



Hong Kong: Green Building

IN ACTION



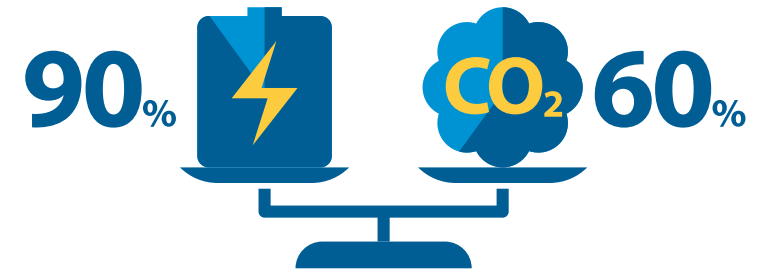
HKGBC
香港綠色建築議會

Data as at
31/12/2019



Hong Kong's Unique Built Environment

Significance of Buildings



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

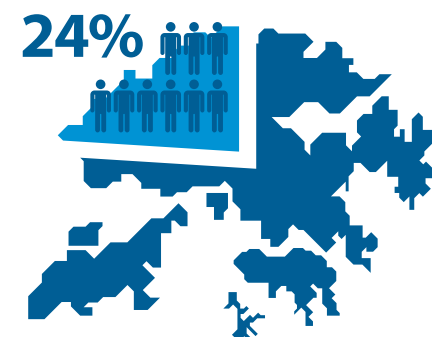
High Population Density



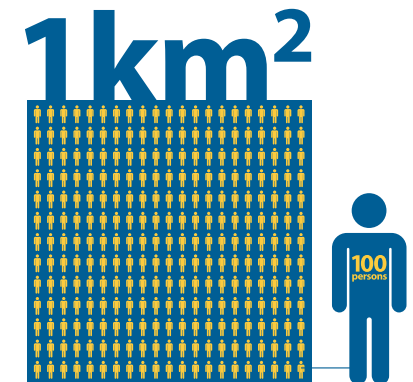
42,000+ buildings in private sector¹



