

Hong Kong: Green Building in

Action



HKGBC
香港綠色建築議會

Data as at
31/12/2021



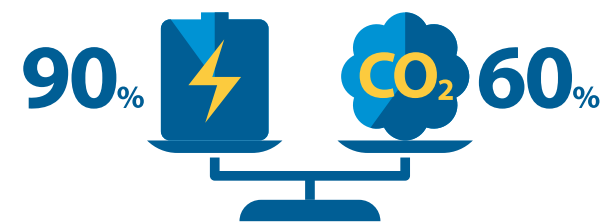
At a Glance

- 1. Fostering Green Building P.2
- 2. New Buildings: Building Green Future P.6
- 3. Existing Buildings: Challenges and the Way Forward P.9
- 4. Advancing Net Zero P.12
- 5. Green Finance P.14
- 6. Turning Engagement into Impact P.16

Fostering Green Building

Hong Kong's Unique Built Environment

Significance of Buildings



Activities in buildings account for **90% electricity consumption or 60% greenhouse gas emissions**¹

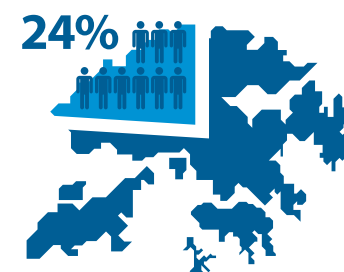
High Population Density



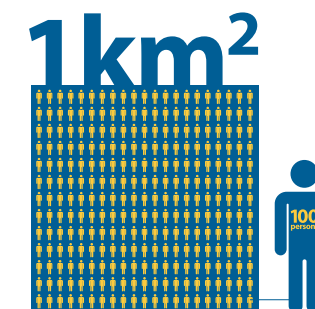
42,000+ buildings in private sector¹



12,188 high-rise buildings and skyscrapers²



People live and work in **24% of Hong Kong's total area**¹



Average population density of built-up areas **28,000 persons/km²**³

BEAM Plus

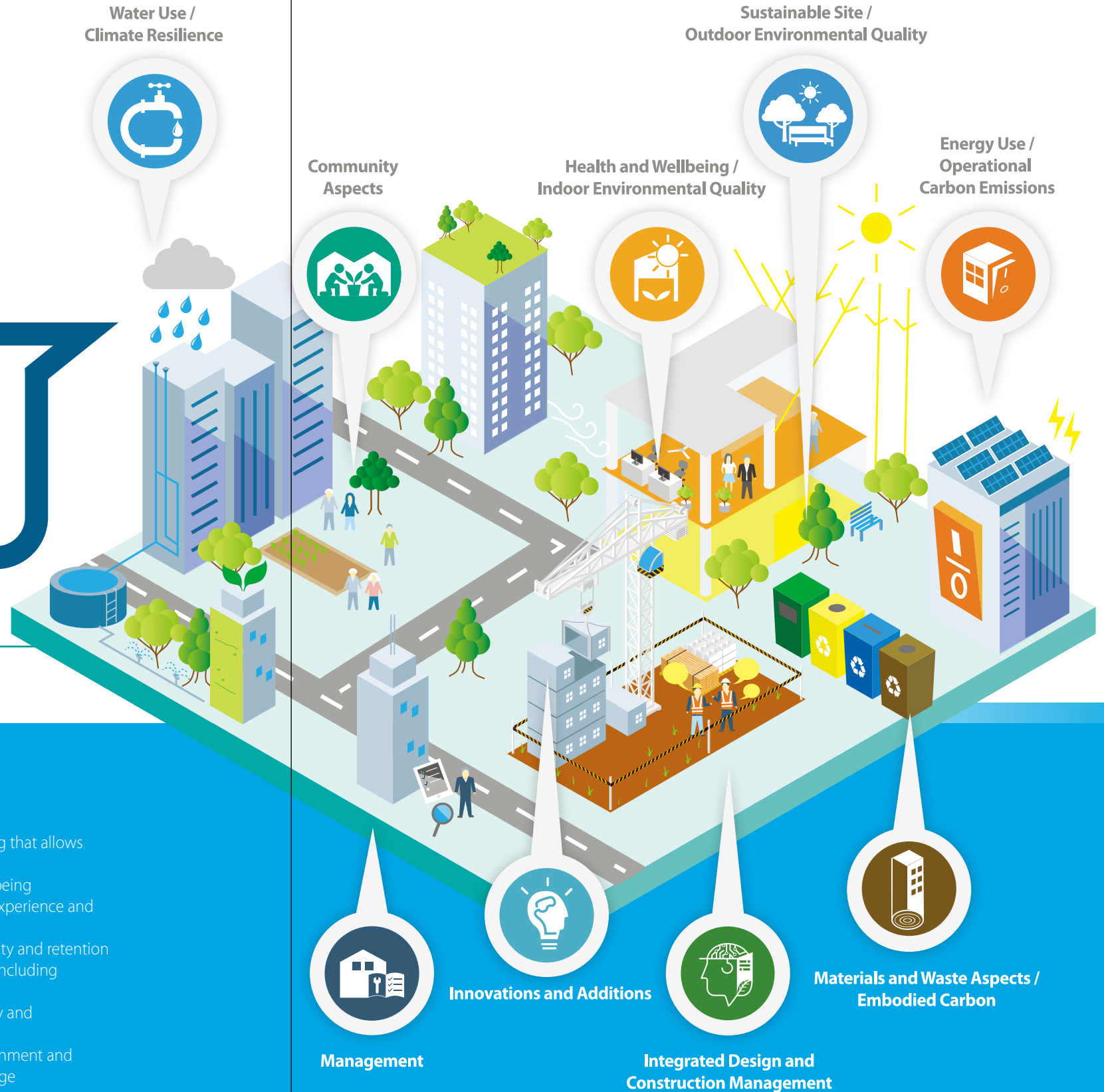
What is BEAM Plus?

