



土木工程拓展署

CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT

Environmental Report 2022 環保報告

We Engineer
Hong Kong's Development

卓越工程 建設香港



環保認證

Environmental Certification



- ✓ 繼續獲得 ISO 14001:2015 認證
Maintained ISO 14001:2015 certification
- ✓ 環保目標及表現
Environmental Target and Performance

達標率為：
Achievement rate: **100%**

可持續發展的基建 Infrastructure for Sustainable Development



- ✓ 將軍澳跨灣連接路項目的二氧化碳排放量由於利用創新物料與建造技術：
CO₂ emission through innovations in materials and construction methodologies in Tseung Kwan O Cross Bay Link project: **減少 less 30,000 公噸 Tonnes**
- ✓ 東涌填海工程的二氧化碳排放量由於採用礦渣水泥：
CO₂ emission by using Portland Blast Furnace Cement in Tung Chung reclamation project: **減少 less 60,000 公噸 Tonnes**

土木工程拓展署主要建築物 Major CEDD Premises



- ✓ 於土木工程拓展署主要建築物（包括總部大樓及工務中央試驗所）的二氧化碳排放量較2021年：
CO₂ emission in major CEDD premises including CED Building and Public Works Central Laboratory when comparing with 2021: **減少 less 10,634 公噸 Tonnes**
- ✓ 相對2018年基準的總耗電量：
Total electricity consumption when comparing with baseline year 2018: **減少 less 7.8%**



其他環保成果

Other Environmental Achievements



- ✓ 使用回收玻璃物料作填海的數量：
Recycled glass used in reclamation: **≈ 14,290 公噸 Tonnes**
- ✓ 電動車數目：
Number of electric vehicles: **62**



≈ 14,290 公噸 Tonnes



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引言

Introduction

報告範圍

Scope of Report

這份 2022 年的環保報告闡述土木工程拓展署由 2022 年 1 月至 12 月的環保措施成果，並展示我們支持《清新空氣約章》、《減碳約章》、節約能源、環保培訓、可再生能源及環境管理所作出的努力，以符合可持續發展的原則推動各項發展及基建項目。

在 2022 年，本署在總用紙量、環保紙用量、辦公室的總耗電量、美化鞏固的斜坡數目、種植樹木及灌木的數量等均達到定下的目標。在可持續發展的基建設施規劃及設計方面，本署興建了梅窩越野單車練習場；活化東涌河；採用嶄新物料與先進的建造技術興建將軍澳跨灣連接路以達至整體減碳；及使用回收玻璃製造的路磚鋪設行人路。本署亦與業界合作，研發了一套應用於工務區域試驗所的自動化系統進行混凝土磚護養及壓力測試。

This Report summarises Civil Engineering and Development Department (CEDD)'s environmental achievements in the period from January to December 2022. It also presents our efforts in supporting the Clean Air Charter, Carbon Reduction Charter, energy saving, staff environmental training, renewable energy and environmental management in CEDD projects and premises to promote sustainable development in various development plans and infrastructure works.

In 2022, the objectives and targets of gross paper consumption, recycled paper consumption, office energy consumption, landscaped upgraded slope numbers and tree/shrub planting quantity have been achieved. In planning and design of infrastructures for sustainable development, CEDD developed Mui Wo Mountain Bike Practice Ground, revitalised Tung Chung Stream, adopted novel construction materials and innovative construction technologies to construct Cross Bay Link which reduced the overall embodied carbon, and used eco-pavers, made of recycled glass, for paving footpaths. In collaboration with industrial practitioners for environmental advancement, CEDD has developed a fully automated system to carry out concrete cube curing and concrete cube testing in the Public Works Regional Laboratory.

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。

組織架構方面，除部門總部外，還設有兩個功能分處及五個分區拓展處。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、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、策略性研究等工作。最後，在 2017 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的發展項目和保育計劃。



CEDD is a department of the Hong Kong SAR Government under the Development Bureau. Major areas of the services of CEDD cover the provision of land and infrastructure, port and marine services, geotechnical services, and environment and sustainability services.

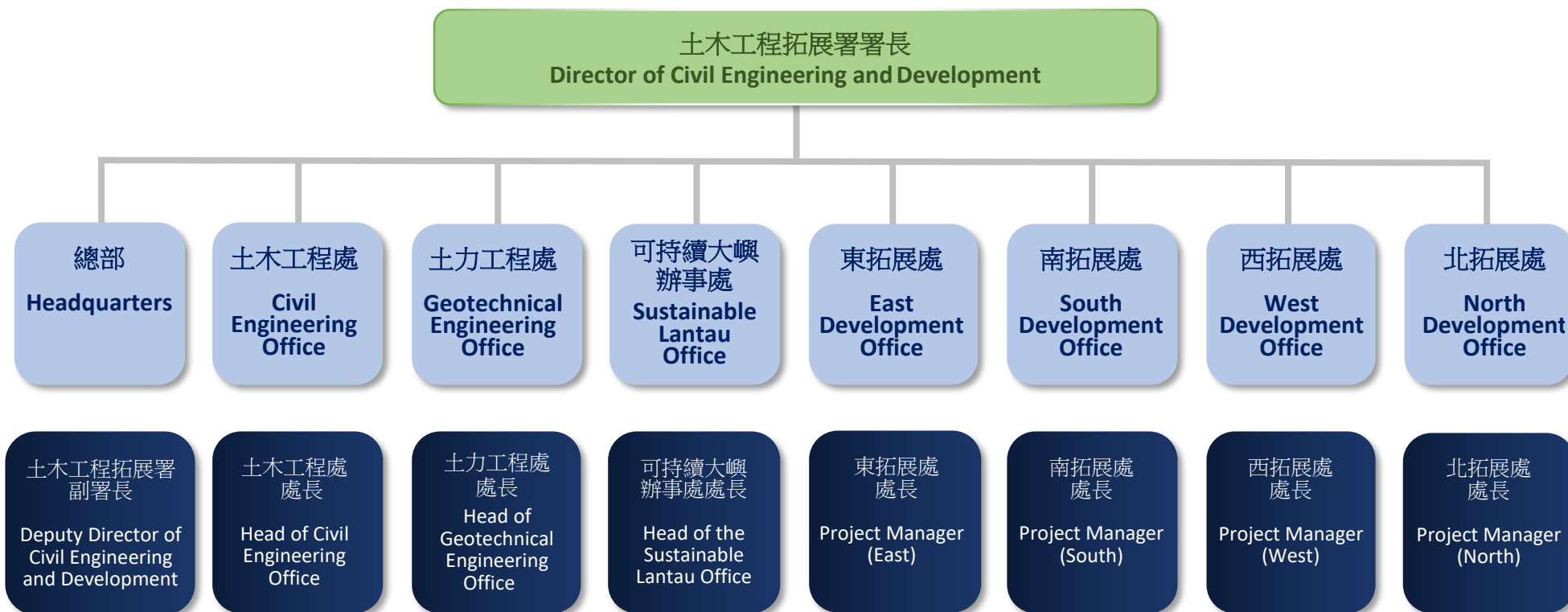
Besides Headquarters, CEDD has two functional offices and five development offices. As functional offices, Civil Engineering Office is responsible for infrastructure, port works, landfill management and implementation of Greening Master Plan, while Geotechnical Engineering Office's work includes slope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

