



校長談環保

「中大的環保工作已做得相當不錯，許多老師、同事都投入很多心力，不少新建築物都有環保設計，例如污水處理等。但未來可以做的事還有不少，例如廢紙和塑膠瓶的回收，現在的回收箱數目還不是很足夠，這方面還可以改善。」

另外，探險家李樂詩希望設立展覽館，展出她在極地蒐集的圖片、資料、儀器，我們正在探討能否在中大校園設立這個展覽館。如能成事，不但我們的學生受惠，還可開放給一般市民參觀。我們也和環保署商量一些可合作方案，他們有許多環保意念想推動，例如環保巴士，希望透過大學起示範作用，影響全港。

環保除了好的硬件外，最重要的是人的行為，例如使用空調和電燈的習慣，我希望這方面的教育可以做好一點，不是說有了環保建築就可以盡情開冷氣，令我們的碳排放增加。」

沈祖堯校長

校園的綠色推手 朱利民教授



朱利民教授在辦公室裏養了一缸魚，不是色彩斑斕的名貴珊瑚魚，而是一條條不起眼的異鱧、七星和擬細鯽。他說：「是我的學生從溪流中抓來做研究用的，研究做完就放在我這裏養。」身為校園環境委員會主席的朱教授注重環保，是可以想像的，意想不到的，連養魚怡情也貫徹愛護生靈的原則。

朱教授是生命科學學院教授，專業是應用生態學和生態修復，由他擔任校園環境委員會主席，再適合不過。今年，中大連奪幾個環保獎項，包括最近在2009香港環保卓越計劃中，奪得界別卓越獎公共機構界別的金獎。頻頻出席頒獎禮的他謙稱這是前人種樹，後人乘涼，得獎應歸功於前任領導同事、委員會其他成員和物業管理處等部門同事。

得獎固然值得高興，但朱教授說：「委員會成立多年，我們的環保工作，從來不以獲獎為目標。」

身體力行

在朱教授看來，在中大推動環保是有一些先天困難，「我們的校園廣闊，依山而建，不利於走路或騎單車，師生只好依賴汽車或校巴往來，這自然製造了污染和能源消耗。」

另一個困難關乎人的習慣和部門文化。他舉自己遇到的例子：「我常常在辦公室撿垃圾，我們有兩個垃圾桶，一個用來裝要扔掉的垃圾，一個回收廢物。但有些同事收到垃圾郵件，順手就丟到垃圾桶。我常去撿回來，把紙放到回收箱。剛開始時給人家取笑，現在大家都見怪不怪，並且加入一起做分類。」

「另外，我是聯合書院的院務委員，以前書院寄文件給我都用新信封，我覺得很浪費，就建議用舊信封，甚至用電郵傳遞即可，書院也很從善如流。」

要改變部門文化和同事習慣，非一朝一夕之事。因此委員會的工作重點之一是教育，例如環保大使計劃，希望透過大使把環保訊息帶到各部門。

沒有終點的工作

中大訂立了清晰目標，要在2025年前減少人均溫室氣體排放量百分之二十，人均能源消耗量百分之二十五。要達到減碳目標，就要從節能、省水和減廢着手。

常做研究的朱教授說：「我們做研究，有時用電量很驚人。」另外，空調、照明、電腦都消耗很多電力。除了安裝省電的空調和照明系統外，委員會還與資訊科技服務處研究加設中央伺服器室，把現在各部門分散的伺服器集中，減少恆溫方面的用電。

節約用水方面，現在校園的水龍頭都裝設節水裝置，減少水流量；還利用未圓湖和游泳池的水灌溉，未來會研究能否收集雨水使用。

大學是教學機構，耗紙量不少。我們將加強推廣「無紙辦公室」，盡量減少用紙，例如用電子文件傳遞文件，如非打印不可，就以雙面打印，並用廢紙影印；另外，無用的紙應回收再造。朱教授說：「希望做到沒有一張紙須扔到垃圾桶。」

