BEAM Plus

Existing Buildings

Version 3.0 (Beta 0)

07.2024

HKGBC
香港綠色建築議會

BEAM
建築環保評估協會

Disclaimers of BEAM Plus Existing Buildings v3.0 (Beta 0)

The BEAM Plus Existing Buildings v3.0 (Beta 0) is released as a beta version for pilot use. This must not be taken as an official launch of the final version which is subject to changes in due course.

In no circumstances shall a reader rely on this version for any purpose other than treating this as a beta version for pilot use.

BEAM Society Limited, its commissioned consultants, participants of Steering Committee and all individuals involved in the development of BEAM Plus Existing Buildings accept no liability for any loss or damage arising from any use or misuse of or reliance on any information in this draft manual.

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1. Introduction

1.1 Overview

BEAM

Building Environmental Assessment Method (BEAM) Plus is a comprehensive environmental assessment tool for buildings which is carried out on a voluntary basis. It defines the best practice criteria for a range of sustainability issues across the whole life cycle of buildings and projects, such as how buildings should be designed, constructed and operated, etc. Recognised as one of the world's leading green building assessment tools, it provides a comprehensive set of performance standards that can be pursued by developers and owners.

BEAM Plus Existing Buildings (Version 3.0), owned and operated by the BEAM Society Limited (BSL), is a rating tool that falls under the BEAM Plus framework. It specifically focuses on the management, operation, maintenance, and environmental performance of existing buildings. The assessment can be initiated once the building has been in operation for a minimum of one year.

It aims to reduce the environmental impacts of existing buildings whilst improving quality and user satisfaction by the adoption of the best techniques available. It also drives the society to achieve carbon neutrality.

BEAM Plus Existing Buildings (Version 3.0)

The building operational emissions are responsible for about 30% of global energy related carbon emissions. Encouraging building owners, especially in private sector, to adopt green building management and upgrading the building services systems can play a significant role in the world of sustainability and achieving carbon neutrality.

BEAM Plus Existing Building Version 3.0 (EB v3.0) aims to embrace more participation in "Green" existing buildings, encourage more energy saving towards net zero emission, and educate and induce behavioural change. The BEAM Plus EB v3.0 is introduced to encourage existing buildings to consider holistic green enhancements for more energy efficient and sustainable operation.

The BEAM Plus EB v3.0 is unique in the way with the following features:

i. Copes with the global climate, physical constraints and ease of long-term facility management;
ii. Is unique in new features which may set precedent to promote sustainability in worldwide;
iii. Incorporates new initiatives to improve the energy efficiency and environmental performance;
iv. Echoes with globe's target of net carbon zero by 2050;
v. Moulds inhabitant's behaviour lifestyle through demand-side management;
vi. Encourages enhancement to aged buildings;
vii. Embraces existing buildings of all ages;
viii. Contains various levels of practical requirements; and
ix. Provides flexible implementation options to encourage participation.

There are 2 major schemes under BEAM Plus EB v3.0, i.e. Comprehensive Scheme and Labelling Scheme. Comprehensive Scheme adopts the 'Plan-Do-Check-Act' approach for the continual improvement of the buildings while Labelling Scheme embraces the 'Better than yesterday' principal to recognise the efforts made by the building management related to a specific theme.

BEAM Society Limited (BSL)

BEAM is owned and operated by BSL, an independent non-profit public body whose membership is drawn from many professional and interest groups in Hong Kong's building construction and real estate sectors. BSL is committed to developing and implementing the BEAM assessment tools, assessing green buildings and training professionals.

Hong Kong Green Building Council (HKGBC)

HKGBC was established in 2009 as Hong Kong's industry body that coordinates efforts towards green building. HKGBC certifies BEAM Plus projects, accredits BEAM Professional (BEAM Pro), BEAM Affiliate (BA) and BEAM Assessor (BAS).

