

卓越工程
*We Engineer Hong Kong's
Development*
建設香港



同心展關懷

caringorganisation²⁰⁰⁶⁻⁰⁹

Awarded by The Hong Kong Council of Social Service
香港社會服務聯會頒發

ENVIRONMENTAL REPORT

環保報告



政策 (2006年9月起生效)

我們在施行工程的各個階段，均注重環保。我們通過履行綜合管理系統政策所訂定的下述承諾，致力達到這個目標：

- 遵守適用的法例及其他規定。
- 創建安全、綠化及可持續發展的環境。
- 監督承建商的表現，確保他們遵守本署的規定。
- 避免環境污染，並致力緩解因工程項目及部門運作而可能對環境構成的影響。
- 在可行的情況下，奉行以下原則：資源減省、資源再用和資源循環再造。
- 為持續改進表現，定期檢討綜合管理系統的成效及訂立的目標和指標。

我們的工作與環境息息相關

我們自2006年9月起，在整個部門實施環境管理系統，並在2007年8月為此系統取得ISO 14001:2004認證。透過環境管理系統，我們有系統地監察承建商在環保方面的表現，確保他們遵守有關環保的法例和合約規定。我們在這方面取得顯著成效，部門向公眾提供的服務在環保方面的表現亦得以提升。

在致力提供基本服務以配合香港的發展時，我們審慎地評估工程及作出環保考慮，務求避免工程對環境造成不良影響。在進行工務工程時，我們也藉機引進環保設施改善環境。

Policy (effective from September 2006)

We place due emphasis on environmental considerations in all stages of our projects. We endeavour to achieve this through the following commitments in our Integrated Management System Policy :

- Complying with applicable legal and other requirements.
- Creating a safe, green and sustainable environment.
- Monitoring the performance of our contractors to ensure their compliance with our requirements.
- Preventing pollution and mitigating potential environmental impacts arising from our projects and operations.
- Observing the principles of reduction, reuse and recycling in the consumption of resources wherever practicable.
- Achieving continual improvement through regular review of the effectiveness of our Integrated Management System as well as the Objectives and Targets.

CEDD and the Environment

We have implemented an environmental management system (EMS) throughout the Department since September 2006 and obtained ISO 14001:2004 Certification for this management system in August 2007. By making use of the EMS, we systematically monitor the environmental performance of our contractors to ensure compliance with the legal and contractual environmental requirements. We have achieved remarkable result and enhanced the environmental performance in delivering services to the public.

In providing essential services to support the development of Hong Kong, we carry out assessment with due regard to environmental considerations to avoid causing adverse environmental impacts. In implementing our construction projects, we also endeavour to take every opportunity to introduce environmental facilities to enhance the environment.

2008年的環保工作

Environmental Activities in 2008

我們的工作 CEDD Activities	環保目標 Environmental Objectives	環保措施 Environmental Measures
<p>規劃及設計 Planning and Design</p>	<ul style="list-style-type: none"> · 避免對環境造成不良影響 Avoid adverse environmental impacts · 如無法避免對環境造成不良影響，採取適當的緩解措施 Adopt suitable mitigation measures when adverse impacts are unavoidable · 遵守減少廢物、廢物再用及廢物循環再造的原則 Observe the principles of Waste Reduction, Re-use and Recycling 	<ul style="list-style-type: none"> · 探討不同方法 Explore options · 為指定工程項目進行環境影響評估 Carry out Environmental Impact Assessment for designated projects · 加入緩解環境影響的措施 Incorporate environmental mitigation measures · 編訂建築和拆建物料管理計劃 Compile Construction & Demolition Material Management Plan
<p>建造工程 Construction Works</p>	<ul style="list-style-type: none"> · 確保承建商遵守環保規定 Ensure that contractors comply with environmental requirements 	<ul style="list-style-type: none"> · 遵守環境許可證的審批條件 Comply with Environmental Permit Conditions · 實施環境管理計劃 Implement Environmental Management Plan · 實施環境監察及審核計劃 Implement Environmental Monitoring and Audit Programme
<p>環境改善工程 Environmental Improvement Works</p>	<ul style="list-style-type: none"> · 藉機改善環境 Take every opportunity to improve the environment · 推廣綠化及採用創新的環境美化設計 Promote greening and adopt innovative landscape design 	<ul style="list-style-type: none"> · 廣泛植樹 Adopt extensive planting · 推行綠化總綱圖的工作 Implement Greening Master Plans · 施行人造斜坡鞏固工程時美化斜坡 Landscape man-made slopes in upgrading works · 修復石礦場 Rehabilitate quarries · 監察已在天然山體崩塌殘痕完成的土壤生物修復工程 Monitor installed bioengineering measures at natural terrain landslide scars · 清理河床 Clearing up river beds