未來還會推廣綠色採購。委員會最近成立了專責小組，研究制訂綠色採購指引，幫助各部門採購環保節能的產品。此外，委員會正計劃在建築物牆壁試驗垂直綠化；還研究能否在校內設立電動車充電站，如價格合理，甚至考慮引入電動小型貨車。

當了兩年委員會主席的朱教授認為，環保工作得獎，表示有人肯定我們的努力。但是，儘管我們做過的事情不少，但未做或者可以改善的還有很多。正如他所說：「環保是沒有終點的。」

為子孫後代留一個乾淨的地球，人人皆應致力環保，中文大學更是責無旁貸。朱教授說：「大學領導層都很關注環保，得到他們的全力支持，相信委員會締造可持續校園的工作，將有更豐碩的成果。」





Vice-Chancellor on Environmental Protection

‘The University has been doing a good job in protecting the environment of our campus. Many new buildings are equipped with eco-friendly features like wastewater treatment facilities. But there are still many things we should do, such as paper and plastic recycling. Currently we do not have enough recycle boxes. We should do more in this respect.’

Moreover, polar explorer Dr. Lee Lok-sze Rebecca plans to set up an exhibition centre for the pictures, information and equipment she collected from the Arctic and the Antarctic. We’re studying the possibility of placing it on CUHK campus to serve as an education centre for our students and the public. We’re also working with the Environmental Protection Department to look at ways of cooperation. There are many initiatives they want to spearhead, such as green buses. They want the University to set an example for the community.

Environmental protection is more about human behaviour than physical provision. We won’t be able to lower our carbon emissions even if we have more and more green buildings when everyone lets their air conditioners run at full blast. I think it’s important to intensify our efforts to raise environmental awareness on campus.’

Prof. Joseph J.Y. Sung, Vice-Chancellor

In a corner of Prof. Chu Lee-man’s office sits a fish tank, which contains not colourful coral reef fish, but plain-looking freshwater fish. Professor Chu explains, ‘They were caught by my students for research. When their research was over, they gave them to me.’ As the chairman of the Committee on Campus Environment (CCE), Professor Chu is predictably a green-minded person. And his principle of nature conservation is evident in his hobby of fish keeping.

A professor in the School of Life Sciences with research interests in applied ecology and ecological restoration, Professor Chu is the right person for the chairmanship of CCE. He is no stranger to award presentation ceremonies because CUHK has won a number of awards, including the most recent gold award in the public sector of the 2009 Hong Kong Awards for Environmental Excellence. Professor Chu says he was just reaping the fruits of the labour of his predecessor, other CCE members, and colleagues of different University offices like the Estates Management Office.

Winning awards is certainly motivating. But Professor Chu says, ‘CCE has many years’ history. We’re committed to environmental protection, not to applause of others.’

Talk the Talk, Walk the Walk

Professor Chu says that CUHK has some inherent difficulties in promoting environmental protection. ‘Traveling within the campus on foot or by bike is not desirable because of its large area and hilly terrain. And reliance on vehicles inevitably causes pollution and energy consumption.’

Another obstacle lies in personal habits and departmental culture. For this Professor Chu has some personal experiences: ‘I often dig through our office’s garbage for recyclables. We have a garbage bin for waste and a box for paper for recycling. When receiving junk mail, some colleagues would throw them into the garbage bin. I often pick them up and put them into the recycle box. At first, I was laughed at for doing this. Now they are used to it and even join me to sort paper for recycling.’

‘I’m a member of the Assembly of Fellows of United



Green Crusader of CUHK: Prof. Chu Lee-man

College. The College used to send us documents in crisp new envelopes. I told them it’s not necessary. It’s alright to send us documents in used envelopes or by e-mail. The College was quick to accept my suggestions.’

It takes time to change departmental culture and personal habits. So, one of CCE’s major works is education. The Sustainability Ambassador Programme is one example. They hope these ambassadors can raise environmental awareness in different departments.

Work Without End

The University has set the targets of reducing greenhouse gas emissions by 20% and energy use per capita by 25% by 2025. To achieve them, we have to cut back on energy and water consumption and reduce waste.

