

Property Management Seminar 2023

Enhancing the Energy Saving and Green Buildings
Towards Carbon Neutrality by Strengthening the
Regulation and Collaboration

加強規管與協作，提升節能綠建實現碳中和

22 December 2023

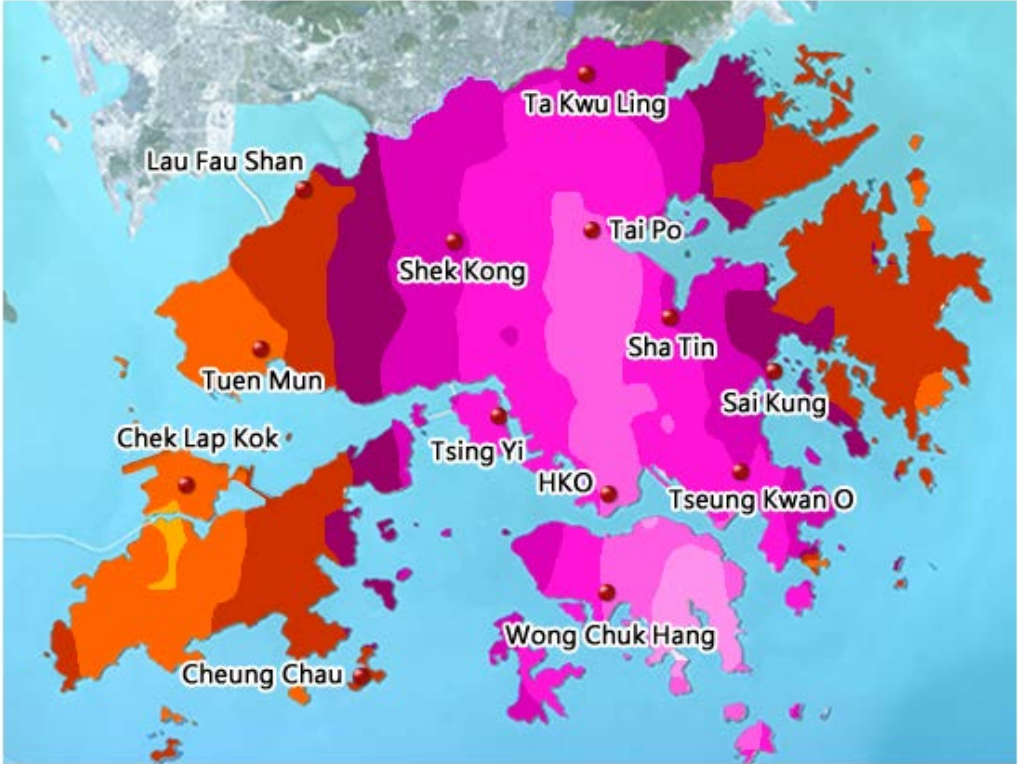
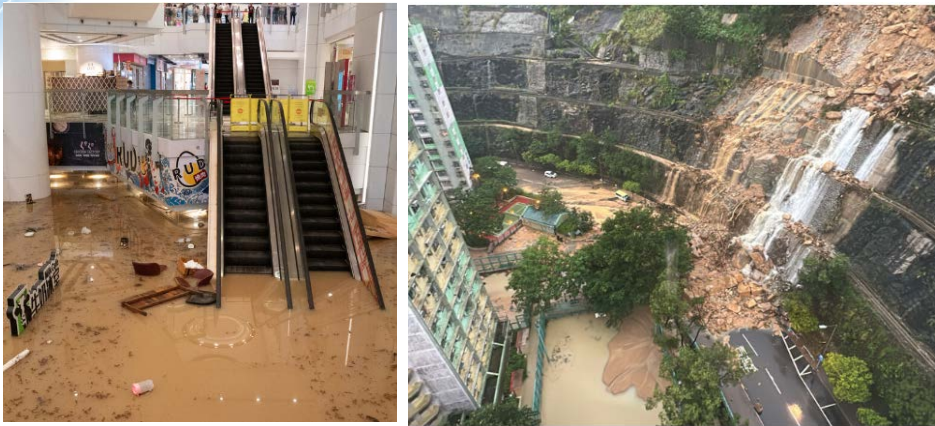
Extreme Weather



