CONSTRUCTION INDUSTRY COUNCIL
建造業議會

可持續發展共建美好未來
Build Better with Sustainability

2050 並行踏上碳中和之旅

Together Towards Carbon Neutrality

全速邁向碳中和
Moving Full Speed Towards Carbon Neutrality

氣候變化對自然環境及人類社會構成重大挑戰，成為當前的熱論議題。為應對氣候變化，香港特區政府承諾於 2050 年之前實現碳中和。**《香港氣候行動藍圖 2050》**概述了四個主要的減碳策略：

Climate change, a defining issue of our time, poses significant challenges to the natural world and human society. To combat climate change, the Hong Kong Special Administrative Region Government has committed to achieving carbon neutrality before 2050. The **"Hong Kong's Climate Action Plan 2050"** (HKCAP 2050) outlined four major decarbonisation strategies:

淨零發電
Net-zero Electricity Generation

節能綠建
Energy Saving and Green Buildings

香港邁向碳中和 Carbon Neutral@HK

綠色運輸
Green Transport

全民減廢
Waste Reduction

香港減碳目標
Hong Kong's Decarbonisation Targets

2035

在 2035 年前把碳排放總量從 2005 年的水平減半

Reduce total carbon emissions of Hong Kong by 50% against the 2005 level

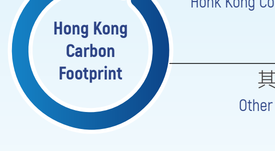
2050

在 2050 年前達致碳中和

Achieve carbon neutrality before 2050

香港建造業黃金時代· 可持續建築黃金機遇
Golden Era of Hong Kong Construction Industry · Golden Opportunities for Sustainable Construction

上述目標對建造及建築業而言既為挑戰，亦是機遇。研究顯示，2019 年香港建造業佔全港 40.2MtCO$_2$e 碳足跡的 3.7%(即 1.49MtCO$_2$e 或百萬公噸二氧化碳當量）。



This climate target presents both a challenge and an opportunity for the construction and building sector. In 2019, the Hong Kong construction industry accounted for about 3.7% (viz. 1.49 million metric tons of carbon dioxide equivalent or MtCO$_2$e) of Hong Kong's carbon footprint (40.2 MtCO$_2$e) as revealed in a recent study on industry decarbonisation.

主要碳排放來源
The Major Carbon Emissions Sources

工地營運
On-site construction activities

拆除與施工
Site processes

工地辦公室
Site offices

廢棄物處理
Waste treatment

廢料和材料運輸
Waste and materials transportation

未來十年，香港將有多個大型發展及基建項目動工，標誌著建造業進入黃金時代。這為業界提供絕佳機會，在早期設計階段，以可持續發展為導向，建設一個更美好的城市。

In the coming decade, there will be the commencement of multiple mega development and infrastructure projects in Hong Kong, denoting another golden era of the industry. This provides excellent opportunities for us to build a better city with sustainability in mind, starting from the early design stage.

三大減碳方向
Three Decarbonisation Directions

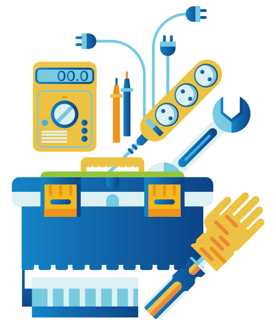
工地電氣化和潔淨能源應用
Construction Site Electrification and Clean Energy Adoption

傳統的建築機械及施工方法高度依賴工地現場柴油燃燒，成為主要的溫室氣體排放來源。使用電網供應的的電力或其他潔淨能源代替柴油，可以顯著減少工地碳排放。

Traditional machinery and construction methods rely heavily on onsite diesel combustion, a major greenhouse gas source. Replacing diesel with grid electricity or clean energy can significantly cut site emissions.

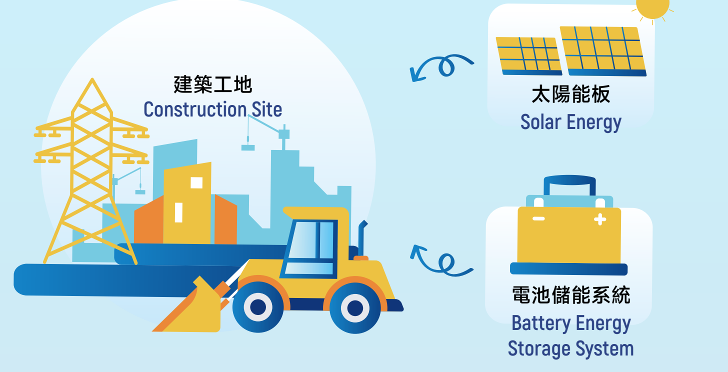
為促進此轉型，主要措施是探索採用電動機械代替柴油設備，同時亦將柴油發電機替換為電池儲能系統或其他新能源發電設備。此外，在促成建築工地早期供電同樣至關重要。減少對柴油的依賴不僅能夠減少碳排放，同時可以緩解當地的空氣污染。

To facilitate this transition, key steps are exploring the adoption of electric machinery over diesel equipment and the transition from diesel generators to battery energy storage systems or other new energy generators. Additionally, early electricity supply to construction sites is also crucial. Reducing diesel dependency not only cuts carbon emissions but also mitigates local air pollution.



然而，面臨供應及成本的挑戰，包括本地非化石燃料建築機械市場供應不足及初期投資成本高昂等因素，窒礙業界廣泛應用潔淨能源的步伐。有鑒於此，議會未來將進行全面的可行性研究，探索將潔淨能源應用於建築工地的可行性及有效實施方案。

Nevertheless, supply and cost challenges including insufficient market supply of non-fossil fuel construction machinery, high cost for initial investment, etc. hinder the construction industry from wider adoption of clean energy. In light of the above, the CIC will conduct a comprehensive feasibility study to explore the practicability and effective implementation of cleaner energy adoption on construction sites.