BEAM Plus is Hong Kong's leading initiative to offer independent assessments of building sustainability performance.

BEAM Plus Family of Tools

- New Buildings
- Interiors
- Data Centres
- Existing Buildings
- Neighbourhood
- Existing Schools

What does BEAM Plus assess?



Benefits of BEAM Plus

Developers and owners

- Demonstrate CSR/ESG commitments
- Help achieve carbon neutrality goal
- Achieve climate resilience
- Reduce liability and risks
- Lower building's life cycle cost
- Create future-proof building assets
- Enhance property value
- Differentiate products in the marketplace
- Attract green investors
- Receive possible reduction in profits tax
- Help meet state or city requirements

End users

- Obtain third-party rating that allows easy comparison
- Assure health and wellbeing
- Provide a green living experience and enhance quality of life
- Increase staff productivity and retention
- Lower operating costs including water and energy
- Enhance maintainability and reduce related costs
- Help protect the environment and enhance corporate image

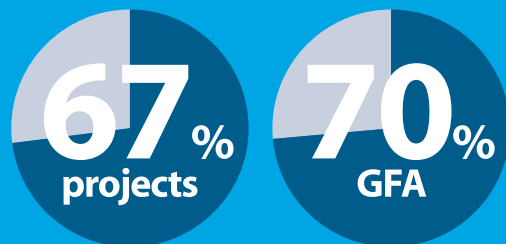
A Strong Green Building Movement in over 20 Years



Aiming High

	Registered	Certified*
No. of Buildings	7,448	3,490
No. of Projects	2,236	1,152
GFA (m ²)	72.2 million	46.4 million