Disclaimer

BEAM Plus has been prepared with the assistance and participation of many individuals and representatives from various organisations. The outcome represents a general consensus, but unanimous support from each and every organisation and individual consulted is not implied. The BEAM Plus documentation shall be reviewed on a regular basis and as frequently as necessary. BSL reserves the right to amend, update and change this Manual from time to time without prior notice. Where changes in regulations necessitate changes to the assessment criteria, they will be issued to all parties involved in an assessment and will be announced in the BSL's website. An appropriate transitional period shall be allowed for projects undergoing assessment process.

It should be noted that none of the parties involved in the funding of BEAM, including BSL and its members, provide any warranties or assume any liability or responsibility to the users of BEAM, or any third parties for the accuracy, completeness or use of, or reliance on, any information contained in BEAM, or from any injuries, losses, or damages arising out of such use or reliance.

As a condition of use, users covenant not to sue, and agree to waive and release BSL and its members from any and all claims, demands and causes of actions for any injuries, losses and damages that users may now or hereafter have a right to assert against such parties as a result of the use of, or reliance of BEAM.

Limitations

BSL does not endorse any self-assessed rating awarded by the use of BEAM Plus for Existing Buildings (Version 3.0).

HKGBC offers a formal certification process of rating, which provides an independent third-party review of credit submission in order to ensure all credits claimed are supported by the provision of the necessary documentary evidence. Any users or parties without a formal certification are not entitled to issue any rating certification of BEAM Plus Existing Buildings (Version 3.0).

Application and Eligibility

BEAM Plus EB v3.0 attempts to cover the management, operation and maintenance of all types and ages of existing buildings, from small single building to large buildings, including but not limited to commercial, educational, government, industrial, office and residential buildings, hotels and shopping centres etc.

Existing buildings that have not been certified by BEAM Plus or other green building certificates are also encouraged to participate in this Scheme. It is recommended that building(s) should gather at least one year's operational data of the building before registration.

BEAM Plus does not assess any buildings or portions of any buildings that are unauthorized by local building ordinance of their respective region. In case any non-compliance works or unauthorised portions in a building are reported, both HKGBC and BSL reserve the right to deprive the awarded rating from the Applicant.

Assessment Boundaries

BEAM Plus concerns the interactions between the assessed building, neighbouring properties, and the neighbourhood in general. The assessment seeks to reduce negative impacts on neighbours and rewards efforts to improve the quality of the immediate surroundings to the benefit of the neighbourhood: the concept of 'good neighbour' buildings.

Under normal circumstances, BEAM Plus EB v3.0 only assesses those areas which are under the control of the Applicant. It is understood that the involvement of tenants also plays an important role in improving the building's environmental performance. Therefore, credit points could be awarded when the Applicant can demonstrate that their tenants are also getting involved in the assessment. Details shall be referred to the assessment criteria of individual credit.

1.2 Framework

Certification Framework	A Comprehensive Scheme and Labelling Scheme in BEAM Plus EB v3.0 are designed to provide Applicants with more flexibility to participate in this green assessment to suit their program, budget and technical capability.
Comprehensive Scheme	Comprehensive Scheme is a one-go assessment for all aspects under this Manual and one full certificate is offered if the requirements are fulfilled.
Labelling Scheme	Labelling Scheme is an assessment for groups of related credits form a specific theme, and certificate will be issued for each individual label. The assessment criteria are the same as Comprehensive Scheme.
Certification Process	Independent BEAM Assessors (BAS) or BSL in-house BAS would be assigned to each project to undertake the assessment works. The Assessment Sub-committee (ASC) of BSL will review the assessment reports done by the BAS and endorse the assessment results, followed by the issuance of certification by the HKGBC. Detail assessment procedures can be found in the BEAM Plus Project Assessment Procedures Manual which is available in the HKGBC and BSL websites.
Documentation	The Applicant has the obligation to provide evidence to demonstrate credit compliance. In BEAM Plus EB v3.0, only sufficient amount of material (by way of example) is required to be submitted. However, the Applicant must make sure all supporting information is timely collected and properly documented. Just in case when the BEAM assessor considers it necessary to demand additional materials of the same sort for clarification, the Applicant is obligated to produce such materials upon request.
Certification Fees	BEAM Plus EB v3.0 certification fee comprises 2 parts, namely Registration Fee and Assessment Fee which are payable to HKGBC and BSL respectively. Certification fees for BEAM Plus EB v3.0 depend on the size and complexity of the project as determined by the HKGBC and BSL. Submission of credit interpretation request (CIR) and Appeals are subject to separate published charges. Details on the fee structure can be found in the HKGBC and BSL websites.
Credit Interpretation Request (CIR)	CIR process is a means whereby Applicants can seek technical and administrative guidance from the BSL TRC on the application of BEAM Plus credits to their projects. Examples may include: i. Alternative compliance approaches to fulfilling the objectives of a particular credit; ii. Clarifications of credit options and special circumstances; and iii. Petitioning for higher credit allocation (performance enhancements). CIR submissions should comprise a method statement identifying the objective of BEAM Plus EB v3.0 for which credit is being sought, a description of the approach being adopted and, where appropriate, the proposed alternative and method for assessment. More details of CIR can be found in HKGBC and BSL website.
Appeals	The Applicants may submit an appeal on individual credit should they disagree to and not accept the decision made by the BSL. More details can be found in HKGBC and BSL website.
Certificate Validity	BEAM Plus EB v3.0 certificate is normally valid for 3 years from the date of issuance. Upon the expiry date or failure of submission of on-going data report, the certificate and grading are no longer effective or recognised by the BSL.

