



土木工程拓展署  
CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT

Environmental Report 2017 環保報告

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



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## 署長的話 Director's Message

我十分高興為大家介紹土木工程拓展署二零一七年的環保報告。這份報告回顧本署在環保方面的各項政策、措施及其成效，讓各位對我們在環境保護方面的工作有更加深入的了解。

在進行各項大型發展計劃及基礎工程項目的同時，我們致力確保工程符合可持續發展的原則。在工地內，我們積極採取多項綠化措施，保護周邊環境，例如：工地辦公室採用綠化外牆，以減少視覺影響和降低室內溫度；使用可重用的金屬棚架代替傳統竹棚來興建臨時工作平台，以減少產生建築廢料；於海事工程中採用雙層隔泥幕，以減低對水質的影響。

減碳節能及循環再用能有效減緩對環境的影響。我們在合適的工地照明系統及交通標誌牌利用太陽能，並已在三個公眾碼頭安裝太陽能供電系統，充分使用再生能源。我們亦採用電動車輛，減少路面廢氣排放及噪音污染。此外，我們將在公眾填料場收集到的拆建物料，循環再造成碎石填料，以減少開採，在二零一七年已有三十項工務工程使用了這些再造石填料。

It is my pleasure to present the Civil Engineering Development Department (CEDD) Environmental Report 2017, which comprehensively illustrates our environmental protection policies, initiatives and achievements.

When launching development plans or infrastructure works, we are always committed to ensure a sustainable development. In construction sites, we proactively formulated various greening measures to protect the environment. For example, we built green walls in site offices to reduce visual impact and lower the indoor temperature in the office. Reusable metal scaffold, instead of traditional bamboo scaffold, were adopted to provide temporary working platform, to minimize construction waste. In marine works, we used double layer of silt curtain to reduce the impacts on water quality.

Reduce, Recycle and Renewable Energy are proven the effective measures to save our environment. We installed solar panels in three public piers for electricity supply. We used electric vehicles to reduce emission of greenhouse gases and noise pollution. Moreover, a good proportion of construction and demolition materials collected in public fill reception facilities were recycled into rockfill materials, reducing the need of mining. In 2017, the recycled rockfills have already been used in thirty different public works contracts.



林世雄太平紳士  
Lam Sai-hung, JP

土木工程拓展署署長  
Director of Civil Engineering and Development

我們一直持續改進，每年都會訂立一系列的環保目標，主要包括總用紙量、環保紙用量、辦公室的總耗電量、美化鞏固的斜坡數目、樹/灌木種植量等等。我欣然宣佈，在各單位協調及努力下，二零一七年的環保目標已經全部達成。我們不但有一套已取得ISO14001認證的環境管理系統，環保措施和綠化成果亦一直獲得專業團體的認同。

作為拓建香港的機構典範，除了力求工程卓越，我們一直非常重視環保工作，為香港的可持續發展出一分力。在未來，我們會繼續全力以赴，為市民締造更加美好的生活環境。

We consistently look for continuous improvement in our environmental performance, therefore we have set a series of annual environmental objectives and targets, including gross paper consumption, recycled paper consumption, energy consumption, landscape upgraded slope numbers and the trees/shrubs planting quantity. With concerted efforts of my colleagues, I am grateful to announce that all 2017 targets have been achieved. Together with our ISO14001-certified environmental management system, our environmental protection measures and achievements are constantly recognized by the professional organizations.

As a leading organization engineering the development of Hong Kong, we do not only strive for engineering excellence, we also resolutely focus on protecting the environment and ensuring a sustainable development in Hong Kong. In the future, we will continue to do our best to create a better living environment for all citizens in Hong Kong.

# 引言 Introduction

## 關於本報告

這份土木工程拓展署環保報告總結了由二零一七年一月一日至十二月三十一日我們的環保措施成果。報告亦展示我們支持《清新空氣約章》、節約能源、環保培訓、可再生能源、環境管理及公眾參與所作出的努力。

## 部門概覽

土木工程拓展署是香港特區政府發展局轄下的工務部門，主要工作範疇包括土地及基礎建設、港口及海事工程服務、岩土工程服務以及環境及可持續發展服務。

在組織架構方面，除了部門總部外，我們設有兩個功能分處、四個分區拓展處及可持續大嶼辦事處。兩個功能分處分別是土木工程處及土力工程處。土木工程處負責海陸基建工程、公眾填土管理和制訂並執行綠化總綱圖等工作。而土力工程處的工作包括斜坡安全、修復石礦場及提供岩土諮詢服務等。此外，東、南、西、北四個分區拓展處，則負責其地理位置內的土地開拓、配套基建、工程建設、策略性發展研究等工作。最後，在二零一七年成立的可持續大嶼辦事處，則負責執行大嶼山及其他離島各發展項目、保育計劃和與工程相關的地區行政工作。

土木工程拓展署二零一七年的編制共有大約一千九百名員工，大約有三分之二是專業和技術人員，包括土木工程師、土力工程師、技術主任、測量師和園境師等。

## About this Report

This CEDD Environmental Report summarizes our environmental achievements in the period from 1 January 2017 to 31 December 2017. It also presents our efforts in supporting the Clean Air Charter, energy saving, renewable energy, environmental management and public engagement in CEDD projects and staff environmental training.

## Department Profile

The Civil Engineering and Development Department (CEDD) is a department of the Hong Kong SAR Government under the Development Bureau. The four major areas of services of CEDD are provision of land and infrastructure, port and marine services, geotechnical services, and environment and sustainability services.

Besides headquarters, CEDD has two functional offices and five development offices. As functional offices, Civil Engineering Office is responsible for infrastructure, port works, landfill management and greening works, while Geotechnical Engineering Office's work include slope safety, quarry maintenance and geotechnical consultations. Meanwhile the East, South, West and North Development Offices are responsible for the land development, infrastructure works, feasibility studies etc. in their respective areas. Last but not least, the Sustainable Lantau Office, established in 2017, is responsible for implementing the development and conservation plans in the Lantau Island and other islands.

In 2017, there are around one thousand and nine hundred staff in CEDD, while two-third of them are professional and technical grade staff, including civil engineers, geotechnical engineers, technical officers, surveyors and landscape architects etc.



