

Hong Kong Green Building Council Limited (HKGBC)

Invitation for Submission of Retrofitting Initiatives and Local Case Studies for HKGBC Retrofitting Hub

A. Introduction

The HKGBC Retrofitting Guidebook was first released in January 2023 and its second edition was launched in December 2023. The purpose of the guidebook is to drive the mainstreaming of retrofitting for existing buildings by providing practical initiatives and successful case studies in Hong Kong as references to the industry. Since its launch, the guidebook has been highly regarded by the industry both locally and abroad.

To advance energy efficiency and support the goal of achieving carbon neutrality, the Retrofitting Hub (website) was officially launched in May 2025. It serves as an online knowledge platform, offering industry professionals easy access to retrofitting strategies, guidelines, case studies, and events. Thanks to wide-ranging support from the industry, 60 case studies are currently available in the Retrofitting Hub, featuring over 60 retrofitting solutions. The HKGBC is now further collecting local case studies to be included into the Retrofitting Hub. This round of the case studies collection aims to:

1. Enrich the current showcase areas with more initiatives on new and cutting-edge technologies, such as chilled ceiling / flooring system, evaporative and local cooling, retrofit for data centre and F&B sector, digital platform & A.I. technologies, solar responsive film / coating on facades, etc.;
2. Enrich existing retrofitting strategies on the platform; and
3. Any other new retrofitting initiatives and case studies.

The HKGBC would like to extend the invitation to you and your organisations for submission of relevant initiatives and case studies to be included into the Retrofitting Hub. Your contribution will help showcase new retrofitting ideas and best practices in the industry and encourage others to adopt those initiatives and further contribute to the carbon neutrality roadmap of Hong Kong.

HKGBC Retrofitting Guidebook

<https://retrofitting.hkgbc.org.hk/guidebook/download.php>

HKGBC Retrofitting Hub

<https://retrofit.hkgbc.org.hk>

B. Criteria

1. The submissions shall be related to the following showcase areas:-

Current showcase areas

MEP System (MEPS)

- HVAC – Waterside Air Conditioning System
- HVAC – Airside Air Conditioning System
- HVAC – Heating System
- HVAC – Carpark Mechanical Ventilation System
- HVAC – Data Centre / Server Room
- HVAC – External Pipework and Ductwork
- Electrical System – Lighting
- Electrical System – Electricity Distribution System
- Electrical System – Lift & Escalator
- Plumbing & Drainage System
- Commercial Appliances – Green Commercial Kitchen
- Commercial Appliances – Server Room / Data Centre

Central Control and Monitoring System (CCMS)

- Building Automation / Management System
- Smart Control Platform

Building Envelope (BE)

- Curtain Wall and Skylight System
- Passive System
- Opaque Wall and Roof System

Plus any other new showcase areas.

2. The submissions can be:-
 - A new local case study using current retrofitting initiatives and/or new retrofitting initiatives. For the list of current retrofitting initiatives, please refer to Annex 1 or our website (<https://retrofit.hkgbc.org.hk/retrofitting-strategies>).
 - An update of the existing case study with new retrofitting initiatives added.
3. The case studies shall showcase real retrofitting projects in private / public building sector, and are expected to demonstrate remarkable achievement in terms of energy saving and/or pioneering good practice for industry's reference.
4. There is no limit on the number of submissions.
5. The acceptance of the submissions for inclusion into the Retrofitting Hub will be at the sole discretion of the HKGBC.

C. Submission Details

Any parties who are interested in contributing to the Retrofitting Hub are welcome to submit **by completing the ONLINE FORM (<https://forms.office.com/r/btK4BBR1WD>) on or before 30 September 2026 (Wednesday) 6:00pm**. The submissions will be reviewed against the above mentioned criteria, and those accepted will be featured in the showcase webpage of the Retrofitting Hub. Kindly note that the consent of publishing relevant information in the showcase webpage should be obtained from the building owner before publicity.

D. Enquiry

Should you have any questions, please feel free to contact the HKGBC Secretariat at 3994 8863 / 3994 8821 or retrofit@hkgbc.org.hk.