Applicants are encouraged to commission and submit separate certification assessments to renew their certificate.

On-going Data Report

On-going data report on building's key sustainability data shall be submitted on an annual basis by the Applicant after the issuance of the BEAM Plus EB v3.0 certificate to demonstrate on-going tracking and monitoring of building performance. Detail shall be referred to the submittals criteria of individual credit. Submittal requiring on-going data report is denoted with " **^** ".

Performance Categories

Different assessment methods have different credit distribution based on preferences of the tool developer. In BEAM Plus EB v3.0, credits are grouped into the following categories:

i. Management (MAN);
ii. Sustainable Site (SS);
iii. Materials and Waste (MW);
iv. Energy Use (EU);
v. Water Use (WU);
vi. Health and Wellbeing (HWB); and
vii. Innovations and Additions (IA).

While BEAM Plus EB v3.0 adopts similar categories as in other BEAM Plus tools, the number and nature of credits within each category are specific to the context of operation, maintenance and management of existing buildings in different locations.

Management (MAN)

MAN focuses on the sustainable management of the occupied buildings during operation. The main objectives of MAN are as follows:

i. Green Procurement;
ii. Environmental, Health and Safety (EHS) and Energy Management;
iii. Environmental, Social, and Governance (ESG) Disclosure;
iv. Operation and Maintenance; and
v. Green and Health Management.

Sustainable Site (SS)

SS focuses on the design and planning issues, and the integration of neighbourhood and site location. The main objectives of SS are as follows:

i. Neighbourhood Integration;
ii. Ecologically Responsible Design; and
iii. Bioclimatic Design.

Materials and Waste (MW)

MW focuses on the green procurement practice and minimisation of waste generation. The main objectives of MW are as follows:

i. Selection of Materials; and
ii. Waste Reduction.

Energy Use (EU)

EU focuses on the evaluation of energy performance and reduction of energy consumption during occupancy. The main objectives of EU are as follows:

i. Building Energy Monitoring;
ii. Renewable and Alternative Energy Generation;
iii. Energy Management and Analysis; and
iv. Energy Efficient Improvement.

Water Use (WU)

WU focuses on the reduction of water consumption and discharge management. The main objectives of WU are as follows:

i. Water Conservation;

ii. Effluent;
iii. Water Harvesting and Recycling; and
iv. Water Management.

Health and Wellbeing (HWB)

HWB focuses on the human development and environmental quality. It is designed to expand the scope of previous indoor environmental quality (IEQ) category and adopt human centric design elements. The main objectives of HWB are as follows:

i. Inclusive Design; and
ii. Indoor Environmental Quality.