* Certified means Bronze rating or above

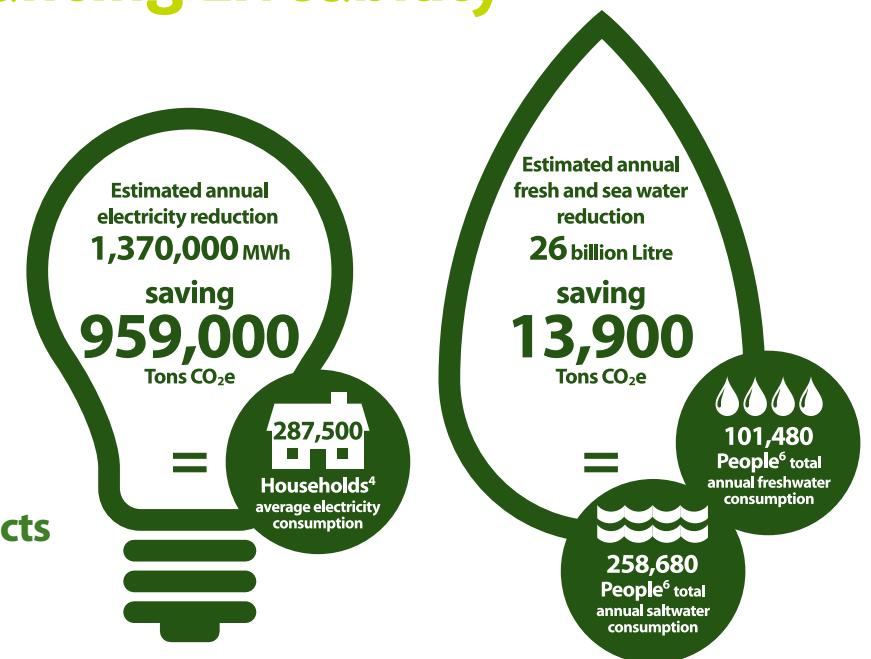


of HK-BEAM and BEAM Plus certified projects have achieved Platinum or Gold rating (including projects with Excellent or Very Good grade under the Selective Scheme of Existing Buildings).

New Buildings: Building Green Future

Combating Climate Change and Enhancing Liveability

Total saving of BEAM Plus New Buildings assessed projects compared to the baseline:

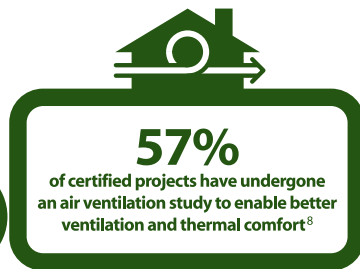
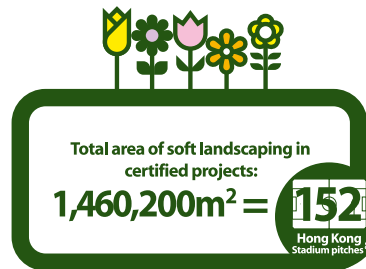


Total estimated carbon emissions saved each year:

972,900 Tons of CO₂e
= **42.3 million** trees planted

Liveability and a Sustainable Lifestyle

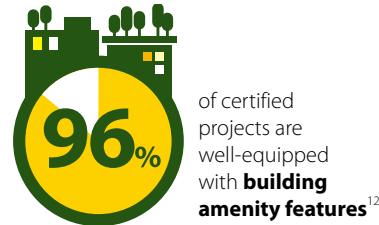
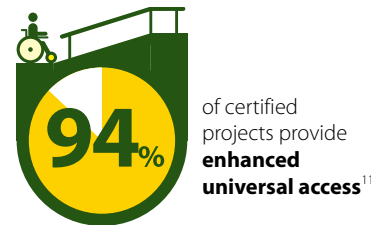
Pleasant Environment



Walkability and Mobility

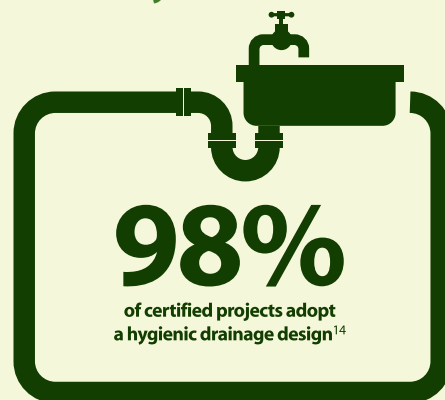


Community Facilities and Amenities



Health and Wellbeing

Excellent Indoor Environmental Quality



Biophilia and Daylight Design

Humans' instinctive bond to nature offers opportunities in interior design to create a positive impact on peoples' physical and mental health. In offices that cannot enjoy views of nature, greenery can be introduced by using indoor plants and rooftop gardens. Many modern interior spaces also make good use of natural light, which enhances user comfort and reduces the use of energy for lighting.