環境管理計劃

本署向來注重轄下基建工程的環境管理工作，這些基建工程複雜而繁多，必須有系統地實施綜合的環境管理方法，才能在這方面達到理想的水平。自2005年起，負責2,000萬元以上基本工程合約的承建商，均須為工程制定和推行環境管理計劃。基本上，環境管理計劃載明承建商在工程的環境管理方面的政策、組織結構、職務與責任、培訓覆檢安排等。根據環境管理計劃的部分規定，承建商須委派一位指定的環境主任，確保環境管理計劃在建造工地切實執行，並推行特定的環境滋擾消減措施，例如使用卸泥車機動蓋掩、在工地把拆建物料篩選分類以回收可再用和可循環再造的物料等。直至2008年年底，我們有19份基建工程合約已訂明須實施環境管理計劃。



配備機動蓋掩的卸泥車
Dump truck with mechanical truck cover

Environmental Management Plan

Environmental management is always a high priority for our infrastructure works. The complexity and diversity of our infrastructure works mean that achieving the desired level of environmental performance requires a structured and integrated approach. Starting from 2005, any contractor undertaking a capital works contract with the contract sum exceeding \$20 million has been required to establish and implement environmental management plans (EMP) for the works. In essence, the EMP sets out the contractor's policy, organizational structure, duties and responsibilities, training review arrangements etc. for the environmental management of the works. As part of the EMP requirements, the contractor is required to appoint a designated environmental officer to oversee the implementation of the EMP and implement specific environmental nuisance abatement measures, such as the use of mechanical dump truck covers, and sorting of construction and demolition material on site to recover reusable and recyclable material, etc. As of the end of 2008, 19 number of infrastructure works contracts managed by us have incorporated the EMP requirements.



將軍澳第137區的建築廢物處理設施
Construction waste disposal facilities at Tseung Kwan O Area 137

環境監察及審核計劃

凡《環境影響評估條例》涵蓋的指定工程項目，我們均實施環境監察及審核計劃，以密切監察承建商的環保表現，並確保承建商遵守環境影響評估報告的規定。

建築和拆建物料的管理

公眾填料委員會由署長擔任主席，負責公眾填料的策略性管理。有關的管理工作按下列三項原則執行：

- 減少
- 再用
- 循環再造

政府的政策是在公共工程的規劃、設計和施工階段，盡量減少產生建築和拆建物料。我們為建造業提供服務，讓公眾填料可以在策略性地點的公眾填料接收設施卸置。剩餘的公眾填料我們會暫時堆存，以供日後再用。

在2008年，公眾填料接收設施共接收約790萬公噸公眾填料。

註：如建築和拆建物料是按照《廢物處置條例》傾倒，它們又稱為建築廢物。

緩解環境影響的措施

透過綜合規劃和設計，我們致力減少擬建工程對環境可能造成的不良影響。倘若這些影響實在無可避免，我們在施工及設施運作期間，採取適當的緩解措施。



Environmental Monitoring and Audit Programme

We have implemented the Environmental Monitoring and Audit Programme for all the designated projects covered by the Environmental Impact Assessment Ordinance to closely monitor the environmental performance of contractors and to ensure compliance with the requirements specified in the Environmental Impact Assessment Report.

Management of Construction and Demolition Material

The Public Fill Committee, under the chairmanship of our Director, is responsible for the strategic management of public fill. The strategic management builds on the 3R principle:

- Reduce
- Reuse
- Recycle

It is the government policy to reduce generation of construction and demolition (C&D) material in planning, design and construction of public works projects. We provide a service to the construction industry for the disposal of public fill at public fill reception facilities at strategic locations and we temporarily stockpile the surplus public fill for future reuse.

In 2008, the total quantity of public fill received at public fill reception facilities was about 7.9 million tonnes.

Note: Construction and Demolition Material is also called construction waste if it is abandoned under the Waste Disposal Ordinance.