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Encl.:

Annex 1 – List of Current Retrofitting Initiatives

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MEP System (MEPS)

A. HVAC – Waterside Air Conditioning System	
A1	Replacement of more efficient chiller
A2	Conversion of air-cooled to water-cooled chiller plant
A3	Conversion to variable speed cooling tower fan
A4	Installation of auto-cleaning devices for condensers of water-cooled chillers
A5	Installation of electromagnetic clamp-on / ultrasonic devices for condensing water system
A6	Conversion to variable speed chilled water pump
A7	Conversion to primary variable flow system
A8	De-centralised chilled water distribution system with zone in-line pump
A9	Supply and return chilled water temperature differential control with zone control valve
A10	De-centralised chilled water distribution system for equipment with different chilled water operation requirements
A11	Installation of thermal energy storage (TES) system
A12	Conversion to waterside free cooling system
B. HVAC – Airside Air Conditioning System	
B1	Replacement of traditional 3-speed FCU to variable speed FCU with permanent magnet motor
B2	Conversion of constant-air-volume (CAV) to variable-air-volume (VAV) system
B3	Conversion of VAV system to sensible space cooling with dedicated outdoor air system (DOAS)
B4	Installation of indirect evaporative cooling system (IEC) for pre-cooling of primary fresh air with exhaust air
B5	Conversion to demand fresh air control system coupling with exhaust air system
B6	Conversion to radiant cooling technologies (e.g. chilled beam / chilled ceiling) with dedicated air handling system (DAHS)

B7	Using spot cooling for local air-conditioning zone
B8	Using high volume low pressure (HVLP) ceiling fan for ventilated cooling
B9	Using lower pressure drop air filters with new technologies and features that can improve filter efficiency
B10	Using electronically commutated (EC) plug fan in AHU / PAU / CRAC
B11	Enlargement of fresh air inlet and ductwork for free cooling application with low ambient temperature and relative humidity
C. HVAC – Heating System	
C1	Replacement of electric / gas heater / boiler to heat pump
D. HVAC – Carpark Mechanical Ventilation System	
D1	Zoning the carpark for operation mode
D2	Conversion to demand fresh air control system coupling with exhaust air system
D3	Installation of induction fan unit to minimise fan dust ventilation system
E. HVAC – Data Centre / Server Room	
E1	Installation of cold-aisle enclosure which can totally separate it from hot-aisle
E2	Use of immersion cooling and heat pipe recovery modules for cooling
E3	Conversion of CRAC unit to cold door for server rack cooling
F. HVAC – External Pipework and Ductwork	
F1	Application of insulated coating / painting at external pipework and ductwork
G. Electrical System – Lighting	
G1	Re-allocation of office layout plan and/or lighting distribution plan to maximise daylight penetration and match the demand
G2	Installation of occupancy / motion sensor for on / off / dimming control of lighting
G3	Use of smart lighting control platform
G4	Adoption of task lighting to lower the background lighting
G5	Replacement of high efficacy lighting source
H. Electrical System – Electricity Distribution System	
H1	Provision of power and harmonic analyser

H2	Provision of smart metering
J. Electrical System – Lift and Escalator	
J1	Installation of regenerative drive for lifts
J2	Modernisation of lifts and escalators
J3	Upgrade of lift control platform with energy efficiency features
J4	Optimise the counter weight and decoration weight of lift car
K. Plumbing & Drainage System	
	To be included
L. Commercial Appliances – Green Commercial Kitchen	
L1	Conversion to demand control ventilation system
L2	Conversion to heat recovery kitchen appliances
M. Commercial Appliances – Server Room / Data Centre	
M1	Replacement of more energy efficient uninterrupted power system (UPS)

Central Control and Monitoring System (CCMS)

N. Building Automation / Management System	
N1	Enhancing the BA / BMS for data collection and visualisation, performance monitoring and evaluation, demand control and efficiency improvement
N2	Using advance control algorithm to improve energy efficiency and operational performance for major equipment and building services systems
N3	Using multi-purpose monitoring devices (e.g. web-cam people counting / recognition system, etc.) for improving energy efficiency and operational performance of air-conditioning and building transportation system
P. Smart Control Platform	
P1	Installation of smart energy management platform for data collection and visualisation, performance monitoring and evaluation, demand control and efficiency optimisation
P2	Using AI solution and data mining technologies to optimise energy efficiency and operational performance for major equipment and building services systems

P3	Using web-cam people counting and recognition system for optimising energy efficiency and operational performance of air-conditioning and building transportation system
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Building Envelope (BE)

Q. Curtain Wall and Skylight System	
Q1	Application of solar film / heat reduction / insulated coating at façade / skylight
Q2	Application of ventilation façade
Q3	Application of multi-skin façade system
Q4	Renewable energy integrated with façade
Q5	Replacement of façade system
R. Opaque Wall and Roof System	
R1	Application of vertical green wall and green roof
R2	Application of insulated coating / painting at external wall and roof
R3	Renewable energy integrated with roof / green roof
S. Passive System	
S1	Use of natural ventilation
S2	Use of light shelf and light tube
S3	Use of double door / revolving door or installation of air curtain to reduce infiltration