組織結構

Organisation

土木工程拓展署 2022 年的編制共有約 2,070 名員工，當中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、測量師、園境師及技術主任等。

In 2022, there were around 2,070 staff in CEDD. About two-third of them are professional and technical grade staff, including civil engineers, geotechnical engineers, surveyors, landscape architects and technical officers, etc.



我們在建造工程的各個階段，均非常注重環境保護，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、綠化和可持續發展的環境
- 監督顧問及承建商的表現，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及其目標和指標

我們還推行一套環境管理系統，土木工程拓展署的綜合管理系統已成功取得 ISO14001:2015 認證。我們的環保措施和綠化成果，均獲專業團體的認同。



綜合管理系統政策
IMS Policy

環保政策

Environmental Policy



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 consultants and 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 has been successfully certified to ISO14001:2015. Our environmental measures and greening achievements have been well recognised by professional bodies.

基建項目的可持續性及環境管理

Sustainability and Environmental Management in Project Delivery

可持續發展的基建設施規劃及設計

Planning and Design of Infrastructures for Sustainable Development

(1) 東涌河活化工程

為提升東涌谷東涌河的生態價值和優化河道環境，我們將活化位於石榴埔東北面已被渠道化的東涌河河段，使其回復天然面貌，還原上下游的生態連繫，並把部分河段發展成河畔公園，以推廣親水文化和活動。我們將於河畔公園內設立訪客中心以促進保育和豐富訪客的體驗。



(1) Revitalisation of Tung Chung Stream

To enhance the ecological value and the environment of the Tung Chung Stream, we will revitalise the channelised section of Tung Chung Stream at its downstream in the northeast of Shek Lau Po to restore the ecological connection between upstream and downstream to its natural setting and develop a section into a River Park to promote water-friendly culture and activities. We will also set up a visitor centre at the River Park to promote conservation and enrich visitors' experience.

擬建的東涌河畔公園及訪客中心構想圖

Artistic impression of the proposed river park and visitor centre

Planning and Design of Infrastructures for Sustainable Development

活化工程包括使用天然物料取代並修復現有的混凝土河床，及種植多樣水生植物、放置石塊等營造天然溪澗生境，為河道生物提供更好的棲息空間，增加河道的生物多樣性。我們致力加入綠化元素、美化景觀、促進生物多樣性及親水活動，以營造更美好的居住環境。

The revitalisation works include replacing the existing concrete channelised section with natural materials, growing a variety of aquatic vegetations and placing rock pieces to create natural stream habitats. These measures can preserve river ecosystems and promote wildlife growth to increase river biodiversity. We aim to introduce green elements, beautify the scenery, as well as promote biodiversity and water-friendly activities for creating a more liveable environment.



原渠道化的東涌河河段經活化後的模擬圖
Photomontage of the revitalised section of the channelised
Tung Chung Stream

可持續發展的基建設施規劃及設計

Planning and Design of Infrastructures for Sustainable Development

為了讓公眾更了解生物多樣性及關注自然環境，我們在 2022 年就活化工程舉辦了四個公眾活動，當中包括生物多樣性工作坊、生態攝影工作坊及參觀香港生物多樣性博物館等。我們亦與綠色團體保持溝通，安排會議定期向他們匯報工程進度及聆聽他們的意見和關注事宜。

To raise public awareness on biodiversity and natural environment, we organised four public activities in respect of the revitalisation works in 2022. These include biodiversity workshops, eco-photography workshops and visits to the Hong Kong Biodiversity Museum, etc. We also kept close communication with Green Groups and arranged regular meetings to update the works progress and listen to their opinions and concerns.



生態攝影工作坊
Eco-photography workshop



生物多樣性工作坊
Biodiversity workshop

Planning and Design of Infrastructures for Sustainable Development

(2) 觀塘行動區發展的基建設施工程

為配合「飛躍啟德」計劃，「觀塘行動區發展的基建設施工程」已於 2022 年第四季度展開。工程將重新規劃及改善觀塘碼頭及現有公共運輸交匯處一帶的公共及交通設施和土地用途。工程完成後，它將為該區提供約 22,000 平方米的公共休憩用地，包括連接觀塘海濱花園的海濱長廊，以及毗鄰的其他綠化帶。

為配合環保原則，部分現有樹木會盡量予以保留或移植。工程亦會種植新的樹木，以進一步綠化開源道及偉業街交界地段及公共休憩用地。綠化位置將提供足夠的空間種植樹木，令它們能健康成長。