Innovations and Additions (IA)

IA focuses on promoting and rewarding true innovations. The main objectives of IA are as follows:

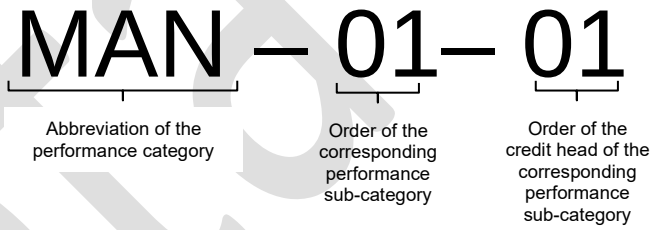
i. Innovation Techniques; and
ii. Innovation Challenges.

Credit Point Allocation

Credits points have been broadly allocated to each assessment criterion by taking into account other internationally recognised green building assessment tools as well as the sensitivity analysis and the comments received during the stakeholder engagement workshops.

Credit Code

All BEAM Plus tools will adopt the same nomenclature. The classification of each credit is divided into three levels which includes: i) Performance category, ii) Performance sub-category and iii) Credit head.



The coding system of each credit consists of English letters and Arabic numbers. The first level of the coding system is the performance category which adopts the abbreviation. The second level is coded by Arabic numbers to present the corresponding performance sub-category. The third level represents the order of credit head.

Extent of Application

Extent of Applications specify the applicable credit to different types of buildings.

Absolute Point-Based Scoring

Having reviewed the local and international assessment schemes as well as echoing the design principle of “Simple”, the final BEAM Plus result is calculated based on the total credit points achieved across the performance categories without category weighting or averaging scores.

IA Credit Point

The IA credit points in BEAM Plus EB v3.0 are counted towards the total number of credit points achieved in all the respective categories for an award of classification. One (1) point is counted towards the total number of credit points for each successful IA credit and a maximum of twenty (20) IA credit points could be awarded in IA performance category for achieving a higher overall credit points in the assessment.

Determination of Overall Rating - Comprehensive Scheme

The final certificate rating for projects certified under BEAM Plus EB v3.0 Comprehensive Scheme is calculated with the absolute point-based scoring system and subject to the following conditions:

i. Achieving overall credit points required; and
ii. Obtaining minimum %. of each performance category listed below.

EB v3.0 Certification		
Overall Credit Points Achieved	**Minimum % of each performance category (Except IA)**	**Rating**
80 points	20%	Platinum
70 points		Gold
60 points		Silver
50 points		Bronze

If a project cannot comply with both the minimum %. of each performance category and requirements of overall credit achieved for each rating, it will be rated as “Assessment Completed Without Any Rating”.

Determination of Achievement – Labelling Scheme

The final certificate for projects certified under BEAM Plus EB v3.0 Labelling Scheme is determined by the overall score with the absolute point-based scoring system. The theme label is achieved when 70% of the defined groups of related credits are achieved.

If a project cannot comply with the minimum no. of credit achieved of Green Rating in the assessed category, this category will be graded as “Assessment Completed”.

1.3 Summary of Credits

<table>
<tr><th></th><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td>2</td><td>Management (MAN)</td><td></td><td></td><td>38</td></tr>
<tr><td>MAN-00-01</td><td>Green Purchasing Plan</td><td>This credit head is not applicable under EB v3.0.</td><td></td><td></td></tr>
<tr><td>MAN-01-01</td><td>EHS and Energy Management System</td><td>This credit head is not applicable under EB v3.0.</td><td></td><td></td></tr>
<tr><td>MAN-01-02</td><td>Building Environmental Excellence</td><td>(a) Complimentary Certification

1 credit point for the building being certified with final certification rating by any of the following BEAM Plus Assessment Tools:

<table>
<tr><th>BEAM Plus Assessment Tools</th><th>Bronze or Silver Rating</th><th>Gold or Platinum Rating</th></tr>
<tr><td>New Buildings (NB)</td><td rowspan="2">1</td><td rowspan="2">2</td></tr>
<tr><td>Existing Buildings (EB) (Comprehensive Scheme)</td></tr>
<tr><td colspan="3">The certification should be valid at the time of first assessment submission.</td></tr>
</table>
(b) Environmental Excellence Certificate

1 to 2 credit points if the building has obtained one (1) or two (2) of the following environmental awards/ certification schemes/ campaign:
a. IAQ Certification Scheme;
b. Quality Water Supply Scheme for Buildings – Fresh Water (Management System);
c. Quality Water Supply Scheme for Buildings – Flushing Water;
d. Waste Certificate;
e. Energy Certificate;
f. IAQ Certificate;
g. Carbon Reduction Certificate;
h. Hong Kong Awards for Environmental Excellence (HKAEE) – Property Management Sector Award;
i. ISO 14001 Certificate;
j. ISO 50001 Certificate; and
k. Other green building related awards/ certification schemes/ campaigns which are not listed above.