## 我們的環保政策與工作

我們在建造工程的各個階段，均非常注重環境的保護，致力履行綜合管理系統政策下所訂定的各項承擔，包括：

- 遵守與保護環境相關的法例及其他規定
- 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環保規定
- 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以及其目標和指標

我們還推行了一套環境管理系統，土木工程拓展署的綜合管理系統並已成功取得ISO14001:2015認證。我們的環保措施和綠化成果，亦獲得專業團體的認同。



## Our Environmental Policy and Activities

We place due emphasis on environmental protection considerations in all stages of our construction projects, which are achieved through the following commitments in our Integrated Management System (IMS) Policy:

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

We have also implemented an environmental management system and CEDD IMS was successfully certified to ISO14001:2015 in mid 2017. Our environmental measures and greening achievements have been well recognized by professional bodies.



## 清新空氣約章 Clean Air Charter

### 綠色辦公室

我們積極履行「清新空氣約章」的承諾。截至2017年，土木工程拓展署大樓連續第15年獲頒發室內空氣質素良好級檢定證書，連同總部以外的辦事處，本署獲頒合共12張「良好」級檢定證書。

我們繼續履行「減碳約章」的承諾。在2016年4月至2017年3月期間，總部大樓的運作直接產生的二氧化碳為32.28公噸，而通過用水用電間接排放的二氧化碳則為2,236.19公噸。二氧化碳的總排放量比上一年少36.34公噸。

The image shows a formal Indoor Air Quality Certificate (Good Class) issued by the Environmental Protection Department (EPD) of the Government of the Hong Kong Special Administrative Region. The certificate is for the Civil Engineering and Development Building, located at 101 Princess Margaret Road, Homantin. It certifies that the indoor air quality fully complies with the Good Class objectives. The certificate is valid from 27 Dec 2016 to 26 Dec 2017. It is signed by Shek Ka Wing, an approved HKIAS IAQ Signatory, on behalf of CMA Industrial Development Foundation Limited. The certificate number is 0082007201701 (2013).

**環境保護署**  
ENVIRONMENTAL PROTECTION DEPARTMENT

**HKIAS**  
HKIAQ 2013

**Indoor Air Quality Certificate (Good Class)**  
室內空氣質素檢定證書〈良好級〉

Valid period: 27 Dec 2016 to 26 Dec 2017  
有效日期: 27 Dec 2016 到 26 Dec 2017

I hereby certify that the indoor air quality of the following location(s) has fully complied with the Good Class of the Indoor Air Quality Objectives.  
本人證明下列地點的室內空氣質素完全符合「良好級」室內空氣質素指標。

Name of building: Civil Engineering and Development Building  
建築物名稱: 土木工程拓展署大樓  
Address: 101 Princess Margaret Road, Homantin  
地址: 何文田公主道101號

Certified location(s): Whole Building  
已檢定地點: 全幢

Approved HKIAS IAQ Signatory  
香港認可審核室內空氣質素簽署人員  
Name: Shek Ka Wing  
姓名: Shek Ka Wing  
IAQ Certificate Issuing Body: CMA Industrial Development Foundation Limited  
室內空氣質素證書發機構: CMA Industrial Development Foundation Limited  
Signature: [Signature]  
簽署: [Signature]  
Date of issue: 05 Jan 2017  
簽發日期: 05 Jan 2017  
Certificate No.: 0082007201701 (2013)  
證書編號: 0082007201701 (2013)

(This certificate is issued based on the results of the HKIAS endorsed inspection report no. AV0000066(0).  
(此證書是根據香港檢驗機構認可計劃檢驗報告編號 AV0000066(0) 所得之結果發出)

Indoor Air Quality Certification Scheme for Offices and Public Places  
辦公室及公眾場所室內空氣質素檢定計劃

IAQ  
Indoor Air Quality Information Centre  
室內空氣質素資訊中心

**室內空氣質素檢定證書〈良好級〉**  
**Indoor Air Quality Certificate (Good Class)**

### Green Office

We actively fulfilled our commitment under the “Clean Air Charter”. Up to 2017, the Civil Engineering and Development (CED) Building has been awarded the “Good Class” Indoor Air Quality Certificate consecutively for fifteen years. Together with our outstation offices, we were awarded a total of twelve “Good Class” Indoor Air Quality Certificates.

We continued to fulfill our obligations under the “Carbon Reduction Charter”. From April 2016 to March 2017, the amount of carbon dioxide generated directly by the operation of the CED Building was about 32.28 tonnes, while the amount emitted indirectly through water and electricity consumption was about 2,236.19 tonnes. The amount of carbon dioxide emitted was 36.34 tonnes less than that of the preceding year.

### 使用電動汽車

電動車由內置的可充電電池的電力推動。由於電動車輛不會排放引致路邊空氣污染的廢氣及減少排放溫室氣體，從而有助改善路邊空氣質素。此外，電動車行走時不會進行內燃運動，因而較以內燃引擎推動的車輛寧靜，有助減少交通噪音的污染。現時，在土木工程署共有10輛電動汽車值勤，包括於2015年至2017年期間，土木工程拓展署批予工程合同中的8輛電動車及屬於部門的2輛電動車。

### Use of Electric Vehicles

Electric vehicles (EV) is driven solely by the electrical power using its built-in rechargeable batteries. As EV does not exhaust emission which is one of the major sources of roadside air pollution, it reduces greenhouse gas emissions and thus improves roadside air quality. Moreover, without internal combustion occurs in EVs in motion, they are quieter than those driven by internal combustion engine, and help reducing traffic noise pollution. At present, CEDD has 10 EVs in service, including 8 EVs provided by CEDD's works contracts awarded from 2015 to 2017 and CEDD headquarters' 2 EVs.



電動車  
Electric Vehicle

## 節省用電

本署大樓的總耗電量，由2013年的3,362,000度減少至2017年的3,237,000度，減少了3.72%。

本署於2017年的耗電量如下：

本署辦公室 <sup>1</sup> CEDD Offices <sup>1</sup>	耗電量(千瓦小時) [與2013年比較的增減幅] Electricity (kWh) [Reduction as compared with 2013]
土木工程拓展署大樓 CED Building	3,236,927 [-3.72%]
工務中央試驗所大樓 PWCL	1,798,987 [-15.93%]
旺角道一號商業中心 One Mong Kok Road Commercial Centre	248,086 [-8.63%]
觀點中心 Kwun Tong View	121,532 [-17.63%]
華懋廣場 Chinachem Golden Plaza	133,049 [+1.29%] <sup>3</sup>
新都會廣場 <sup>2</sup> Metroplaza <sup>2</sup>	80,465 [不適用] [NA]

注釋:

1. 只包括已安裝獨立電錶的辦公室。
2. 相關辦公室於2014年或以後才開始使用，因此與2013年耗電量的比較並不適用。
3. 隨著工作人員及所需的辦公設備增加，耗電量亦會同時增加。

## Saving in Electricity Consumption

The total electricity consumption of the CED Building has been reduced by 3.72%, from 3.362 million kWh in 2013 to 3.237 million kWh in 2017.

