelling in GeoSpatial Information Science was a landmark event in the field of GISc, in 2010. This was so as it had joined together the ISPRS Technical Commission II Symposium, the 14th International Symposium on Spatial Data Handling, and the conference on Modelling Geographical Systems from IGU, all of which were major events in the discipline. The present conference gathered international experts in the GISc community to present the latest advances in the field. Paper selection was based on a vigorous process of both abstract and full paper peer review.

A 3-day commercial exhibition concurrent with the conference attracted many top companies in GISc, these included Environmental Systems Research Institute (ESRI), Leica Geosystems Ltd., Pitney Bowes Business Insight (MapInfo) and Navia Info Corporation Ltd., South Survey and Mapping Instrument, and Taylor & Francis Group. It also attracted the attention of renowned research institutes, including the Institute of Space and Earth Information Science of The Chinese University of Hong Kong, other than the Department of Land Surveying Geo-Informatics at PolyU.

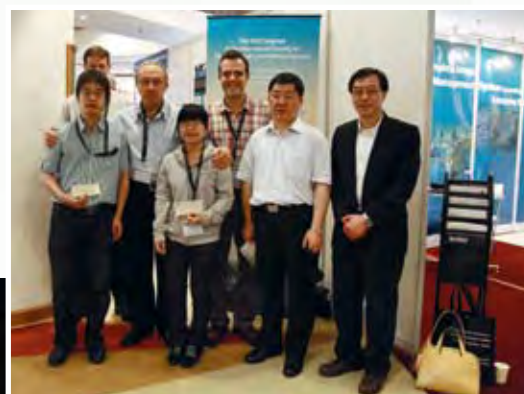
地理資訊科學理論、數據處理及模擬國際會議

由國際攝影測量與遙感學會 (ISPRS) 及國際地理聯合會 (IGU) 合辦的「地理資訊科學理論、數據處理及模擬國際會議」，已於本年五月二十六至二十八日在香港理工大學隆重舉行。這國際會議是由理大、香港浸會大學、香港中文大學、香港大學及中國科學院共同籌劃，旨在為各國的地理資訊學專家和學者提供一個平台，讓他們討論最新研究成果和分享經驗。活動內容非常豐富，包括有著名地理資訊學家發表專題演講，報道最新科研成果的小組討論環節，讓學生與業內巨匠見面的學生論壇，以及展示最新地理資訊科技的商業展覽。

好的開始是成功的一半，此五月二十六日早上，理大賽馬會綜藝館內雲集了逾三百位研究人員和一百五十位特區政府官員出席會議的揭幕儀式。理大校長唐偉章教授及規劃署副署長梁焯輝先生致歡迎辭後，五位傑出的科學家先後發表了專題演講。

這次國際會議是地理資訊科學界 2010 年的盛事，會議集結了 ISPRS 的第二技術委員會研討會、第十四屆國際空間數據處理研討會，以及 IGU 的地理系統建模會議，全屬業內的大型項目。各國專家在會上報告他們的最新研究成果。值得一提的是，會議上發表的論文都經過嚴格篩選，論文均經同儕審閱。

與會議同步進行的商業展覽為期三天，參與的業內巨擘包括 Environmental Systems Research Institute (ESRI)、徠卡測量系統、Pitney Bowes Business Insight (MapInfo)、Navia Info Corporation Ltd.、中國南方測繪及 Taylor & Francis Group。此外，是次活動亦吸引了其他著名研究所參與，當中包括香港中文大學太空與地球信息科學研究所。



PolyU Successfully Hosted the Second International Postgraduate Conference on Infrastructure and Environment (IPCIE 2010)

The conference organized by a group of 13 postgraduate students from the Faculty of Construction and Land Use (FCLU) of The Hong Kong Polytechnic University (PolyU) was held from 1 to 2 June on PolyU Campus. With support from an Advisory Committee formed by academic staff, and assistance from the faculty office, the conference was to provide a forum for postgraduate students working in the areas of infrastructure and environment to exchange their findings, and to develop friendship and to form potential collaboration.

Since 2006, the FCLU had been organizing a local version of this conference in Hong Kong. Last year, however, it was decided that the boundaries be extended so that the conference could become international. This year, the Second International Postgraduate Conference on Infrastructure and Environment attracted some 180 participants from 40 universities in 15 countries around the world. These figures are significant increases as compared with those of last year when the international conference was first launched, and are encouraging indicators that the conference could in time become a leader of its type in the years to come.

This year, the conference's opening ceremony was graced by the presence of the President of PolyU, Prof. Timothy Tong, who kindly welcomed all participants and highlighted PolyU's commitments through its research activities to protect the environment. Dr. Kitty Poon, the Under Secretary for Environment of Hong Kong was invited to deliver the opening speech in which she introduced the various measures taken by the Hong Kong Government to achieve environmental protection targets emerging on both the local and the global levels.

Prominent keynote speakers addressed the audience with state of the art, motivational and role model lectures. They were, Prof. Nigel J.D. Graham of Imperial College of London, UK,; Prof. Shuoxian Wu of South China University of Technology, China,; and Prof. Yeong-Bin Yang, President of National Yunlin University of Science and Technology, Taiwan, China.

The conference was also characterized by thought-provoking debates, which had been inspired by high quality oral and poster presentations. Thanks to the sponsorship by Atkins China Limited, three Best Presenter Awards were delivered in recognition of the winners' excellent performance. The Faculty also recognized the first three runner-ups with Merit Awards for Presentation.

At the conference's closing ceremony, Prof. J.G. Teng, Dean of FCLU announced that the Third International Postgraduate Conference would be held in 2011 and encouraged the return of all the participants for the event.

Interested parties in the conference can visit the website below for more detailed information: <http://www.polyu.edu.hk/fclu/ipc2010/Site/Home.html>

理大成功主辦第二屆「基建與環境國際研究生會議」

由香港理工大學建設及地政學院十三名研究生籌辦的第二屆「基建與環境國際研究生會議」，已在六月一至二日於理大校園圓滿舉行，期間蒙本院教員組成的諮詢委員會及學院職員協助。研讀基建及環境相關學科的研究生藉著這次難得的機會聚首一堂，交流心得，建立友誼，為日後合作打下了基礎。

這項學術活動其實源於2006年，最初只有本地研究生參與；到了去年，會議擴大規模，並走向「國際化」的大道。今年，有接近一百八十位來自十五個國家、四十所大學的人士參與會議，遠較去年為多，情況令人鼓舞，假以時日，相信不難成為同類型會議中的翹楚。

理大校長唐偉章教授在百忙中抽空出席會議的開幕儀式。致歡迎辭後，他特別提到理大透過科研活動保護環境的決心。至於應邀致開幕辭的環境局副局長潘潔博士，則介紹了香港特區政府為了達致本地及國際環保標準而推行的各項環保措施。



今年的主題演講嘉賓包括英國倫敦帝國學院Prof. Nigel J.D. Graham、華南理工大學吳碩賢教授，以及台灣國立雲林科技大學校長楊永斌教授，陣容鼎盛，講題全都圍繞尖端科技，極具啟發性。

由於今年的口頭報告及海報發表水平甚高，會議上的辯論十分精采，引人深思。蒙安建顧問公司慷慨贊助，大會頒發了三個「最佳講者」獎項，以表揚得主的卓越表現。另外，三位奪得亞軍的講者亦獲建設及地政學院頒發優異獎。

在閉幕儀式上，建設及地政學院院長滕錦光教授宣佈將於2011年續辦第三屆會議，並希望所有參加者繼續支持。

查閱會議詳情，可登入<http://www.polyu.edu.hk/fclu/ipc2010/Site/Home.html>。



LSGI Welcomes One-day Visit by Students across Hong Kong High Schools

Geomatics plays an increasingly important role in modern life and our society's development. All the key technologies behind vehicle GPS navigation to Google maps, with which many of us are familiar, have been developed by geomatics engineers and scientists. As the only university department in Hong Kong that offers geomatics programmes at Higher Diploma, Undergraduate degree and Master's levels, the Department of Land Surveying & Geo-Informatics (LSGI) at The Hong Kong Polytechnic University has deemed it necessary to increase the awareness of the Modern Geomatics Technologies among the younger generation and the public in general. Hence, LSGI hosted on 2 July 2010, a fully scheduled one-day event entitled 'Modern Geomatics Technologies in Our Daily Life'.

The programme attracted 23 Form 5 to Form 7 students from 10 different secondary schools across Hong Kong. In this full-day event, the students had the opportunity to be exposed to modern geomatics technologies through laboratory visits, seminars, instructor demonstrations, hands-on participation, and visiting geomatics-related government departments. The students were delighted by the exposure to the various activities, and especially by the hands-on learning opportunities. They were impressed by the wide range of applications geomatics engineering technologies have played in Hong Kong and beyond.

We were also delighted to have two presenters from the geomatics-related government sectors to give talks to the students. They were Mr So Wing Yeung, Senior Land Surveyor, from the Lands Department and Mr Ng Tak Wah, Senior Town Planner, from the Planning Department.

The day's events concluded with a visit to the Hong Kong Planning and Infrastructure Exhibition Gallery of the Planning Department. There the students were informed of the extensive uses of geomatics technologies in urban planning, and the latest update on planning and infrastructure developments in Hong Kong.

This full-day event also allowed the high school students to sample their future university life, since they were given the chance to listen to instructors, to do field geomatics experiments on PolyU campus, to have lunch and chat

with our teaching staff in the student cafeteria, and to visit geomatics-related government departments. All of us at PolyU were very pleased to hear that some students indicated PolyU as their first choice of university.

土地測量及地理資訊學系為本地中學生舉辦參觀日

測量及空間資訊學與現代生活息息相關，它對社會發展的影響力更是與日俱增。以大家熟悉的全球衛星定位導航駕駛系統和「谷歌」地圖為例，其背後的重要技術都是由這個領域的工程師和科學家研發。本院的土地測量及地理資訊學系，是全港唯一同時開辦測量及空間資訊學高級文憑、學士及碩士課程的大學學系；而為了加深年輕人和公眾對這些現代科技的認識，該系於七月二日舉辦了「現代測量及空間資訊科技與日常生活」的活動。

這項一整天的活動吸引了二十三位來自十家中學的中五至中七學生參加。同學不但可以參觀實驗室和相關政府部門，還有機會出席研討會、觀看導師示範和親身進行各種實驗。期間的所見所聞及實際的學習機會，都使他們非常雀躍；而測量及空間資訊科技應用於日常生活的普及程度，更叫他們感到驚嘆。地政總署和規劃署是廣泛應用測量及空間資訊技術的政府部門。兩部門亦分別派出高級土地測量師蘇永揚先生和高級城市規劃師伍德華先生為同學講解。當日的最後一項活動是參觀由規劃署管理的香港規劃及基建展覽館。同學不但明白到測量及空間資訊技術對都市規劃的重要性，也對香港的最新規劃和基建狀況加深了認識。同學的另一得著，就是可以一嘗大學生活的滋味。他們參加講課，在校園進行實地測量實驗，在學生餐廳與老師午膳聊天，又一起參觀有關政府部門。部分同學更表示會以理大為他們的首選大學。



UTM Global Outreach Visits LSGI

The Department of Land Surveying & Geo-Informatics (LSGI) at The Hong Kong Polytechnic University was pleased to have students from the Department of Geoinformatics, Universiti Teknologi Malaysia (UTM) to visit the department as their Global Outreach Event. The visitors arrived on 13th July 2010 (Tuesday), and included 30 students and 2 lecturers.