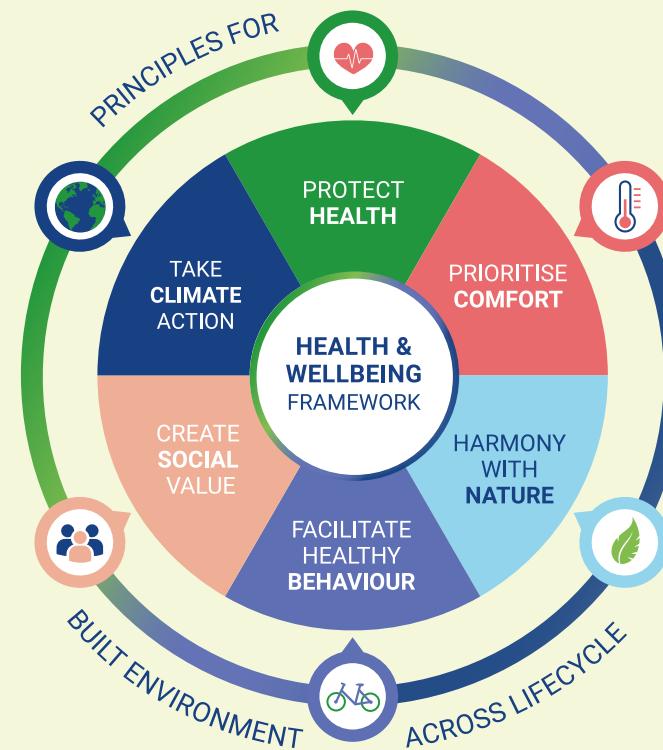


Office of the Printing Division, Government Logistics Department

Better Places for People

The WorldGBC Health & Wellbeing Framework

Six Principles for a Healthy, Sustainable Built Environment



Health and Wellbeing Framework

Since 2014, Hong Kong Green Building Council has participated in the "Better Places for People" Campaign launched by World Green Building Council (WorldGBC). In late 2020, WorldGBC launched a new "Health and Wellbeing Framework" to redefine the scope of health and wellbeing in the built environment. This launch was followed by the rollout of training materials in 2021, offering comprehensive educational tools for healthy and equitable built environments.

Beyond the Business Case Report 2021

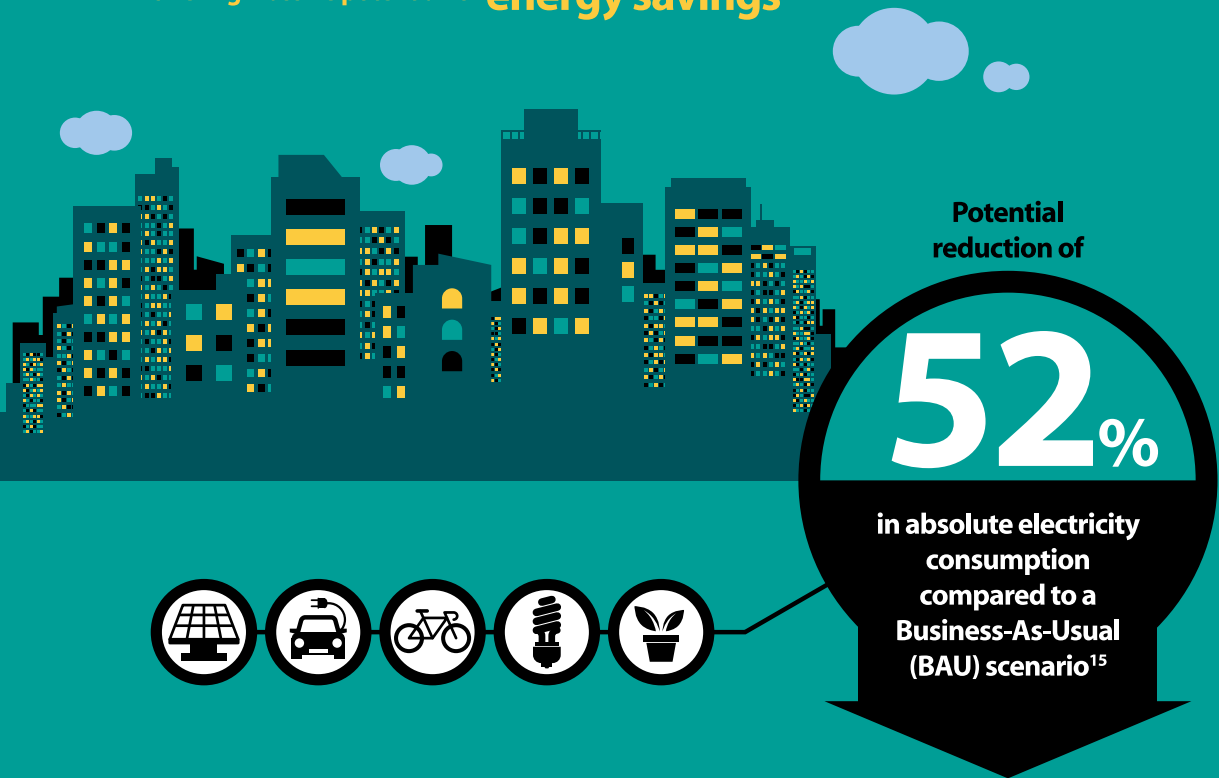
"The Business Case for Green Buildings" Report published in 2013 helped to raise the industry's awareness of sustainability and drive it to differentiate the value of built assets based on green credentials. In 2021, the "Beyond the Business Case" Report presented additional drivers for broadening the business case while also demonstrating seven irrefutable co-benefits for investing in a sustainable built environment, covering both financial and social aspects.