As a researcher, Professor Chu knows very well that besides air conditioning, lighting and computers, research facilities also consume a lot of electricity. CCE is looking at ways of saving power in addition to introducing energy-efficient devices. The Information Technology Services Centre plans to set up a centralized server room to house servers of different departments to save energy for temperature control.

The University has installed water-saving devices on taps to reduce water flow. The water of Lake Ad Excellentiam and the swimming pool is collected for irrigation. And the viability of collecting rain water for use is being explored.



Paper consumption is high in education institutes like CUHK. To save paper, CCE intends to promote the concept of a ‘paperless office’. Professor Chu says, ‘We hope that not a single piece of paper will be thrown into garbage bins.’

In the future we will promote green purchasing. A task group has been formed under CCE to formulate green purchasing guidelines for departments. CCE plans to experiment with vertical greening on walls of buildings. It also studies the possibility of introducing electric minivans and installing electric vehicle charging stations on campus.

Having been the chairman of CCE for two years, Professor Chu believes that the awards we have received are recognition of our efforts to protect the environment. But there is plenty of room for improvement. He says, ‘There is no finishing line for environmental protection.’

To leave a clean planet for future generations, all of us should be committed to environmental protection. This is what CUHK as a university is obligated to do. Professor Chu says, ‘The senior management of the University are very environmentally conscious. With their support, we believe that we will make substantial progress towards a sustainable campus.’

路旁的綠意——行道樹

Roadside Oases: Street Trees

每天走在中大人行道上的你，或坐校巴、或開車穿行於校園的你，可曾留意過路旁的大樹？有否見過台灣相思開花，灑得遍地金黃？有否忍不住用手去摩娑白千層那層層疊疊的樹皮？有否聞到樟樹散發的芳香？還是總是行色匆匆，根本沒有注意過這些行道樹，也不曾停下腳步探問它們的名字？

行道樹，或稱路樹，泛指種植於道路兩旁的樹木。在樹木眾多的中文大學，物業管理處園藝組把主要車道兩旁三米處的樹木定義為行道樹。

行道樹具有遮蔭、淨化空氣、減低噪音，以及為雀鳥等小動物提供棲息處的生態功能。一整排種類相同的樹木在道路兩旁列隊佇立，也形成一道延伸性的景觀。

現在全中大有約一千八百棵行道樹，近一百個品種，以白千層佔最多，其次為台灣相思。園藝組經理黃秉雄說：「選擇行道樹的樹種，要視乎種植空間大小、樹木生長形態和想要達到的景觀。盡量不會選擇果實大或結漿果的樹種，以避免果實落下傷人或弄髒環境。」

為確保校內行人和駕駛者的安全，行道樹是園藝組重點檢查和保養的對象。負責照顧樹木的員工，都受過訓練。他們每年至少檢查所有行道樹一遍，以目測法為主。該組監工鄭兆斌說：「樹木會說話，生長得健康，它會告訴你。」

樹木告訴你的方式，其實就是它的樹形、樹勢、枝葉生長狀況、有無真菌或蟲蟻等，檢查樹木的員工會以目測觀察這些情況，還會用木槌敲打樹幹，根據發出的聲音判斷內部有無空洞。鄭先生說：「這樣檢查一棵樹，約需要四十五分鐘。」

經過目測後，如員工認為須進一步檢查，會利用園藝組特別購入的兩大利器——阻抗圖譜儀和脈衝式樹木斷層攝影儀——詳細診斷。園藝組還與生命科學學院合作，利用該學院的研究力量支援其工作。

過去十二個月園藝組檢查過的行道樹中，只有約百分之一點三需要跟進處理，如進一步評估、修剪、滅蟲。一般問題不大，也沒有倒塌傷人紀錄。

作家張曉風有一篇散文名為〈行道樹〉，為樹木發聲：「或許有一個早起的

孩子走過來，貪婪地呼吸着鮮潔的空氣，這就是我們最自豪的時刻了。是的，或許所有的人早已習慣於污濁了，但我們仍然固執地製造着不被珍惜的清新。」

下次經過平常不大為人注意的行道樹時，你大抵會細心欣賞這些默默為中大人遮蔭擋雨的珍貴資產，並記得大學裏有一群人盡心盡力，維護它們的健康和安全吧。



生命科學學院學生伍雪瑩以阻抗圖譜儀檢查樹木
Shirley Ng, a student of the School of Life Sciences, examines a tree with a resistograph