Source: HKO Facebook

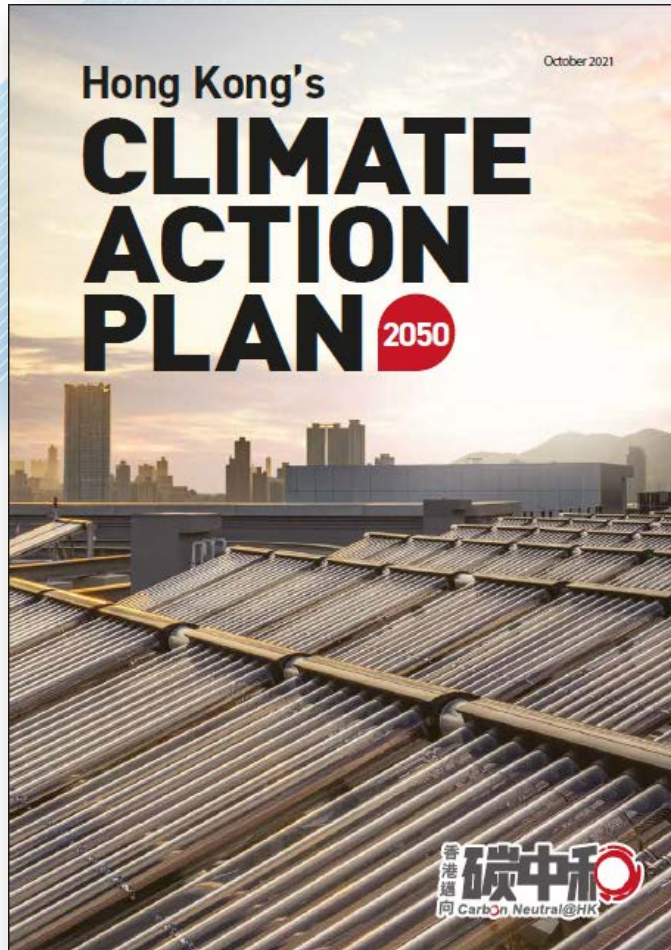
Source: EEB Facebook

Record-breaking Rainfall on 8 Sep 2023



- Flooding in MTR stations, shopping mall, basement carpark, roads...
- Landslides, Road collapsed ...

Hong Kong's Climate Action Plan 2050



Before 2035

Total carbon emissions
Compared with 2005 level

2035

Electricity consumption
(Compared with 2015)

COMMERCIAL BUILDINGS
15-20%

(Reduce by 30-40% subsequently)

RESIDENTIAL BUILDINGS
10-15%

(Reduce by 20-30% subsequently)

Four decarbonisation strategies

Net-zero Electricity Generation

Energy Saving and Green Buildings

Green Transport

Waste Reduction

Source: Hong Kong Climate Action Plan 2050, (Oct 2021)

Multi-pronged Approach in Enhancing Buildings Energy Performance



Para.4.4.8 and 4.4.9

《建築物能源效益條例》
The Buildings Energy Efficiency Ordinance

- Buildings Energy Efficiency Ordinance (BEEO) enhancement
- Building Energy Code and Energy Audit Code review once every 3 years

Para.4.4.7 and P.33

Green new government buildings and Green Energy Target for existing government buildings