The Electricity Consumption of CEDD in 2017 is as follows:

本署辦公室 <sup>1</sup> CEDD Offices <sup>1</sup>	耗電量(千瓦小時) [與2013年比較的增減幅] Electricity (kWh) [Reduction as compared with 2013]
新文華中心 <sup>2</sup> New Mandarin Plaza <sup>2</sup>	13,324 [不適用] [NA]
帝國中心 Empire Centre	187,147 [-10.26%]
南洋中心 <sup>2</sup> South Seas Centre <sup>2</sup>	16,164 [不適用] [NA]
英皇道1063號 <sup>2</sup> 1063 King's Road <sup>2</sup>	21,714 [不適用] [NA]
狗虱灣政府爆炸品倉庫 Kau Shat Wan Explosives Depot	414,221 [-17.72%]
九龍政府爆炸品倉庫 Kowloon Explosives Depot	40,046 [-7.37%]

Notes:

1. Only offices with individual electricity metres installed are included.
2. The offices were commissioned in or after 2014, comparison with 2013 is not applicable.
3. The increase in electricity consumption was due to the increase in number of staff and office equipments.



## 清新空氣約章 Clean Air Charter

### 節省用電措施

在2017年度, 本署推行/計劃推行的節省用電措施如下:

- (1) 日常運作 - 本署繼續積極提醒同事採取日常節能措施 (如在離開辦公室時關掉電燈及電腦)。
- (2) 節能方案 - 本署正安排提升本署大樓的通風系統以改善其效能。本署亦繼續與機電工程署保持聯繫, 探討各種可行的節能方案。

### 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得到持續改善。2017年的工作成效如下:

#### 2017年的環保目標和指標 Environmental Objectives and Targets in 2017

減少總用紙量, 較2003年少22.5%  
Reduce total paper consumption by 22.5% as compared with that in 2003

以環保紙取代普通紙至總用紙量的48%  
Substitute 48% of normal plain paper with recycled paper

減少本署大樓的總用電量, 較2013年少3%  
Reduce total electricity consumption of the CED Building by 3% as compared with that in 2013

本年度美化150幅在「長遠防治山泥傾瀉計劃」下鞏固的斜坡  
Landscape 150 upgraded slopes under the Landslip Prevention and Mitigation Programme in this year

本年度種植至少88萬棵樹/灌木  
Plant at least 0.88 million trees/shrubs in this year

### Electricity Saving Measures

In 2017, we have implemented the following electricity saving measures:

- (1) Housekeeping measures - we have continued to proactively remind colleagues to adopt daily energy saving measures (e.g. switching off lighting and shutting down computers when away from office).
- (2) Electricity saving projects - we are arranging for the upgrade of the ventilation system of CED Building to enhance its efficiency. We have kept liaising with the EMSD to explore feasible energy saving opportunities.

### Environmental Performance

To achieve continuous improvement in our environmental performance, we have set annual environmental objectives and targets. Below is a summary of our achievement in 2017:

#### 2017的成績 Achievement in 2017

總用紙量較2003年減少29.9%  
Total paper consumption reduced by 29.9% when compared with that in 2003

環保紙佔總用紙量的51%  
Recycled paper accounted for 51% of total paper consumption

本署大樓的總用電量較2013年減少3.72%  
Electricity consumption of the CED Building reduced by 3.72% when compared with that in 2013

本年度已美化155幅在「長遠防治山泥傾瀉計劃」下鞏固的斜坡  
155 upgraded slopes under the Landslip Prevention and Mitigation Programme have been landscaped in this year

本年度已種植200萬棵樹/灌木  
2 million trees/shrubs have been planted in this year

## 可再生能源

由於地球上的化石燃料正逐步消耗，加上它會對環境造成不良影響，可再生能源扮演的角色越趨重要。可再生能源與化石燃料(例如煤及石油)不同之處，在於前者可讓我們用之不竭，而且在周圍環境中蘊藏量極多，可來自太陽、風、流水、海浪及生物質能等。可再生能源資源最大好處無疑是可以不斷重複使用；而另一大好處是這些能源不會釋放溫室氣體或其他空氣污染物。

### 三個公眾碼頭 - 荃灣公眾登岸台階，東涌發展碼頭 (公眾) 和 西貢公眾碼頭

我們挑選了三個公眾碼頭以安裝太陽能系統作初部嘗試，所獲得的實地資料和經驗將成為日後在規劃和設計海上設施的電器組件及照明方面的寶貴參考。太陽能是來自太陽的輻射光和熱量，以用作發電用途。它是再生能源的重要來源。太陽能可以成為一個極具吸引力的電力來源。這三個挑選出的公眾碼頭總太陽能電池板產生的能量是每天 15.51 千瓦時。

## Renewable Energy

With the gradual reduction of available fossil fuel reserves and its impact on the environment, renewable energy (RE) is becoming increasingly important. Unlike fossil fuels such as coal and oil, RE will never run out. It is abundant in the environment, which can come from the sun, wind, running water, waves, and biomass. The absolute value of all RE sources is that we can use them repeatedly. Another important advantage is that they will not emit greenhouse gases or atmospheric pollutants.

### Three Public Piers - Tsuen Wan Public Landing, Tung Chung Development Pier (Public) and Sai Kung Public Pier

We have selected three public piers to install solar energy systems for initial trials. The field data and experience will be valuable reference for our future planning and design of electrical installations including lightings in our piers. Solar energy is the radiant light and heat from the sun to be used for power generation. It is an important source of renewable energy. Solar energy can be a very attractive source of electricity. The solar panels installed at the three selected public piers generate energy of 15.51 kwh per day.



於東涌發展碼頭(公眾)的太陽能系統  
Solar Energy System in Tung Chung Development Pier (Public)

於西貢公眾碼頭的太陽能系統  
Solar Energy System in Sai Kung Public Pier



於荃灣公眾登岸台階的太陽能系統  
Solar Energy System in Tsuen Wan Public Landing

## 可再生能源 Renewable Energy

### 啟德發展計劃 - 啟德機場北面停機坪第3A及第4期基礎設施 (污水泵站 NPS 及 PS2)

我們也於啟德發展計劃中的污水泵房樓頂安裝太陽能電板作為輔助電源。太陽能電池板可以產生的能量是每天161.64千瓦時。

### Kai Tak Development – Stage 3A & Stage 4 Infrastructure Works at North Apron Area of Kai Tak Airport (Sewage Pumping Station NPS & PS2)

We also installed solar panels at roofs of sewage pumping stations as auxillary power supply in the Kai Tak Development. The solar panels can generate energy of 161.64 kwh per day in the Kai Tak Development.