There were presentations from both departments, cultural exchange activities, as well as laboratory and campus tours. Dr Lilian Pun and Prof. John Shi gave opening speeches and introduced to our visitors our current research projects. Prof. Mohamad Nor Said, Head of the Department of Geoinformatics at UTM, presented some current GIS and remotes sensing research projects in Malaysia. The presentations facilitated the students' better understanding of current GIS applications all over the world.

On the second day of the visit, some cultural exchange activities took place: UTM students taught our students Malaysian dancing and treated LSGI students to some of their traditional food. It goes without saying that our students responded with enthusiasm to the dancing lesson, and also introduced their Malaysian counterparts to quite a few of the snacks indigenous to Hong Kong.

The visit concluded happily with Prof. Mohamad Nor Said presenting gifts to our Department and students, in appreciation of the warm reception and of our having organized the event.

馬來西亞工藝大學師生到訪 土地測量及地理資訊學系

馬來西亞工藝大學地球信息科學系的師生，於本年七月十三日到訪香港理工大學土地測量及地理資訊學系。這次旅程是該學系「環球外展計劃」的其中一站。到訪的共有三十二人，包括兩位講師和三十位同學。

在短短的一天半裡，土地測量及地理資訊學系為他們安排了豐富的節目，包括學系介紹、文化交流活動，以及實驗室和校園參觀。潘鄒淑貞博士和史文中教授首先致辭，介紹學系正在進行的研究項目；馬來西亞工藝大學地球信息科學系主任Prof. Mohamad Nor Said接著亦簡介了該國一些有關地理資訊科學和遙感的研究。這些介紹有助同學了解地理資訊科技在全球的應用情況。

第二天的活動以文化交流為主。到訪的同學教導本系學生馬來西亞舞蹈，又與大家分享家鄉傳統美食。本系同學對這堂難得的舞蹈課自然深感興趣，並禮尚往來，以幾款地道的香港小食答謝對方。

到了訪問尾聲，Prof. Mohamad Nor Said向土地測量及地理資訊學系和同學致送禮物，以答謝他們的熱情招待。



Faculty of Construction and Land Use Distinguished Lectures and Public Seminars 建設及地政學院傑出講座及研討會

The Faculty of Construction and Land Use was honoured to have the following speakers giving distinguished lectures and seminars at PolyU:
下列講者應建設及地政學院之邀請於理大舉辦研討會：

Dr Rudi Seracino, Associate Professor, North Carolina State University; gave a seminar on "Applications of Fiber-Reinforced Polymer Materials in the Prestressed/Precast Concrete Industry". (7 Dec 2009)



Professor Bin Zhu, Professor Candidate, Department of Energy Technology, Royal Institute of Technology (KTH); gave a seminar entitled "NANOCOFC Advanced Low Temperature Solid Oxide Fuel Cells and Polygenerations". (9 Feb 2010)



Professor B.F. Spencer, Jr., Nathan M. and Anne M. Newmark Endowed Chair of Civil Engineering, University of Illinois at Urbana-Champaign; was speaker at a seminar on "Smart Sensing Technology: A New Paradigm for Structural Health Monitoring". (11 Dec 2009)



Professor Peter Lund, Professor of Engineering Physics and Advanced Energy Systems, Aalto University; gave a seminar on "Modelling and Effective Use of Low-temperature SOFC Fuel Cells for Polygeneration Applications". (10 Feb 2010)

Professor Zhao Xiao-Ling, Head of Department, Department of Civil Engineering, Monash University; gave a seminar entitled "Concrete-Filled Tubular Members and Connections". (15 Jan 2010)



Professor Sun Wei, Professor of Materials Science and Engineering, Southeast University, Nanjing; was speaker at a seminar on "Development and Application of High Performance Concrete in China". (5 March 2010)



Dr Richard Sandor, Father of Carbon Trading; gave a Distinguished Lecture on "The Evolution and Convergence of Environmental and Financial Markets: The Chicago Climate Exchange Global Experience". (20 Jan 2010)



Professor Nuno Gil, Associate Professor, The University of Manchester; was speaker at a seminar on "Using Relational Contracts to Support Large-scale Engineering Projects: A 4-Force Analysis of the Terminal 5 (T5) Project, Heathrow Airport". (1 April 2010)

Professor Yongguan Zhu, Director General, Institute of Urban Environment, Chinese Academy of Sciences; gave a seminar entitled "Towards Sustainable Urbanization". (27 Jan 2010)



Professor Kent A. Harries, Associate Professor, Department of Civil and Environmental Engineering, University of Pittsburgh; gave a seminar entitled "FRP Materials in Civil Infrastructure and Replacing a Composite RC Bridge Deck with an FRP Deck – The Effect on Superstructure Stresses". (12 April 2010)



Professor Ahsan Kareem, Robert M. Moran Professor of Engineering, University of Notre Dame; was speaker at a Distinguished Lecture on "The Audacity of Change: A Transition to Nonstationary and Nonlinear Era". (27 Jan 2010)



Dr Chuck Yu, President, International Society of the Built Environment; gave a seminar on "Building Pathology - Environmental Monitoring and Investigation of Sick Buildings". (27 April 2010)

Professor Tamon Ueda, Professor at Division of Built Environment, Hokkaido University; was speaker at a seminar on "New JSCE Standard Specifications for Hybrid Structures and New Type of Connections". (6 Feb 2010)



Professor S. C. Yao, Department of Mechanical Engineering, Carnegie Mellon University, was speaker at a seminar entitled "Sprays for Cooling". (10 May 2010)



Dr Lidia Morawska, Professor, School of Physical and Chemical Sciences, Queensland University of Technology, was speaker at a seminar entitled "The fascinating world of indoor small and large airborne particles". (7 September 2010)



Professor Su-Seng Pang, Associate Vice Chancellor for Strategic Initiatives and Jack Holmes Distinguished Professor of Mechanical Engineering, Louisiana State University; and **Professor Guoqiang Li**, Associate Professor of Mechanical Engineering, Louisiana State University; gave a seminar on "Overall review of education evaluation by the US Accreditation Board for Engineering and Technology (ABET) and US Accreditation Evaluation for Southern Association of Colleges and Schools". The seminar is co-hosted by FCLU and FENG. (24 May 2010)

Professor Deric John Oehlers, Professor of Structural Engineering at the School of Civil, Environmental and Mining Engineering at The University of Adelaide; was speaker at a seminar on "Our obsession with curvature in reinforced concrete". (11 June 2010)



Professor Steve C. S. Cai, Professor, Department of Civil and Environmental Engineering, Louisiana State University, gave a seminar on "Analysis Framework of Vehicle-Bridge Interaction and Its Applications". (5 October 2010)

Prof. Julio F. Davalos, Benedum Distinguished Teaching Professor, Department of Civil and Environmental Engineering, West Virginia University, gave a seminar entitled "Advanced Materials for Civil Infrastructure Rehabilitation and Protection". (6 October 2010)



Professor Gangbing Song, Director of the Smart Materials and Structures Laboratory, and Professor of both Mechanical Engineering, and Electrical & Computer Engineering at the University of Houston; gave a seminar entitled "Piezoceramic Based Smart Aggregates: a Distributed Intelligent Multi-purpose Sensor Network (DIMSN) for Civil Structures". (25 June 2010)

Professor Joost Walraven, Department of Design and Construction, Structural and Building Engineering, Concrete Structures, Delft University of Technology; gave a seminar on "The 2010 fib Model Code for Concrete Structures: a New Approach to Structural Engineering". (9 July 2010)



Prof. Wu Shuoxian, Member of Chinese Academy of Sciences, and Professor of School of Architecture, South China University of Technology, was speaker at a seminar on "Sustainable Urban Sound Environment". (26 October 2010)

Prof. Lin Gao, Member of the Chinese Academy of Sciences, and Leading Professor of Hydraulic Structure Engineering, School of Civil and Hydraulic Engineering, Dalian University of Technology, gave a seminar on "A Scaled Boundary Finite Element Approach for Fluid-Structure Interaction and Electromagnetic Field Problems". (29 October 2010)



Professor Steven D Glaser, Professor, Department of Civil and Environmental Engineering, University of California, Berkeley; was speaker of a seminar on "Intelligent Infrastructure for Improving the Public Well-Being". (20 August 2010)

First International Conference on Sustainable Urbanization

The Faculty of Construction and Land Use of The Hong Kong Polytechnic University is organizing the First International Conference on Sustainable Urbanization (ICSU 2010). The Conference will be held in Hong Kong on 15–17 December 2010 in Harbour Grand Kowloon Hotel.

The Conference aims to provide a forum for the international scientific/engineering community to examine challenges posed by the massive urbanization programmes under way in many parts of the world and to find effective solutions to achieve sustainable development and management of urbanized areas. The three sub-themes of the Conference are Infrastructure, Energy and Environment. Please visit the conference website <http://www.polyu.edu.hk/fclu/ICSU2010/> for further details.

We have received excellent responses to our calls for papers. In addition to the 9 Mini-Symposia which will comprise around 100 papers, we have received over 170 full papers for the parallel sessions. The following four distinguished speakers will deliver Plenary Keynote Lectures at the Conference:

- Prof. Martin A. GREEN, Scientia Professor of the University of New South Wales, Australia
- Mrs. LAM CHENG Yuet Ngor, Carrie, JP, Secretary for Development, Government of the HKSAR, China
- Dr Baoxing QIU, Vice Minister of Ministry of Housing and Urban-Rural Development, China
- Dr Samuel Yen-liang YIN, Chief Executive Officer of Ruentex Group, Taiwan, China

Hong Kong is a very successful example of high-density urbanization. Indeed, given its unique urbanization experience and geographical location,

Hong Kong is well-positioned to become a world leader in technologies and processes for sustainable urbanization. We hope that this Conference will contribute to making Hong Kong a knowledge/technology centre in this important area and a greener city.

You are invited to register at the Conference website <http://www.polyu.edu.hk/fclu/ICSU2010/>. We look forward to meeting you at the Conference.

第一屆可持續都市發展國際會議

建設及地政學院將於本年十二月十五至十七日，假九龍海逸君綽酒店舉辦第一屆「可持續都市發展」國際會議 (ICSU 2010)。

這次會議旨在匯聚各國的科學及工程專才，共同探討全球大規模都市化所帶來的挑戰，商議有助持續發展和管理都市的有效方案。大會已定出基建、能源及環境三個副題，查閱詳情，請登入 <http://www.polyu.edu.hk/fclu/ICSU2010/>。

各界對今次的論文徵集反應熱烈。除了將要在九個小型研討會上發表的約一百篇論文，大會已收到逾二百篇論文。下列四位傑出講者亦將在會上發表專題演講：

- 澳洲新南威爾斯大學科學教授 Prof. Martin A. GREEN
- 香港特區政府發展局局長林鄭月娥太平紳士
- 中國住房與城鄉建設部副部長仇保興博士
- 台灣潤泰集團總裁尹衍樑博士

香港是經歷高密度都市化的成功例子，以我們獨特的都市化經驗和地理位置，很有條件成為研究可持續都市化相關科技和過程的頂級專家。本院期望這次會議有助香港晉身為上述領域的知識與科技中心，並成為更環保、更綠化的城市。