Existing Buildings: Challenges and the Way Forward

Taking up a very large proportion of Hong Kong's current building stock, existing buildings play a key role in Hong Kong's transformation into a low carbon metropolis.

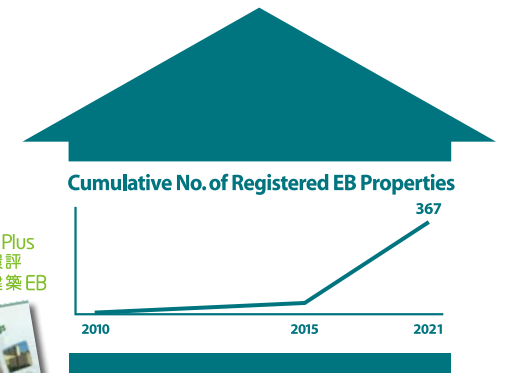
Over **42,000** existing buildings in Hong Kong, offering massive potential for **energy savings**



Existing Buildings: Challenges and the Way Forward

BEAM Plus Existing Buildings V2.0

- Launched in March 2016
- Covering the management, operation, maintenance and improvement of all types of existing buildings of all ages
- Comprehensive Scheme: assessing the overall performance of a property in either one-step or step-wise assessment
- Selective Scheme: assessing individual aspect of the property with a certificate issued for each assessed aspect



A Volume Certification arrangement was launched in 2019 to enable multiple properties managed by the same organisation to undergo assessment in a streamlined and cost-effective manner.

Achievements of BEAM Plus Existing Buildings Certified Properties



Key Initiatives Facilitating Market Transformation



ACT-Shop

The HKGBC's ACT-Shop seeks to nurture and strengthen industry competence in retro-commissioning through different pilot cases, and to promote the adoption of knowledge-based energy management best practices in buildings.



Retro-commissioning Training & Registration Scheme

The Scheme aims to enhance retro-commissioning (RCx) standards and encourage the industry to adopt RCx as a primary energy conservation solution for existing buildings through training and registration mechanism. Comprehensive trainings are provided to elevate the skill levels of RCx professionals. Qualified industry practitioner and company can be registered as RCx Practitioner, RCx Professional and RCx Service Providers under the Scheme to carry out relevant RCx works and provide professional advice. The Scheme is in line with HKSAR Government's active promotion of RCx as a cost-effective means of enhancing energy performance of existing buildings.



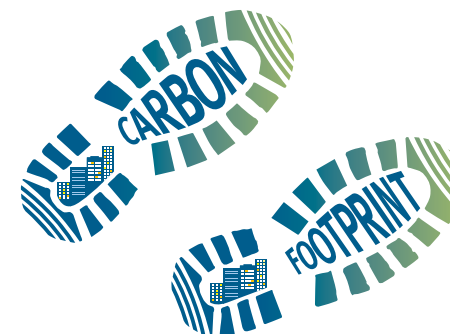
CIC Green Product Certification

The scheme aims to transform Hong Kong into a greener built environment by providing a certification platform for building and construction products / materials. It differentiates products which have significantly reduced their impact on the environment.

Advancing Net Zero

What is Advancing Net Zero (ANZ)?

"Advancing Net Zero" is the World Green Building Council's (WorldGBC) global project which calls for business, organisations, cities, states and regions to reach net zero operating emissions in their portfolios by 2030 and for all buildings to be net zero in operation by 2050.



According to the WorldGBC, buildings currently account for 39% of energy-related carbon emissions globally– with operational carbon emissions accounting for 28% while embodied carbon emissions account for the remaining 11%.