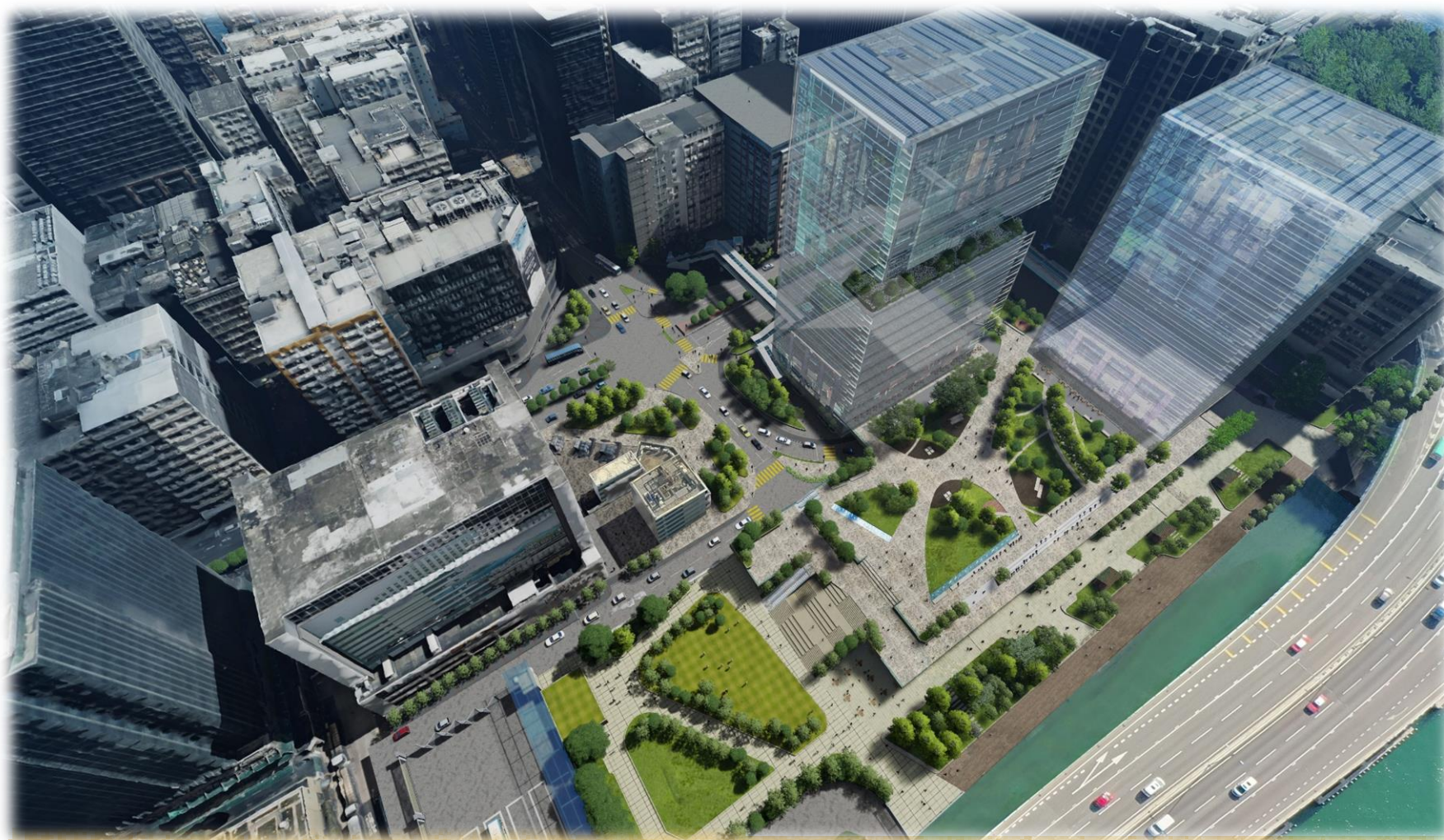
(2) Infrastructure Works for Developments at Kwun Tong Action Area

In accordance with the Kai Tak Fantasy Project, the Infrastructure Works for Developments at Kwun Tong Action Area (KTAA) commenced in Q4 2022. The project aims to restructure and enhance the public and transportation facilities, and the land use of the area of the Kwun Tong Pier and the existing Public Transport Interchange. Upon completion, the project will provide approximately 22,000m² of public open space, including a new waterfront boardwalk that will be connected to the Kwun Tong Promenade, and other adjacent green belts in the area.

Following the green principle, existing trees will be preserved or transplanted as far as possible, while new trees will be planted for further greening of the public open space and the area near the junction of Hoi Yuen Road and Wai Yip Street. Sufficient space will be provided for the planting of trees to enable their healthy growth.

可持續發展的基建設施規劃及設計

Planning and Design of Infrastructures for Sustainable Development



觀塘行動區發展的基建設施工程的模擬圖

Photomontage of infrastructure works for developments at Kwun Tong Action Area

Planning and Design of Infrastructures for Sustainable Development

(3) 將軍澳跨灣連接路

將軍澳跨灣連接路於 2022 年 12 月通車，是本署一個標誌性項目，展示在工程推展上實踐減碳與提升可持續性。

(3) Cross Bay Link, Tseung Kwan O

The Cross Bay Link (CBL) in Tseung Kwan O, commissioned in December 2022, is one of the CEDD's signature projects which showcases sustainability enhancement and carbon reduction in project delivery.



跨灣連接路
Cross Bay Link

可持續發展的基建設施規劃及設計

Planning and Design of Infrastructures for Sustainable Development

3.1 具備綠色元素的多功能海上高架橋

跨灣連接路是香港首條多功能海上高架橋，設有行車道、行人路及單車徑，亦同時組成將軍澳灣沿岸的 5 公里環迴單車徑及行人路，促進健康生活和以自行車為主的可持續出行模式。單車徑及行人路邊設置了總面積逾 3,700 平方米的種植帶，為騎單車人士和行人打造一條綠色走廊。

3.1 Multi-purpose Sea Link with Green Features

The CBL is the first multi-purpose marine viaduct in Hong Kong that comprises carriageways, a footway and a cycle track. Moreover, the CBL constitutes a key section of a 5-km coastal walkable and cycling loop to advocate healthy and sustainable non-vehicular travelling modes. Along the cycle track and footway of the CBL, there are planters of a total area over 3,700 m² to create a green corridor to enhance the cycling and walking experience.



使用中的跨灣連接路
Cross Bay Link in operation

Planning and Design of Infrastructures for Sustainable Development

3.2 嶄新的建築物料

跨灣連接路亦是香港首個採用 S690 高強度結構鋼的基建項目。這嶄新的建築物料用以鑄造主跨的雙鋼拱肋，亦是大橋的主要承重部分。高強度鋼令拱肋鋼材用量減少 50% 約 4,000 公噸，雙拱的外型因而更為纖巧，同時亦縮減地基的規模，節省約 15% 混凝土用量。

3.2 Novel Construction Material

The CBL is also the first infrastructure project in Hong Kong to adopt S690 high-strength structural steel. The material has been used for the double arches of the main span, which is one of the key structural elements of the bridge. The much stronger steel material leads to a 50% reduction, about 4,000 tonnes, of steel uptake and consequently much slimmer arches, as well as lighter foundations amounting to 15% less concrete consumption.