歡迎透過大會網站報名 <http://www.polyu.edu.hk/fclu/ICSU2010/>，我們熱切期盼你的參與。

Forthcoming Events

| Event | Date/Venue | Organizer | Contact Information |
|--|--|---|--|
| The First Outstanding BRE Alumni Award 2010 – Award Presentation Ceremony & Dinner | Date: 22 November 2010 (Monday) Venue: Jockey Club Auditorium, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK Time: 4:30-5:00pm (Registration and Photo Taking) 5:00-6:30pm (Ceremony to be embedded in the 16th Congregation of FCLU) Award Dinner: Date: 22 November 2010 (Monday) Venue: Montparnasse Room, 2/F, Regal Kowloon Hotel, Tsim Sha Tsui, Kowloon, HK Time: 6:30-7:30pm (Tea Reception) 7:30pm (Chinese Dinner) | Department of Building and Real Estate, PolyU | The BRE Award Secretariat c/o Department of Building and Real Estate, PolyU Tel: (852) 3400 3867 Email: bspromo@inet.polyu.edu.hk |
| First International Conference on Sustainable Urbanization (ICSU 2010) | 15 – 17 December 2010 Harbour Grand Kowloon, Hunghom, Kowloon, Hong Kong | Faculty of Construction and Land Use, PolyU | ICSU Conference Secretariat c/o Faculty of Construction and Land Use, PolyU Tel: (852) 3400 3878/3895 Email: clicsu@inet.polyu.edu.hk |
| The 5th Cross-strait Conference on Structural and Geotechnical Engineering (SGE-5) | 13 – 15 July 2011 The Hong Kong Polytechnic University | Department of Civil and Structural Engineering, PolyU | SGE-5 Conference Secretariat c/o Department of Civil and Structural Engineering, PolyU Tel: (852) 2766 4473/4812 Email: xw.ye@polyu.edu.hk Website: http://www.polyu.edu.hk/fclu/SGE5/ |

Promotion to Professors 晉升為教授

Professor Kwok-tai Chan

陳國泰教授

BSc, MBA, PhD, CEng, RPE, FCIBSE, MASHRAE, MHKIE

Teaching areas

Air Conditioning, Ventilating and Refrigerating

Research interests

Chiller Operation Control, Building Energy Efficiency

Biography

Since graduation in 1978 from the University of Hong Kong with his first degree in mechanical engineering, Prof. Chan has been working in the building services engineering field covering contracting, consulting, teaching and research. He completed his MBA degree and PhD whilst at work. Apart from leading academic programmes and teaching on HVAC and Design Project courses, Prof. Chan has actively participated in professional activities, including serving the professional institutions on qualification and training requirements, undertaking industrial-linked consultancy works on chiller performance, and serving government bodies in their working committees on legislative controls of building envelope, ventilation requirement for buildings and building energy efficiency. He has undertaken research projects on chiller energy efficiency, building envelope thermal performance and O&M strategy funded by the Research Grants Council and several other external bodies as well as The Hong Kong Polytechnic University. Over 100 refereed articles have been



published from results of the research projects. He will continue to develop variable condensing temperature control and application of water-mist pre-cooling for improving heat rejection effectiveness in the operation air-cooled chillers.

任教範疇

空調、通風及製冷技術

研究興趣

冷水機組的運行控制、節能建築

簡歷

陳教授自1978年從香港大學取得首個機械工程學位後，便與屋宇設備工程行業結下不解之緣，無論是安裝、設計顧問、教學或研究，都有切身的經驗。他一邊工作，一邊考取工商管理碩士及哲學博士學位，除了統籌多項課程，還執教「暖通空調系統」及「設計專項」這些科目，並且積極服務業界，如為學會審訂資歷和培訓準則，承接有關冷水機組效能的顧問工作，以及參與政府相關組織就立法規管建築外殼、通風設備及建築物能源效益而成立的工作小組。他獲得香港研究資助局、其他機構和理大撥款，完成了好些有關冷水機組能源效益、建築外殼熱性能，以及運行與維修策略的研究，並就研究結果發表了過百份經審查的學術論文。展望未來，他會繼續致力研發「可變冷凝溫度控制方法」及「水霧預冷技術」的應用，藉此提升風冷機組運行時的排熱效能。

Professor Kwok-wing Chau

周國榮教授

BSc, MSc, MPhil, PhD, CEng, MHKIE, MICE, MIStructE

Teaching areas

Fluid Mechanics, Hydraulics & Hydrology, Coastal Hydraulics

Research interests

Hydrodynamic Modelling, Water Quality Modelling, Hydroinformatics, Hydrological prediction, Artificial Intelligence Applications in different civil engineering fields

Biography

Prof. Chau was awarded the Bachelor of Science in Civil Engineering degree with First Class Honours, the Master of Science in Civil Engineering degree with Distinction, and the Master of Philosophy by The University of Hong Kong, and the Doctor of Philosophy degree by the University of Queensland in Australia. He is currently a Professor in the Department of Civil and Structural Engineering of The Hong Kong Polytechnic University. He is very active in undertaking research works and the scope of his research interest is very broad, covering numerical flow modelling, water quality modelling, hydrological modelling, knowledge-based system development and artificial intelligence applications. Prof. Chau authored a book entitled "Modelling for Coastal Hydraulics and Engineering" and published over 130 Science Citation Index journal papers. The total number of non-self citations is about 1300. He has been honored with various prestigious research awards. He was bestowed with the 2009 State Science and Technology Awards second-class award organized by the State Council, PRC for project entitled "Multiobjective decision making and rainfall-runoff prediction theories for complex flood control system for



reservoirs" together with his partners from Dalian University of Technology. This award is China's most prestigious award in the field of natural science and aims to recognise academic excellence in basic and applied research in natural science. The developed flood forecasting system is installed in 100 medium to large-sized reservoirs in the Chinese mainland and has been successfully applied to the flood control system centred around the Three Gorges Reservoir for flooding system planning, and the Liao River, Hun River and Tai River for real time operation of reservoirs. Prof. Chau was honored with 2009 Dean's Award for Outstanding Publication Achievement (Overall performance in citation in the past 10 calendar years). It proves that the total number of his non-self citations recorded in the science citation index databases in the past 10 calendar years for his publications exceeds the appropriate top 1% threshold. Another prestigious research award received by Prof. Chau was the 2008 Natural Science Class 1 Award conferred by Ministry of Education, China for project entitled "Study on complex flood operation system with multi-objective flow forecasting algorithms and decision-supporting theories" together with his partners from Dalian University of Technology. Prof. Chau is currently the Editor of the journals "Engineering Applications of Computational Fluid Mechanics" and "HKIE Transactions".

任教範疇

流體力學、水力學及水文學、海岸工程

研究興趣

流體力學建模、水質模擬分析、水信息學、水文預測、人工智能在不同土木工程範疇的應用

簡歷

周國榮教授以一級榮譽的成績畢業於香港大學土木工程系，並於該校取得土木工程理學碩士(優等)及哲學碩士學位。他其後在澳洲昆士蘭大學獲哲學博士資格，現任教於土木及結構工程學系。周教授熱衷科研工作，興趣廣泛，涉獵的範疇包括水流數值模擬分析、水質模擬分析、水文模擬分析，以及以知識為本的系統開發及人工智能應用研究。著有《海岸工程建模》一書外，他有一百三十多份論文已獲納入《科學引文索引》，獲他人引述的次數約達一千三百次。周教授多次獲得顯赫的科研獎項，去年就以「複雜防洪調度系統的多目標決策及徑流預報理論」這個項目，與合作夥伴大連理工大學雙獲國務院頒發「國家自然科學獎」二等獎。此獎是中國頒發予自然科學學者的最高榮譽，旨在表揚在上述範疇的基礎和應用研究有卓越表現的人員。得獎設計不但已安裝在內地一百座中、大型水庫，還成功應用於以三峽水庫

為中心的庫群防洪系統規劃，以及遼河、渾河和太河流域的水庫實時洪水調度系統。

周教授也是2009年院長特設卓越表現獎(學術論文及書籍)的得主。據《科學引文索引》的數據資料顯示，即使不計自我引用，其文章在過去十年屬於有關範疇內最常獲引用的首百分之一論文。他的另一項重要獎項，是由國家教育部於2008年頒發的「高等學校科學研究優秀成果獎」自然科學一等獎。這個得獎項目也是與大連理工大學的學者合作，名為「複雜防洪調度系統多目標徑流預報方法和決策理論問題研究」。

他現為《計算流體力學的工程應用》及HKIE Transactions兩本學術期刊的編輯。

Professor Simon Shiming Deng

鄧仕明教授

BEng, PhD, MASHRAE, FHKIE

Teaching areas

Air Conditioning and Ventilation, Building Energy Efficiency, Refrigeration

Research interests

Direct Expansion (DX) Air-Conditioning and Refrigeration System Simulation and Control Strategies Development; Applying Air-Conditioning and Thermal Comfort in Sleeping Environment in Tropics or Subtropics; Building Energy Use Performance Analysis including Building Energy Audit and Benchmarking (in particular for hotel buildings).

Biography

Prof. Deng graduated from Tongji University, Shanghai, China, with a Bachelor's degree in HVAC Engineering in 1983. He then worked for three years in Shanghai as an HVAC consulting engineer. In 1991, he obtained his PhD in Environmental Engineering from South Bank Polytechnic, UK. He joined The Hong Kong Polytechnic University as a lecturer in 1992. Prior to promotion, he was Associate Professor in the Department of Building Services Engineering. He is a fellow of The Hong Kong Institution of Engineers, and

American Society of Heating, Refrigeration and Air Conditioning Engineers.

任教範疇

空調及通風、建築節能、製冷技術

研究興趣

直接膨脹式(DX)空調及製冷系統模擬及控制策略的開發；空調及熱舒適技術在熱帶或亞熱帶地區睡眠環境的應用；建築物(尤其是酒店)能源使用效益分析(包括進行樓宇能源審計及制訂能源耗用基準)

簡歷

鄧教授畢業於上海同濟大學，1983年獲暖通空調工程(HVAC)工學士學位，曾在上海市任職HVAC顧問工程師三年；後繼續進修，1991年獲英國倫敦南岸理工學院頒授環境工程學哲學博士學位；翌年加入理大擔任講師，晉升前為屋宇設備工程學系副教授。他現為香港工程師學會(HKIE)資深會員，以及美國採暖制冷空調工程師學會(ASHRAE)會員。



Professor Yi-qing Ni

倪一清教授

BEng, MSc, PhD, MASCE, MIABSE, MISHMII, MIABMAS

Teaching areas

Structural Analysis, Computational Mechanics, Reliability in Civil Engineering, Seismic Design of Building Structures

Research interests

Structural Health Monitoring, Structural Dynamics and Control, Smart Materials and Structures, Bridges and Cables, Nonlinear Oscillation and Identification

Biography

Prof. Ni currently serves as a co-chair of the Committee on Sensors and Actuators, Asia-Pacific Network of Centers for Research in Smart Structures Technology. He is a member of the International Structural Health Monitoring (SHM) Guidelines Standing Committee, the International Society for Structural Health Monitoring of Intelligent Infrastructure, and a member of editorial board for the international journals Mechanical Systems and Signal Processing, Structural Control and Health Monitoring, and Advanced Steel Construction. Prof. Ni has been heavily involved in the research assisting the Hong Kong Government Highways Department to implement and operate SHM systems on the large-scale bridges in Hong Kong. He has also acted as a lead



consultant in developing SHM systems for a number of landmark structures including the design of SHM systems for the cable-stayed Sutong Bridge with a main span of 1,088 m and the Guangzhou New TV Tower with a height of 610 m. Prof. Ni has co-authored five books, 86 international journal papers, and 177 conference papers. His "Mega-Structure Diagnostic and Prognostic System" received a Gold Medal and a Grand Prize at the 37th International Exhibition of Inventions, Geneva (2009), and a Golden Prize at the 11th China International Industry Fair, Shanghai (2009). He is currently appointed as an Adjunct Professor by Zhejiang University (China) and by University of Notre Dame (USA).