拆建廢料管理
Construction and Demolition Waste Management

「拆除與施工廢料」是香港建造業碳排放的另一個主要來源。於拆建廢物管理方面，建造業正面對儲存及分類廢物的工地空間有限、處理設施不足等挑戰。為應對挑戰，拆建廢物管理需改善規劃和設計、提升物料使用效率等。

Construction and demolition waste (C&D waste) is a significant carbon emission source in the construction industry. Challenges include limited on-site space for waste storage and sorting, inadequate treatment facilities, etc. Addressing these issues involves improved planning and design, efficient material use, etc.

針對此問題，議會開發一站式數碼平台——「建築廢料智慧管理工具」，將廢料數據由收集到管理的過程數碼化，以有效評估及審視廢料和資源管理，有助循環經濟發展。

The CIC has developed a one-stop digital platform, namely Smart Waste Management Tool (SWMT) to digitise processes from waste data collection to management on construction sites. This is a significant embarkment of measuring and rethinking waste and resource management, contributing to the circular economy.

另一方面，隨著「組裝合成」建築法（MiC）和建築信息模擬（BIM）在本地建造業中逐漸普及，能夠提升資源使用效率。

On another track of waste reduction, the increasing adoption of Modular Integrated Construction (MiC) and Building Information Modelling (BIM) in the local industry enables better resource efficiency.

高效建築和建造數碼化
High Productivity Construction and Construction Digitalisation

運用建築信息模擬（BIM）、「組裝合成」建築法（MiC）、「機電裝備合成法」（MiMEP）和預製鋼筋等創新建築方法及數碼工具，可改善規劃和設計過程、減少浪費建材和提高生產力。

Advanced construction approaches and digital tools, such as BIM, MiC, Multi-trade Integrated Mechanical, Electrical and Plumbing (MiMEP), prefabricated steel rebar, etc., can improve planning and design processes, reduce waste, and increase productivity.

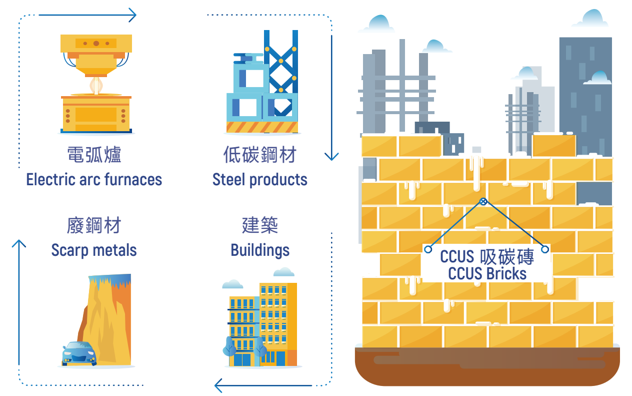
為推動行業轉型，議會作為創新科技及數碼化資源和知識樞紐，致力於為業界提供指引和參考資料，推動建造業邁向高效、可持續、先進技術的未來。

The CIC serves as a hub for industry innovation, offering guidance and resources for digitalisation and knowledge-sharing to enhance capacity building. The goal is to propel the industry towards a more efficient, sustainable, and technologically advanced future.

BIM 建築信息模擬
Building Information Modelling

「組裝合成」建築法
Modular Integrated Construction

可持續建造材料　Sustainable Construction Materials



碳中和之旅：共同創造
The Carbon Neutrality Journey: A Collaborative Effort

實現碳中和並非易事，但亦絕非口號。一如船運及運輸等行業，建造業面對諸多挑戰，尤其以潔淨能源取代化石燃料的目標受制於本地市場規模小及缺乏本地生產，短期內甚難達到。解決挑戰需時，亦需資源及額外初始投資，如透過可行性研究建議支援充電設施。

Achieving carbon neutrality, not just a slogan, poses significant challenges for industries like shipping and logistics, including the transition from fossil to clean energy. Hong Kong faces unique hurdles due to its small market and lack of local production. Overcoming these challenges requires time, substantial initial investment, and additional resources for new charging facilities, as per the feasibility study.

行業的綠色轉型亦講求觀念轉變、和所有持份者的共同努力。議會致力推動轉型及鼓勵建造業減碳，提供不同的減碳相關工具及計劃，例如建造業議會碳評估工具、建造業議會可持續金融認證計劃等。

The industry's green transition requires a mindset change and collective efforts from all stakeholders. The CIC endeavours to decarbonisation through different tools like the CIC Carbon Assessment Tool and initiatives like the CIC Sustainable Finance Certification Scheme.

千里之行難靠一人之力，業界協作極為重要。否則實現碳中和只會成為「不可能任務」。於實現碳中和路上，香港建造業應走於前端，肩負環保責任。以可持續發展為先，我們建造的不僅是建築物，同時亦為下一代建構珍貴的未來。

Ultimately, we place great importance on collaboration. Without this, the mission to achieve carbon neutrality would be at risk of failure. Hong Kong's construction industry could be the frontrunner in environmental responsibility. By prioritising sustainable practices, we are not only constructing buildings but also constructing a lasting legacy for future generations.

通力合作
Sectors Cooperation

建造業議會減碳相關工具及計劃
CIC Decarbonisation Tool and Initiatives

建造業議會
碳評估工具
CIC Carbon Assessment Tool

建造業議會
綠色產品認證計劃
CIC Green Product Certificate

建造業議會
可持續金融認證計劃
CIC Sustainable Finance Certification Scheme

建築廢料智慧管理工具
Smart Waste Management Tool

建造業議會可持續建築大獎
CIC Sustainable Construction Award