於國內工廠預製鋼拱橋
Prefabrication of steel arch bridge at Mainland yard

可持續發展的基建設施規劃及設計

Planning and Design of Infrastructures for Sustainable Development

3.3 先進的建造技術

跨灣連接路應用了多項嶄新的施工技術，大規模預製各結構組件，並配合「浮托」和全跨橋面吊運等先進技術作現場組裝，令整體施工方案在安全、工程質素、效率、減低對周邊影響等方面實現了多重效益。

透過利用創新物料與建造技術，項目達至 23% 整體減碳效果，相等於超過 30,000 公噸二氧化碳。

3.3 Innovative Construction Technologies

Construction of the CBL utilised a number of new construction technologies. Prefabrication of structural members were undertaken on an extraordinarily extensive scale. Coupled with “float-over” erection and whole-span lifting technologies for modular installation on site, the overall construction scheme realised multiple benefits in respect of construction safety, works quality, productivity, minimising impact on the surroundings, etc.

Through innovations in materials and construction methodologies, the project achieved 23% overall reduction in embodied carbon, equivalent to more than 30,000 tonnes of CO₂.



全跨橋面浮托
Whole-span “float-over” erection

Planning and Design of Infrastructures for Sustainable Development

(4) 建設梅窩越野單車練習場

梅窩越野單車練習場於 2022 年 12 月 17 日正式開幕。位於南大嶼郊野公園及佔地約 4.5 公頃的練習場，是香港首個越野單車練習場。它亦是亞洲最大型的越野單車練習場之一，它連同附近的路徑組成全港唯一涵蓋全部五個越野單車徑難度級別的場地。

擴展南大嶼山越野單車徑網絡是我們推展的其中一個主要可持續休閒康樂項目。練習場的設計和建造均按可持續原則，盡量保留郊野公園原貌且減少日後維修的需要，並吸納專家意見以保障使用者的安全。

(4) Development of Mui Wo Mountain Bike Practice Ground



梅窩越野單車練習場內的越野單車徑

Mountain bike trails in the Mui Wo Mountain Bike Practice Ground

可持續發展的基建設施規劃及設計

Planning and Design of Infrastructures for Sustainable Development



梅窩越野單車練習場內的土坡場
Pump track in the Mui Wo Mountain Bike Practice Ground

The Mui Wo Mountain Bike Practice Ground was officially opened on 17 December 2022. Located in Lantau South Country Park with an area of about 4.5 hectares, the Mui Wo Mountain Bike Practice Ground is the first mountain bike practice ground in Hong Kong and also one of the largest practice grounds in Asia. Together with its associated trails, it is the only venue in Hong Kong that covers all five mountain bike difficulty levels.

The expansion of the mountain bike trail networks in south Lantau is one of our sustainable key leisure and recreation initiatives. Sustainable principles have been adopted in the design and construction of the practice ground with a view to retaining the original landscape of the country park as far as possible and reducing the need for future maintenance. Experts' advice has also been sought to safeguard the safety of users.

環保工程物料

(1) 使用玻璃纖維增強複材

玻璃纖維增強複材 (GFRP) 是一種由玻璃纖維和樹脂合成的複合材料。由於其高耐腐蝕性和耐久性，它可以代替鋼筋應用在鹹水環境和極端氣候下遭受波浪侵襲的海事設施。

此外，GFRP 能夠在其整個生命週期中帶來環境效益。在生產過程中，由於 GFRP 不涉及鋼材生產中的鐵礦石開採過程，它所消耗的能源和產生的廢物較鋼筋少。在施工過程中，其輕質特性帶來運輸和安裝的方便。在保養階段，其高耐用性減少了維修工作的頻率。有研究指出，使用玻璃纖維增強複合材料筋加固的混凝土樑比使用傳統鋼筋加固的混凝土樑可減少約 43% 二氧化碳排放量。

Green Construction Materials

(1) Use of Glass-Fibre Reinforced Polymer (GFRP)

Glass-Fibre Reinforced Polymer (GFRP) is a composite material composed of glass fibre embedded in a polymeric resin matrix. Due to its excellent corrosion resistance and durability, it is applied as an alternative material to steel rebar for marine facilities subject to saltwater environment and wave attack under extreme weather conditions.

Moreover, GFRP offers environmental benefits throughout its life cycle. In its production process, unlike steel, GFRP does not involve iron ore mining process, hence it requires less energy and produces less waste. During construction, its lightweight nature facilitates easy transportation and installation. In maintenance stage, its high durability reduces the frequency of repair works. In one study, GFRP reinforced concrete beam has been shown to emit about 43% less carbon dioxide as compared with traditional steel reinforced concrete beam.

可持續建築

Sustainable Construction

鑑於 GFRP 對海事設施的好處，土木工程拓展署於 2022 年開始在南丫島北角碼頭重建工程中的層板結構板開始試用玻璃纖維筋，並監測其表現。



「重建南丫島北角碼頭工程」混凝土層板結構的玻璃纖維筋
GFRP rebars in concrete slab under the reconstruction of
Pak Kok Pier on Lamma Island

In view of the benefits of GFRP for marine facilities, CEDD started a trial use of GFRP in the construction of pier slabs of the Pak Kok Pier on Lamma Island in 2022. The performance of GFRP is under monitoring.



安裝傳感器監測玻璃纖維筋耐久性表現
Sensors installed to monitor the durability of GFRP

(2) 粒化高爐礦渣粉

粒化高爐礦渣粉 (GGBS) 是鋼鐵工業的副產品，是低碳的建築物料。為了讓持份者進一步了解 GGBS 低碳混凝土的好處，混凝土科技常務委員會聯同香港工程師學會於 2022 年首次舉辦「低碳混凝土比賽」。參賽者須調校出一種低碳混凝土，並滿足一系列包括強度、和易性和成本效益的要求。由我們管理的工程合約編號 ND/2018/01 – 缸瓦甫警察設施土地平整及基礎建設工程在比賽中脫穎而出，奪得從業員組別亞軍。



土木工程拓展署管理的工程項目奪得低碳混凝土獎杯比賽 2022 亞軍
CEDD's project won the 1st Runner-up in the Low Carbon Concrete Trophy Competition 2022

(2) Ground Granulated Blast-furnace Slag (GGBS)

Ground Granulated Blast-furnace Slag (GGBS) is a by-product of steel industry, and is a low carbon construction material. To arouse the awareness and interest of stakeholders in the construction industry towards the benefits of low carbon concrete produced using GGBS, the Standing Committee on Concrete Technology and Hong Kong Institution of Engineers co-organised the first Low-carbon Concrete Trophy Competition in 2022. The participants were requested to develop a low carbon concrete mix which complied with a set of requirements including specific cube strength, workability and cost effectiveness. CEDD's Contract No. ND/2018/01 – Site Formation and Infrastructure Works for Police Facilities in Kong Nga Po won the 1st Runner-up of the Practitioners Category in this competition.

