

建設都市微森林

實踐可持續發展

Building the **Urban Mini-forest**
for a Sustainable Future

Urban Mini-forest Initiative
都市微森林計劃

「都市微森林」先導項目 “Urban Mini-forest” Pilot Project

政府在規劃新發展區時，除了照顧市民的住屋和就業需要，亦致力建設可持續的低碳社區，提供優質、宜居和舒適的生活環境。為應對氣候變化，土木工程拓展署與香港園境師學會合作，在粉嶺北新發展區推行先導計劃，於梧桐河畔設立「都市微森林」，透過高密度種植原生苗木，可在石屎森林中進一步引入本地生態，豐富市區的生物多樣性，同時增加綠化覆蓋率，舒緩熱島效應。

作為香港首個工務工程下的「都市微森林」先導項目，本計劃成功展示以嶄新技術推行環保工作，為日後的城市規劃起了示範作用。

The Government has considered multiple factors while formulating a New Development Area (NDA). Alongside the provision of housing and job opportunities, it also strives to develop a sustainable low-carbon community, which creates a high-quality, pleasant, and comfortable living environment. To cope with climate change, the Civil Engineering and Development Department (CEDD) and the Hong Kong Institute of Landscape Architects (HKILA) jointly initiated a pilot project in the Fanling North NDA to establish an “Urban mini-forest” near Ng Tung River. Native saplings are planted densely to add greens among concrete jungles. This hopes to enrich the city's biodiversity, and to alleviate the heat island effect.

This pilot project is the first local public work project to introduce the “mini-forest” concept, setting an example on how new environment-preserving innovation can be integrated into urban planning.



「微森林」特色 Features of Mini-forests

0.8-1米/年
0.8-1m / year

樹木生長速度 Tree Growth

一般樹木生長速度為每年0.2米，而「微森林」的植物生長速度預計可快4-5倍。
Saplings in mini-forest can grow 4-5 times faster, as opposed to the normal (approx. 0.2m) per year

3-5棵/平方米
3-5 no. / m²

種植密度 Density of Plants

一般都市園境規劃，一百平方米內大約只得10-20棵苗木，「微森林」則有400棵苗木，其中200棵可以成長為喬木400 nos. of trees/shrubs within the 100 m² mini-forest area, of which 200 nos. of them can grow into size of trees, as opposed to 10 to 20 nos. /100 m² in usual urban landscape

CO₂
碳封存
Carbon sequestration

相比一般都市園境規劃，碳封存成效高出10倍。
Sequester over 10 times more carbon than in usual urban landscape

註：碳封存是指捕獲和儲存大氣中的二氧化碳(CO₂)的過程。這有助於緩解氣候變化。
Remark: Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide (CO₂), which helps mitigate climate change.

「微森林」的益處 Benefits of Mini-forests

相較傳統森林，它可
Compared to the traditional forests, it can

10倍
Faster
生長速度
Attaining maturity in 15-20 years, as opposed to the 150-200 years required for normal forests

佔地少至
in less than
25平方米
可以在面積較細範圍(約為兩個停車場)內生長
Grow in a small area (approximately the size of two parking lots)

它可以為城市帶來
It can bring to cities

20倍
Biodiversity
物種數量比非原生森林多20倍，有助促進生物多樣性
20 times more diverse (in no. of species) than non-native forests, boosting biodiversity

5°C
氣溫較周邊環境低5°C，有助舒緩城市熱島效應
5°C lower than surrounding air temperature, relieving urban heat island effect



厚殼桂
Cryptocarya chinensis

因時制宜 符合成本效益

計劃選址位於粉嶺北第15區東第一期公營房屋用地以北，佔地100平方米，該處日後將成為綠色公共空間的一部份。由於香港地少人多，土木工程拓展署為善用珍貴的土地資源，參考日本著名植物學家宮脇昭(Akira Miyawaki)的植林方法，在面積較小的土地空間上，以多樣化的本土品種高密度植林，加強城市綠化，平衡社區發展。