於啟德發展污水泵站樓頂的太陽能系統  
Solar Energy System in Sewage Pumping Station of Kai Tak Development

## 啟德的智能元素

在啟德發展區，政府鼓勵在建築及基建設計方面加入智能元素，以提升區內優質生活及促進可持續發展。

## 綠建環評評級

所有建築樓面面積超過5000平方米的新建政府建築物，將以達致香港綠色建築議會的綠建環評 (BEAM Plus) 的金級或以上評級為目標。當中如啟德郵輪碼頭大樓、污水泵房及淤泥清理站、工業貿易大樓及香港兒童醫院等，均獲得綠建環評認證註冊登記「金」評級或以上評級。

## 較高的綠化比例

啟德發展區的建築物旨在實現綠色環保建築設計。

## Higher Green Ratio

Buildings in Kai Tak Development are designed to achieve Green Building Design.



較高的綠化比例  
Higher Green Ratio

## Smart Elements at Kai Tak

At the Kai Tak development area, the Government promotes the inclusion of smart elements in the design of government buildings and infrastructures to enhance living quality and sustainable development.

## Green Building Environmental Assessment (BEAM Plus) Rating

All newly-built government buildings with a floor area of more than 5,000 square meters will be targeted to achieve the gold rating of or above by the BEAM Plus of the Hong Kong Green Building Council. The Kai Tak Cruise Terminal, sewage pumping stations and desilting compounds, Trade and Industry Tower and Hong Kong Children's Hospital have achieved "Gold" or above rating for BEAM Plus certification as better and more environmental designed buildings.



啟德明渠重建及改善工程獲取綠建環評認證暫定鉑金級  
Provisional Platinum of BEAM Plus in Reconstruction  
and Upgrading of Kai Tak Nullah

## 環境管理 Environmental Management

### 智能水錶

為積極響應政府將香港建設成環保及善用資源城市的新措施，我們已在啟德發展區推展智能水錶項目。智能水錶自動提供實時讀數及過往用水記錄，有助改善供水規劃及管理。此外，智能水錶的用戶將可透過互聯網或手機應用程式查詢耗水量，有助他們養成良好的節水習慣。

### 私營建築項目

另外，土木工程拓展署亦跟各相關政策局及政府部門合作，透過土地契約納入具體規定，包括要求新發展項目，例如市建局住宅項目「煥然壹居」，必須為綠建環評認證註冊登記「金」評級或以上，並按發展項目的用途，要求採用較高的綠化率及增強步行街的街景、使用智能水錶、公開實時泊車位資料、提供電動汽車充電設施，或使用區域供冷系統等。



智能水錶  
Smart Water Meters

### Smart Water Meters

In order to actively respond to the government's latest initiative to develop Hong Kong into a green and resource-efficient city, we have put forward a Smart Metering Initiative in Kai Tak development area. Smart metering provides automatic and essentially real-time reading of water meters and historical consumption data to enable better planning and management of water supplies. It also provides consumption data that can be made available to consumers through the Internet or a mobile phone app for their reference to help them establish good water conservation habits.

### Private Development Project

Besides, CEDD, in collaboration with relevant government bureaux/departments, have further incorporated specific requirements through land leases, including requiring new development projects, such as "De Novo" by Urban Renewal Authority (URA), to be registered with the "Gold" rating or above for BEAM Plus certification, and to require a higher greening ratio and to enhance the streetscape of pedestrian streets, to use of smart water meters, to share real-time parking spaces information, to provide electric vehicle charging facilities, or to adopt the use of district cooling system.



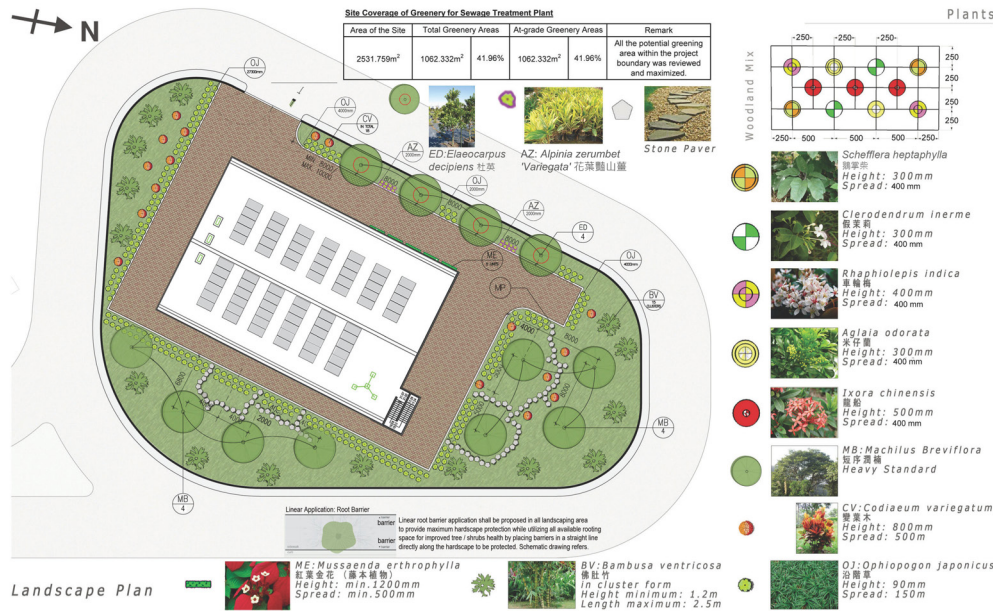
私營建築項目獲取綠建環評認證  
BEAM Plus Certification in Private Development  
Project

蓮塘/香園圍口岸與相關工程 - 污水處理廠

本項目帶出了一個不可或缺的概念：「可持續設計需始於項目開端」，實現了鄰里共融、綠色建材、高能效益、高水效益、及良好室內環境質素。這是首個榮獲綠建環評新建建築(1.2版)暫定鉑金級殊榮的污水處理廠，不但讓可持續設計概念融入整體污水廠的設計，同時確保其運作安全性及可靠性的實際要求。

Liantang / Heung Yuen Wai Boundary Control Point and Associated Works - Sewage Treatment Plant

The project demonstrates an indispensable concept: “Think Sustainability from Project Commencement” to integrate with neighbourhood, wisely use resources, advocate energy and water efficiency, improve indoor environmental quality, and enhance performance. It is the first sewage treatment plant achieving BEAM Plus NB v1.2 Provisional Platinum through a balanced approach recognizing sustainable design and best practices without compromising operation and reliability.