可持續建築

Sustainable Construction

我們東涌填海項目的工程團隊亦採用了礦渣水泥 (PBFC) 進行深層水泥拌合法 (DCM) 將海泥加固。PBFC 是 GGBS 和 普通矽酸鹽水泥 (OPC) 的混合物。GGBS 的隱含碳量遠比 OPC 低，使用 GGBS 不僅環保，而且還提升了 DCM 的整體耐久性。此外，PBFC 可以增強 DCM 的強度，變相令整個工程項目的水泥用量平均減少 20%。因此，與 OPC 相比，在 DCM 工程中使用 GGBS 可以減少排放約 600,000 噸二氧化碳。



深層水泥拌合工程船
Deep cement mixing barge

Our project team of Tung Chung reclamation project has also adopted Portland Blast Furnace Cement (PBFC) for Deep Cement Mixing (DCM) works. PBFC is a mixture of GGBS and Ordinary Portland Cement (OPC). GGBS' embodied carbon is much lower than OPC. Use of OPC does not only environmentally friendly, but also improves overall durability of DCM. Moreover, a higher DCM strength can be achieved with PBFC and this can reduce the cement consumption by 20% on average in this project. As such, the use of GGBS for DCM works in this project has brought about reduction in around 600,000 tonnes of CO₂ emission when compares with OPC.

成功減少排放二氧化碳近 **600,000 噸**

Successfully reduces CO₂ emission of about 600,000 tonnes



(3) 使用回收玻璃進行填海工程

東涌新市鎮擴展 - 填海及前期工程於 2022 年 12 月完結，
工程使用約 14,290 公噸回收玻璃物料作填海之用。

使用回收玻璃物料作
填海之用

14,290 公噸



(3) Use of Recycled Glass for Reclamation

The Tung Chung New Town Extension - Reclamation and Advance works was completed in December 2022, and about 14,290 tonnes of glass cullets were used as reclamation material.

**Amount of recycled glass
used in the reclamation**

14,290 tonnes



填土工程進行中
Earth filling works in progress

可持續建築

Sustainable Construction

(4) 使用回收玻璃製造路面鋪設材料

啟德發展計劃 - 前北面停機坪第 3B 期及第 5A 期基礎設施建設工程使用了由回收玻璃製造的路面鋪設材料鋪設行人路。在 2022 年期間，約有 7,390 平方米的行人路使用由回收玻璃製造的路面鋪設材料鋪設，更好循環再用玻璃廢料。

(4) Using Recycled Glass Paving Blocks

Kai Tak Development – Stages 3B and 5A Infrastructure Works at Former North Apron Area used eco-pavers, which was made of recycled glass, for paving footpath. In 2022, around 7,390 m² of the footpath was paved by eco-pavers, contributing to the upcycling of glass wastes.



行人路使用由回收玻璃製造的路面鋪設材料鋪設
Footpath paved with eco-pavers made of recycled glass

工地的環境緩解措施

(1) 防塵措施



用防水布覆蓋斜坡防止揚塵
Covering of fill slope to prevent dust dispersion



利用水車清洗工地附近的公路
Cleaning of adjacent public roads by water truck

Mitigation Measures in Works Sites

(1) Dust Prevention



自動灑水系統減少塵土飛揚
Automatic sprinkler system for dust suppression



人工智能攝像鏡頭監控自動洗車池
Automatic wheel washing system monitored by AI camera

可持續建築

Sustainable Construction

(2) 噪音緩解措施



使用隔音屏障減低噪音

Use of acoustic blankets to reduce powered mechanical equipment noise

(2) Noise Mitigation



使用隔音屏障及隔音罩

Use of acoustic screens & enclosures



使用優質機動設備

Use of quality powered mechanical equipment

(3) 空氣污染緩解措施



機動設備使用超低含硫量柴油

Use of ultra-low sulphur diesel in powered mechanical equipment

(3) Air Pollution Control



定期檢查機械以確保機械沒有排放黑煙
Plants were checked regularly against Ringelmann Chart to ensure no emission of dark smoke



使用合乎環保署訂明的廢氣排放標準的非道路移動機械
Adopted EPD approved non-road mobile machinery system which complies with prescribed emission standards

可持續建築

Sustainable Construction

2022 年獲得的獎項及嘉許

(1) 傑出環境管理獎

發展局及建造業議會於 2022 年合辦第二十八屆公德地盤嘉許計劃以推廣工地注重公德的態度，以及安全、健康及環保的良好作業方式。以下由我們管理的工程合約承建商於「傑出環境管理獎」中獲得優異獎。



Awards/ Appreciations received in 2022

(1) Outstanding Environmental Management and Performance Awards

Development Bureau and Construction Industry Council jointly organised the 28th Considerate Contractors Site Awards Scheme to promote considerate attitude and good site safety, health and environmental practices in construction sites. The following CEDD's contractors won the Merit Award in the Outstanding Environmental Management and Performance Awards (OEMPA).

Contract No. 合約編號	Name of Contractor 承建商名稱	Contract Title 合約名稱	OEMPA 傑出環境管理獎
ND/2019/03	Sang Hing – Kuly Joint Venture 生興 – 豐利聯營	Kwu Tung North and Fanling North New Development Areas, Phase 1: Development of Long Valley Nature Park 古洞北及粉嶺北新發展區第一階段 – 發展塱原自然生態公園	Merit 優異獎
NL/2017/03	Build King – SCT Joint Venture 利基 – 三星聯營	Tung Chung New Town Extension – Reclamation and Advance Works 東涌新市鎮擴展 – 填海及前期工程	Merit 優異獎
SD/2018/01	Richwell Civil Joint Venture 顯豐土木聯營	Footbridge across Hip Wo Street near the Junction of Hip Wo Street / Mut Wah Street 橫跨協和街近協和街 / 物華街交界處的行人天橋	Merit 優異獎
NE/2017/08	Build King Civil Engineering Limited 利基土木工程有限公司	Cross Bay Link, Tseung Kwan O – Road D9 and Associated Works 將軍澳跨灣連接路 – D9 路及相關工程	Merit 優異獎

(2) 優越環保管理獎

多個土木工程拓展署管理的工程合約承建商於「香港綠色企業大獎 2022」得到由環保促進會頒發的優越環保管理獎(項目管理)，以表揚其綠色管治及可持續採購的傑出表現。

(2) Green Management Award

A number of CEDD's contractors won the Green Management Award – Project Management (Large Corporation) by the Green Council under the Hong Kong Green Awards 2022 to recognise their exceptional performance on green management and sustainable procurement.