HKGBC ANZ Programme

HKGBC commits to help the Hong Kong building and construction industry sector transition towards net zero in a high density high rise compact city context.

- Hong Kong's first "Advancing Net Zero" Ideas Competition:

1 Generated inspirational ideas for the transformation of the industry and to actively meet the Government's target of achieving carbon neutrality by 2050;



2 Showcased the many valuable and pioneering solutions from the Competition via a series of public exhibitions in Hong Kong and online.

- Hong Kong's first "International Conference on Advancing Net Zero – Decarbonising High-rise, High-density, Sub-tropical Cities"

Promoted international net zero solutions and enhanced the knowledge of professionals in the building and construction sector with the latest concepts, trends, strategies and technical solutions for decarbonising and advancing towards a net zero and sustainable built environment. On average, the conference attracted more than 2,000 participants daily online.



- Advancing Net Zero Technical Webinar Series

Brought together over 3,600 participants in a knowledge-sharing online platform to discuss net zero initiatives and help transform Hong Kong into a low-carbon city.



Green Finance



What is Green and Sustainable Finance?

Green and Sustainable Finance is a new and rapidly expanding area of financial activities.

Green finance raises funds via an array of loans, debt mechanisms and investments for addressing climate and environmental issues.

Sustainable finance takes into consideration an even wider range of topics, including environmental, social and governance (ESG) issues and risks, with the aim of increasing long-term investments in sustainable economic activities and projects.

Why is it important?



- Hong Kong is aiming to be an international green finance hub. The Government has committed to issuing green bonds totalling **US\$4.5 billion** in 2022, including retail green bonds, and is expanding its Green and Sustainable Finance Grant Scheme.²⁰



- The green finance market in Hong Kong is undergoing strong growth. The amount of green and sustainable debts (including bonds and loans) issued in 2021 **exceeded US\$50 billion**, which was four times more than that in 2020.¹⁹
- A substantial number of Mainland and overseas entities have chosen to issue green bonds in Hong Kong, including multilateral development banks.

What is the role of green building and BEAM Plus in green finance?

BEAM Plus is one of the green building certification schemes recognised by GRESB, HKQAA & CIC.



HKGBC
BEAM Plus
綠建環評

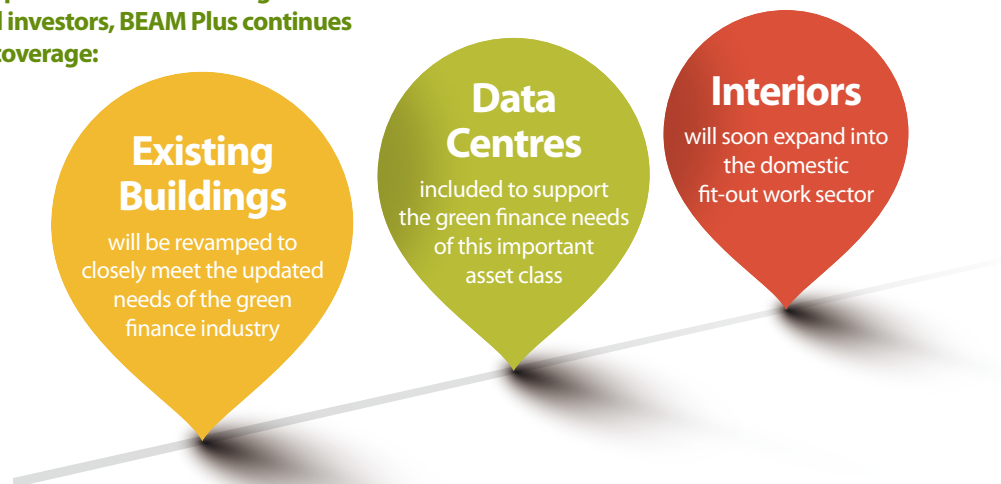


BEAM Plus is also a criterion of Green Mortgage in Hong Kong, which has the following features:

- Available for green residential properties which have attained BEAM Plus Gold or Platinum ratings;
- Clients who purchase green residential properties are rewarded with an extra cash rebate and other incentives;
- A way to stimulate the public to pay more attention to the green ratings of residential properties.

How is BEAM Plus transforming in response to green finance?