污水處理廠的景觀設計  
Landscape Plan of Sewerage Treatment Plant



## 環境管理 Environmental Management

本項目更在2017年度綠建環評頒獎典禮中備受肯定，在未來營運階段，目標成為污水廠業界的好榜樣。環保特點包括：

It was commended in BEAM Plus Certification Ceremony 2017 and its operation will be a role model of sustainable development for future sewerage treatment plants. Some green features include:

環保特點 Green Features	
符合城市設計指引的要求 Meeting HKPSG Urban Design Guidelines	安裝相等於建築佔地面積21%的太陽能板發電 PV panels covering 21% building footprint
優化園景設計，減少地面水徑流直接排入河道及提升自然生境質素 Maximizing hard and soft landscapes to reduce surface runoff and enhance habitat quality	採用節水潔具，每年節省41%食水及減少56%污水排放 Water saving fixtures achieve 41% annual potable water saving and 56% annual sewage reduction
不影響周邊風環境、氣溫、鄰舍自然採光、光污染 No impact on wind environment, air temperature, neighbourhood, daylight, light pollution	回收及處理污水作灌溉水，無需使用食水 Recycled wastewater for irrigation to achieve 100% reduction of potable water
行車及行人道的 80%面積採用含再造物料 80% exterior surfaces adopt recycled materials	安裝水管洩漏感測器減少浪費食水 Sensors alert potable water leakage
87%建築材料來自800km範圍 87% building materials within 800 km	良好的室內設計令揮發性有機化合物、甲醛及氬氣達內空氣質素檢定計劃「良好級」 IAQ Good Class for VOCs, formaldehyde and Radon
採用無CFC冷媒及不含消耗臭氧層物質 No CFC-based refrigerants and ozone-depleting substances	有效除臭 Odour properly treated
採用高效冷氣及LED燈，每年可節能16% High COP ACs and LED lamps to achieve 16% annual energy saving	合適的室內照明、提供維修平臺、起重機、外部樓梯、SCADA等設施方便維修保養 Optimal interior lighting, maintenance platform, lifting appliances, external, staircase, SCADA, for O&M



2017年度綠建環評頒獎典禮  
BEAM Plus Certification Ceremony 2017

### 惰性拆建物料的循環再用與再造

政府一直透過多管齊下的措施，以妥善管理本地建造業所產生的各類拆建物料，當中包括鼓勵盡量減少和重用拆建物料。因此，土木工程拓展署在將軍澳和屯門營運公眾填料接收設施以接收及貯存惰性拆建物料，待日後在填海或地盤平整工程中使用。

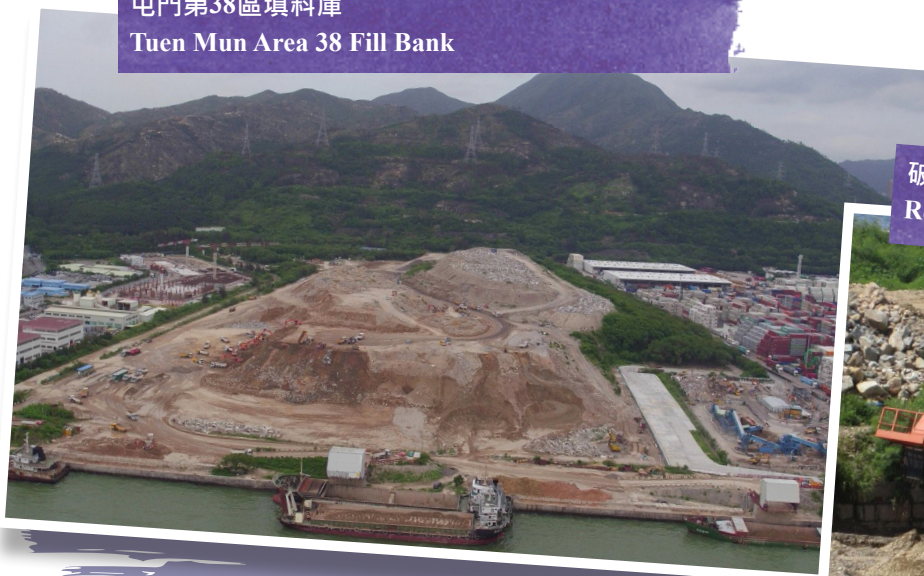
這些拆建物料中，一部分為破碎混凝土及石塊，可經循環再造成再造碎石填料後重用於工程，以減少開採，有助香港得以持續發展。在2017年，有30項工務工程使用了我們生產的200級再造石填料。由2017年5月起，我們亦接受私人工程項目的訂購申請，而有關服務只以收回成本方式收費。

### Reuse and Recycling of Inert Construction and Demolition Materials

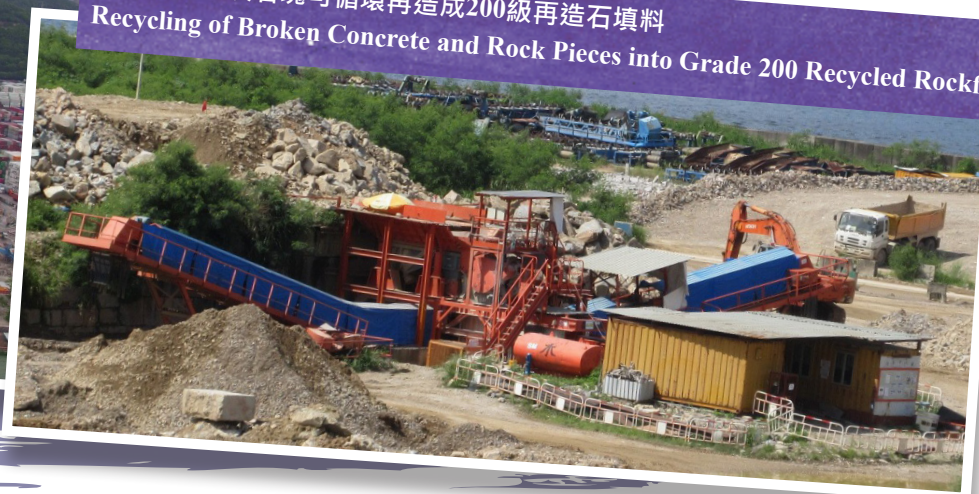
The Government is adopting a multi-pronged approach to manage Construction and Demolition (C&D) materials generated by the local construction industry, including promoting minimisation and reuse of C&D materials. As a result, CEDD commissions public fill reception facilities in Tseung Kwan O and Tuen Mun to receive and temporarily stockpile inert C&D materials disposed of by the local construction industry for reuse in new reclamation or site formation projects.