Contract No. 合約編號	Name of Contractor 承建商名稱	Contract Title 合約名稱	Award 獎項
NL/2020/03	Build King Civil Engineering Limited 利基土木工程有限公司	Tung Chung New Town Extension – Major Infrastructure Works in Tung Chung East 東涌新市鎮擴展 - 東涌東主要基礎設施工程	Silver 銀獎
ND/2019/01	Build King - Richwell Engineering Joint Venture 利基 - 顯豐工程聯營	Kwu Tung North New Development Area, Phase 1: Site Formation and Infrastructure Works 古洞北新發展區第一階段 - 地盤平整及基礎設施工程	Silver 銀獎
ND/2019/05	CRCC - Paul Y. Joint Venture 中國鐵建十五局 - 保華聯營公司	Fanling North New Development Area, Phase 1: Fanling Bypass Eastern Section (Shung Him Tong to Kau Lung Hang) 粉嶺北新發展區第一階段 - 粉嶺繞道東段(崇謙堂至九龍坑)	Silver 銀獎
ND/2018/01	Build King Construction Limited 利基建築有限公司	Site Formation and Infrastructure Works for Police Facilities in Kong Nga Po 缸瓦甫警察設施土地平整及基礎建設工程	Silver 銀獎
ND/2019/04	Daewoo - Chun Wo - Kwan Lee Joint Venture 大宇建設 - 俊和 - 群利聯營	Fanling North New Development Area, Phase 1: Fanling Bypass Eastern Section (Shek Wu San Tsuen North to Lung Yeuk Tau) 粉嶺北新發展區第一階段 - 粉嶺繞道東段(石湖新邨北至龍躍頭)	Bronze 銅獎
ND/2019/07	China Road and Bridge Corporation 中國路橋工程有限責任公司	Fanling North New Development Area, Phase 1: Site Formation and Infrastructure Works 粉嶺北新發展區第一階段 - 地盤平整及基礎設施工程	Bronze 銅獎
ND/2019/02	Chun Wo - Kwan Lee Joint Venture 俊和 - 群利聯營體	Kwu Tung North New Development Area, Phase 1: Roads and Drains between Kwu Tung North New Development Area and Shek Wu Hui 古洞北新發展區首階段 - 古洞北新發展區至石湖墟的道路和渠務工程	Merit 優異獎

可持續建築

Sustainable Construction

(3) 超卓環保安全健康獎

以下由我們管理的工程合約承建商亦獲得環保促進會頒發的超卓環保安全健康獎，以表揚其於環保管理、環境、安全及健康的傑出表現。



(3) Environmental, Health and Safety Award

The following CEDD's contractor was also granted Environmental, Health and Safety Award (Large Corporation) to recognise its outstanding performance and achievements in green management, environmental, health and safety management.

Contract No. 合約編號	Name of Contractor 承建商名稱	Contract Title 合約名稱	Award 獎項
NL/2020/03	Build King Civil Engineering Limited 利基土木工程有限公司	Tung Chung New Town Extension – Major Infrastructure Works in Tung Chung East 東涌新市鎮擴展 - 東涌東主要基礎設施工程	Silver 銀獎

土木工程拓展署的工程項目獲得「香港綠色企業大獎 2022」的獎項
CEDD's projects won awards of the Hong Kong Green Awards 2022

清新空氣約章及減碳約章

我們繼續積極履行《清新空氣約章》的承諾。截至 2022 年，土木工程拓展署大樓連續第 20 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 2 張「卓越」級及 9 張「良好」級檢定證書。

我們繼續履行《減碳約章》的承諾。在 2021 年 4 月至 2022 年 3 月期間，總部大樓的運作直接產生的二氧化碳為 26.48 公噸，比上一年度少 0.03 公噸。由用水用電的間接排放量則為 1,275.2 公噸，比上一年度少 1,016.77 公噸。在同一期間，工務中央試驗所的運作直接產生的二氧化碳為 10.54 公噸，比上一年度少 0.72 公噸。而通過用水用電間接排放的二氧化碳則為 9,600.12 公噸，比上一年度少 9,616.22 公噸。

Clean Air Charter and Carbon Reduction Charter

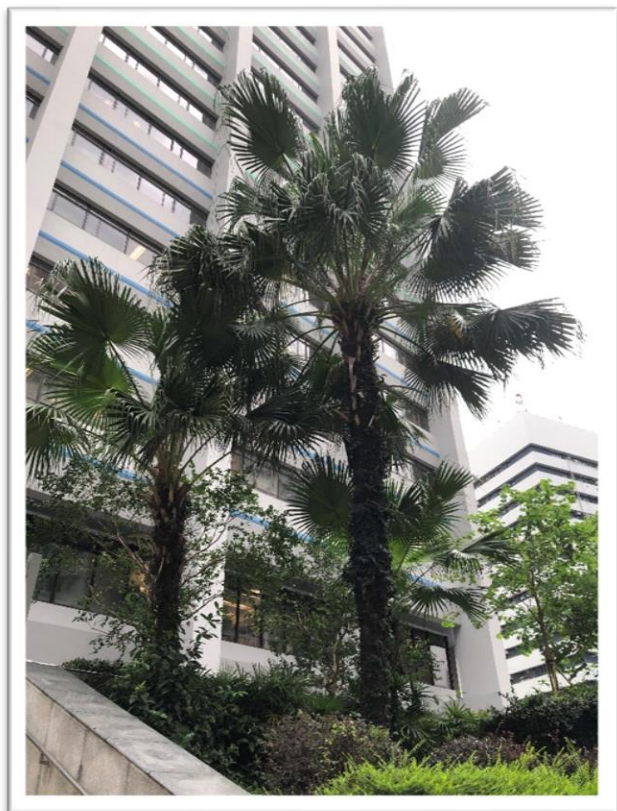
The image shows a formal Indoor Air Quality Certificate (Good Class) issued by the Environmental Protection Department (EPD) of the Government of the Hong Kong Special Administrative Region. The certificate is for the Civil Engineering and Development Building, located at 101 Princess Margaret Road, Homantin. It certifies that the indoor air quality of the building fully complies with the Good Class of the Indoor Air Quality Objectives. The certificate is valid from 27 December 2021 to 26 December 2022. It is signed by Yeung Siu On, an Approved HKIAS IAQ Signatory, on behalf of PIT Limited, the IAQ Certificate Issuing Body. The certificate number is 0082007202111 (2018). The certificate is issued based on the results of the HKIAS endorsed inspection report no. IR(A)2111/00042. The certificate is part of the Indoor Air Quality Certification Scheme for Offices and Public Places, managed by the Indoor Air Quality Information Centre.