9,700 high-rise buildings and skyscrapers²

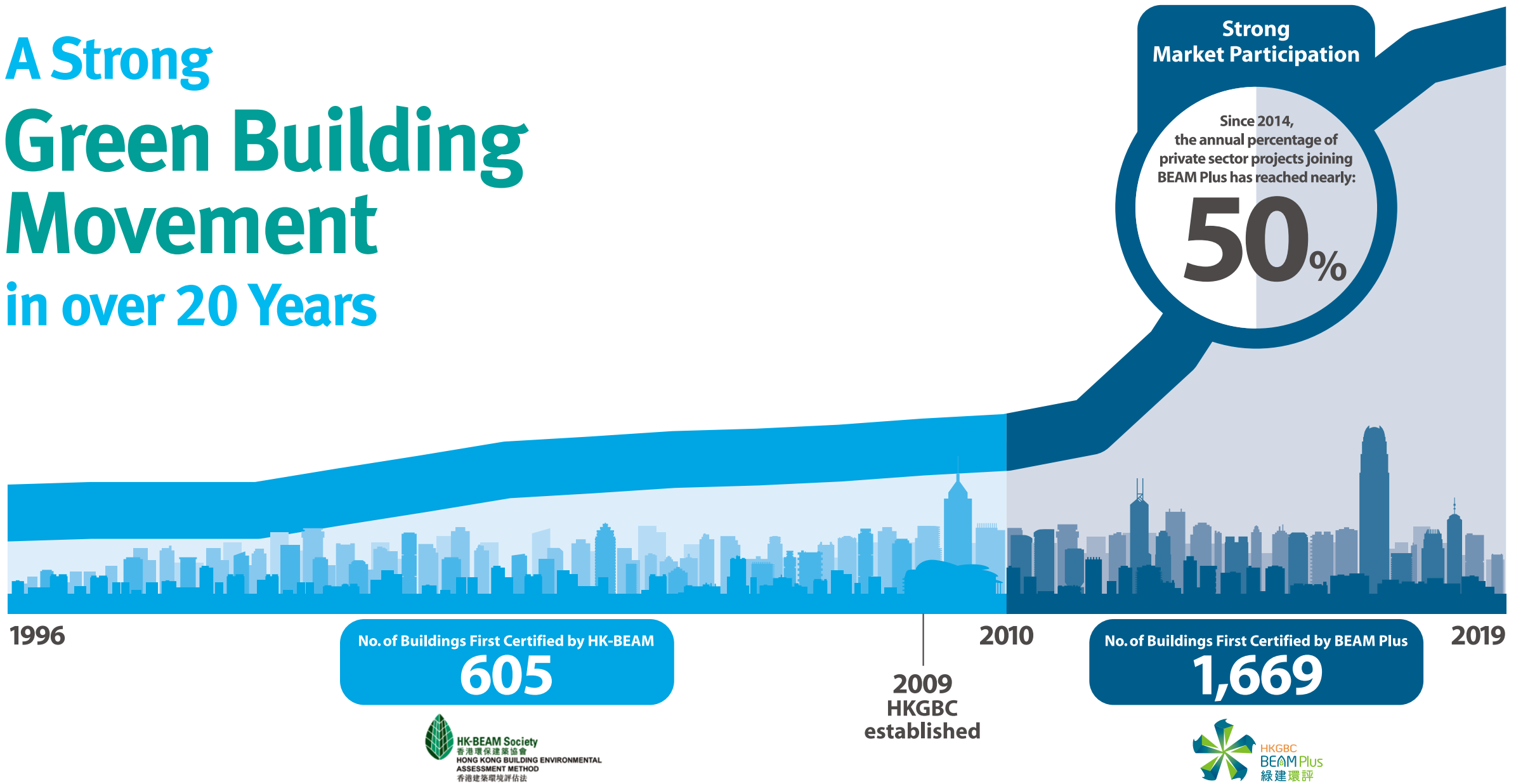


People live and work in
24% of Hong Kong's total area¹



Average population density of built-up areas
28,000 persons/km²³

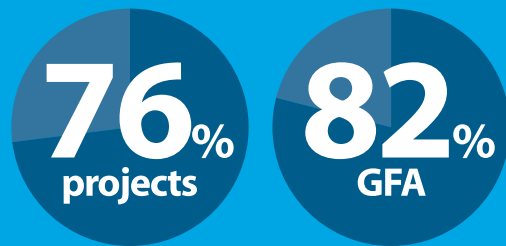
A Strong Green Building Movement in over 20 Years



Aiming High

	Registered	Certified*
No. of Buildings	6,028	2,382
No. of Projects	1,678	773
GFA (m ²)	53.4 million	28.1 million