Environmental Mitigation Measures

Through comprehensive planning and design, we endeavour to minimize all possible adverse environmental impacts resulting from the proposed projects. When projects inevitably bring about adverse environmental impacts, we adopt suitable mitigation measures in both construction and operation stages.

將軍澳填料庫 - 運送剩餘的公眾填料再作有益的用途

Tseung Kwan O Fill Bank - Delivery of surplus public fill for beneficial reuse

▲ 荃灣象鼻山路隔音屏障加建工程

目前，荃灣石圍角邨與象山邨之間的一段象鼻山路毗鄰約1 663個住宅正受高達80分貝(A)L10 (1小時) 的交通噪音影響。這項工程範圍包括在二陂圳與三棟屋村之間沿象鼻山路東行線加建共長約845米、高6米的懸臂式隔音屏障；以及在石圍角邨及象山邨外沿象鼻山路西行線加建長共約645米的半封閉式隔音罩以減低噪音的影響。有關設施可把該處住宅所受的交通噪音降低達18分貝(A)L10 (1小時)。

▲ 九號幹線荃灣石圍角至柴灣角段

九號幹線荃灣石圍角至柴灣角段的主線在2007年2月開放給公眾使用。為紓減交通噪音的影響，我們設置1 700米長的垂直式隔音屏障和3 600米的半開放式隔音罩，以及在主線路面鋪設降低噪音的物料。



▲ Retrofitting of Noise Barriers on Cheung Pei Shan Road in Tsuen Wan

At present, about 1 663 premises adjacent to the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan are exposed to traffic noise of up to 80 dB(A)L10 (1 hour). This project includes retrofitting of cantilevered noise barriers of about 845m in length and 6m in height between Yi Pei Chun and Sam Tung Uk Resite Village and retrofitting of noise semi-enclosure of about 645m outside Shek Wai Kok Estate and Cheung Shan Estate along the westbound carriageway of Cheung Pei Shan Road. The project will reduce the existing traffic noise levels on the affected noise sensitive receivers adjacent to the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan by up to 18 dB(A)L10 (1 hour).

▲ Route 9 Section between Shek Wai Kok and Chai Wan Kok

The main line of the Route 9 Section between Shek Wai Kok and Chai Wan Kok was opened to public in February 2007. In order to mitigate the impact of traffic noise, different types of noise abatement measures including construction of 1 700m long vertical barriers, 3 600m long noise semi-enclosure and low-noise road surfacing along the main line carriageway are provided.

荃灣象鼻山路隔音屏障
Noise barriers on Cheung Pei Shan Road



垂直式隔音屏障和半開放式隔音罩
Vertical noise barriers and noise semi-enclosure

▲中環填海計劃第三期

承建商實施了多項緩解環境影響的措施，以減少施工期間對空氣、噪音及水質的影響。工地人員亦進行定期監察，以確保工程符合環境保護規定。此外，承建商根據其廢物管理計劃，有效地減少建築廢物的產生並利用廢物分類方法，循環再用合適的物料。



▲在舊啟德機場南面停機坪進行 清拆和淨化工程

九龍拓展處於2008年4月批出一份3,200百萬元工程合約，為舊啟德南面停機坪的土地進行清拆和淨化工程，讓未來發展的土地在環境上安全和避免影響日後居民的健康。

該工程合約範圍要處理的污染地點主要限於南面停機坪的前政府飛行服務隊停機坪用地，其他受污染地方均屬局部性質，而且相對較小。有關的污染物主要是金屬、總石油碳氫化合物和揮發性有機化合物，即苯乙烷和二甲苯。

我們以「生物堆置法」處理那些受總石油碳氫化合物和揮發性有機化合物污染的泥土。「生物堆置法」是一項常用的生物除污技術，利用泥土中的微生物促進污染物分解。過程中，我們會透過埋藏於污染堆土中的通氣管道，使堆土保持充氧狀態。

▲Central Reclamation Phase III

The Contractor has implemented various environmental mitigation measures to alleviate the impacts on air, noise and water, etc. during the construction stage. Regular monitoring has been conducted to ensure the compliance with the environmental requirements. In addition, the contractor has effectively minimized the generation of construction waste and recycled suitable material by on-site sorting in accordance with the Waste Management Plan.