Valid period / 有效日期	27 December 2021	to / 到	26 December 2022
Name of building / 建築物名稱	Civil Engineering and Development Building / 土木工程拓展署大樓		
Address / 地址	101 Princess Margaret Road, Homantin / 何文田公主道 101 號		
Certified location(s) / 已檢定地點	Whole Building / 全幢		
Name / 姓名	Yeung Siu On		
IAQ Certificate Issuing Body / 室內空氣質素證書簽發機構	PIT Limited		
Signature / 簽署			
Date of issue / 簽發日期	24 November 2021		
Certificate No. / 證書編號	0082007202111 (2018)		

室內空氣質素檢定證書《良好級》
Indoor Air Quality Certificate (Good Class)

綠色辦公室

Green Offices



We continued proactively fulfill our commitment under the “Clean Air Charter”. As at 2022, the Civil Engineering and Development (CED) Building was awarded the “Good Class” Indoor Air Quality Certificate for 20 consecutive years. Together with our outstation offices, we were awarded a total of 2 “Excellent Class” and 9 “Good Class” Indoor Air Quality Certificates.

We continued to fulfil our obligations under the “Carbon Reduction Charter”. From April 2021 to March 2022, the amount of carbon dioxide generated directly by the operation of the CED Building was about 26.48 tonnes which was 0.03 tonnes less than the preceding year. The amount of indirect emission through water and electricity consumption was about 1,275.2 tonnes, which was 1,016.77 tonnes less than the preceding year. During the same period, the amount of carbon dioxide generated directly by the operation of the Public Works Central Laboratory was about 10.54 tonnes, which was 0.72 ton less than the preceding year. The amount of indirect emission through water and electricity consumption was about 9,600.12 tonnes which was 9,616.22 tonnes less than the preceding year.

節省用電

本署的總耗電量由 2018 年的 5,720,420 度減少 7.8%至 2022 年的 5,274,278 度，達至我們這方面的環保目標。本署於 2022 年的耗電量如下：

本署辦公室 ¹ CEDD Offices ¹	耗電量(千瓦小時) [與2018年比較的增減幅] Electricity (kWh) [% change as compared with 2018]
土木工程拓展署大樓 CED Building	3,093,535 [-4.65%]
工務中央試驗所大樓 PWCL	1,565,024 [-9.65%]
旺角道一號商業中心 ² One Mong Kok Road Commercial Centre ²	24,729 [不適用/NA]
新都會廣場 ² Metroplaza ²	119,819 [不適用/NA]
高銀金融國際中心 ² Goldin Financial Global Centre ²	26,827 [不適用] [NA]

注釋:

1. 只包括已安裝獨立電錶的辦公室。
2. 涉及2019年或以後才開始使用的辦公室，因此與2018年耗電量的比較並不適用。

Saving in Electricity Consumption

The total electricity consumption of the Department decreased by 7.8%, from 5.720 million kWh in 2018 to 5.274 million kWh in 2022, achieving our environmental target in this respect. The electricity consumption of CEDD in 2022 is as follows:

本署辦公室 ¹ CEDD Offices ¹	耗電量(千瓦小時) [與2018年比較的增減幅] Electricity (kWh) [% change as compared with 2018]
新文華中心 New Mandarin Plaza	11,403 [-25.60%]
英皇道1063號 1063 King's Road	47,365 [-0.86%]
狗虱灣政府爆炸品倉庫 Kau Shat Wan Explosives Depot	351,827 [-12.41%]
九龍政府爆炸品倉庫 Kowloon Explosives Depot	33,749 [-28.64%]

Notes:

1. Only offices with individual electricity metres installed are included.
2. As it involves office that was commissioned in or after 2019, comparison with 2018 is not applicable.

綠色辦公室

Green Offices

使用電動汽車

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，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。截至2022年12月，本署有62輛（45輛全電動車及17輛混能車）電動汽車。

節省用電措施

在2022年，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），並安排部分載客升降機於非繁忙辦公時段暫停服務。
- (2) 節能方案 - 本署開始提升本署大樓的照明系統，以改善其效能，並繼續與機電工程署保持聯繫，探討各種可行的節能方案。

Use of Electric Vehicles

Electric vehicles (EVs) do not exhaust emission which is one of the major sources of roadside air pollution. They reduce greenhouse gas emissions and thus improves roadside air quality. Moreover, EVs in motion do not involve internal combustion, they are therefore quieter than those driven by internal combustion engine, and help reduce traffic noise pollution. As at December 2022, CEDD has 62 EVs (45 full EVs and 17 hybrid EVs).



Electricity Saving Measures

In 2022, we implemented and planned the following electricity saving measures:

- (1) Housekeeping measures - we continued to proactively remind colleagues to adopt daily energy saving measures (e.g. switching off lighting and computers when away from office) and operated lesser number of passenger lifts during non-peak office hours.
- (2) Electricity saving projects - we commenced upgrading the lighting system of CED Building to enhance its efficiency. We kept liaising with the EMSD to explore feasible energy saving opportunities.