* Certified means Bronze or above



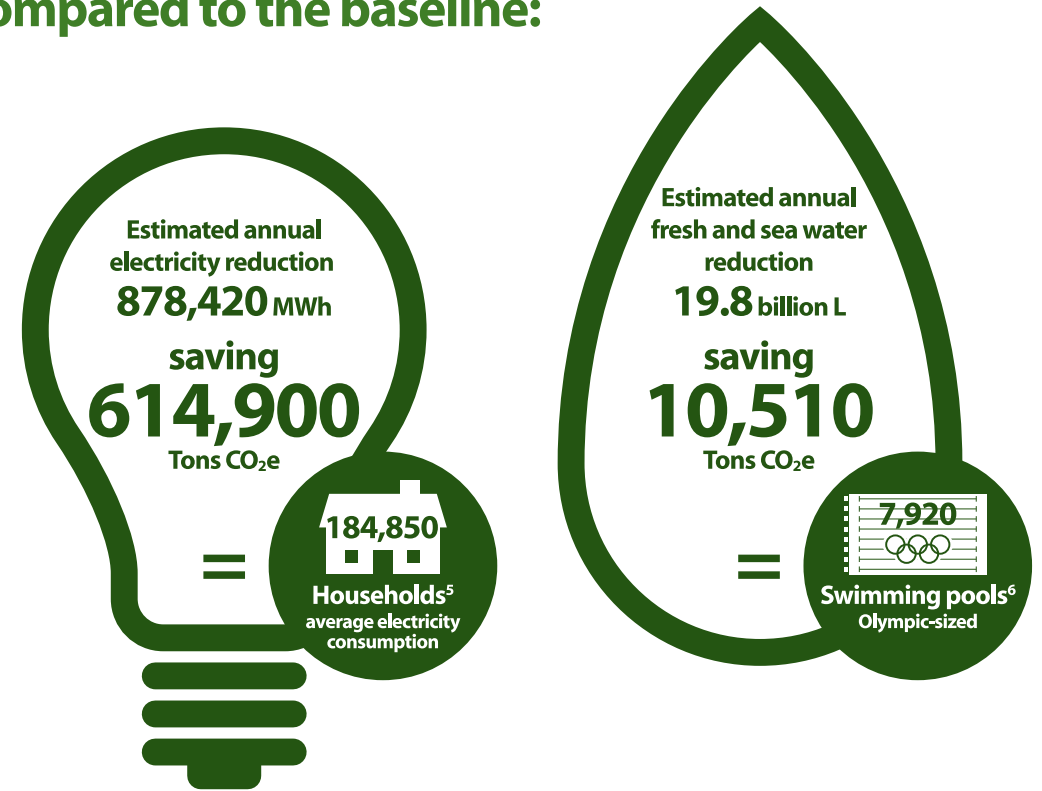
of HK-BEAM and BEAM Plus certified projects have achieved Platinum or Gold rating.

BEAM Plus and GFA concessions

Designed to foster a quality and sustainable built environment, and provide an effective measure to promote green building in Hong Kong, certification by BEAM Plus has been one of the prerequisites for the granting of gross floor area (GFA) concessions for certain green and amenity features in new building projects since April 2011. Along with other requirements set out in the Sustainable Building Design Guidelines, the total concession granted to listed features is capped at 10%.⁴

Combating Climate Change and Enhancing Liveability

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

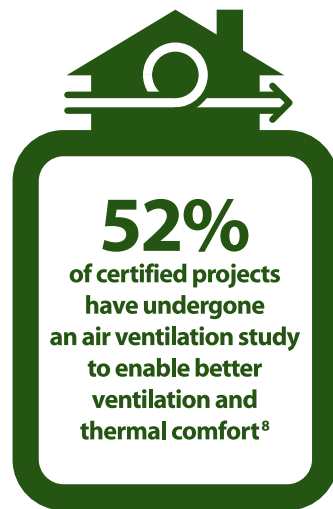


Total estimated carbon emissions
saved each year:

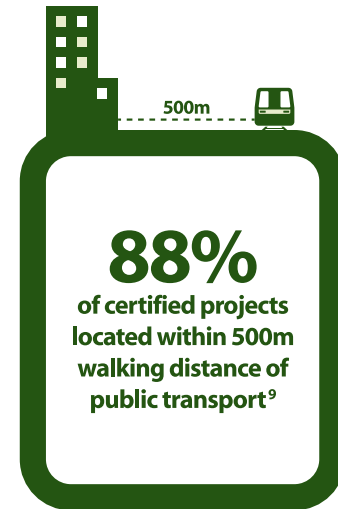
625,400
Tons of CO₂e
= 27.2 million trees planted