Para.4.4.4

Incorporate district cooling systems in development projects

P.34

Subsidy and supporting schemes

Para.4.4.12 and P.33

Foster support in business sector and members of the community

Para.4.4.15

Keeping the Mandatory Energy Efficiency Labelling Scheme (MEELS) under review

Para.4.4.11

Tighten statutory OTTV standards for and conduct reviews on RTTV

Para.4.4.5

I&T to improve the energy performance of buildings and DCSS

Para.4.4.10

Hong Kong Energy Efficiency Registration Scheme for Buildings – encourage outperformance

Para.4.4.14

Enhance data transparency and building energy benchmark

Buildings Energy Efficiency Ordinance Cap. 610 (BEEO)



✓ Full Implementation on 21 September 2012

4 types of Prescribed Building Services Installation (BSI)

EMSD Buildings Energy Efficiency Ordinance (Cap. 610)

BUILDINGS ENERGY EFFICIENCY ORDINANCE (CAP. 610)
《建築物能源效益條例》第610章

空調裝置
Air-conditioning Installation

照明裝置
Lighting Installation

電力裝置
Electrical Installation

升降機及自動梯裝置
Lift and Escalator Installation

English 繁體中文 簡體中文



<http://www.emsd.gov.hk/beeo>



Lighting



Electrical



Air-conditioning



Lift & Escalator



Legislative Framework

Ordinance

Cap 610 - Buildings Energy Efficiency Ordinance (BEEO)

**Effective since
Sep 2012**

**Subsidiary
Legislation
(Regulation)**

Cap 610A
Buildings Energy Efficiency
(Fees) Regulation

Cap 610B
Buildings Energy Efficiency
(Registered Energy
Assessors) Regulation

**Code of
Practice**

**Building Energy Code
(BEC)**



**Energy Audit Code
(EAC)**



**Review once
Every 3 years**

BEC & EAC Review

2012

Enacted
Buildings Energy
Efficiency Ordinance

BEC & EAC 2012



2015

BEC & EAC
2015



2018

BEC & EAC
2018



2021

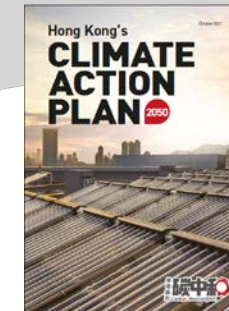
BEC & EAC
2021



2024 --> 2050

BEC & EAC
2024 Edition

4th
Comprehensive
Review



~10% improvement

~18% improvement







~15% improvement

On-going improvement
(BEC & EAC review by
3-year interval)

Compare to
BEC 2012

Compare to
BEC 2015

Major Requirement

| | Responsible party | Applicability | Code Compliance | Legal Obligation |
|--|---|---------------------------------------|-----------------------------------|---|
| <p>(1) Newly Constructed Buildings</p>  | <p>Developer</p>  | <p>4 key types of BSIs</p> | <p>Building Energy Code (BEC)</p> | <p>Apply for COCR Stage 1 & Stage 2 (EE1 & EE2)</p> |
| <p>(2) Existing Buildings</p>  | <p>Responsible person; Owner of installation(s)</p>  | <p>Major Retrofitting Works (MRW)</p> | <p>BEC (Table 10.1)</p> | <p>Obtain FOC (EE4) from REA</p> |
| <p>(3) Commercial Buildings / Commercial Portion of Composite Buildings</p>  | <p>Building owner</p>  | <p>Energy Audit</p> | <p>Energy Audit Code (EAC)</p> | <p>Obtain EA Form (EE5) and EA Report from REA</p> |

Regulatory Scope

Regulatory Requirements



The building services installations (BSI)* of New Constructed Building or Existing Building undergoing Major Retrofitting Works shall comply with the Building Energy Code

** Building services installations include: Air-conditioning, electrical, lift & escalator and lighting installation*



Existing Building shall conduct energy audit for central BSI at intervals no longer than 10 years