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可持續改善。2022 年的目標和工作成效如下：

Environmental Performances

To achieve continuous improvement in our environmental performance, we have set annual environmental objectives and targets. Below are summaries of our targets and achievements in 2022:

2022 年的環保目標和指標 Environmental Objectives and Targets in 2022

減少總用紙量，較 2003 年少 22.5%
To 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 60%
To substitute 60% of normal plain paper with recycled paper

減少本署的總用電量，較 2018 年少 3.6%
To reduce total electricity consumption of the Department by 3.6% as compared with that in 2018

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

本年度種植至少 63 萬棵樹/灌木
To plant at least 630 thousand trees/shrubs

2022 年的成績 Achievements in 2022

總用紙量較 2003 年減少 30.9%
Total paper consumption reduced by 30.9% when compared with that in 2003

環保紙佔總用紙量的 64.3%
Recycled paper accounted for 64.3% of total paper consumption

本署的總用電量較 2018 年減少 7.8%
Electricity consumption of the Department reduced by 7.8% when compared with that in 2018

本年度已美化 158 幅在「長遠防治山泥傾瀉計劃」下鞏固的斜坡
158 upgraded slopes under the Landslip Prevention and Mitigation Programme landscaped

本年度已種植 91 萬棵樹/灌木
910 thousand trees/shrubs planted

與業界合作促進可持續發展

Collaboration with Industrial Practitioners for Sustainable Development

利用無人機在偏遠山坡的山泥傾瀉殘痕上播種

我們於 2021 年展開研究，利用無人機在偏遠山坡的山泥傾瀉殘痕上播種，冀加快回復天然山坡的自然外貌。此項研究的主要目的是透過實地試驗找出理想的播種模式。

2022 年的研究重點在監察試驗現場的種子發芽速率、成長狀況和綠化成效，以及評估影響種子發芽表現及速率的其他因素，例如種子儲藏期、種子預措處理及野生動物捕食的影響等。

本署將根據研究結果，總結出相關技術所需之硬件要求和理想的播種模式，並會適時擬定使用無人機播種的應用策略及規劃後續工作，包括考慮將該技術應用於香港其他的山泥傾瀉殘痕。

Use of Unmanned Aerial Vehicle (UAV) for Seed Sowing at Landslide Scars

In 2021, we initiated a study on the use of Unmanned Aerial Vehicle (UAV) for direct seed sowing at landslide scars, with a view to restoring the landscape of bare landslide scars on remote natural hillside. The main objective of the study is to identify an optimised implementation approach through field trials.

In 2022, the study mainly focused on monitoring of the seeds' germination rate, growth conditions and greening effect at the trial sites, together with a review of possible factors affecting the seeds' germination performance and rate, such as the storage duration and pre-treatment of seeds as well as the effect of wild predation.

Based on the findings of the site trials, we will summarise the hardware and optimised implementation arrangement of using UAV for direct seed sowing on landslide scars. We will also formulate the application strategy and plan the follow-up work, including a wider application of such a technology at other bare landslide scars on when appropriate.

Collaboration with Industrial Practitioners for Sustainable Development



空中播種的種子發芽表現
Germination performance at UAV seeding plot



天然山坡山泥傾瀉殘痕之播種試驗範圍現場
Seeding plot at landslide relict of natural hillside



研究中使用的無人機及撒播器
UAV with seed spreader used in the study

與業界合作促進可持續發展

Collaboration with Industrial Practitioners for Sustainable Development

自動化混凝土磚護養及壓力測試

本署與「物流及供應鏈多元技術研發中心」共同研發了一套自動化系統以進行混凝土磚護養及壓力測試，該系統設於深水角工務區域試驗所，並於 2022 年全面運作。系統成功將整個混凝土磚測試過程全面自動化，以提升測試效率去面對基建項目不斷增加的測試需求。系統設有一個中央電腦，由於所有測試數據會自動傳送及儲存於系統內，因此自動化系統能取代傳統測試中使用紙本試算表作記錄的需要。與傳統測試比較，我們估算系統每年能節省約 20,000 張紙。

Automatic Concrete Cube Testing System

CEDD, in collaboration with the Logistics and Supply Chain MultiTech R&D Centre Limited, have developed a fully automated system to carry out concrete cube curing and concrete cube testing in the Public Works Regional Laboratory (Sham Shui Kok) (PWRL(SSK)), which has been in full operation since 2022. This pilot project successfully automates the entire concrete cube testing process for enhanced efficiency to meet the increasing testing demand from infrastructure projects in Hong Kong. With a centralised computer system, all the testing data are automatically transferred and stored in the system which eliminates the use of paper worksheets in conventional testing procedures. It is envisaged that about 20,000 pieces of paper can be saved annually when comparing with conventional operation.

Collaboration with Industrial Practitioners for Sustainable Development

除此之外，深水角工務區域試驗所亦有應用可再生能源，在天台表面裝設超過 160 塊最高產電量可達 86 千瓦的太陽能光伏板，每年可生產約 100,000 度電，大約為香港 30 個家庭一年之用電量，或相等於試驗所 20% 的用電量和每年減少 40 公噸的二氧化碳排放。

Furthermore, the PWRL(SSK) has also adopted renewable energy by installing solar photovoltaic system on the roof, consisting of more than 160 photovoltaic panels with a maximum generation capacity of 86kW. The panels can produce about 100,000kWh of electricity annually. The amount is equivalent to the total electricity consumption by about 30 families in Hong Kong or 20% of the electricity consumption of the laboratory. Apart from producing electricity, the system will achieve a reduction of carbon dioxide emission from power stations amounting to 40 tonnes per annum.



自動化混凝土磚測試系統
Automated system for concrete cube testing system



深水角工務區域試驗所天台的太陽能光伏板
Solar panel on the roof of PWRL(SSK)

員工培訓

Staff Training

參觀英泥製造廠

因應粒化高爐礦渣粉已開始在一些先導工程項目中成功使用，土木工程拓展署於 2022 年 12 月安排共 50 多位同事參觀一間生產與應用粒化高爐礦渣粉的英泥製造廠。是次活動旨在推展日後在工程項目中使用粒化高爐礦渣粉。



Visit to Cement Manufacturing Plant

In view of the successful applications of GGBS in some pilot projects, CEDD arranged site visits in December 2022 for more than fifty colleagues to a cement manufacturing plant which produces and applies GGBS. The visits aims to pave way for the future use of GGBS concrete in our projects.



參觀英泥製造廠

Visit to Cement Manufacturing Plant

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，並加強他們履行環境監督職責的能力，本署聯同環境保護署繼續為項目工程師、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。於 2022 年，共有 248 位人員完成培訓。



Environmental Training

To equip and reinforce our staff and our consultants' site supervisory staff with the necessary knowledge on environmental legislation and to strengthen their competency of environmental monitoring duties, CEDD, in collaboration with the Environmental Protection Department, has continued to organise training on the latest development of environmental legislation for project engineers, CEDD / consultants' site supervisory staff and contractors' key site staff members. In 2022, a total of 248 staff have completed the training.



環保法例培訓班
Environmental legislation training