任教範疇

結構分析、計算力學、土木工程的可靠度、建築結構的抗震設計

研究興趣

結構健康監測、結構動力學及控制、智能材料及結構、橋樑及索結構、非線性振動及識別

簡歷

倪教授現任亞太地區智能結構技術合作網傳感器及驅動器委員會的聯席主席、國際智能結構健康監測學會常設的結構健康監測規範委員會委員，也是國際學術期刊《機械系統及信號處理》、《結構控制及健康監測》和《先進鋼建築》的編輯委員。他積極從事研究工作，協助香港特區政府路政署在大型

橋樑實施及運行結構健康監測系統。他以首席顧問的身份為內地多項地標性基建工程研發結構健康監測系統，包括主跨一千零八十八米的蘇通大橋，以及高達六百一十米的廣州新電視塔。倪教授參與撰寫五本學術著作，在國際學術期刊發表論文八十六篇，國際會議論文多達一百七十七篇。由他主力研

發的「大型結構診斷及預測系統」，繼去年中在日內瓦的第三十七屆國際發明展勇奪金獎及特別大獎，又在上海2009中國國際工業博覽會獲得金獎。現時，他是中國浙江大學及美國聖母大學的兼任教授。

Professor Hüseyin Bâki İz

BSc, MSc, PhD

Teaching areas

Spatial Data Analysis and Mining, Geospatial Data Mining and Knowledge Discovery, Satellite and Physical Geodesy, Mathematics for Geomatics, Site Surveying, Geodesy, Geodetic Control, Deformation Analysis, Analysis of Observations, Advanced Analysis of Observations, Satellite Positioning, Computing.



Research interests

Professor H.B.İz's research interests include kinematic geodesy and earthquakes, polar motion and earth rotation, global mean sea level change, satellite orbit estimation, gravimetric geodesy, and selenodesy. Since 2008, Professor H.B.İz analyzed the existing Unified Lunar Control Network 2005 (UNCLN 2005) for mapping the lunar surface and computed the new parameters of geometrically best fitting lunar figures using ULCN, SELENE and Chang'E-1 lunar laser altimetry measurements, and assessed the lunar reference frames as defined by the SELENE and Chang'E-1 missions laser altimetry. He recently estimated the orientation of the lunar shape with respect to the selenodetic reference frame using Chang'E-1 and SELENE laser altimetry measurements. His upcoming research activities include development of local lunar gravity models which account for the lunar mass concentrations to facilitate upcoming manned and unmanned lunar landing missions by China. Professor H.B.İz will, estimate the global mean sea level change from satellite laser altimetry and tide gauge measurements using his recently developed empirical harmonic time series models that incorporates transient changes in mean sea levels. Professor H.B.İz is currently investigating the effect of the recent China earthquake on the Earth's pole position. Another interest area of Professor H.B.İz is the analysis of the geospatial distribution of the H1N1 cases in Hong Kong and he is developing algorithms for tracking the spread of contagious diseases using spatial models that make use of geospatial data collected by various sensors.

Biography

Professor H.B.İz received his BSc degree from the Black Sea Technical University in Turkey in 1975, MSc degree from the Black Sea Technical University in Turkey in 1976 and was awarded his PhD from the Ohio State University in 1987. Soon after receiving his MSc degree, he was involved in the geodetic measurements of recent crustal movements along the North and East Anatolian fault zones in Turkey for predicting earthquakes in these regions. Upon receiving his PhD degree, which was initiated by a NATO scholarship, Professor H.B.İz worked for a contracting company in USA to support Goddard Space Flight Center of NASA's research activities for a number of years during which he was involved in the error analysis of a several planetary and earth bound satellite missions for monitoring Earth's geomagnetic and gravity field, tracking and modeling the orbits of space debris, satellite altimetry, analysis of polar motion data and earthquake occurrences, estimating tectonic plate motions from very long baseline

interferometry data and satellite laser measurements, and the development of the Martian and Goddard Earth Gravity Models. Before his arrival to Hong Kong Professor H.B.İz was a contractor scientist for NASA and participated to the analysis of COBE (Cosmic Background Explorer) data. The project shared the 2006 Nobel Prize in Physics. During June 1999 – May 2000, Professor H.B.İz took leave from The Hong Kong Polytechnic University and worked as an astronomer in the Department of Earth Orientation, at the US Naval Observatory, Washington DC, USA, calculating GPS rapid orbits and the analysis of VLBI baselines, and the estimation of Earth orientation parameters.

任職範疇

空間數據的分析及挖掘、地理空間數據的挖掘及知識探勘、衛星及物理測地學、地理信息學數學、實地測量、大地測量、大地測量管制、形變分析、觀測結果分析、觀測結果進階分析、衛星定位、計算學

研究興趣

Professor İz的研究興趣包括動態大地測量及地震學、極移及地球自轉、全球平均海平面的轉變、衛星軌道估算、重力大地測量學及月球測繪。2008年起，他開始在「2005年月球統一控制網」提供的數據基礎上繪製月面地形圖，又利用月球統一控制網、日本「月亮女神」及中國「嫦娥一號」探月衛星所採集的鐳射測高數值，計算幾何學上最合適的月球圖像新參數，並評估通過「月亮女神」和「嫦娥一號」探月任務以「鐳射測高法」界定的「月面測量參考框架」。至於較近期的研究，就是參照前述的「月面測量參考框架」估計月形定向。展望未來，他希望研發一些可以解釋月球質量濃度的月球重力場模型，以配合中國即將展開的載人及不載人登月任務。另外，他也會應用其最新研發、已計算平均海平面瞬間轉變的「實證諧波時間序列模型」，根據衛星鐳射測高及驗潮所取得的數據，估計全球平均海平面的變化。Professor H.B.İz正在研究中國最近的大地震對地球極點位置的影響。分析H1N1流感個案在香港的地理空間分佈，是另一個叫他深感興趣的範疇。他正在研究如何根據由傳感器收集得來的地理空間數據，利用空間模型進行運算，從而追蹤傳染病的散播情況。

簡歷

Professor İz分別於1975年及1976年取得土耳其黑海科技大學的理學士及理學碩士學位，1987年獲美國俄亥俄州立大學頒授哲學博士資格，完成碩士課程後，隨即參與量度土耳其安納托利亞北部及東部斷層帶的地殼變動，以預測該區的地震情況。取得博士學位後，他獲北約獎學金資助，在一家美國公司工作，支援美國太空總署歌達德太空飛行中心的科研活動。在這數年裡，他曾經參與好些星球及地球衛星任務的誤差分析工作，目的是監測地球的地磁場及重力場，追蹤及模擬空間碎片的軌道，進行衛星測高，分析極移數據及地震發生情況，根據「超長基線干涉測量法」所取得的數據和衛星雷達測量結果估計板塊的運動狀況，以及研發「火星-歌達德地球重力場模型」。來港前，Professor H.B.İz是美國太空總署的特約科學家，曾經參與分析2006年諾貝爾物理學獎得獎項目「宇宙背景探索者」所取得的數據。1999年六月至2000年五月，他暫別理大，遠赴美國首都華盛頓的美國海軍氣象台地球定向部門工作，負責計算全球衛星定位系統的快速軌道，分析「超長基線干涉測量法」所取得的數據，以及估計地球定向參數。

Professor Siu-seong Law

羅紹湘教授

BS., MPhil, PhD, CEng, MHKIE, MICE, MStructE

Teaching areas

Structural Analysis, Structural Design, Bridge Engineering

Research interests

Bridge Engineering, Structural Dynamics, Moving Load Identification, Structural Condition Assessment

Biography

Prof. Law has successfully supervised five PhD graduates as the chief supervisor and three Post-doctoral Research Fellows. He is currently supervising four full-time PhD students as the Chief Supervisor and two PhD students in the PRC as co-supervisor. He has published over 100 refereed journal papers and over 70 conference papers. He has secured RGC research grants in the last four years. He is also leading the area of "New modelling technology, new system identification and model updating methods for large civil structure" in a Niche Area project funded by the University. He has completed a joint research project with the Guangdong Province Communication Science Research Institute of the Guangdong Province Communications Department of People's Republic of China on the "Load-carrying capacity assessment of bridges from dynamic



responses". He is currently undertaking another research project with the Guangdong Province Highway Management Bureau of the PRC on the "Assessment of load-carrying performance of pre-stressed concrete bridges".

任教範疇

結構分析、結構設計、橋樑工程

研究興趣

橋樑工程、結構動力學、移動荷載識別、結構狀態評估

簡歷

羅教授以首席論文導師的身份，成功協助五位博士生完成學業，又曾擔任三位博士後研究員的導師。現時，獲其指導的博士生有六位，由他擔任首席論文導師的四人屬全日制學生，另外兩人是內地學生，羅博士是他們其中一位導師。多年來，他發表的期刊論文和研討會論文分別超過一百及七十份。羅博士最近四年都獲得香港研究資助局撥款，而現時由其領導的「大型土木結構的新建模科技、新系統識別及模型更新方法」研究，亦獲得理大的「專長領域」研究計劃資助。他早前與廣東省交通廳轄下的廣東省交通科學研究所合作，在該省完成了一項名為「從動態反應評估橋樑承載能力」的研究，最新的合作夥伴則是廣東省公路管理局，項目名為「預應力混凝土橋樑的承載性能評估」。

Professor Bo-sin Tang

鄧寶善教授

BSocSc (Hons.), MSc, MBA, PhD, MRTPI, MHKIP, RPP, MRICS

Teaching areas

Real Estate Development, Urban Planning & Development, Research Methods

Research Interests

Prof. Tang's research interests include land-use planning policy, public sector decision-making, urban development strategy and institutional analysis of property industry and infrastructural development. His research papers are published in international academic journals such as Town Planning Review, Landscape and Urban Planning, Land Use Policy, Urban Studies, Cities, Environmental Impact Assessment Review, Housing Studies, Habitat International and so on. He was involved in leading and managing many public sector and private sector consultancy projects. His consulting clients include Asian Development Bank, Hong Kong Housing Authority, Hong Kong Consumer Council, MTR Corporation Ltd., Planning Department of HKSAR Government, Hong Kong Institute of Planners, Guangzhou Municipal Government, Guangzhou Land Development Centre, and Guangzhou Development District. His current research covers the planning of public open space in Hong Kong, governance and urbanization in the Pearl River Delta, and institutional changes in China.



Biography

Prof. Tang received his BSocSc (Hons) in Economics and Sociology and MSc (Distinction) in Urban Planning from the University of Hong Kong, MBA from the Hong Kong University of Science and Technology, and PhD from the London School of Economics and Political Science. On the professional front, he is a member of the Royal Town Planning Institute, the Hong Kong Institute of Planners and the Royal Institution of Chartered Surveyors, and a registered professional planner (Hong Kong). He currently serves as the Associate Head of the Department of Building & Real Estate and the Programme Leader of the MSc (International Real Estate) programme offered in Hangzhou, Zhejiang.

In public services, he is now the Vice Chairman of the Planners' Registration Board, member of the Town Planning Appeal Board, member of the Estate Agents Ordinance Appeal Panel, and member of the Kowloon City District Advisory Committee of the Urban Renewal Authority. He previously served as the expert panel member in the Frontier Closed Area Study of the Planning Department and the Chief Editor of the Journal of the Hong Kong Institute of Planners.