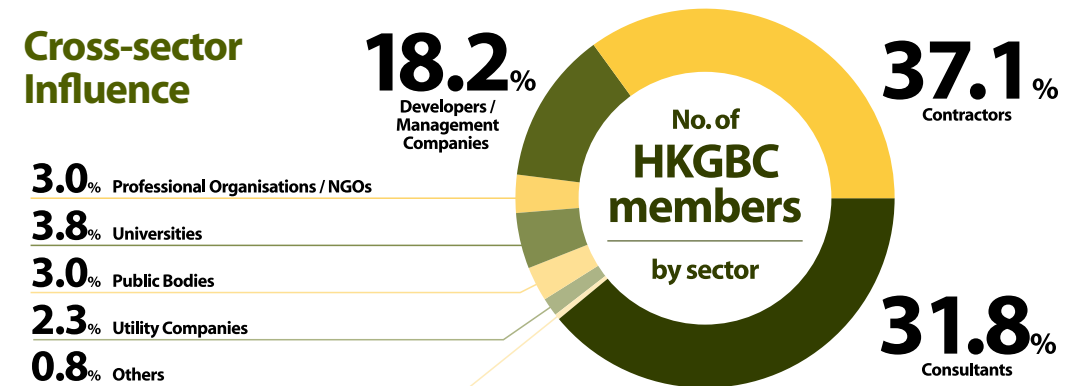
In order to expand its market coverage and attract international investors, BEAM Plus continues to widen its coverage:



Turning Engagement into Impact

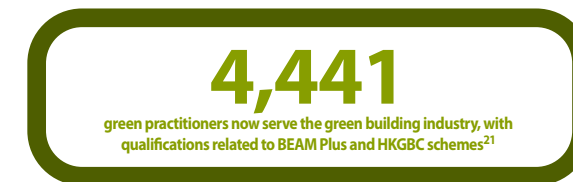
To drive Hong Kong's transformation into a sustainable built environment, it is essential to bring the Government, industry, academia and the public together. As an overarching organisation in the green building community, Hong Kong Green Building Council strives to take the lead in turning the valuable network into real impact.

Cross-sector Influence



Building Competence

No. of green building practitioners



No. of training hours



Since its establishment in 2009, the HKGBC has been spreading the importance of green building at home and abroad through:





“My Green Space” Student Competition

- Organised since 2011
- Encourages students to present their creative ideas on applying green building concepts in real-life built environments, and to develop their ideal green spaces

Hong Kong Green Building Week

- First launched in 2013 with Construction Industry Council
- An annual territory-wide campaign to encourage the public to live a greener life and learn more about local green building development through a series of educational programmes

Hong Kong Green Shop Alliance

- Established in 2016
- Fosters collaborations between malls and shops in building a green shopping environment

Jockey Club BEAM Plus in Schools Project

- Takes place from 2020 to mid-2023 at over 120 secondary and primary schools
- Aims to lead the school sector to achieve 10% carbon reduction and BEAM Plus certification
- Carries out retro-fitting works and facility upgrades to reduce carbon emissions and develops a new BEAM Plus manual for Existing Schools
- Provides educational programmes to promote green building concepts to teachers and students

Green Building Award



Co-organised by the Hong Kong Green Building Council (HKGBC) and the Professional Green Building Council (PGBC), this biennial award aims to provide recognition to building-related projects and organisations for their outstanding performance and contributions to sustainability and the built environment. The Award covers five categories: New Buildings (NB), Existing Buildings (EB), Research & Planning (RP), Building Products & Technologies (BPT) and Green Building Leadership (GBL).

References

Unless otherwise specified, the data and statistics used in this publication are referring to projects under BEAM Plus assessment scheme only and updated as of 31 Dec 2021.

1. ENERGY SAVING PLAN For Hong Kong's Built Environment 2015~2025+, <https://www.enb.gov.hk/sites/default/files/pdf/EnergySavingPlanEn.pdf>
2. High-rise buildings are defined as a multi-story structure between 35-100 meters tall, or a building of unknown height from 12-39 floors. (Emporis, <http://www.emporis.com/building/standard/3/high-rise-building>)

Skyscrapers are as defined as a multi-story building at least 100 meters tall. (Emporis, <http://www.emporis.com/building/standard/75/skyscraper>)