Liveability and a Sustainable Lifestyle

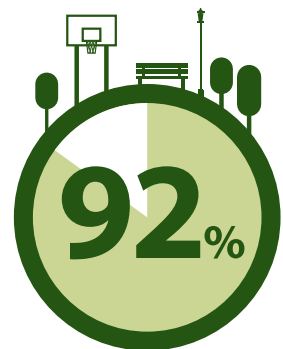
Pleasant Environment



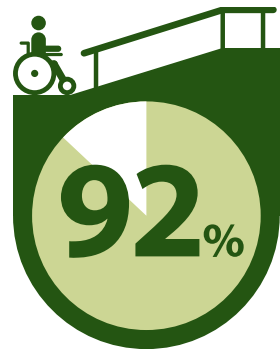
Walkability and Mobility



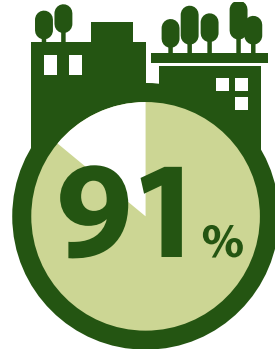
Community Facilities and Amenities



of certified projects have nearby recreational facilities¹⁰



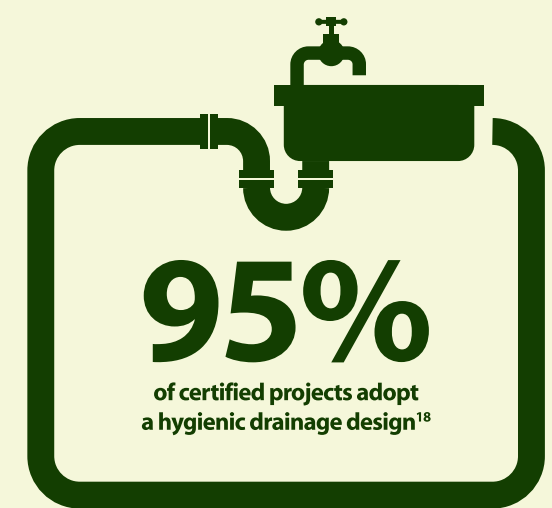
of certified projects provide enhanced universal access¹¹



of certified projects are well-equipped with building amenity features¹²

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

Hong Kong Green Building Council has participated in the "Better Places for People" Campaign launched by World Green Building Council (WorldGBC) since 2014. Launched in 2019, "Plant a Sensor" will advance the work of the WorldGBC's Air Quality in the Built Environment campaign as part of "Better Places for People" global project.



Green Sky of Conservation International Hong Kong

Active in over 30 countries worldwide, this campaign is dedicated to improving human health as part of the sustainable built environment and acquiring a global set of accurate data that will empower our network to enhance awareness, technical work and advocacy impact. The data gathered from the air quality monitors around the world will be publicly available on the RESET Earth platform.

WorldGBC also launched the Case Study Library (<https://www.worldgbc.org/case-study-library>) in 2019 to showcase the world's most cutting edge sustainable buildings, including 5 cases from Hong Kong.

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 **42,800** existing buildings in Hong Kong, offering massive potential for **energy savings**

Potential reduction of

52%

in absolute electricity consumption compared to a Business-As-Usual (BAU) scenario¹⁵

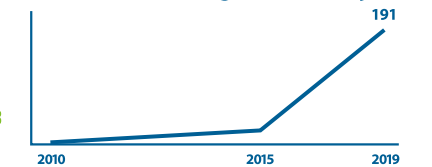


BEAM Plus Existing Buildings V2.0

- 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 project in either one-step or step-wise assessment
- Selective Scheme: assessing individual aspect of the project with a certificate issued for each assessed aspect



Cumulative No. of Registered EB Projects



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.

Facilitating Market Transformation



HK BEST

Designed for office occupants and commercial buildings, the HKGBC Benchmarking and Energy Saving Tool (HK BEST) provides an independent marking scheme as well as identifying opportunities to improve energy intensity and efficiency for tenants and building owners with guidance.



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.



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 is designed to elevate the skill levels of retro-commissioning professionals, in line with the HKSAR Government's active promotion of retro-commissioning as a cost-effective means of enhancing the energy efficiency of existing buildings.