任教範疇

房地產發展、城市規劃及發展、研究方法

研究興趣

鄧寶善教授的研究興趣包括土地利用規劃政策、公共行政決策、都市發展策略、房地產制度分析及基建發展。其論文廣見於國際性的學術期刊，如 Town Planning Review, Landscape and Urban Planning, Land Use Policy, Urban Studies, Cities, Environmental Impact Assessment Review, Housing Studies, Habitat International 等等。他也統籌和管理多項政府及民間顧問項目，服務對象計有亞洲開發銀行、香港房屋委員會、香港消費者委員會、港鐵公司、香港特區政府規劃署、香港規劃師學會、廣州市政府、廣州市土地開發中心及廣州開發區。鄧教授現時的研究課題包括香港的公共空間規劃、珠江三角洲的管治與都市化，以及中國內地的制度變遷。

簡歷

鄧教授是香港大學經濟及社會學(榮譽)社會科學學士及城市規劃理科碩士(優等)、香港科技大學工商管理碩士，以及倫敦政治經濟學院哲學博士。專業方面，他是英國皇家規劃師學會、香港規劃師學會及英國皇家特許測量師學會的會員，並擁有香港註冊專業規劃師資格。除了出任建築及房地產學系副系主任，鄧教授也是理大在浙江杭州開辦的國際房地產碩士學位課程的課程主任。

他熱心服務社會，身兼多項公職，現為規劃師註冊管理局副主席、城市規劃上訴委員會委員、地產代理條例上訴委員會委員，以及市區重建局九龍城分區諮詢委員會成員。另外，他曾經出任規劃署《邊境禁區土地用途研究》專家小組的成員，也是香港規劃師學會期刊的前總編輯。

Promotion to Associate Professors 晉升為副教授

Dr Daniel Wai-Ming Chan

陳煒明博士

BEng(Hons), PhD, MAPM, MHKICM, MASCE

Teaching areas

Construction Management, Project Management, Construction Procurement, Research Methods

Research interests

Construction Time Performance, Construction Procurement Systems, Project Partnering and Strategic Alliances, Guaranteed Maximum Price and Target Cost Contracting, Construction Safety Management, Public Private Partnership



Biography

Dr Daniel Chan obtained his BEng (Hons) degree in Civil and Structural Engineering and PhD degree in Construction Project Management from the Department of Civil Engineering of The University of Hong Kong. Thereafter, he worked as a Research Assistant and Senior Research Assistant for the same University until August 2000. He started his engineering profession as an Assistant Structural Engineer in September 2000 by joining a leading local structural building design consulting engineering firm. He is a project manager and construction manager by profession. Dr Chan joined The Hong Kong Polytechnic University as a Postdoctoral Research Fellow in Construction Management at the Department of Building and Real Estate (BRE) in Mid-April 2001. Then he was appointed by BRE as an Assistant Professor on 1 July 2003 and was promoted to Associate Professor in Construction Project

Management on 1 July 2010. He has published 12 research monographs, 1 scholarly textbook, 1 book chapter, 54 peer-reviewed journal articles and 87 refereed conference papers up to July 2010. He has been serving as the Programme Award Co-ordinator for the MSc/PgD in Construction and Real Estate offered by BRE since January 2007.

任教範疇

建築管理、項目管理、建築採購模式、研究方法

研究興趣

建築工期績效、建築採購模式、項目合夥與策略聯盟、保證最高價與目標成本合約制、建築安全管理、公營私營合夥計劃

簡歷

陳煒明博士畢業於香港大學土木工程系，獲土木及結構工程(榮譽)工學士及建設項目管理哲學博士學位，其後在港大擔任研究助理及高級研究助理，直至2000年八月為止；同年九月，他加入本地一家著名的樓宇結構設計顧問公司任職助理結構工程師，是專業的項目經理及建築經理。2001年四月中，陳博士加入本學院之建築及房地產學系擔任建築管理學的博士後研究員，2003年七月一日晉升為該系助理教授，本年七月一日再擢升為建築項目管理學副教授。截至本年七月，他一共出版了十二本研究專論和一本大學教科書，為另一本專論撰寫了其中一章，並發表過五十四份經同儕評核的學術期刊文章，以及八十七份經評核的研討會論文。2007年一月起，他一直擔任系內建築及房地產學理學碩士/深造文憑課程的課程主任。

Dr Mingli Chen

陳明理博士

BEng, MSc, PhD

Teaching areas

Electrical Technology, Power & Machines, Electrical Engineering, Electrical Installations and Systems, Electrical Installation, Building Services

Research interests

Lightning Detection & Protection, Building Electrical Services, Electromagnetic Compatibility, Power Quality



Biography

Dr Chen, BSc (1985, Lanzhou University, China) in Theoretical Physics, MSc (1988, Chinese Academy of Sciences (CAS)) in Atmospheric Physics, and PhD (2000, Gifu U, Japan) in Electrical & Electronic Information Systems. Dr Chen joined the Department of Building Services Engineering in 2002 and is now an Assistant Professor. Before joining the Department, he was a researcher in the CAS and a system engineer in Morimatsu Ltd in Japan. He is now in charge of teaching in the subject areas of electrical technology,

power & machines, and electrical installations & systems in buildings. His research/consultancy interest is in the areas of lightning detection & protection, building electrical services, EMC, and power quality.

任教範疇

電氣科技、能源與機器、電氣工程、電氣裝置及系統、屋宇設備

研究興趣

雷電監測及防護、樓宇電氣裝置、電磁兼容、電能質量

簡歷

陳博士是中國蘭州大學理論物理學理學士(1985)、中國科學院大氣物理理學碩士(1988)，以及日本岐阜大學電氣及電子信息系統哲學博士(2000)，於2002年加入屋宇設備工程學系前，曾任中科院研究員及日本森松集團系統工程師。他晉升前為該系助理教授，負責統籌電氣科技、能源與機器，以及樓宇電氣設備及系統這些科目的教學事宜。其研究興趣包括雷電監測及防護、樓宇電氣裝置、電磁兼容及電能質量。

Dr Nai-Kong Fong

方乃剛博士

BSc, PhD, MHKIE.

Teaching areas

Fire Dynamics, Design Considerations for Fire Safety Management, Fire Engineering System, Computational Fire Modelling in Building Design

Research interests

Fire Modelling, Sprinkler Research, Fire Detection System, Performance Based Fire Safety Design



Biography

Dr Fong is an Assistant Professor of the Department of Building Services Engineering of The Hong Kong Polytechnic University. He graduated from University College of North Wales, Bangor, UK with a BSc degree in

Applied Mathematics and Computing in 1986. He obtained his PhD degree in Fire Engineering from The Hong Kong Polytechnic in 1991.

任教範疇

火災模擬、制訂消防安全管理指引的考慮因素、消防工程系統、用於樓宇設計的火災計算模型

研究興趣

火災模式、洒水系統研究、火警探測系統、性能化防火設計

簡歷

方博士晉升前是屋宇設備工程學系的助理教授，八十年代負笈英國北威爾斯班戈大學，86年完成應用數學及計算學理學士課程；1991年獲前香港理工學院頒授消防工程哲學博士學位。

Dr Horace Kwok-Wai Mui

梅國威博士

BEng, PhD, HD, CEng, RPE, MCIBSE, MHKIE, MASHRAE

Teaching areas

Air Conditioning & Ventilation, Built Environment, Building Performance, Building Technology, Architectural and Buildings, Building Design Operation Process, Building Environmental Performance, Design Operation and Management, Indoor Air Quality Engineering, Construction Materials, Building Services



Research interests

Indoor Environmental Performance, Indoor Air Quality, Plumbing and Drainage

Biography

Dr Mui obtained his BEng (Hons, First Class) degree in Building Services Engineering (BSE) at The Hong Kong Polytechnic University. He finished his PhD specialising in building environmental performance from the same department. He received his industrial training in building services designs and project management in a mechanical and electrical engineering consulting company. He joined The Hong Kong Polytechnic University as a faculty member of BSE in 2000. Over the years, Dr Mui has also attained

professional memberships from a number of professional bodies worldwide, including, HKIE, CIBSE, ASHRAE, CEng and RPE. He has taken research projects and consultancy works in the fields of energy efficiency, building environmental performance, thermal comfort and indoor air quality.

任教範疇

空調通風、建築環境、樓宇效益、建築科技、建築及樓宇結構、建築設計流程、建築環境性能、設計操作及管理、室內空氣質素工程、建築材料、屋宇裝備

研究興趣

室內環境性能、室內空氣質素、管道及排水系統

簡歷

梅博士在香港理工大學屋宇設備工程學系，以一級榮譽成績畢業，其後留校深造，主力研究建築環境性能，成功取得博士學位。他曾在一家機械及電氣工程顧問公司工作，擁有屋宇設備設計和項目管理的實戰經驗。2000年，梅博士重返理大，成為屋宇設備工程學系的一份子。他是香港工程師學會、英國屋宇裝備工程師學會，以及美國冷凍空調學會的會員，並擁有特許工程師及註冊專業工程師資格，曾經參與有關節能、建築環境性能、熱舒適性，以及室內空氣質素的研究和顧問工作。

New Appointments 新任命

Mr. Cheuk Kuen CHOI

Instructor of Building Services Engineering Department

蔡卓權先生

屋宇設備工程學系導師

ECPI2, MSc, CEng, MIFireE, MCIBSE, MIMechE, MHKIE

Biography

Mr. Choi joined the Department of Building Services Engineering in Aug 2009. He is a Chartered Building Services Engineer since 1990. He has practised as a professional engineer in Hong Kong for more than 20 years and has extensive experiences in the building services engineering field. He is a member of The Institution of Fire Engineers, The Chartered Institution of Building



Services Engineers, The Institution of Mechanical Engineers and The Hong Kong Institution of Engineers.

簡歷

蔡卓權先生於2009年八月加入屋宇設備工程學系。他早於1990年已取得英國特許屋宇裝備工程師資格，在香港的屋宇裝備工程界工作超過二十年，經驗豐富，現為消防工程師學會、英國屋宇裝備工程師學會、英國機械工程師學會及香港工程師學會會員。

Prestigious Appointments of Staff Members

Prof. Eddie Hui and Prof. Edwin Chan of the Department of Building and Real Estate (BRE) have been appointed as members of the Town Planning Board by the Chief Executive of the HKSAR Government.

Prof. William Lam, Chair Professor of Civil and Transportation Engineering of the Department of Civil and Structural Engineering has been appointed as the Chang Jiang Scholars Chair Professor at the Beijing Jiaotong University for a period of 3 years from 2010 to 2013.

Prof. Francis Wong, Professor of BRE has been elected as a Board Member of the International Council for Research and Innovation in Building and Construction (CIB) from 2010 to 2013. In addition, he has also been

appointed as the Chairman of the newly established International Student Chapters' Committee.