Total number of high-rise buildings and skyscrapers (Emporis, <https://www.emporis.com/city/101300/hong-kong-china>)
3. Energy Saving Charter 2020, https://www.energysaving.gov.hk/esc2020/filemanager/doc/ESC2020_Introduction.pdf
4. The average three-person household electricity consumption in Hong Kong is about 397kWh per month. (Electrical and Mechanical Services Department, Hong Kong Energy End-use Data 2021, https://www.emsd.gov.hk/filemanager/en/content_762/HKEEUD2021.pdf)

Unit electricity consumption of fresh water and salt water are 0.606kWh/m³ and 0.368kWh/m³ respectively. (Water Services Department, Water Services Department Annual Report 2019/20, https://www.wsd.gov.hk/filemanager/common/annual_report/2019_20/en/index.html)

Average unit electricity consumption of sewage treated is 0.29kWh/m³. (Drainage Services Department, Drainage Services Department Sustainability Report 2019/20 https://www.dsd.gov.hk/TC/Files/publication/DSD-SR2019-20_full-report.pdf)
5. Buildings Department Sustainability Report 2019 <https://www.bd.gov.hk/doc/en/resources/codes-and-references/notices-and-reports/sustainability/SustainabilityReport2019e.pdf>
6. The Water Services Department Annual Report 2019/20 https://www.wsd.gov.hk/filemanager/common/annual_report/2019_20/pdf/WSD_AR2019-20.pdf
7. The dimension of the pitch area of Hong Kong Stadium is 130m x 74m. (Leisure and Cultural Services Department, <http://www.lcsd.gov.hk/en/stadium/hks/facilities.html>)
8. Achievement rate of credit SA8c of BEAM Plus New Buildings (V1.1 and V1.2)
9. Achievement rate of credit SA2b of BEAM Plus New Buildings (V1.1 and V1.2)
10. Achievement rate of credit SA3b of BEAM Plus New Buildings (V1.1 and V1.2)
11. Achievement rate of credit IEQ22 of BEAM Plus New Buildings (V1.1 and V1.2)
12. Achievement rate of credit IEQ23a of BEAM Plus New Buildings (V1.1 and V1.2)
13. Achievement rate of credits IEQ6 and IEQ7 of BEAM Plus New Buildings (V1.1 and V1.2)

The projects have to be certified (in Final Assessment stage) or target to achieve (in Provisional Assessment stage) at least the Good Class standard of the Indoor Air Quality (IAQ) Certification Scheme for Offices and Public Places. (Environmental Protection Department, A Guide on Indoor Air Quality Certification Scheme for Offices and Public Places, <https://www.iaq.gov.hk/wp-content/uploads/2021/04/certguide-eng.pdf>)
14. Achievement rate of credit IEQ2 of BEAM Plus New Buildings (V1.1 and V1.2)
15. Hong Kong Green Building Council, HK3030 Market Drivers for Transformation of Green Buildings in Hong Kong (Executive Summary), January 2015, <https://www.hkgbc.org.hk/en/resources/publications/HKGBC-Publication/index.jsp>
16. Achievement rate of credit EU4b of BEAM Plus Existing Buildings V2.0 Comprehensive and Selective Scheme
17. Adoption rate of credit EU3b of BEAM Plus Existing Buildings V2.0 Comprehensive Scheme
18. Achievement rate of credits MWA1 of BEAM Plus Existing Buildings V2.0 Comprehensive Scheme and MWA2a of BEAM Plus Existing Buildings V2.0 Selective Scheme
19. The amount of green and sustainable debt issued in 2021 <https://www.info.gov.hk/gia/general/202202/23/P2022022200567.htm>
20. The 2022/2023 Budget https://www.budget.gov.hk/2022/eng/pdf/e_budget_speech_2022-23.pdf
21. Statistics including the number of BEAM Professional, BEAM Affiliate, GB Faculty and BEAM Assessor, RCx Professional and Practitioner.
22. Training man-hours are offered to BEAM Practitioners by the HKGBC, BEAM Society Limited and other organisations that provide green building-related trainings.



Hong Kong Green Building Council Limited
www.hkgbc.org.hk

Acknowledgement

Statistics and data related to HK-BEAM assessment tool is generously contributed by BEAM Society Limited and Business Environment Council.

Enquiry: enquiry@hkgbc.org.hk

Website: <https://www.hkgbc.org.hk>

Hong Kong Green Building Council Limited. All rights reserved © 2022