在淤泥屏障內進行填沙工程以防止泥沙流出工地
Sandfilling within silt curtain to prevent dispersion of silty plume

▲Decommissioning and Decontamination Works at the South Apron of the Former Kai Tak Airport

Kowloon Development Office awarded a \$32 million contract in April 2008 for carrying out decommissioning and decontamination works at the south apron area of the former Kai Tak Airport, to make land environmentally safe for future development and eliminate any health impact on the future residents.

Major contamination areas identified within the scope of the Contract is limited to the vicinity of the ex-Government Flying Services site. Other contaminated areas are local and comparatively minor in scale. Contaminants consist mainly of metals, total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs), namely, ethylbenzene and xylenes.

A method known as 'Biopiling' is adopted to treat the soil contaminated with TPH and VOCs. It is an established bioremediation technique by means of using micro-organisms in soils to degrade such contaminants. The process requires an aerobic condition, which is achieved through aeration pipes embedded within the contaminated soil piles.

我們以「水泥凝固/穩固法」處理受金屬污染的泥土，加入的水泥會使金屬和凝固/穩固的泥土結成一體，從而避免金屬被釋放出來。至於受金屬和總石油碳氫化合物污染的泥土，我們先以「生物堆置法」處理，然後採用「水泥凝固/穩固法」。經過「生物堆置法」處理的泥土，將盡量在工地再作為填料；而經過「水泥凝固/穩固法」處理的泥土，則將在工地上用作為回填土，上面會覆蓋一米厚的潔淨填土。

在南面停機坪挖掘污染的泥土
Excavation of contaminated soil at the south apron

Regarding the soil contaminated with metals, a 'Cement solidification/stabilization' technique is used in binding the soil to prevent the release of metals. The soil contaminated with both metals and TPH is treated first by means of 'Biopiling' and then 'Cement solidification/stabilization'. The soil treated by means of 'Biopiling' is reused on site as fill material as far as practicable, while the soil treated by means of 'Cement solidification/stabilization' is backfilled on site and then covered with 1m of clean fill.



建造生物堆土及安裝通氣管道
Formation of biopile and installation of aeration pipes

▲ T3道路 - 園景美化工程

為了改善環境，已展開的T3道路園景美化工程，包括種植大約6 700棵喬木，270 000棵灌木/地被植物及提供3.8公頃的綠化地。

▲ Road T3 - Landscape Works

To improve the environment, Road T3 project has been carrying out landscape works which include planting about 6 700 trees, 270 000 shrubs/groundcover and providing 3.8 ha green area.



位於積運街的T3道路園景美化工程
Road T3 landscape works at Chik Wan Street

其他緩解環境影響的措施



地盤出口的洗轆設施
Automated wheel-washing facility at site exits

Other Environmental Mitigation Measures



利用沉澱池處理地盤產生的廢水
Sedimentation tank to treat the wastewater generated on site

▲ 環保教育及培訓

我們為員工提供環保知識及相關技能的培訓，讓員工持續進修，以應所需。在2008年，我們舉辦了下列課程：

▲ Environmental Education and Training

To equip our staff with the necessary knowledge and skills, continuous education in environment-related subjects is provided. In 2008, the following training courses were organized:

課程 Course Title	課程數目 No. of Courses	參加人數 No. of Participants
環境管理及與環境有關的經驗分享研討會、講座和簡報會 Experience-sharing Seminars, Talks, Briefing and De-briefing Sessions, etc. on Environmental Management or Environment-related Topics	5	4
環保法例及環保事項(廢物與空氣)培訓課程 Training Course on Environmental Legislation and Environmental Issues (Waste and Air)	3	112
其他與環境有關的培訓課程 Other Environment-related Training Courses	3	111

▲ 環保辦公室

在辦公室管理方面，我們致力建立環保的工作間，並繼續在辦公室的用紙、用電和廢紙回收方面訂定目標。這些目標不單加強員工執行各項辦公室環保措施的動力，同時亦不斷改進我們在實踐環保方面的表現。

透過管理層的積極推廣，員工已廣泛利用電子布告板發放通告或信息以替代傳閱列印文本，循環再用紙製文書用品如檔案夾、信封及已在一面列印的紙張，在可能情況下盡量採用循環再造產品，離開辦公室前關掉電燈、電腦及打印機，分類回收廢紙、鋁罐及塑料廢料等，這些做法已成為員工習以為常的辦公室實務守則。隨著節用能源的文化在員工中建立，同事亦主動提出節能方案，當中包括在天氣較涼的月份提早關掉空調；為影印機等設備加裝自動關機時間製，以避免這些設備在非辦公時間內仍處於待機狀態而虛耗電能；以及因應地庫停車場已改用較光的T5光管而考慮在適當位置減少照明設施等。這些方案實施後，我們一方面可以達到更高的節約用電目標，同時亦能鼓勵員工共同參與建設環保的辦公室。在同事的努力下，我們持續地在用電、用紙及廢紙回收方面達至既定的節約目標。