黃秉雄先生（左）與鄭兆斌先生
Mr. Wong Bing-hung Billy (left) and Mr. Cheng Shiu-bun Steward

Have you ever paid attention to the trees alongside roads on CUHK campus? Have you seen the ground gilded by a layer of the little yellow flowers of the Taiwan Acacia? Have you been tempted to peel off the thick, spongy barks of the Paper-bark Tree? Have you smelled the scent of the Camphor Tree? Or are you too busy to notice their existence?

Street trees or roadside trees refer to the trees planted along roads. In CUHK, the Landscaping Section of the Estates Management Office defines them as trees located within three metres of both sides of main driveways.

Street trees provide pedestrians with shade, produce oxygen, reduce noise, and provide habitats for birds and other animals. A row of trees of the same species along a road can also create a visual effect of spatial extension.

The University's street tree population consists of about 1,800 trees of approximately 100 species, with Paper-bark Tree and Taiwan Acacia as the most common ones.

Mr. Wong Bing-hung Billy, landscaping manager of the Landscaping Section, says, 'The selection of street tree species depends on many factors, such as planting space, size and shape of the species, and the arboreal scenery you want to create. We normally would not choose those with big or soft fruits out of safety and hygiene concerns.'

To ensure the safety of pedestrians and drivers, street trees are inspected and looked after with great care. The staff who tend them have all been given proper training. Each tree is inspected at least once a year. A procedure called Visual Tree Assessment (VTA) is the primary method used for surveying trees. Mr. Cheng Shiu-bun Steward, works supervisor of the Landscaping Section, says, 'Trees talk. They can tell you whether they are healthy or not.'

The way a tree tells you its physical condition is by the way it grows, such as its shape and form, whether there's fungus infection, and pest infestation. In addition to VTA, our staff taps the trunk with a sounding mallet to look for the dull thud resonated by a cavity. Mr. Cheng says, 'It normally takes about 45 minutes to examine a tree.'

After using VTA, if the tree inspectors want to conduct a more thorough examination of a tree, they have two powerful devices in their arsenal—the resistograph and the ARBOTOM impulse tomography unit. To facilitate their work, the section teams up with the School of Life Sciences to tap their research expertise.

Of the street trees surveyed in the past 12 months, only about 1.3% need follow-up treatment, such as further assessment, pruning, pest control. No case of injury from a falling tree has been recorded.

Taiwanese writer Chang Hsiao-feng speaks for street trees in one of her essays: 'Perhaps a child who gets up

early would come near and greedily breathe in the fresh air. This is the moment of which we are most proud. Perhaps people are all used to filthiness. But we still obstinately produce freshness that is not cherished.'

Next time when you pass by the street trees on campus, you may pay more attention to these green assets of ours that provide us with shade and protection, and appreciate the efforts made by our tree care specialists to ensure the healthy growth and safety of these trees.✿

小白腰雨燕青睞本土設計巢箱 Homegrown Nest Boxes Wins Swifts' Heart

去年3月，大學在大學圖書館南面簷口安裝了二十五個人工巢箱，協助原棲息於圖書館北面、受擴建工程影響的小白腰雨燕遷新居。這些巢箱共有四款，兩款由英國引入，兩款由本校物業管理處設計。

小白腰雨燕一旦失去鳥巢，會在原巢位置或附近地點築建新巢，而在垂直的建築物外牆上築起穩固的巢基，是最困難的第一步。



圖一：在垂直外牆重建的新巢還未完成
Figure 1: A house swift and its incomplete nest



圖二：在人工巢箱上建的新家已竣工
Figure 2: A completed swift nest built on an artificial nest box