The certification should be valid at the time of first assessment submission. For the certificate(s) without expiry date, it shall be only considered as valid when it was awarded less than 60 months</td><td>All building types</td><td>4</td></tr>
</table>

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
		prior to the time of first assessment submission.		
MAN-02-01	Environmental, Social and Governance (ESG) Disclosure	**(a) ESG Committee** 1 credit point for establishment of a committee to oversee the building ESG issues. **(b) Policies On ESG Issues** 1 credit point if the building is supported by at least five (5) different policies on ESG issues.	All building types	2
MAN-02-02	Net-Zero Transition Plan	**(a) Environmental Management System** 1 credit point for demonstrating that environmental management system (EMS) either follow their internal company guideline or other international standards, shall be in place. **Alternatively,** Provide a copy of ISO 14001 Certificate and the certification should be valid at the time of first assessment submission. **(b) Roadmap to Net Zero** 1 credit point for establishment of mid-term absolute Scopes 1 and 2 GHG emissions reduction target. 1 credit point for establishment of mid-term Scope 3 GHG emissions reduction target. 2 credit points for the building management's commitment to achieving net zero by 2050. 2 additional credit points if the carbon reduction target is validated by Science Based Targets initiative (SBTi). 1 credit point will be awarded if the building owner discloses its net-zero transition plan and targets to the public.	All building types	8
MAN-02-03	Resilience Strategy	**(a) Climate Related Physical Risks and Opportunities** 1 credit point for detailing the climate related physical risks and opportunities identified, the methodology used for the assessment and the key metrics where applicable.	All building types	3

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
		(b) Transition Risks and Opportunities 1 credit point for detailing the transition risks and opportunities identified, the methodology used for the assessment and the key metrics where applicable (Metrics should include energy, water, land use and waste management where relevant and applicable). **(c) Evaluation of Climate Resilience** 1 credit point for conducting climate-related scenario analysis to evaluate their climate resilience in the face of extreme weather events.		
MAN-03-01	Staff Training and Resources	**(a) BEAM Accredited and Professional Qualified Personnel** 1 credit point for building-in-charge/ team lead of building management team of the building who is a formal property management practitioners (Tier 1) holder under the Property Management Services Ordinance (Cap.626) and has accredited with BEAM Pro qualification for EB v3.0. **(b) Staff Training** 1 credit point for providing adequate and periodic training for the staff responsible for the M&OM of the individual building project/ each building project in the building portfolio.	All building types	2
MAN-03-02	Building and Site Operation and Maintenance	This credit head is not applicable under EB v3.0.		
MAN-03-03	Building Services Operation and Maintenance	This credit head is not applicable under EB v3.0.		
MAN-03-04	Facility Management Plan	1 credit point for demonstrating that a facility management plan has been developed.	All building types	1
MAN-03-05	Smart Facility Management	**(a) Predictive Maintenance Practices** 1 to 2 credit points for implementing at least five (5)/ ten (10) applicable good practices as stipulated in Best Practices for Operation and Maintenance Service of HVAC, Electrical and Lift and Escalator installations.	All building types	6