總部大樓獲頒發「香港建築物能源效益註冊」計劃升降機及自動梯裝置（升降機）註冊證書

The CED Building has been registered in the Hong Kong Energy Efficiency Registration Scheme for Buildings for Lift and Escalator Installations (Lift)

▲ Green Office

We pursue a green workplace in office management and continue to set specific targets on the consumption of paper and electricity as well as collection of waste paper for recycling. These targets not only spur us to implement various green measures, they also bring about continuous improvement in our environmental performance.

Through active promotion of the management, our staff have adopted green initiatives such as widely using the electronic bulletin board to issue notices or messages instead of circulating hardcopies, reusing file jackets, envelopes and paper printed only on one side, using recycled products as far as practicable, switching off the lights, the computer and the printer before leaving offices, sorting and collecting waste paper, aluminum cans and plastic waste for recycling, etc. as a part of their daily office routines. With the establishment of an energy-saving culture among the staff, colleagues have made a number of energy saving proposals. These proposals include turning off the air-conditioning supply earlier during the cool season, introducing timers to switch off office equipment such as photocopiers after office hours so that such equipment will not remain in standby mode and continue to consume electricity after work, considering to reduce the lighting facilities in appropriate locations of the basement carpark having regard to the installation of brighter T5 fluorescent tubes in the carpark. Upon the implementation of the above proposals, we

can achieve a higher energy saving target and encourage staff participation in building up a green office. With concerted efforts, we continue to achieve the targets on saving electricity and paper consumption as well as collecting waste paper for recycling.



我們在翻新總部大樓時，加裝了變頻變壓系統來推動升降機的運作，令大樓升降機的耗電量顯著地減少。總部大樓因而獲頒發「香港建築物能源效益註冊」計劃 — 升降機及自動梯裝置（升降機）註冊證書。

良好的空氣質素有助提升員工的工作效率，我們繼續支持「清新空氣約章」，履行改善空氣質素的承諾。在2008年，總部大樓連續第六年獲頒發「室內空氣質素管理計劃」良好級檢定證書。年內，六個總部以外的辦事處亦獲頒良好級證書。

為了響應環境保護署的「綠色香港·碳審計」活動，部門在2008年7月已簽署「減碳約章」，承諾在總部大樓進行二氧化碳排放審計，並依審計的結果，訂立減少建築物溫室氣體排放的目標及相應的對策，以全力建設綠色香港。

「香港環保卓越計劃」

我們參加了由環境保護運動委員會主辦的「香港環保卓越計劃」，就部門在整體環境管理方面的成績，競逐「公共機構及非政府機構界別」卓越獎，並在減廢、節能及清新室內空氣三方面申請相關的「環保標誌」。

我們期望透過參與此類獎勵計劃，肯定本署在節能、環保及綠化管理方面所作出的努力，並鼓勵員工及協作夥伴持續推動環境管理的政策，以改善環境，建構綠色香港。

With the installation of the Variable Voltage Variable Frequency System to the lifts of the CED Building during the renovation of the building, significant saving of electricity consumption has been achieved in the lift operation of the building. The CED Building was successfully registered in the Hong Kong Energy Efficiency Registration Scheme for Buildings for Lift and Escalator Installations (Lift).

Good air quality helps to boost work efficiency. We continue to support the "Clean Air Charter" to fulfill our commitment to improve air quality. Up to 2008, the CED building has been awarded the 'Good Class' Indoor Air Quality Certificate for six years straight. During the year, six outstation offices were also awarded the 'Good Class' Indoor Air Quality Certificates.

In support of the "Green Hong Kong - Carbon Audit" Campaign organized by the Environmental Protection Department, we signed the "Carbon Reduction Charter" in July 2008. We undertake to conduct carbon audit in the CED building and formulate targets and strategies on reducing greenhouse gas emission from the building according to the results of the audit in order to build a green Hong Kong.