Regulatory Scope

13 types of buildings

Listed in [Schedule 1](#) of BEEO

1. Commercial building
2. Composite building – portion not for residential or industrial use
3. Hotel or guesthouse
4. Residential building – common area
5. Composite building – common area of portion for residential or industrial use
6. Industrial building – common area
7. Educational building
8. Community building
9. Municipal building
10. Medical and health care building
11. Government function building
12. Passenger terminal building of airport
13. Railway station

2 types of buildings

Listed in [Schedule 4](#) of BEEO

1. Commercial building
2. Composite building - portion for commercial use

Regulatory Requirements



Building owner must exhibit a copy of specified Energy Audit Form in a conspicuous position at main entrance of the building after energy audit

Regulatory Scope



Key information displayed:

- ❑ Particulars of building
- ❑ Electricity Utilization Index (kWh/m²)
- ❑ Completion date of energy audit



To facilitate developer, owner or responsible person of buildings to comply the regulatory requirements, the BEEO established the role of Registered Energy Assessor (REA).

BEE (REA) Regulation Cap.610B

One of the criteria in consider to accept the application for registration as REA is that the applicant is a Registered Professional Engineer or corporate member of the Hong Kong Institution of Engineers in the following disciplines:

- Electrical;
- Mechanical;
- Environmental; or
- Building Services.

Further Enhancement



The Hong Kong Special Administrative Region
of the People's Republic of China

**The Chief Executive's
2023 Policy Address**

2023.10.25

154. In order to achieve the “dual carbon” targets, the Government is striving to achieve carbon neutrality before 2050 and reduce Hong Kong’s carbon emissions by 50% before 2035 as compared to the 2005 level. The Government has established the Office of Climate Change and Carbon Neutrality to help achieve the carbon neutrality targets of our country and Hong Kong, and tackle the carbon emission problem at source. We will:

- (i) enhance energy conservation and decarbonisation in buildings – We will consult the trade this year on the proposal of amending the Buildings Energy Efficiency Ordinance, including extending the scope of regulation to more types of buildings, mandating the disclosure of information in energy audit reports, and shortening the interval of energy audit. Our target is to commence the legislative exercise next year;

Proposed Amendment No. 1



Include data centre under the regulatory scope of energy efficiency standard for building services installations

Background

- ◆ Annual gross floor area growth rate of data centre is about 9.5%
- ◆ Increasing electricity consumption – reached 4% of the total electricity consumption of buildings in Hong Kong
- ◆ Increasing development in industrial building or industrial lots

amend
Schedule 1
of the BEEO



1. Commercial building
2. Composite building – portion not for residential or industrial use
3. Hotel or guesthouse
4. Residential building – common area
5. Composite building – common area of portion for residential or industrial use
6. Industrial building – common area
7. Educational building
8. Community building
9. Municipal building
10. Medical and health care building
11. Government function building
12. Passenger terminal building of airport
13. Railway station

to add: 14. building or part of the building that is occupied principally as data centre

Proposed Amendment No. 2



Require more types of buildings to conduct energy audit

Background

- ◆ Energy audit can identify energy management opportunities (EMO) for improve its energy efficiency
- ◆ The electricity consumption of buildings covered under the current BEEO is only 27% of the total building electricity consumption in Hong Kong

amend
Schedule 4
of the BEEO



1. Commercial building
2. Composite building - portion for commercial use

to add:

3. building or part of the building that is occupied principally as data centre
4. Hotel or guesthouse
5. Educational building
6. Community building
7. Municipal building
8. Medical and health care building
9. Government function building
10. Passenger terminal building of airport
11. Railway station

Proposed Amendment No. 3



Shorten the interval of energy audit

Background

- ◆ The current energy audit interval is relatively long for which the benefits of energy audit may not be fully utilized
- ◆ Energy audit intervals in other major countries /cities are 5 years in average
- ◆ Shorten the energy audit interval can facilitate the adoption of latest energy saving technologies and management practices in a more timely manner



amend Section 22 of the BEOO

- The owner of a building must cause an energy audit to be carried out at intervals no longer than ~~10~~ 5 years in respect of the central building services installations of the building.
- The first energy audit for the central building services installations of a building issued with a Certificate of Compliance Registration must be carried out within ~~10~~ 5 years after the building is first issued with a Certificate of Compliance Registration.