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
		2 credit points for implementing at least five (5) applicable best practices as stipulated in the Best Practices for Operation and Maintenance Service of HVAC, Electrical and Lift and Escalator installations. **(b) Digitalised Facility Management** 2 credits for adoption of digitalised facility management system.		
MAN-03-06	BIM Integration	**(a) Maintenance of BIM Model** 1 credit points for maintaining BIM model including as-built fixtures, finishes and equipment data. **(b) Use of BIM Model** 2 additional credit points for using BIM model for asset management and facility management.	All building types	3
MAN-04-01	Green Lease	**(a) Green Lease Incentive** 1 credit point for inclusion of measurable KPI/ sustainability tasks on carbon related reduction targets in the green lease. **(b) Green Lease Coverage** 1 to 3 credit points for at least 5%/ 10%/ 15% by leased area of tenants are engaged with the green lease.	All building types with tenants	4
MAN-04-02	Green Cleaning	This credit head is not applicable under EB v3.0.		
MAN-04-03	Tenant Engagement Programme	**(a) Capacity Building Programme(s)** 1 credit point for organising capacity building programme(s) to the tenant for at least 25% of the leased area. **(b) Free Carbon Audit To Tenants** 1 credit point for offering free carbon audit to the tenants for at least 5% of the leased area to help them identify carbon reduction opportunities. 1 additional credit point for assisting tenants to establish carbon related reduction percentage target based on the findings of carbon audit.	All building types with tenants	5

Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
	(c) Award For Recognition 1 credit point for organising award for the recognition of excellence in carbon reduction of tenants. **(d) Carbon Related Pledge** 1 credit point for implementing carbon related pledge, with measurable KPI/ sustainability tasks for at least 25% of the leased area.		

<table>
<tr><th></th><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td>4</td><td colspan="2">Sustainable Site (SS)</td><td></td><td>19</td></tr>
<tr><td>SS-01-01</td><td>Noise Control for Building Equipment</td><td>1 credit point for demonstrating the level of the intruding noise at the façade of the potential Noise Sensitive Receivers (NSRs) is in compliance with the criteria recommended in the Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites.</td><td>All building types</td><td>1</td></tr>
<tr><td>SS-01-02</td><td>Lighting Pollution Mitigation</td><td>1 credit point for switching off external lightings from 23:00 to 07:00.

1 additional credit point for switching off external lightings from 22:00 to 07:00.

Alternatively
2 credit points for no installation of external lighting.</td><td>All building types</td><td>2</td></tr>
<tr><td>SS-02-01</td><td>Native Species</td><td>1 credit point for providing diverse plant species with more than 20% to be native to the Hong Kong climate condition.</td><td>All building types</td><td>1</td></tr>
<tr><td>SS-03-01</td><td>Urban Heat Island Mitigation Measures</td><td>2 credit points for demonstrating listed strategies implemented for nonroof and roof area to meet the following requirement:

$\frac{Area\ of\ nonroof\ with\ strategies}{0.5} + \frac{Area\ of\ high\ reflectance\ roof}{0.75} + \frac{Area\ of\ vegetated\ roof\ with\ strategies}{0.5} \geq Total\ nonroof\ area + Total\ roof\ area$

<table><tr><th colspan="3">List of strategies for nonroof area</th></tr><tr><td>Greenery</td><td>Shading device</td><td>Blue spaces</td></tr><tr><td colspan="3">Paving materials with solar reflectance (SR) of 0.33</td></tr><tr><td colspan="3">Other strategies proposed by the Applicant</td></tr></table>
<table><tr><th>List of strategy for high reflectance roof</th></tr><tr><td>Roof Materials with Solar Reflectance Index (SRI) of 78 or above</td></tr></table>
<table><tr><th colspan="2">List of strategies for vegetated roof</th></tr><tr><td>Greenery</td><td>Roof farming</td></tr><tr><td colspan="2">Other strategies proposed by the Applicant</td></tr></table></td><td>All building types</td><td>2</td></tr>
<tr><td>SS-04-01</td><td>Building-scale Climate Adaptation Measures</td><td>Maximum 4 credit points for demonstrating one (1) to four (4) best practices adapted in the buildings for aspect(s) below:

i) Heat waves;
ii) Typhoon;
iii) Lightning;
iv) Heavy precipitations;
v) Flooding; or
vi) Landslide.</td><td>All building types</td><td>4</td></tr>
</table>

<table>
<tr>
<td>SS-05-01</td>
<td>Neighbourhood Integration</td>
<td>
(a) Community Engagement