A good proportion of these C&D materials are broken concrete and rock pieces which can be recycled into recycled rockfills for use in construction works, reducing the need of mining for sustainable development in Hong Kong. In 2017, 30 number of public works contracts have used the Grade 200 recycled rockfills produced by CEDD in their construction works. Since May 2017, private projects can also source Grade 200 recycled rockfills from CEDD, which will be charged on a cost-recovery basis.

屯門第38區填料庫  
Tuen Mun Area 38 Fill Bank



破碎混凝土及石塊可循環再造成200級再造石填料  
Recycling of Broken Concrete and Rock Pieces into Grade 200 Recycled Rockfills





## 環境管理 Environmental Management

### 使用回收玻璃進行填海工程

在東涌新市鎮擴建工程計劃中，回收玻璃物料將會用作填海工程，估計數量約為8萬公噸。該工程合同已於2017年12月招標。

### 長遠防治山泥傾瀉工程相關的綠化工程

推展「長遠防治山泥傾瀉計劃」下的斜坡工程時，我們不僅重視斜坡的穩固性，亦注意斜坡的外觀和生態方面的可持續性。為了減低斜坡的視覺影響，我們會美化所有鞏固後的人造斜坡和位於天然山坡上的建構物。在力求斜坡及建構物外觀自然並與周圍環境配合的前提下，我們會盡量採用植被護面，只有在斜坡穩固性不足或需要緊急維修時，才使用硬性護面。我們平均每年在長遠防治山泥傾瀉工程中所栽種的植物約有30萬棵，當中超過9成為本土品種的植物。

### Use of Recycled Glass for Reclamation

In Tung Chung New Town Extension project, glass cullets will be used for reclamation works with an estimated quantity of about 80 000 tonnes. The works contract of this project was tendered in December 2017.

### Greening Works Associated with Landslip Prevention and Mitigation Works

When implementing the slope works under the Landslip Prevention and Mitigation Programme, we pay attention not only to the stability of the slopes but also to their appearance and ecological sustainability. To minimise the visual impact, landscape treatments are provided to all upgraded man-made slopes and engineering works on natural terrain. In pursuit of a naturalistic and environmentally conforming appearance for the upgraded slopes and engineering works on natural terrain, we provide vegetation cover wherever practicable and use hard surface cover only as the last resort on slope stability grounds and as emergency repairs. On average, we plant about 300 000 plants each year in connection with our landslip prevention and mitigation works, and over 90% of the plants are native species.



東涌東發展區概念圖  
Conceptual Image of Tung Chung East Development Area



配合鄰近天然山坡地貌修復山泥傾瀉痕跡  
Repair of landslide scar to match with the  
neighbouring woodland hillside

### 暢道通行工程

為配合政府保護環境、節約能源及減低碳排放方面的政策，新加建的升降機均採用了機械式通風設計，取代以往沿用的空調系統設計。升降機的機械式通風系統會不停運作，抽氣扇及相配合的進氣口會保持升降機內的空氣流通，抽氣扇的轉速會隨着周圍環境溫度而自動調節，以達致合適的換氣率，令升降機內的溫度與周圍環境的溫度相若，確保使用者在升降機內的舒適度。外牆則按比例採用節能的低輻射玻璃物料減少吸熱，以降低升降機內溫度。此外，升降機內採用LED燈照明，它的耗電量是傳統日光燈的三分之一以下，壽命也是傳統日光燈的10倍，可以長期使用而無需更換，省電環保。

### Universal Accessibility Project

To comply with the Government's policy in environmental protection, energy saving and carbon emission reduction, mechanical ventilation system is provided for lift instead of the air-conditioning system. The fans in the mechanical ventilation system would operate to create air movement helping air enter from and exhaust the vents. The fan speed would be adjusted with reference to the ambient temperature so to optimize the air flow rate. Hence, the lift shaft and lift car temperature could be regulated to enhance the comfort of the lift users. The facades of the lift shaft structure comprises low-e glass which minimizes the heat energy absorbed by the glass and consequently benefits the regulation of the lift shaft temperature. In addition, LED lights are adopted for the lift lighting. Compared with traditional lighting, the energy consumption of LED lights is one-third of the traditional lighting and the life span of LED lights is 10 times longer, which is more durable, energy saving and environmental friendly.



升降機內採用高效節能和耐用的LED照明系統  
Adoption of Energy Efficient and Durable LED Lights in Lift Car



採用機械式通風升降機，以取代舊有的空調系統設計  
Adoption of Mechanical Ventilation System for Lifts Instead of Air-Conditioning



## 環境管理 Environmental Management

### 綠化總綱圖項目

於2011開始，土木工程拓展署年制訂新界東南及西北的綠化總綱圖。由於新界幅員廣大，綠化工程覆蓋範圍集中在市中心、旅遊景點及主要交通幹線等，以有效增加和改善綠化空間。沙田、西貢、屯門及元朗為首先進行新界綠化總綱圖工程的地區，有關工程於2014年12月展開，於2017年10月完成，為新界東南及西北區域種植了大約3,800棵樹和3,600,000棵灌木。

我們的基建發展工程大部分都加入大規模的種植計劃，作為景觀的改善及緩解措施。綠化工程涉及不同的環境，包括道路旁的花槽、行人和行車天橋、斜坡、單車徑與海濱長廊等。

### Greening Master Plan Project

In 2011, CEDD started formulating the Greening Master Plans (GMPs) for the New Territories (NT) Northwest and Southeast. In view of the extensive area of New Territories, the GMP studies focused primarily on core town centres, major transportation routes and tourist attraction locations, in order to effectively enhance the greening effect and improvement to the environment. We have firstly implemented the recommended greening measures in Sha Tin, Sai Kung, Tuen Mun and Yuen Long. The relevant works commenced in December 2014 and were completed in October 2017. About 3,800 trees and 3,600,000 shrubs have been planted in these districts.