隨著社會對環境保育日益重視，土木工程拓展署的規劃方針亦與時並進。署方在「古洞北及粉嶺北新發展區」項目推行前期基建工程時，亦同步展開了園境規劃下的種植項目。

本港部份外來先鋒樹種具排他性，不但會阻礙其他植物生長，致樹林物種較少，更會不利於為本地野生小動物，如青蛙和蜘蛛等提供食物和棲息地。為加強自然保育效果，工程團隊遂採用厚殼桂、翻白葉樹和楊梅等共25個原生樹種，並模仿天然樹林的多層結構，於「微森林」內以隨機形式栽種了400棵樹苗。由於樹林結構多元化，涵蓋灌木至大喬木，加上本土植物生命週期可長達80至90年，有助形成平衡、穩定和豐富的微生境，提升生物多樣性。

採用這種造林法能建立良好的林木結構和生態功能，因此所需的護養年期亦較短，預計3年後「微森林」的生態系統基本上可自給自足，其成熟速度亦較天然森林快10倍，長遠有效舒緩「城市熱島」效應。

Timely and Cost Effective

The mini-forest is located at the north to the public housing site in Fanling North Area 15 East (Phase 1) with a site area of 100 square meters. Keeping in mind to establish a green public open space for the local residents, the project team optimizes the use of our city's precious land resources by adopting the **afforestation method initiated by the celebrated Japanese botanist, Akira Miyawaki**. By planting a high density of diverse native species in a relatively small land space, it enhances urban greening and balances the development of the community.

Alongside the growing emphasis on environmental conservation in our society, CEDD's planning principles have also evolved. During the advanced infrastructure works for the KTN and FLN NDA project, the CEDD simultaneously implemented the planting projects within the landscape architectural plan.

Some exotic species in Hong Kong not only outcompeted indigenous species, but are also undermining habitats and disrupting food chains for local wildlife such as frogs and spiders. To strengthen nature conservation, the project team adopts 25 native species, e.g., Cryptocarya Chinensis, Pterospermum Heterophyllum, and Myrica Rubra to imitate the multiple layers in natural forests by cultivating 400 seedlings randomly in the Mini-forest.



楊梅
Myrica rubra



灑水系統會模仿天然降雨，將水分平均灑落至苗圃各處。
The irrigation system mimics natural rainfall, distributing water evenly across the nursery.

共建低碳社區

工程園境團隊由選址、與香港園境師學會協商制定場地設計標準、敲定技術細節，到正式種植樹苗，僅需時八個月。

署方與業界攜手努力下，項目得以順利推展，並於2025年2月14日舉行種植活動以標誌「微森林」正式建立。工程團隊邀請土木工程拓展署署長方學誠、太平紳士和香港園境師學會會長陳元敬先生等嘉賓，身體力行栽種樹苗。是次經驗不但標誌著署方綠化工程的一個重要里程碑，更可推動都市微森林成為未來基建計劃的永續發展目標。土木工程拓展署未來將繼續努力推展保育工作，建設生態平衡的理想社區。

Build a Low-carbon Community Together

It took the project landscape team only eight months from finalizing the site selection and technical details, to actually planting the saplings.

With the concerted efforts of CEDD and the industry, the pilot scheme has been launched smoothly and a planting event was held on 14 February 2025 to mark the project formation. The project team invited special guests including Michael Fong, JP, the Director of CEDD, and Mr. Paul Chan, the President of HKILA to plant saplings of the “mini-forest”. The successful implementation not only marks an important milestone in CEDD's greening works, but also advocates for urban mini-forests as a goal for sustainable development in upcoming infrastructure works. CEDD will continue its efforts in promoting conservation and building an environmentally sustainable community.

觀看活動花絮短片:
View event highlight video:



天然樹林的多層結構 Multi-layer Features of Natural Forests



大喬木 Canopy Trees
(又名“蒼穹樹”)

喬木 Trees

小喬木 Sub-trees

灌木 Shrubs



翻白葉樹
Pterospermum heterophyllum

北區醫院慈善信託基金慈善步行2025

工程團隊作為服務北區的一份子，於2025年1月12日參加了「北區醫院慈善信託基金慈善步行2025」籌款活動。一眾義工與市民並肩同行約4公里，為活動籌得港幣140萬元。

是次活動籌得的款項，將用於支持北區醫院的智慧醫院項目，優化醫療設施，造福病友，建構健康和諧社區。同時藉此感謝北區醫院醫護團隊多年盡心盡力守護北區，傳承關愛精神。

The North District Hospital Charitable Foundation Charity Walk 2025

As part of the community, the project team participated in "The North District Hospital Charitable Foundation Charity Walk 2025" fundraising event on 12 January 2025. Our volunteers walked alongside the public for about 4 km and raised \$1.4 million in donations for the event.