Proposed Amendment No. 3



Shorten the interval of energy audit

Background

- ◆ In response to the proposed addition on the types of buildings in Schedule 4 of the BEEO, the period within which the first energy audit must be carried out for those buildings without issue with the Certificate of Compliance Registration need to be clearly defined.



amend Schedule 5 of the BEEO

Add time table for the first energy audit of buildings without Certificate of Compliance Registration (for the newly added 9 types of buildings):

| Date of issue of occupation approval | Period within which the first energy audit must be carried out |
|--|--|
| On or after 1 January 1988 | 12 months from the commencement of BEEO amendment |
| After 31 December 1977 but before 1 January 1988 | 24 months from the commencement of BEEO amendment |
| After 31 December 1969 but before 1 January 1978 | 36 months from the commencement of BEEO amendment |
| On or before 31 December 1969 | 48 months from the commencement of BEEO amendment |

Proposed Amendment No. 4



Mandatory disclosure of energy audit report information

Background

- ◆ Data transparency acts as a driver for accountability of carbon neutrality
- ◆ Other countries had implemented data disclosure policy (e.g. Singapore requires annual disclosure)
- ◆ Facilitate the trade to proactively offer energy saving services /retrofit proposals
- ◆ Speed up the implementation of EMO and the development of green economy



amend Part 4 of the BEEO

- To disclose the technical information of the energy audit report under a specified form in EMSD website
- Technical information may include:
 - energy efficiency coefficient of major equipment
 - year of service of major equipment
 - control system of major equipment
 - identified EMO
- The specified form would be developed /updated in collaboration with the trade

Proposed Amendment No. 5



Expand eligible criteria for application for registration as REA and update compositions of Disciplinary Board Panel and Appeal Board Panel

Background

- ◆ Suggestions from the trade received
- ◆ Corporate member of the Hong Kong Institution of Engineers (MHKIE) or registered professional engineer (RPE) in the energy discipline have the relevant professional knowledge as a REA
- ◆ The number of buildings that need to comply with the amended BEEO will be increased for about 2 times



amend Part 2 and Part 3 of the BEE(REA)R; and Part 8 of the BEEO

- Criteria in consider to accept the application for registration as REA – RPE or MHKIE of disciplines:
 - Electrical;
 - Mechanical;
 - Environmental; or
 - Building Services.

**to add discipline of:
Energy**
- Compositions of appointing members of the Disciplinary Board Panel and Appeal Board Panel – MHKIE of disciplines:
 - Electrical;
 - Mechanical;
 - Environmental; or
 - Building Services.