Most of our infrastructure and development projects include the provision of extensive planting schemes serving as landscape enhancement and impact mitigation measures. Such greening works involve planting in a variety of settings like roadside planter, footbridges, flyovers, slopes, cycle tracks and promenades.



屯門綠化總綱圖 (龍門路近龍門居的花槽)  
Greening Master Plan for Tuen Mun (Planter at Lung Mun Road near Lung Mun Oasis)



藍地石礦場修復工程  
The Rehabilitation of Lam Tei Quarry

## 建築工地採取的環保緩解措施 *Environmental Mitigation Measures implemented in Works Projects*

### 空氣質素控制

### Air Quality Control



於工程機械使用B5柴油為潔淨能源以減少溫室氣體排放  
Use of B5 Biodiesel as a Clean Fuel in Constructional Plants to Reduce Emission of Greenhouse Gases



使用自動灑水器以抑制塵埃產生  
Use of Automatic Water Sprayer to Suppress Dust Generation



在泥頭車上噴水以減少粉塵的產生  
Use Water Sprayers on Trucks to Reduce Dusty Materials

## 建築工地採取的環保緩解措施 Environmental Mitigation Measures implemented in Works Projects

### 水質污染控制

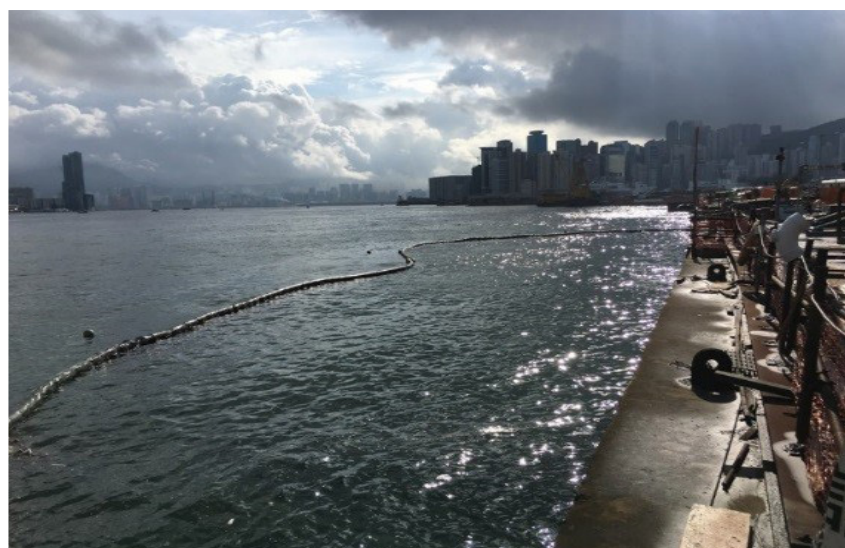


使用沉澱缸處理工地污水  
Use of Sedimentation Tanks for On-Site Wastewater Treatment

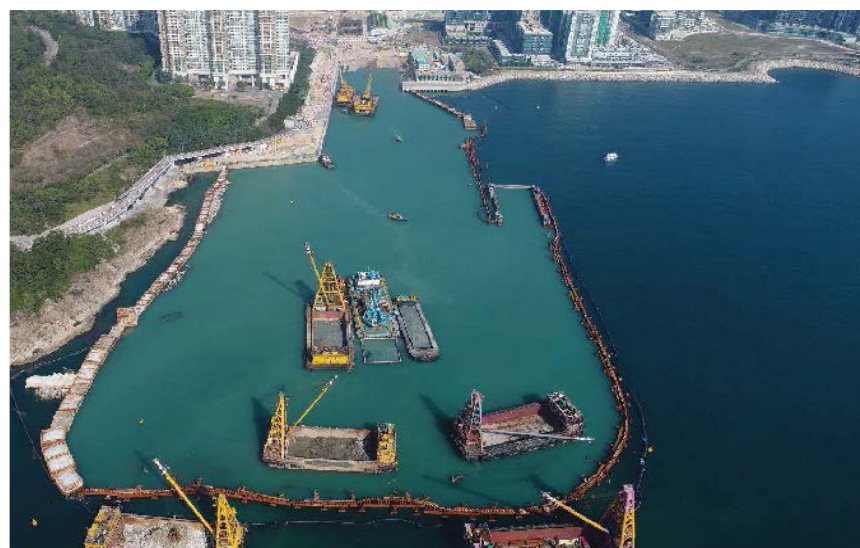
### Water Pollution Control



使用專用污水淨化設備加強污水處理效能  
Use of Wetsep to Facilitate Sedimentation in Wastewater Treatment



使用隔泥幕以緩解建造海堤時對水質的影響  
Use of Silt Curtain to Mitigate Impacts on Water Quality during Construction of Seawall



使用創新的管樁隔泥幕以緩解建造隧道時對水質的影響  
Use of Pipe Pile Silt Curtain to Mitigate Impacts on Water Quality during Tunnelling Works

# 建築工地採取的環保緩解措施 *Environmental Mitigation Measures implemented in Works Projects*

## 噪音緩解



於打石工程採用度身定制的隔音屏障  
Use of Tailor-Made Noise Barrier for Breaker

## Noise Mitigation



使用靜音式打樁機，降低工程期間製造的污染如噪音及振動，亦減少路面沉降  
Use Silent Piler to Minimize the Construction Pollution Like Noise and Vibration, Contributing Less Ground Settlement as well

## 廢物管理



使用可重用的金屬棚架  
Adoption of Reusable Metal Scaffold

## Waste Management



使用廢物分類回收桶  
Use of Waste Separation Bin

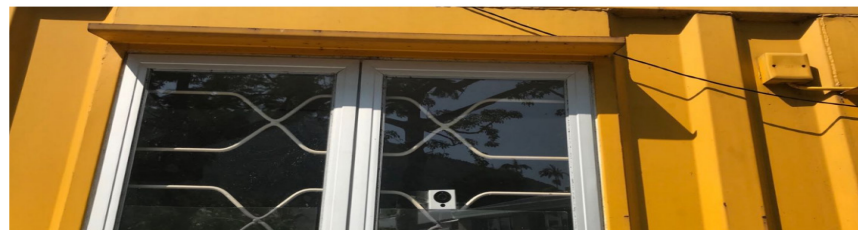
## 建築工地採取的環保緩解措施 Environmental Mitigation Measures implemented in Works Projects

### 可持續措施



於地盤辦公室採用光井善用天然光  
Installing Light Well at Roof of Site Office for Receiving Natural Light