The funds raised will mainly be used to support the North District Hospital's smart hospital project to optimize medical facilities for the benefit of patients and build a healthy and harmonious community. The team also expressed gratitude to the medical team of North District Hospital for their years of dedication to safeguarding the community and carrying forward the spirit of caring.

新春書法工作坊

工程團隊為粉嶺公立學校舉辦「新春書法工作坊」，學習中國傳統文化，亦為社區送上真誠的新年祝福。

活動於粉嶺北社區聯絡中心進行，當日工程團隊先向學生提供導賞，簡介古洞北及粉嶺北新發展區（第一階段）工程內容，讓他們了解社區最新發展。其後由書法導師指導學生用毛筆寫揮春及製作賀年掛飾，學生皆樂在其中，透過書法傳遞滿滿的心意。

Lunar New Year Chinese Calligraphy Workshop

The project team held a Lunar New Year Chinese calligraphy workshop for students from Fanling Public School to learn traditional Chinese culture and send sincere New Year greetings to the community.

The workshop was held at the Fanling North Community Liaison Centre and kicked off with a guided tour of the CLC to introduce the project of Kwu Tung North and Fanling North NDA (Phase I) to let them understand the latest community developments. Afterward, the calligraphy tutor guided the students to write Chinese New Year greetings and make decorations, which was a joyful experience for all the students to express their deepest love through the calligraphy.

Give Blood, Save Lives

The project team has been cooperated with the Hong Kong Red Cross Blood Transfusion Service to provide blood donation service at our site office regularly.

This February, the project team specially arranged the Mobile Collection Team to set up a blood drive at our Fanling North Community Liaison Centre to provide blood donation service to the team and community members, allowing more people to contribute to the society by saving lives.

Project team members from CEDD, Consultant, and Contractors, as well as community members participated in this meaningful event to give blood and save lives.

香港測量師學會工料測量大獎 2024

工程團隊奪得由香港測量師學會工料測量組舉辦的「香港測量師學會工料測量大獎2024」其中兩個獎項，充分肯定其在勇於創新及綠色建築可持續運作方面的傑出成就，以及對本地建築業和社區發展的貢獻。

HKIS QS Awards 2024

The project team was honoured with two awards at the 2024 HKIS QS Awards, organized by the Quantity Surveying Division (QSD) of the Hong Kong Institute of Surveyors (HKIS). These awards recognize the outstanding achievements of the project team in bold innovation and sustainable operations in green construction, as well as their contributions to the development of the local construction industry and community development.

Autodesk Hong Kong BIM Awards 2024

「粉嶺北新發展區第一階段 — 粉嶺繞道東段（石湖新村北至龍躍頭）」

合約工程獲 Autodesk Hong Kong BIM 頒發榮譽獎，表彰工程團隊在靈活運用BIM 技術上的卓越成就。

Autodesk Hong Kong BIM Awards 2024

The contract "Fanling North New Development Area, Phase 1: Fanling Bypass Eastern Section (Shek Wu San Tsuen North to Lung Yeuk Tau)" was awarded an Honorable Mention at the Autodesk Hong Kong BIM Awards, in recognition of the project team's extraordinary contribution to the exemplary application of BIM technology.

工程小知識 Engineering Knowledge

土地測量師

土地測量師是工務工程中不可或缺的角色。古洞北及粉嶺北新發展區項目規模龐大，地理環境複雜，土地測量團隊肩負重任，透過結合空間數據和相關技術，支援土地平整和基礎建設等工作。團隊亦會利用最新科技，整合各類測量工作所得的大數據，為未來城市規劃提供技術支援，配合智慧城市發展。

他們的專業工作包括：採集空間數據以提供地貌資料和劃定地界，運用建築信息模擬（BIM）技術協助項目管理，監測受工程影響的建築物沉降情況，並透過數據整合及分析，確保施工符合核准圖則和合約要求等。

Land Surveyor

Land Surveyors have taken up an indispensable role in public works projects. In the Kwu Tung North and Fanling North NDA project, due to the extensive construction and the complicated geographical features, the land surveying team has played an important part in facilitating land formation and infrastructure works by utilization of spatial data and surveying technologies. The team has also introduced innovative technologies to provide technical support for future urban planning through big data analysis, developing the area as a part of smart city.