建設及地政學院多位學者獲委要職

建築及房地產學系的許智文教授和陳漢雲教授，同時獲香港特別行政區行政長官委任為城市規劃委員會的成員。

土木及結構工程學系林興強講座教授(土木及運輸工程)，獲委任為北京交通大學的長江學者講座教授，任期為2010至2013年。

建築及房地產學系黃君華教授，獲選為國際建築與營建創新研究議會的2010至2013年度理事。另外，他亦獲委任為新成立的國際學生分會委員會主席。

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External Research Grants Received by Members of the Faculty (Apr 2009 - July 2010)

建設及地政學院教員所獲取的校外研究資助 (2009年4月至2010年7月)

| Title | Staff Name | Dept | Project Title | Main Source of Funding | Grant Amount (HK\$) |
|-------|-----------------|------|---|--|---------------------|
| Prof. | CHAN Ping Chuen | BRE | Experimental Research on Health and Safety Measures for Working in Hot Weather | RGC General Research Fund (2009/10) | 778,516 |
| Prof. | CHAN Siu Lai | CSE | Advanced Analysis Allowing for Load and Construction Sequences | CIIHK Ltd | 100,000 |
| Prof. | CHAN Siu-lai | CSE | Collapse Analysis of Steel Tower Cranes and Tower Structures | RGC General Research Fund (2010/11) | 677,221 |
| Dr | CHEN Mingli | BSE | New Method to Obtain the Optimum Source Direction Using a Wideband Magnetic Direction Finder | RGC General Research Fund (2009/10) | 801,000 |
| Dr | CHEN Mingli | BSE | A New Statistical Model for Computing the Absolute Detection Efficiency of a Lightning Location Network and its Application | RGC General Research Fund (2010/11) | 1,032,000 |
| Prof. | CHEN Wu | LSGI | Mitigating Ionospheric Scintillation for GNSS Applications | RGC General Research Fund (2010/11) | 1,145,399 |
| Dr | CHENG Yung Ming | CSE | Innovative Soil Nail Materials for Steep Slopes with Poor Access | CIIHK Ltd | 300,000 |
| Dr | CHIANG Yat Hung | BRE | The Nexus between Firm Efficiency, Construction Volume and Competitiveness | RGC General Research Fund (2009/10) | 483,348 |
| Dr | CHIANG Yat Hung | BRE | Sustainable Building Maintenance: Balancing Employment, Costs and Carbon Emissions | RGC General Research Fund (2010/11) | 717,536 |
| Dr | CHOY Hung Tat | BRE | FDI in China's Urban Market - Further Experience of Hong Kong Estate Developers | Teaching Company Scheme (Non-Innovation and Technology Scheme) | 300,000 |
| Prof. | CHU Wei | CSE | Degradation of Refractory Contaminants in Water by Chemical-free Radicals Generated by High-frequency Ultrasound and UV Irradiation | RGC General Research Fund (2010/11) | 891,080 |
| Prof. | CHUA Hong | CSE | Selected Activated Sludge for Industrial Wastewater Treatment and for Production of Environmental-friendly Bioplastics | RGC General Research Fund (2009/10) | 504,030 |
| Prof. | CHUA Hong | CSE | Study of the Optimal Operation Conditions for the Production of Polyhydroxyalkanoates in nitrogen Reduction Process | Teaching Company Scheme (Non-Innovation and Technology Scheme) | 1,555,000 |
| Prof. | CHUA Hong | CSE | Accumulation of Bio-plastics (PHAs) from Activated Sludge | Teaching Company Scheme (Non-Innovation and Technology Scheme) | 433,000 |
| Prof. | CHUA Hong | CSE | Industrial Wastewater Reuse and Zero-emission Technology and Equipment | Shenzhen-HongKong High-Tech Fund | RMB 400,000 |
| Prof. | CHUNG Kowk-Fai | CSE | Enhanced Ductility and Service Life of Galvanized Structural Steel Members | Nano and Advanced Materials Institute Ltd | 4,977,000 |
| Prof. | CHUNG Kwok-Fai | CSE | Developing System-based Analysis and Design for Multi-span Partially Restrained Cold-formed Steel Purlin Systems | RGC General Research Fund (2010/11) | 875,000 |
| Dr | CHUNG Tse-ming | BSE | Interior Lighting Quality Assessment for Low Carbon Buildings Aided by High Dynamic Range Photography | RGC General Research Fund (2010/11) | 762,379 |
| Dr | DAI Jianguo | CSE | Durability of Bond between FRP and Concrete Exposed to a Humid Subtropical Environment: Experimental Study and Predictive Modeling | RGC General Research Fund (2009/10) | 742,200 |
| Prof. | DENG Shiming | BSE | Sustainable Low Cost Residential Humidity Control in Hong Kong | Environment and Conservation Fund | 555,700 |
| Prof. | DING Xiaoli | LSGI | High Resolution Mapping of Ionospheric TEC Anomalies Associated with Earthquakes with SAR Measurements | RGC General Research Fund (2010/11) | 1,264,500 |

| Title | Staff Name | Dept | Project Title | Main Source of Funding | Grant Amount (HK\$) |
|-------|------------------------|------|--|---|---------------------|
| Dr | DU Ya Ping | BSE | Analysis of Low-frequency Magnetic Shielding by Large Plate Structures for Facilities in Buildings | RGC General Research Fund (2009/10) | 723,785 |
| Dr | FAN Hongqin | BRE | Life Cycle Cost Management of Heavy Construction Equipment Using Data Mining Techniques | RGC General Research Fund (2009/10) | 522,000 |
| Dr | FAN Hongqin | BRE | Construction Equipment Failure Prediction: a Data Mining Approach | RGC General Research Fund (2010/11) | 536,600 |
| Dr | FU Tzung-May | CSE | Primary Emissions and Secondary Formation Pathways of Carbonaceous Aerosol in the Pearl River Delta Region: A Regional Model Synthesis | RGC General Research Fund (2009/10) | 415,584 |
| Dr | GUO Hai | CSE | Contribution of Biogenic Volatile Organic Compounds (VOCs) to the Formation of Photochemical Oxidants and Secondary Organic Aerosols under the Influence of Mesoscale Circulation in Subtropical Hong Kong: Field Observations and Model Simulations | RGC General Research Fund (2009/10) | 1,268,903 |
| Dr | GUO Hai | CSE | Atmospheric Halogenated Hydrocarbons in the Pearl River Delta Region | NSFC/RGC Joint Research Scheme | 678,900 |
| Dr | GUO Hai | CSE | Quantitative Measurement of Acidic Ultrafine Particles in the Atmosphere | Environment and Conservation Fund | 1,279,360 |
| Prof. | IAM Hing Keung William | CSE | Advanced Models for Sustainable Multimodal Transit Systems - An Activity-based Approach in Networks with Uncertainties and Climate Changes | RGC General Research Fund (2009/10) | 552,000 |
| Prof. | IAM Hing Keung William | CSE | Journey Time Estimator for Traffic Surveillance and Incident Detection under Network Uncertainties | RGC General Research Fund (2010/11) | 1,123,700 |
| Prof. | IAM Hing Keung William | CSE | 18th International Symposium of Transportation of Traffic Theory | Croucher Foundation Sponsorship of Conference | 100,000 |
| Dr | IAM Ka Se | CSE | Impact of Climate Change on Air Quality of Pearl River Delta Region | RGC General Research Fund (2009/10) | 423,000 |
| Dr | IAM Tsun Ip | BRE | An Investigation of Pitfalls in Output Specifications for Public-Private Partnership Projects and Their Solutions | RGC General Research Fund (2009/10) | 207,642 |
| Prof. | LEE Shuncheng | CSE | Observation and Modeling of Secondary Organic Aerosol Formation in China | Chinese Academy of Sciences | 199,890 |
| Dr | LEE Wai Ling | BSE | γ Cooling Coil for Energy Saving and Indoor Environmental Quality | RGC General Research Fund (2009/10) | 466,531 |
| Prof. | LI Xiangdong | CSE | Phyto-remediation of the Copper Mine Waste Contaminated Land | International Copper Association | 116,124 |
| Dr | LU Lin | BSE | Environmental Payback Time Analysis of Building-integrated Photovoltaic (BIPV) Applications in Hong Kong | Environment and Conservation Fund | 406,000 |
| Dr | LU Ming | CSE | Development of BIM-based Construction Process Optimization Method and Software | Tsinghua University, PR China | 113,650 |
| Dr | MAK Cheuk Ming | BSE | Development of a Semi-active Control Method with a Single Adaptive Helmholtz Resonator for the Reduction of Transmission Noise in an Air Flow Duct | RGC General Research Fund (2009/10) | 495,876 |
| Prof. | NI Yiqing | CSE | Verification of Wind Pressure and Wind-induced Response of a Supertall Structure Using a Long-term Structural Health Monitoring System | RGC General Research Fund (2009/10) | 973,358 |
| Prof. | NI Yiqing | CSE | Development of Structural Condition Rating System for Inspection and Maintenance of Stonecutters Bridge under In-service Conditions | Highways Department | 1,320,000 |
| Prof. | NICHOL Janet Elizabeth | LSGI | Multi-sensor Estimation of Biomass Carbon in Regenerating Sub-tropical Forest | RGC General Research Fund (2009/10) | 1,094,700 |
| Prof. | NICHOL Janet Elizabeth | LSGI | Multi-sensor monitoring and prediction of fine particulates over an urbanised region | RGC General Research Fund (2010/11) | 806,500 |

| Title | Staff Name | Dept | Project Title | Main Source of Funding | Grant Amount (HK\$) |
|-------|------------------------|------|---|---|---------------------|
| Prof. | NICHOL Janet Elizabeth | LSGI | Impacts of Climatic Warming on High Density Living in Hong Kong Using Remote Sensing and GIS Modelling | RGC Public Policy Research | 358,800 |
| Prof. | NIU Jianlei | BSE | Development of Method and Database of Space Cooling Load Factors of Stratified Air Distribution Systems | RGC General Research Fund (2009/10) | 892,776 |
| Prof. | POON Chi Sun | CSE | Recycling of CRT Glass from Discarded Computer Monitors and TV Sets | Environment and Conservation Fund | 441,400 |
| Prof. | SHEN Qiping | BRE | The Effect of Using Group Support Systems on Virtual Value Management Workshops for Major Construction Projects | RGC General Research Fund (2009/10) | 644,733 |
| Prof. | SHEN Qiping | BRE | An Evaluation of the Effectiveness of Current Dust Control Practices in the Construction Industry in Hong Kong | Pneumoconiosis Compensation Fund Board | 2,076,000 |
| Dr | SUMALEE Agachai | CSE | Toward an Optimal Transport Network and Land Use Design under Climate Change: Model and Algorithm | RGC General Research Fund (2009/10) | 736,000 |
| Prof. | TANG Bo-sin | BRE | Land Supply and Land-use Planning of Public Open Space in Hong Kong | RGC General Research Fund (2010/11) | 284,500 |
| Prof. | TENG Jinguang | CSE | Debonding in FRP-strengthened RC Beams: Effects of Load Distribution and U-jacket Anchorage | RGC General Research Fund (2009/10) | 1,726,762 |
| Prof. | TENG Jinguang | CSE | Hybrid FRP-concrete-steel double-skin tubular beams | RGC General Research Fund (2010/11) | 1,117,350 |
| Prof. | WAI Wing-Hong Onyx | CSE | Improving Long-term Sediment Transport Prediction of Deep Bay (Hong Kong) with Data Assimilation Methods | RGC General Research Fund (2010/11) | 976,000 |
| Prof. | WANG Shengwei | BSE | Study on the Thermodynamic Characteristics and Optimal Control of Buildings with Energy Performance Enhanced by Integrating Phase Change Materials (PCMs) | RGC General Research Fund (2009/10) | 747,523 |
| Prof. | WANG Tao | CSE | Study of Photochemical Air Pollution in Hong Kong | Environment and Conservation Fund | 6,554,936 |
| Dr | WONG Chi Ning | BRE | Policy Changes to Avoid Boom and Burst of Construction Cycle Thereby Improving Working Opportunity and Working Quality of Construction Work Force | Association of Engineering Professionals in Society Ltd | 80,000 |
| Dr | WONG Ling Tim | BSE | Occupant Load Influences on Air Pressure Transients in airtight and Ventilation Stacks in a Dense High-rise Residential Built Environment | RGC General Research Fund (2009/10) | 503,563 |
| Dr | WU Bo | LSGI | Integration of Multi-source Lunar Orbiter Camera Imagery and Laser Altimeter Data for Precision Lunar Topographic Mapping to Support Future Lunar Landed Missions | RGC General Research Fund (2010/11) | 589,558 |
| Dr | XIAO Fu | BSE | Study on the Feasibility and Cost-effectiveness of Hybrid Desiccant and Evaporative Cooling System Applied in Hong Kong | Environment and Conservation Fund | 204,000 |
| Prof. | XU You Lin | CSE | Synthesis of Vibration Control and Health Monitoring to Mitigate Earthquake Hazard to Building Structures | RGC General Research Fund (2010/11) | 774,517 |
| Prof. | XU You Lin | CSE | Development of Structural Health Prognosis Tools for Evaluation of Stonecutters Bridge under In-service Conditions | Highways Department | 1,400,000 |
| Prof. | XU You Lin | CSE | Development of Structural Health Rating and Evaluation System for Stonecutters Bridge | Highways Department | 2,720,000 |
| Dr | YAM Michael Chi-ho | BRE | A Study of a Stiffened Extended End-Plate Connection with Nitinol Shape Memory Alloy Bolts Subject to Cyclic Loading | RGC General Research Fund (2010/11) | 677,221 |
| Prof. | YIK Wai Hung Francis | BSE | The Building Energy Efficiency Programme (BEEP): Initial Phase of Development | Environment and Conservation Fund | 1,983,120 |

Outstanding Student of FCLU

Mr Cheung Hiu Fung, Ken, a final year student of BSc (Hons) in Geomatics from the Department of Land Surveying and Geo-Informatics (LSGI) at The Hong Kong Polytechnic University, was named the Outstanding Student of the Faculty of Construction and Land Use 2009. To bestow recognition on the remarkable achievements of Ken and students of other faculties, an Outstanding Student Awards Presentation Ceremony was held on 4 February 2010, with awards presented by our President, Prof. Timothy W. Tong.



