Hong Kong: Green Building in ACTION
Hong Kong’s Unique Built Environment

Significance of Buildings

90% [Electricity] 60% [CO₂]

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

High Population Density

42,000+ buildings in private sector

9,700 high-rise buildings and skyscrapers

24% People live and work in 24% of Hong Kong’s total area

1km² Average population density of built-up areas 28,000 persons/km²
A Strong Green Building Movement in over 20 Years

1996

No. of Buildings First Certified by HK-BEAM

605

2009 HKGBC established

2010

No. of Buildings First Certified by BEAM Plus

1,669

Since 2014, the annual percentage of private sector projects joining BEAM Plus has reached nearly: 50%

Aiming High

<table>
<thead>
<tr>
<th></th>
<th>Registered</th>
<th>Certified*</th>
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</thead>
<tbody>
<tr>
<td>No. of Buildings</td>
<td>6,028</td>
<td>2,387</td>
</tr>
<tr>
<td>No. of Projects</td>
<td>1,678</td>
<td>773</td>
</tr>
<tr>
<td>GFA (m²)</td>
<td>534 million</td>
<td>28.1 million</td>
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* Certified means Bronze or above

BEAM Plus and GFA concessions

76% projects

82% GFA

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%.
Combating Climate Change and Enhancing Liveability

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

- Estimated annual electricity reduction: 878,420 MWh saving 614,900 Tons CO₂e
- Estimated annual fresh and sea water reduction: 19.8 billion L saving 10,510 Tons CO₂e

Total estimated carbon emissions saved each year:

625,400 Tons of CO₂e

= 27.2 million trees planted
Liveability and a Sustainable Lifestyle

Pleasant Environment

- Total area of soft landscaping in certified projects: 1,169,900m²
- 52% of certified projects have undergone an air ventilation study to enable better ventilation and thermal comfort

Walkability and Mobility

- 88% of certified projects located within 500m walking distance of public transport

Community Facilities and Amenities

- 92% of certified projects have nearby recreational facilities
- 92% of certified projects provide enhanced universal access
- 91% of certified projects are well-equipped with building amenity features

Health and Wellbeing

Excellent Indoor Environmental Quality

- 81% of certified projects comply with “Excellent or Good Class” indoor air quality
- 95% of certified projects adopt a hygienic drainage design

Biophilia and Daylight Design

Humans’ instinctive bond to nature offers opportunities in interior design to create a positive impact on people’s 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.

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.

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

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

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 level 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.

Cross-sector Influence

- 16% Developers / Management Companies
- 38% Contractors
- 34% Consultants
- 2.7% Professional/Organisations / NGOs
- 4.0% Universities
- 2.7% Public Bodies
- 2.0% Utility Companies
- 0.6% Others

No. of HKGBC members by sector

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 schemes.

No. of training hours

- >300,000 training man-hours of CPD activities were undertaken by BEAM Practitioners in Hong Kong during 2012-2019.

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

- Giving 212 talks and seminars in local and overseas occasions such as forums and conferences
- Participating in 23 exhibitions and trade shows
- Delivering 21 research papers on technical and policy aspects
- Producing 56 publications including guidebooks, magazines and reports

“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.


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


7. 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)

8. Unit electricity consumption of fresh water and sea water are 0.577kWh/m$^3$ and 0.368kWh/m$^3$ 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)


11. 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)

12. Achievement rate of credit SA8c of BEAM Plus New Buildings (V1.1 and V1.2)

13. Achievement rate of credit SA2b of BEAM Plus New Buildings (V1.1 and V1.2)

14. Achievement rate of credit SA3b of BEAM Plus New Buildings (V1.1 and V1.2)

15. Achievement rate of credit IEQ22 of BEAM Plus New Buildings (V1.1 and V1.2)

16. Achievement rate of credit IEQ23a of BEAM Plus New Buildings (V1.1 and V1.2)

17. 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)

18. Achievement rate of credit IEQ2 of BEAM Plus New Buildings (V1.1 and V1.2)


20. Statistics including the number of BEAM Professional, BEAM Affiliate, GB Faculty and BEAM Assessor.

21. 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.