為大學監察這些鳥兒的校外顧問詹肇泰博士，在本年7月6日一次定期監察中發現，兩對小白腰雨燕正在圖書館南面外牆築巢。其中一對嘗試在原巢位置重建新巢，另一對則在一款巢箱上築巢。在8月28日，即差不多兩個月後，在原巢位置重建的新巢未見明顯進度（圖一）；而建於人工巢箱上的鳥巢已經完成（圖二）。

這款由本校設計的巢箱，以芒莖骨和木板製作，屬仿巢基的設計。詹博士說：「這次成功利用人工巢箱協助小白腰雨燕築巢，是香港首見的個案。人工巢箱能減少雨燕築巢所需時間，此結果對改進未來的保育措施很有幫助。」

The University installed 25 artificial nest boxes at the eaves of the southern façade of the University

Library in March 2009 as a measure to help the house swifts affected by the expansion works on the building's northern façade to relocate their nests. The 25 boxes comprise four models. Two were introduced from the UK, and two designed by the Estates Management Office of CUHK.

When house swifts lose their nests, they build new ones in the location of the original nests or at a nearby site. The most difficult part of nesting on a vertical wall surface is to make a firm base.

On 6 July 2010, Dr. Tsim Siu-tai, our external consultant in the conservation of house swifts, found in a regular monitoring visit that two pairs of house swifts were nesting on the southern façade of the library. One pair built the nest from scratch.

The other used one of the locally-designed nest boxes as the base of their new nest. Almost two months later, on 28 August, the birds that built their nest from scratch made little progress (Figure 1), while the pair that built their nest on the nest box have completed their new home (Figure 2).

That nest box was made with a tree fern slab and a wooden board. It is intended to serve as a base for the birds to build their nests on it.

Dr. Tsim said, 'This is the first case in Hong Kong where house swifts built their nest with the help of an artificial nest box, which can save the birds much time in nesting. This discovery is significant for the formulation of better conservation measures in the future.'

環保措施改建停車場 Green Measures for Rebuilding Car Park

大學在今年3月搬遷正門保安崗亭位置，並重新規劃富爾敦樓外的停車場，使泊位由六十九個增至九十六個。為貫徹環保原則，改建工程挖出的泥土運到一所中學，供闢建花園之用；而清挖出的混凝土則用作製造環保地磚物料。

The University relocated the guard booths at the main entrance and reorganized the car park at John Fulton Centre in March 2010. The parking spaces at the car park increased from 69 to 96. Environmental measures were implemented for the construction works. The soil removed was reused for the construction of a garden in a secondary school. The concrete debris cleared from the site was recycled as materials for the production of pavement blocks.



興建新淨水設施 New Water Treatment Facilities

大學將興建新的淨水場，選址在方樹泉樓後方空地。這個用於淨化溪水的設施，是本校全面水資源管理系統的重要部分，每年將能淨化二十七萬立方米的水供校園使用，有助減少現在的食水用量，藉此減少十一萬二千二百千克的二氧化碳當量排放，從而減低碳足跡。

淨水場選址靠近現有的主泵房和未圓湖取水口，外觀設計將融入環境，不影響未圓湖景致；運作時產生的噪音也小於現有泵房，在林木阻隔下幾不可聞。建築工程預計明年中完成。

A water treatment plant is planned for construction near the Fong Shu Chuen Building. An important part of the total water management system on campus, the plant will treat water collected from natural streams. It is expected that it can generate 270,000 m³ of usable water annually. With this treated water available for use, we can reduce our current consumption of potable water. And our carbon footprint can be reduced by 112,200 kg of carbon dioxide equivalent emissions.

The carefully selected location is adjacent to an existing main pump room and a water intake point from Lake Ad Excellentiam. The plant will be perfectly hidden so that the scenery at the lake will not be affected. The noise generated by the plant will be smaller than that of the large pump in the main pump room, so that it will not be noticeable with the nearby woodland and bushes functioning as a noise barrier. The construction of the plant is expected to be completed by mid-2011.