Ken's outstanding performance has been well-recognized both inside and outside the PolyU. He is the top student of his class and he has also been awarded 4 different Scholarships over the past two years, namely, the Hong Kong Institute of Surveyors Scholarship, the Royal Institution of Chartered Surveyors Scholarship, the American International Assurance Foundation Scholarship and the Department of Land Surveying and Geo-Informatics Scholarship for Hall Residents.

On top of his excellent academic performance, Ken has also participated actively in community services and extra-curricular activities. In the "Cartier

Wu Zhi Qiao" bridge building programme 2008, he successfully applied techniques learned from his studies and demonstrated his competence in solving problems. He has worked in conjunction with other students from LSGI, as well as from the School of Design and the Department of Civil and Structural Engineering, under the guidance of their lecturers on this bridge building programme, which later won a Bronze Award given through the Community Service Learning Programme organised by the Student Affairs Office.

建設及地政學院卓越學生獲嘉許

土地測量及地理資訊學系張曉峰同學，憑出類拔萃的表現獲選為建設及地政學院的2009年度卓越學生；為了嘉許張曉峰和其他學院的優秀學生，理大於本年二月四日舉行了卓越學生獎頒獎典禮，由校長唐偉章教授親自主禮。

張曉峰是測繪及地理資訊學(榮譽)理學士課程的畢業班學生，校內校外均表現出色。他的成績名列前茅，短短兩年間便先後獲頒香港測量師學會獎學金、英國皇家特許測量師學會獎學金、友邦慈善基金獎學金，以及土地測量及地理資訊學系的宿生獎學金。

除了學業成績驕人，張同學也熱心投入公益和課外活動，服務社群。他在2008年參與「卡地亞無止橋」計劃，以課堂所學到的知識解決問題，真正做到學以致用。他與系內的同學、設計學院與土木及結構工程學系的學生，在講師指導下為內地鄉民修築橋樑。這項建橋計劃其後獲學生事務處主辦的「社區服務實踐計劃」頒發銅獎。

HKIS Dissertation Grand Prize

Keith Chong, a 2009 graduate of the Department of Land Surveying and Geo-Informatics (LSGI), won the Grand Prize of the Hong Kong Institute of Surveyors (HKIS) Outstanding Final Year Dissertation Awards 2009, on the strength of his dissertation 'Modeling with Aerial Stereo Images and Lidar Data in Hong Kong'. This year, the HKIS Research Committee held the annual dissertation competition on 3 December 2009. The competition involved the champion dissertations from five HKIS divisions with three dissertations coming from The Hong Kong Polytechnic University, one from The University of Hong Kong and one from City University of Hong Kong.

Kong. Keith's achievement is unprecedented for a Land Surveying Division student. LSGI is proud of his achievement, which is a clear indication of the competitiveness of our students.

香港測量師學會「傑出畢業論文大獎」

土地測量及地理資訊學系2009年度畢業生張偉明同學，憑《在香港應用航空立體影像及激光雷達建模》一文，贏得由香港測量師學會頒發的「2009年度傑出畢業論文大獎」。比賽在去年十二月三日舉行，由香港測量師學會五個分部各自選出的冠軍論文競逐大獎。五者之中，理大佔了三份，餘下兩份分別來自香港大學及香港城市大學。張偉明是首位獲得上述殊榮的土地測量分部學生，其成就說明理大同學的競爭力不容置疑，我們為此深感自豪。

BRE Student Receiving Advice from Nobel Laureate

Mr Li Jing, from the Department of Building and Real Estate, The Hong Kong Polytechnic University (PolyU), is one of the students selected for the Research Student Attachment Programme 2009/10. This is a University programme designed to provide local and overseas students with an opportunity to add a global dimension to their university life.



Jing stayed at Washington University in St Louis, USA until May, 2010. This is also where Prof. Douglass North teaches. Prof. North was the co-recipient of the 1993 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, and was a Nobel Laureate Speaker last year in the Faculty of Construction and Land Use. Jing has benefitted from the advice from members of his host university, amongst them Prof. North, who is seen in the photograph here as having a discussion with him.

During Jing's stay at the Washington University, Prof Lee Benham has acted as his Supervisor; he has also been under the guidance of other members of the Department of Economics of Washington University in St Louis, for his doctoral thesis entitled "Property Cycle in China: The Government's Role".

At PolyU, Jing's Chief Supervisor and Co-Supervisor are Dr Y.H. Chiang and Dr Lennon Choy respectively.

Jing's attachment programme was initiated and arranged by Dr Choy, who had also previously spent a semester at Washington University in St Louis as a Fulbright Senior Scholar.

建築及房地產學系學生獲諾貝爾獎得主指導

建築及房地產學系的李倬同學，是獲選參加2009/10年度「研究生體驗計劃」的其中一位幸運兒。這項計劃由香港理工大學籌辦，目的是讓本地及海外學生有機會到外地學習，擴闊國際視野。

接待他的華盛頓大學位於美國聖路易市，是1993年諾貝爾經濟學獎得主諾斯教授任教的學府。去年，諾斯教授曾應建設及地政學院的邀請，來港擔任「諾貝爾獎傑出學人講座」的講者。除了諾斯教授，李同學還得到校內其他學者的指點，使他獲益良多。從照片可見，諾斯教授正與他討論問題。

李同學在華盛頓大學的留學生活至本年五月結束，除了得到Prof Lee Benham擔任論文導師，華盛頓大學經濟學系的其他學者亦不時加以指導。其博士論文題為《論政府在中國房地產市場周期中的角色》。李同學在理大的導師及副導師分別是建築及房地產學系的蔣日雄博士和蔡鴻達博士。

這次寶貴的學習機會，是由蔡鴻達博士建議和安排。蔡博士早前亦曾以「富布萊特資深學人」的身份到華盛頓大學參與研究工作，逗留一個學期。

Formal Recognition for our LSGI PhD Student

Mr Elton HC Chan, a part-time PhD student of the Department of Land Surveying and Geo-Informatics (LSGI) of The Hong Kong Polytechnic University has recently won the 1st runner up of the HKGISA Best postgraduate GIS Project Awards 2010. This award is a recognition of the innovations of GIS Projects undertaken by the postgraduate students in Hong Kong. The award ceremony was held at the Chinese University of Hong Kong on 26 March 2010.

Elton is studying the use of evolutionary algorithm (EA) on spatial analysis. Although different GIS applications using EA have been developed in recent years, EA is yet to be a common tool on GIS platform. In this study, dynamics of EA on GIS problems such as path finding problem in the multi-modal transportation system and zone design problem are analyzed to develop an EA framework on GIS.

Dr Lillian Pun and Prof. Zhilin Li of LSGI are respectively Elton's Chief Supervisor and Co-supervisor.

土地測量及地理資訊學系博士生獲獎

土地測量及地理資訊學系兼讀博士生陳浩釗的研究項目最近獲香港地理信息系統學會評為「2010年最佳地理信息系統研究計劃」的亞軍。此獎旨在嘉許在進行地理信息系統研究時取得突破的香港研究生。有關頒獎典禮已於三月二十六日在香港中文大學舉行。

浩釗正在研究進化算法(EA)在空間分析上的應用。近年，進化算法雖已應用於不同的地理資訊系統，但目前並不普遍。浩釗期望透過對分析進化算法如何解決多式聯運系統的路徑尋找和區域設計等地理資訊系統問題的分析研發出一套適用於地理資訊系統的進化算法框架。

潘鄭淑貞博士及李志林教授分別是浩釗的論文導師及副導師。



BRE Students Take Part in Sichuan Rebuilding Project

From 15th to 21st November 2009, 5 students from the Department of Building and Real Estate of The Hong Kong Polytechnic University took part in the Sichuan (China) Rebuilding Project 2009, which was jointly held by Habitat for Humanity China and Jimmy & Rosalynn Carter Work Project. About 220 volunteers from all over the world participated in this event for the rebuilding in Sichuan. The students from our University cooperated with the local technicians and workers to build new homes for the refugees and the needy, using bricks, cement, sand, concrete and steels. All strove their best despite the inhospitable conditions at the site, sub-zero temperatures, muscle fatigue and tiredness due to the long hours of physical labour. About 20 apartments were built during the period; works continued to be undertaken by the local technicians and workers who aimed to have



around 200 apartments completed by the end of 2010. All the 5 volunteers from our University found the event highly meaningful, as they had not only brought into existence new homes, but also brought smiles to the faces of the originally homeless and rekindled their hopes. All the participants found the experience highly rewarding and would like to thank their Department for the contribution towards their accommodation and transportation expenses in Sichuan. They were also thankful to Morgan Stanley for their valuable support, without which they could not have participated in the event.

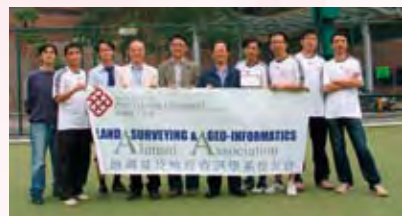
建築及房地產學系同學參與四川災後重建計劃

建築及房地產學系五位熱心同學在去年十一月十五至二十一日遠赴四川參與當地的重建工作。這項計劃是由仁人家園與「吉米-羅莎琳卡特工作計劃」合辦，全球約有二百二十位義工參與。本校同學與當地的技術人員和工人合作，以磚塊、水泥、沙粒、混凝土及鋼材為災民建造新屋。雖然工地的環境非常惡劣，氣溫又跌至零度以下，各人依然全力以赴，努力克服長時間勞動後的疲累，在短短一週內建成約二十套住房。他們返港後，當地的技術人員和工人會繼續施工，以期達到在2010年底建成約二百套住房的目標。五位同學都認為這次旅程意義重大，除了為災民重建家園外，更使他們重現笑臉，對生活重燃希望。各人除了感謝學系慷慨贊助在四川的住宿及交通開支，也非常感激摩根士丹利的鼎力支持，令是次旅程得以順利成行。

LSGIAA Soccer Team Won Federation Cup Soccer Tournament

The Land Surveying & Geo-Informatics Alumni Association (LSGIAA) of The Hong Kong Polytechnic University (PolyU) sent one soccer team and two basketball teams to take part in the Federation Cup Soccer Tournament and the PolyU Alumni 3-on-3 Basketball Tournament of the PolyU Alumni Homecoming Carnival. The events were held on 14 March 2010.