**to add discipline of:
Energy**

Proposed Transitional Arrangement

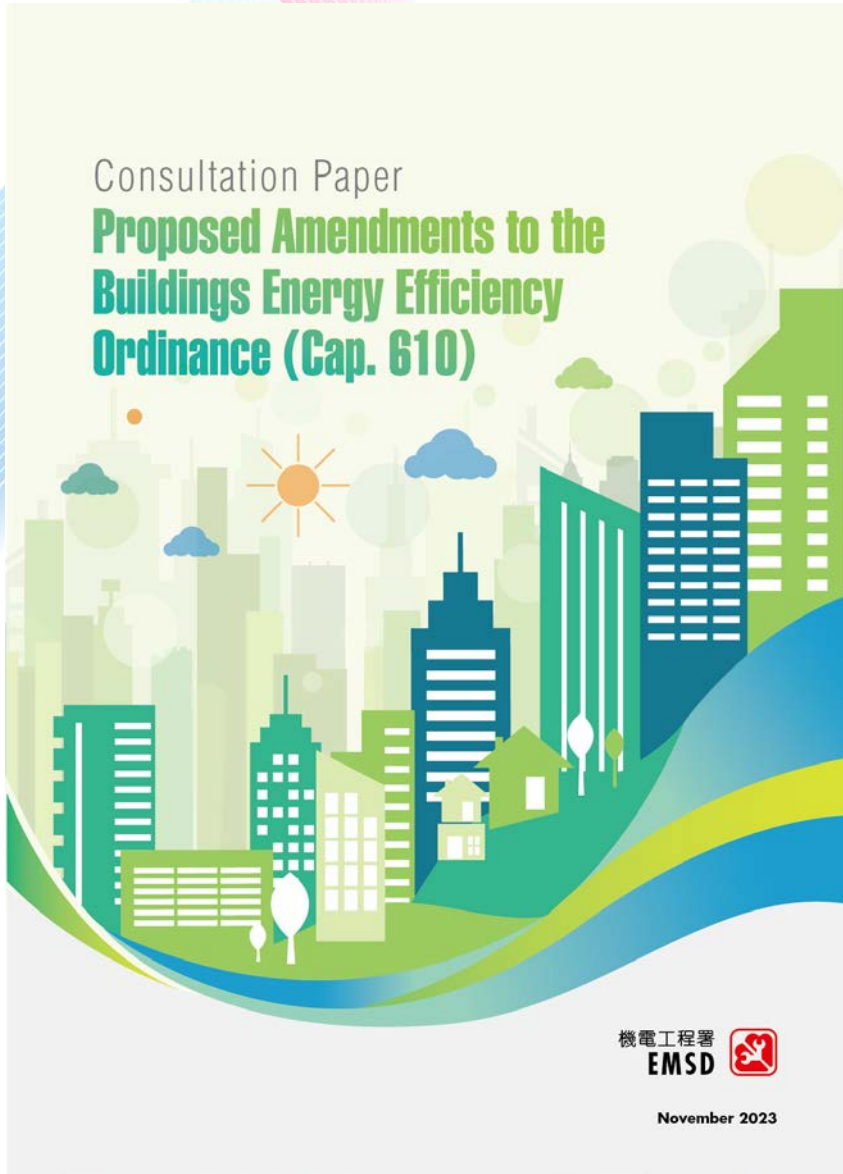
To enable the stakeholders to make necessary preparation, it is proposed to introduce a transitional period of **12 months** after the gazette of the amended Buildings Energy Efficiency Ordinance.

Examples:

- ◆ Data Centre with the “consent to commencement of building works for superstructure construction” issued on or after 12 months of the commencement of the amended Ordinance will require full compliance
- ◆ The deadline of the first energy audit to be carried out for building issued with the Certificate of Compliance Registration (COCR) before the implementation of the amended Ordinance will not be affected (i.e. the first energy audit should be carried out within 10 years)
- ◆ The deadline of the next energy audit to be carried out for building issued with energy audit form before the implementation of the amended Ordinance will not be affected (i.e. the next energy audit should be carried out within 10 years)

Consultation

Consultation Paper
**Proposed Amendments to the
Buildings Energy Efficiency
Ordinance (Cap. 610)**



機電工程署
EMSD

November 2023

Consultation period:

15 November 2023 to 15 January 2024

Welcome to submit views on or before 15 January 2024 using the Response Form in Appendix B of the consultation paper

Consultation website:

https://www.emsd.gov.hk/bceo/tc/mibec_bceo_consult.html



Collaboration

Achievements in Energy Saving and Green Buildings of BEEO

2,600

Energy Audit Reports

1,100

Registered Energy Assessors



14,000

Major Retrofitting Works in Existing Buildings

2,200

New Buildings

(as at December 2023)

全民「築」動節能綠建邁向碳中和 Public Engagement in Energy Saving and Green Buildings for Striving Towards Carbon Neutrality



詳情請參閱以下網址
For details, please refer to the following website:



Thank You