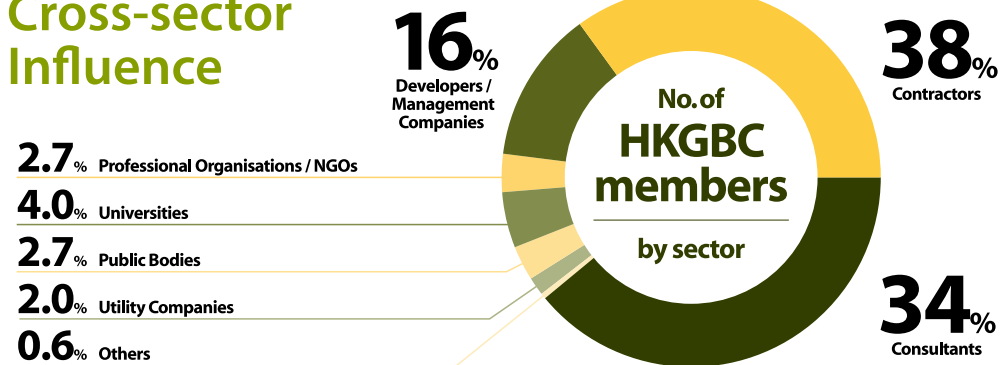
Turning Engagement into Impact

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.

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

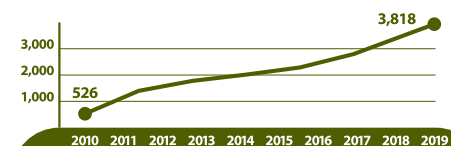


Cross-sector Influence



Building Competence

No. of green building practitioners



3,818

green practitioners now serve the green building industry, with qualifications related to BEAM Plus and HKGBC schemes¹⁶

No. of training hours



>300,000

training man-hours of CPD activities were undertaken by BEAM Practitioners in Hong Kong during 2012-2019¹⁷



"My Green Space" Green Building Competition for Schools

- Organised since 2011
- Encouraging 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

- Hong Kong Green Shop Alliance was established in 2016
- Fostering collaboration between landlords and shop tenants in going green and combating climate change.
- There are also long-term plans to expand the Alliance to cover even more stakeholders in future, such as office occupants.

Reference

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 2019.

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 2019, https://www.energysaving.gov.hk/esc2019/filemanager/doc/ESC_2019_Introduction_Energy_Saving_Charter.pdf
4. Buildings Department, Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (APP-152): Sustainable Building Design Guidelines, <https://www.bd.gov.hk/doc/en/resources/codes-and-references/practice-notes-and-circular-letters/pnap/APP/APP152.pdf>
5. The average three-person household electricity consumption in Hong Kong is about 396kWh per month.
(Electrical and Mechanical Services Department, Hong Kong Energy End-use Data 2019, https://www.emsd.gov.hk/filemanager/en/content_762/HKEEUD2019.pdf)

Unit electricity consumption of fresh water and sea water are 0.577kWh/m³ and 0.368kWh/m³ respectively.
(Water Services Department, Water Services Department Annual Report 2017/18, https://www.wsd.gov.hk/filemanager/common/annual_report/2017_18/en/index.html)

Average unit electricity consumption of sewage treated is 0.28kWh/m³.
(Drainage Services Department, Drainage Services Department Sustainability Report 2018-19, https://www.dsd.gov.hk/uploads/page/DSDSustainabilityReports/0503338_DSD_SR_2018_19_v14.pdf)
6. The capacity of an Olympic-sized swimming pool is 2,500,000 L, assuming a nominal depth of 2m.
(FINA Facilities Rules 2017-2021, https://www.fina.org/sites/default/files/2017_2021_facilities_28012020_medium_ad.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/media/82253/gn_officeandpublicplace_eng-2019.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/eng/resources/publications/policy-papers/index.jsp>
16. Statistics including the number of BEAM Professional, BEAM Affiliate, GB Faculty and BEAM Assessor.
17. Training man-hours are offered to BEAM Practitioners by the HKGBC, BEAM Society Limited and other organisations that provide green building-related trainings.

Acknowledgement

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

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