### Sustainable Measures



於地盤辦公室樓頂安裝太陽電板作建築廢物移運監察以實行「運載紀錄制度」  
Adoption of Solar Panels at Roof of Site Office to Monitor the Disposal of Construction Waste for Implementing the Trip Ticket System



於臨時交通指示燈牌及警告燈安裝太陽電板作為照明電源及顯示  
Installation of Solar Panels at Roof of the Site Accommodation and Temporary Traffic Signage/Warning Lanterns for Lighting and Display Purpose

## 建築工地採取的環保緩解措施 *Environmental Mitigation Measures implemented in Works Projects*

### 可持續措施



於地盤辦公室樓頂安裝太陽能電板作為照明電源  
Installation of Solar Panels at Roof of the Site Accommodation for Lighting Purpose

### Sustainable Measures



採用綠化外牆以減少工地辦公室的視覺影響和室內溫度  
Adoption of Green Wall to Reduce the Visual Impact and Indoor Temperature of Site Office

### 工地清潔



在地盤及鄰近公共道路上使用洗街車清理泥頭車遺下的泥塵  
Use of Street Sweeper to Reduce Dusty Materials on Site and Neighboring Public Roads

### Site Cleanliness



## 環保團體和公眾參與活動 Public Engagement Activities with Green Groups

### 綠化總綱圖計劃

在制訂綠化總綱圖時，我們採用了加強地區參與模式，包括成立由各區區議員、鄉事委員會代表及有關政府部門代表組成的地區參與小組，共同審議顧問公司的綠化建議。我們亦與各區區議員及鄉事委員會在各區進行實地視察或會面，詳細討論各有關綠化的意見。此外，我們與各地區參與小組聯合舉辦綠化總綱圖社區論壇，收集公眾的意見。

在2017年，為慶祝新界東南及西北區域的綠化工程進入竣工階段，我們分別在沙田、西貢、屯門及元朗舉辦綠化總綱圖種植典禮，與地區人士一同分享綠化工程的成果和喜悅。我們亦與小學聯合舉辦社區種植活動，以提倡綠化及喚起市民對種植及環境保護的關注。

### Greening Master Plans

We have adopted an enhanced partnering approach in formulation of GMPs whereby relevant members of the District Council (DC), Rural Committee (RC) and government departments formed a District Participation Group (DPG) with whom we reviewed the recommendations of the Consultants. We also arranged site walks or meetings with the DC members and RC representatives to discuss the greening proposals in details. Further, we and DPG have jointly organized community forums to collect the views from the public.

In 2017, with the greening works in New Territories Northwest and Southeast approaching completion, we organized planting ceremonies in Sha Tin, Sai Kung, Tuen Mun and Yuen Long to share the achievement and our joyfulness for the greening works. We also arranged community planting activities with primary schools to promote planting and arouse their interest in environmental protection.



沙田綠化總綱圖計劃-種植典禮  
Sai Tin Green Master Plans - Planting Ceremony



社區種植日  
Community Planting Day



元朗綠化總綱圖計劃 - 種植典禮  
Yuen Long Green Master Plans - Planting Ceremony

## 環保團體和公眾參與活動 *Public Engagement Activities with Green Groups*

### 昂坪環境美化工程

就昂坪環境美化工程的策劃及設計，我們於2017年4月及10月邀請綠色團體、相關區議會及地區持份者參與討論，並因應其意見，我們會在適當地點種植櫻花樹及春季開花的樹木，例如如木薑子及豆梨。

### Landscape Improvement Works in Ngong Ping

We engaged participation from green groups, the relevant DC and local stakeholders during the planning and design of the landscape improvement works in Ngong Ping in April / October 2017. Taking into account their suggestions, we will plant cherry trees and spring-flowering trees, such as Litsea cubeba and Pyrus Calleryana at suitable locations.



昂坪環境美化工程的合成圖片

Photomontage of Landscape Improvement Works in Ngong Ping

## 環保團體和公眾參與活動 *Public Engagement Activities with Green Groups*

### 塋原自然生態公園

為致力保育位於未來古洞北新發展區的塋原自然生態公園，北拓展處(前稱新界東拓展處)聯同漁農自然護理署於2017年1月26日舉辦了一個焦點座談會，邀請相關的環保團體出席，以諮詢他們對自然生態公園的生境創造及管理計劃(下稱「生境計劃」)的意見。塋原目前是全港最大的淡水濕地，擁有豐富的生物多樣性和珍貴的動植物資源。「生境計劃」將為約37公頃的自然生態公園制定保育框架，包括執行、保護、管理及監察棲息地和生態資源等措施。我們收集了相關持份者對自然生態公園的規劃、營運和管理方面的意見及期望，這些意見及期望有助優化「生境計劃」及詳細設計方案。在開展古洞北及粉嶺北新發展區的同時，我們將繼續適時向公眾公布「生境計劃」的最新發展。

### Long Valley Nature Park

As part of our commitment to conserve the proposed Long Valley Nature Park (LVNP) within the Kwu Tung North New Development Area, North Development Office (formerly known as New Territories East Development Office), in association with the Agriculture, Fisheries and Conservation Department (AFCD), conducted a focus group forum on 26 January 2017 to consult the views of green groups on the Habitat Creation and Management Plan (HCMP) for the LVNP. LVNP is currently the largest freshwater wetland and home to a rich biodiversity of fauna and flora, HCMP will set out the environmental framework for implementing, conserving, managing, and monitoring the habitat and eco-resources at the future 37-hectare LVNP. We have collected our environmental stakeholders' view and aspirations about the planning, operation and management aspects in the ecologically important area. It helped us to enhance HCMP and the detailed design of the LVNP. We will continuously inform the public the latest progress of LVNP at appropriate juncture.



塋原自然生態公園的生境創造及管理計劃焦點座談會  
Focus Group Forum on the Habitat Creation and Management Plan of  
the Long Valley Nature Park

## 環保培訓

為裝備員工和顧問的工地監督人員對必要環保法例的知識及加強他們履行環境監督職責的能力，我們聯同環境保護署為項目工程師、土木工程拓展署/顧問的工地監督人員及承建商的工地要員，安排最新環保法例的培訓班。

## Staff Environmental Training

To equip and reinforce our staff and our consultants' resident site staff with the necessary knowledge on environmental legislation and strengthen their competency of environmental monitoring duties, we, in collaboration with the Environmental Protection Department, organized training classes on the latest development of environmental legislation for project engineers, CEDD/consultants' site supervisory staff and contractors' key site staff members.



環保法例的培訓班  
Environment Legislation Training