1 credit point for providing at least two (2) of the following items:

<table>
<tr><th colspan="2">List of items</th></tr>
<tr><td>On-site venues or public spaces for environmental programme</td><td>Permanent onsite display/ digital platform promoting local amenities</td></tr>
<tr><td>At least two (2) environmental related volunteer activities attended by employees of the building management team on a quarterly basis</td><td>At least one (1) community engagement programme promoting environmental related issues at no cost to the public on a quarterly basis</td></tr>
<tr><td colspan="2">Other features proposed by the Applicant</td></tr>
</table>

(b) Community Space

1 credit point for providing at least two (2) of the following designated communal spaces/ strategies to the occupants:

<table>
<tr><th colspan="2">List of items</th></tr>
<tr><td>On-site resting spaces with quality seating areas for public use at no cost</td><td>Outdoor garden with natural and restorative elements, such as trees, plants, water features, etc.</td></tr>
<tr><td>No smoking is allowed except designated smoking area which is not within 7.5m of all entrances and fresh air intake</td><td>On-site market selling local food organised regularly</td></tr>
<tr><td colspan="2">Provision of canopy with a minimum width of 2m protected zone from wind-driven wind/ sunlight at outdoor/ semi-outdoor communal area</td></tr>
<tr><td colspan="2">Other features proposed by the Applicant</td></tr>
</table>
</td>
<td>All building types</td>
<td>2</td>
</tr>
<tr>
<td>SS-06-01</td>
<td>Transportation Performance</td>
<td>1 credit point for achieving Accessibility Index of 15 or more for All building types of a development.</td>
<td>All building types</td>
<td>1</td>
</tr>
<tr>
<td>SS-06-02</td>
<td>Promotion of Public Transportation</td>
<td>
1 credit point for providing at least two (2) of the following strategies to the occupants that facilitate the use of public transportation:

<table>
<tr><th colspan="2">List of strategies</th></tr>
<tr><td>Permanent display of nearby public transportations information</td><td>Designated parking spaces for shuttle bus</td></tr>
<tr><td>Shuttle bus service to the nearby MTR station/ Public Transport Interchange</td><td>Number of parking spaces at or below the maximum number allowable by code</td></tr>
<tr><td colspan="2">Other features proposed by the Applicant</td></tr>
</table>
</td>
<td>All building types</td>
<td>1</td>
</tr>
</table>

<table>
<tr><td>SS-06-03</td><td>Active Commuting Support</td><td>1 credit point for providing at least two (2) of the following facilities in supporting active commuting:

<table><tr><th colspan="2">List of facilities</th></tr><tr><td>Regular occupants' access to showers</td><td>Regular occupants' access to lockers</td></tr><tr><td>Designated spaces of cycling parking for regular occupants</td><td>Designated areas for bicycle washing & maintenance</td></tr><tr><td colspan="2">Other features proposed by the Applicant</td></tr></table></td><td>All building types</td><td>1</td></tr>
<tr><td>SS-06-04</td><td>EV Charging Facilities</td><td>2 credit points for providing medium chargers (≥ 7kW) for at least 5% of all parking spaces for private cars, motorcycles and light good vehicles.

1 credit point for providing at least two (2) EV quick chargers (≥ 50kW) in the carpark.

1 credit point for providing at least one (1) quick charger (≥ 100kW) in the carpark area for coach, light bus or medium / heavy goods vehicle.</td><td>All building types</td><td>4</td></tr>
</table>

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
5	**Materials and Waste (MW)**			**31**
MW-00-P1	Minimum Waste Handling Facilities	This credit head is not available under EB v3.0.		
MW-01-01	Building Re-use	This credit head is not available under EB v3.0.		
MW-01-02	Modular and Standardised Design	This credit head is not available under EB v3.0.		
MW-01-03	Prefabrication	This credit head is not available under EB v3.0.		
MW-01-04	Design for Durability and Resilience	This credit head is not available under EB v3.0.		
MW-02-01	Sustainable Forest Products	This credit head is not available under EB v3.0.		
MW-02-02	Recycled Materials	This credit head is not available under EB v3.0.		
MW-02-03	Ozone Depleting Substances	1 credit point for demonstrating all the equipment (both newly purchased and existing) using the refrigerants with Global Warming Potential (GWP) ≤50. ***Alternatively,*** • *1 credit point for demonstrating a phased programme of refrigerant replacement for existing equipment with refrigerant GWP value > 50.* • *1 credit point for demonstrating all the equipment (both newly purchased and existing) using refrigerants with a combined value less than or equal to the threshold for the combined contribution to ozone depletion and global warming potential.*	All building types	1
MW-02-04	Regional Materials	This credit head is not available under EB v3.0.		