"Hong Kong Awards for Environmental Excellence"

We have joined the Hong Kong Awards for Environmental Excellence Scheme organized by the Environmental Campaign Committee. We are competing for the Sectoral Award for the Public Sector and Non-government Organizations with our overall environmental management performance. We have also applied for the granting of the Environmental Labels, namely the Wastewi\$e Label, Energywi\$e Label and IAQwi\$e Label, of the Scheme.

Through participating in such activities, we gain recognition for our efforts in energy saving, environmental protection and green management. Our participation will also engage our staff and partners to keep putting environmental management policies into effect for a better environment and greener Hong Kong.

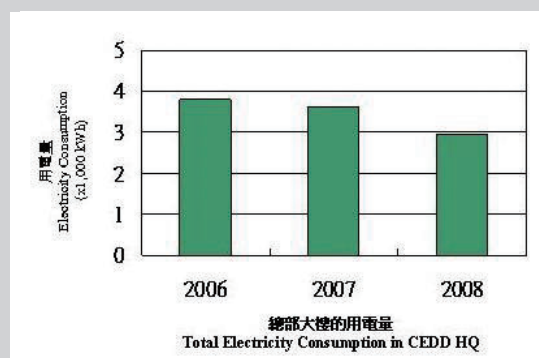
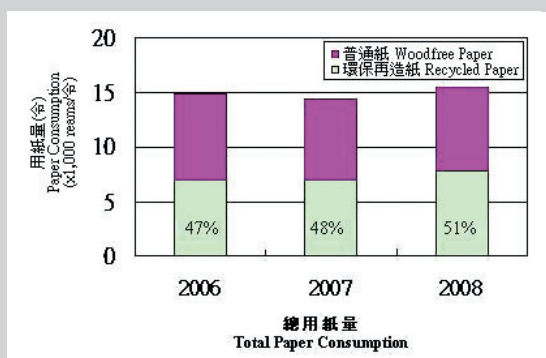
2008年的環保表現

我們每年訂定環保目標和指標，務求在環保表現方面持續改善。2008年的工作成效如下：

Environmental Performance in 2008

To achieve continual improvement in our environmental performance, we set annual environmental objectives and targets. The achievement in 2008 was as follows :

環保目標 Environmental Objectives	環保指標 Environmental Targets	成績 Achievement
減少用紙及用電量 Reduction of paper and electricity consumption	<ul style="list-style-type: none"> * 減少總用紙量，較2003年少15% Reduce total paper consumption over that in 2003 by 15% * 以環保紙取代普通紙至總用紙量的42% Substitute 42% of normal plain paper with recycled paper * 把本署大樓的總用電量維持在2007年的水平 Maintain total electricity consumption of the Civil Engineering and Development Building at 2007 level 	<ul style="list-style-type: none"> * 總用紙量較2003年減少31% Total paper consumption reduced by 31% when compared with that in 2003 * 環保紙佔總用紙量的51% Recycled paper took up 51% of total paper consumption * 本署大樓的總用電量較2007年減少3.3 % Total electricity consumption of the Civil Engineering and Development Building reduced by 3.3% when compared with that in 2007
改善所有人造斜坡的外觀 Enhancement of the appearance of all man-made slopes	<ul style="list-style-type: none"> * 美化340幅在防止山泥傾瀉計劃下已鞏固的斜坡 Landscape 340 upgraded slopes under the Landslip Preventive Measures Programme 	<ul style="list-style-type: none"> * 已美化340幅在防止山泥傾瀉計劃下已鞏固的斜坡 340 upgraded slopes under the Landslip Preventive Measures Programme were landscaped
改善居住環境 Enhancement of living environment	<ul style="list-style-type: none"> * 種植至少70萬棵樹/灌木 Plant at least 0.7 million trees/shrubs 	<ul style="list-style-type: none"> * 已種植120萬棵樹/灌木 1.2 million trees/shrubs were planted





出版 Published :
土木工程拓展署
Civil Engineering and Development Department

設計 Design By :
4a Color Design

地址 Address :
香港九龍何文田公主道101號土木工程拓展署大樓
Civil Engineering and Development Building,
101 Princess Margaret Road, Ho Man Tin, Kowloon, Hong Kong

電子郵件 E-mail :
enquiry@cedd.gov.hk

網址 Web Site :
<http://www.cedd.gov.hk>

政府物流服務署印製
Printed by the Government Logistics Department

2009年3月
March 2009