As a token of support to the alumni participating in the tournaments, LSGIAA sponsored all the team members for their team uniforms. These were presented to the team members during the mass pledge rally held just before the events. Prof. Xiaoli Ding, Head of the Department of Land Surveying and Geo-Informatics (LSGI); Mr. Chung Hang Wong, LSGIAA Honorable Member and Mr Paul Tsui, LSGIAA President were invited as guests of honour at the events, and to present the uniforms to the team members. After the events, alumni and guests stayed for networking and light refreshments.



For the soccer match, there were a total 4 rounds of games. The LSGIAA soccer team successfully beat the champion of last year to win the Federation Cup of this year. As for the PolyU alumni

3-on-3 Basketball Tournament, LSGIAA had sent two basketball teams, named respectively LSGI Champion Players and Relax. LSGI Champion Players came up with the 3rd runner up despite the presence of many strong opponents.

Warmest congratulations are extended to all the participants in the events, who have not only shone on the sports ground but more significantly have fostered closer ties amongst the alumni.

土地測量及地理資訊學系校友會足球隊勇奪理大校友會聯會盃

在本年三月十四日舉行的「理大校友嘉年華」中，土地測量及地理資訊學系校友會(LSGIAA)組成一支足球隊及兩支籃球隊，分別參加「理大校友會聯會盃足球友誼賽」及「理大校友三人籃球挑戰賽」。

學系為了感謝校友的支持，特別贊助所有參賽健兒的球衣，並於賽前舉行誓師儀式，由系主任丁曉利教授、校友會榮譽會員黃仲衡先生及會長徐開源先生三位主禮嘉賓，向參賽的校友致送球衣。賽事結束後，眾校友和來賓一面享用茶點，一面談天說地，氣氛輕鬆愉快。

校友會足球隊在四個回合中過關斬將，力壓去年盟主，成功捧走今年的聯會盃。籃球方面，校友會亦組成了「LSGI Champion Players」及「Relax」兩隊參賽，結果前者在強敵環伺下仍打入最後四強，成績驕人。

New Name for the Faculty

建設及地政學院改名為「建設及環境學院」

The Faculty is pleased to announce that we are going to change our name from the present "Faculty of Construction and Land Use" "建設及地政學院" to "Faculty of Construction and Environment" "建設及環境學院", with effect from 2011/12. Senate at its meeting on 7th October 2010 had approved of the proposal for this change. The acronym for the revised name will be FCE.

建設及地政學院將於2011/12學年改名為「建設及環境學院」。是項建議已於本年十月七日獲教務委員會通過。學院改名後，英文縮寫亦會改為「FCE」。

The issue of revising the name of the Faculty was raised almost a year ago and had been thoroughly discussed internally. Several rounds of internal and external consultations had also been conducted before the proposal was put forward to Senate for approval.

The Faculty had considered the issue of revising its name mainly on the ground that the areas of environment and sustainable development are gaining in importance world-wide, and are high on the agenda of many top universities. The Faculty has made major contributions in terms of both its researches, and the development of its academic programmes to underpin its present international renown in the areas concerned.

On the research front, all four departments in the Faculty have developed substantial expertise in areas related to environment and sustainable development. The Department of Building Services Engineering (BSE) and the Department of Civil and Structuring Engineering (CSE) each have in place a research centre devoted to research in environment-related themes, namely the Research Centre for Building Environmental Engineering in BSE and the Research Centre for Environmental Technology and Management in CSE. The Department of Land Surveying and Geo-Informatics and the Department of Building and Real Estate likewise possess research strengths in the related areas, for example, remote monitoring of environmental changes for the former, and urban planning for sustainability for the latter. The Faculty itself is in the process of developing a research institute/centre in the area of sustainable urban development, in order to integrate research strengths in all the related areas within and outside the Faculty.

On the teaching front, the Faculty has also enhanced its academic programme profile to cater for the rising demand in these areas. Specifically, the Faculty has newly launched two new programmes in environment and sustainable development – one at the undergraduate level, and the other at the postgraduate level – to top up its already well-established Bachelor's and Master's programmes in the related areas.

In view of the fact that the Faculty's presence in the area of environment and sustainable development is progressively strengthening, it is strongly believed that the name of the Faculty should be revised, both to better reflect its strengths and to develop for it a

more appropriate branding. The Faculty's present name falls short of highlighting its focus on the area of environment and sustainable development as one of the strengths of the University. Moreover, 'Environment' is also preferred to 'Land Use' since the latter, especially its Chinese translation (地政) is often not well understood, especially in contexts outside Hong Kong.

The Faculty is confident that its revised name would much better reflect the scope of its expertise. It would thereby convey a clearer message to both our peers and the general public with regard to our strengths, and our commitment to excel in the areas of construction and environment.

更名一事其實已醞釀了接近一年，並經學院內部深入討論；而本院將建議提交教務委員會審批前，亦已進行多回內部及對外諮詢。

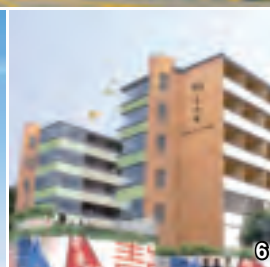
學院萌生更名的念頭，主要是因為全球日益重視與環境及可持續發展有關的議題，不少國際一流學府更把其視為研發重點。至於建設及地政學院，多年來在這個範疇上貢獻良多，無論是科研或課程發展，在國際學術界都享有良好聲譽。

在科研方面，本院屬下四個學系擁有不少從事環境及可持續發展研究的菁英。以屋宇設備工程學系和土木及結構工程學系為例，兩者分別設有「建築環境技術研究中心」與「環境科技及管理研究中心」，專攻與環境有關的研究項目。土地測量及地理資訊學系和建築及房地產學系，科研實力同樣雄厚，前者以遙感技術監測環境變化，後者研究可達致持續發展的城市規劃政策，都取得一定的成就。另外，學院正在籌劃成立一個可持續都市發展領域的研究所／研究中心，期望把學院內外從事相關研究的專才和資源結合起來，發揮協同效應。

教學方面，本院鑑於社會對相關人材的需求極為殷切，除了不斷改良原有課程的內容，還特別開辦兩個以環境與可持續發展為主題，分屬學位及深造程度的課程，使學院的本科及碩士課程組合更為全面。

鑒於我們在環境及可持續發展方面的研究實力越趨雄厚，為了更清晰地突出這些優勢，也為了讓學院更名副其實，更改名稱確然有其必要。現時的名稱未能反映學院在環境與可持續發展（理大的重點發展領域之一）領域的大量工作；另外，很多人對“Land Use”一詞（尤以其中文譯名「地政」為甚）瞭解不多，這種情況到了外地尤其明顯。

我們深信新名稱更能突出學院精擅的領域，使同儕和公眾更瞭解學院的優勢所在，也能更清楚地表達我們在建設及環境領域追求卓越的目標。



- **1 The Hong Kong Polytechnic University, Hong Kong Community College, Hung Hom Bay Campus
- 2 City Revitalization Project at Cheung Chau for The Hong Kong Housing Society
- 3 URA Nga Tsin Wai Village Conservation Park cum Redevelopment
- 4 URA Redevelopment Scheme at Hai Tan Street, Sham Shui Po
- **5 The Hong Kong Polytechnic University Phase 8 Development for 3+3+4 Academic Programme

- 6 Revitalization of Mei Ho House as City Hostel for Hong Kong Youth Hostel Association
- *7 The Hong Kong Polytechnic University, Hong Kong Community College, West Kowloon Campus
- 8 The B & P International Education Park in Beijing
- 9 ASD 24-Classroom Primary School at Inverness Road, Kowloon City

* In collaboration with AGC Design Ltd.
In collaboration with Wang Weijun Architecture



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埠至蚌埠公路 / 國道312合肥至繁昌公路 ●湖南 國道25513長沙至益陽高速公路 ●廣西 國道324桂林段

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以心
Building
Homes
with Heart
建
家



新鴻基地產秉承「以心建家」的信念，堅持追求卓越，精益求精，是香港最具領導地位的發展商之一。集團用心發展每個項目，興建多項地標物業，彰顯香港國際大都會的地位，其中即將全面落成的九龍站環球貿易廣場，與對岸的中環國際金融中心二期組成宏偉壯麗的「維港門面」，勢將成為維港嶄新標誌。

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Sun Hung Kai Properties

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Civil Engineering
Construction and Real Estate
Construction Law and Dispute Resolution
Environmental Management and Engineering
Facility Management
Fire and Safety Engineering
Geomatics (Geographic Information Systems)
Geomatics (Surveying)
International Real Estate (Zhejiang)
Project Management
Sustainable Urban Development

理學碩士 / 深造文憑

屋宇設備工程學
土木工程學
建築及房地產學
建築法及爭議解決學
環境管理及工程學
設施管理
消防及安全工程學
測繪及地理資訊學 (地理資訊)
測繪及地理資訊學 (測量)
國際房地產
項目管理
可持續城市發展學

Department

BSE
CSE
BRE
BRE
CSE
BSE
BSE
LSGI
LSGI
BRE
BRE
FCLU

Bachelor's Degree

Building Engineering and Management
Building Services Engineering
Civil Engineering
Environmental and Occupational Safety and Health
Environment and Sustainable Development
Geomatics (Geo-Information Technology)
Geomatics (Land Surveying)
Geomatics (Utility Management and Surveying)
Property Management
Surveying

學士學位

建築工程及管理學
屋宇設備工程學
土木工程學
環境及職業安全與健康
環境與可持續發展
測繪及地理資訊學 (地理資訊科技)
測繪及地理資訊學 (土地測量)
測繪及地理資訊學 (管線設施測繪與管理)
物業管理學
測量學 *

Department

BRE
BSE
CSE
CSE
CSE
LSGI
LSGI
LSGI
BRE
BRE

Higher Diploma

Building Services Engineering
Building Technology and Management (Engineering)
Building Technology and Management (Surveying)
Civil Engineering
Geomatics (Geo-Information Technology)
Geomatics (Land Surveying)

高級文憑

屋宇設備工程學
建築科技及管理學 (工程)
建築科技及管理學 (測量)
土木工程學
測繪及地理資訊學 (地理資訊科技)
測繪及地理資訊學 (土地測量)

Department

BSE
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BRE
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* 課程名稱將改為「地產建設測量學」，有待審批

For programme details, please contact the departments or visit their websites:

如欲查詢詳細課程資料，請聯絡相關學系或瀏覽學系網頁：

Department of Building and Real Estate (BRE)

建築及房地產學系

2766-5807 / 5808 / 7770
<http://www.bre.polyu.edu.hk>

Department of Building Services Engineering (BSE)

屋宇設備工程學系

2766-5847
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Department of Civil and Structural Engineering (CSE)

土木及結構工程學系

2766-6052
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<http://www.lsgi.polyu.edu.hk>

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碩士及深造文憑課程

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全日制學士學位及非學位課程

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13 December 2010 – 31 January 2011

Non-local applicants 非本地申請人:

13 September 2010 – 31 March 2011

Students applying on the basis of current year Joint Entrance Examination (JEE) results 內地應屆高考生:

20 December 2010 – 7 June 2011

Part-time Bachelor's Degree and Sub-Degree Programmes

兼讀制學士學位及非學位課程

13 December 2010 – 1 March 2011

Programme Entrance Requirements 課程入學要求

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請於 Study@PolyU 查閱最新資料，網址為 www.polyu.edu.hk/study

Enquiries on Application and Admission 查詢申請及入學

Admission Office
Academic Secretariat
The Hong Kong Polytechnic University
Hung Hom, Kowloon, Hong Kong

香港理工大學教務處
香港九龍紅磡

Email 電郵:

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We welcome your articles, news and updates.

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歡迎投稿，所有稿件請交

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