Their professional duties include: spatial data collection to provide information on ground features and establish site boundaries, assistance in project management through the Building Information Modeling (BIM) technology, settlement monitoring of structures affected by site works, and data analysis to ensure construction works comply with the approved work plans and contractual requirements.

查詢詳情，請與古洞北及粉嶺北新發展區辦事處聯絡。
For further information, please contact the Kwu Tung North and Fanling North New Development Area Office.
古洞北 tel: 3547 1645 email: ktnrp@cedd.gov.hk
粉嶺北 tel: 3547 1648 email: flnnp@cedd.gov.hk

瀏覽古洞北及粉嶺北新發展區（第一階段）網頁，了解更多最新工程資訊！
Visit Kwu Tung North and Fanling North New Development (Phase 1) webpage for more latest project information!

合約編號 Contract No.: ND/2019/01

古洞北新發展區第一階段 - 地盤平整和基礎設施工程
Kwu Tung North New Development Area, Phase 1: Site Formation and Infrastructure Works



白石凹交匯處建造工程正在進行中。
Construction works at Pak Shek Au Interchange are in progress.

工程熱線 Enquiry Hotline 5975 8579

合約編號 Contract No.: ND/2019/03

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
Kwu Tung North and Fanling North New Development Areas, Phase 1: Development of the Long Valley Nature Park



塱原自然生態公園內的所有工程已經完成，並已交予漁農自然護理署管理。
All works in the Long Valley Nature Park have been completed and handed over to the Agriculture, Fisheries and Conservation Department for management.

工程熱線 Enquiry Hotline 5506 5268

合約編號 Contract No.: ND/2019/04

粉嶺繞道東段 — 石湖新村北至龍躍頭
Fanling Bypass Eastern Section between Shek Wu San Tsuen North and Lung Yeuk Tau



全球首例S960超高強度鋼材行人天橋橫跨梧桐河已完成安裝，行車橋主體結構工程正在進行中。
Installation of the world's first ultra-high strength S960 steel footbridge spanning across Ng Tung River has completed. Bridge deck construction is in progress.

工程熱線 Enquiry Hotline 5197 5733

合約編號 Contract No.: ND/2019/07

粉嶺北新發展區第一階段 - 地盤平整及基礎設施工程
Fanling North New Development Area, Phase 1: Site Formation and Infrastructure Works

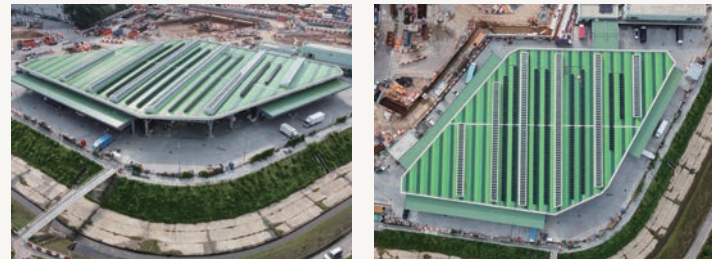


土地平整大致完成，新建道路、渠務工程及隔音屏障正在進行中。
Site formation works have been substantially completed. Construction of new roads, drainage works and noise barriers are in progress.

工程熱線 Enquiry Hotline 5925 7173

合約編號 Contract No.: ND/2019/06

粉嶺北新發展區第一階段 - 北區臨時農產品批發市場重置工程
Fanling North New Development Area, Phase 1: Reprovisioning of North District Temporary Wholesale Market for Agricultural Products



北區臨時農產品批發市場內的所有工程已經完成，並已交予漁農自然護理署營運。
All works in the reprovisioned North District Temporary Wholesale Market for Agricultural Products have been completed and handed over to Agriculture, Fisheries and Conservation Department for operation.

塘坑東村
Tong Hang Tung Chun