<table>
<tr><th></th><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td>MW-02-05</td><td>Use of Green Products</td><td>(a) Green Building Components

1-3 credit points for demonstrating at least 30%/ 50%/ 70% by cost of the renovated building components are certified green products endorsed by Construction Industry Council (CIC) Green Product Certification, or regionally or internationally recognised standard.

Types of building components are shown below:

<table>
<tr><th colspan="4">Building Components</th></tr>
<tr><td>Panel Board</td><td>Ceramic Tile</td><td>Adhesive & Sealant</td><td>Stone</td></tr>
<tr><td>Paint & Coating</td><td>Pavement Block</td><td>Thermal Insulation</td><td>Ready-mixed Concrete</td></tr>
<tr><td>Plant-based Fibre Composite</td><td colspan="3">Block for Internal Partition</td></tr>
</table>

(b) Green Building Services Systems

1-3 credit points for demonstrating at least 30%/ 50%/ 70% by cost of the additional/ replaced building services systems in major retrofitting works are certified green products endorsed by Construction Industry Council (CIC) Green Product Certification, or regionally or internationally recognised standard.

Types of building services systems are shown below:

<table>
<tr><th colspan="4">Building Services Systems</th></tr>
<tr><td>Thermal Insulations</td><td>VRF Split Type System</td><td>Cooling Tower</td><td>Air-handling Unit</td></tr>
<tr><td>Fan Coil Unit</td><td>Chiller</td><td>Water Pump</td><td>Cable & Wire</td></tr>
<tr><td colspan="4">Lighting
(LED lighting, Compact Fluorescent Lamp Bulb, Electronic Ballast)</td></tr>
</table>
</td><td>All building types</td><td>6</td></tr>
<tr><td>MW-02-06</td><td>Life Cycle Costing</td><td>2 credit points for conducting life cycle costing analysis for active systems when undertaking major retrofitting works.</td><td>All building types</td><td>2</td></tr>
<tr><td>MW-03-01</td><td>Adaptability and Deconstruction</td><td>This credit head is not available under EB v3.0.</td><td></td><td></td></tr>
</table>

<table>
<tr><th></th><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td>MW-03-02</td><td>Enhanced Waste Handling Facilities</td><td>(a) Recyclables Collection

1 to 2 credit points for demonstrating the provisions of on-site recycling facilities of any three (3)/ five (5) of the following waste streams:

<table>
<tr><th colspan="4">Credit Point(s)</th></tr>
<tr><td>Paper/ Carboard, Metal, Plastics and Glass</td><td>Regulated Electrical Equipment (REE)</td><td>Tetra Pack</td><td>Clothes</td></tr>
<tr><td>Fluorescent Lamps and Tubes</td><td>Rechargeable Batteries</td><td colspan="2">Small Electrical Appliances (cookers, toasters, ovens, irons, hair-dryers, phones, etc.)</td></tr>
<tr><td>Dried/ Canned Food</td><td>Food Waste</td><td colspan="2">Restaurant Waste (Used Cooking Oils, Grease Trap Waste)</td></tr>
<tr><td colspan="4">Other recyclables may be proposed at the discretion of the Applicant</td></tr>
</table>
(b) Recycling Performance

1 to 4 credit points for demonstrating the annual recycling percentage by weight over the past 12 months meeting the prescribed requirements.

<table>
<tr><th>Credit Point(s)</th><th>Annual Recycling Percentage</th></tr>
<tr><td>1</td><td>10%</td></tr>
<tr><td>2</td><td>15%</td></tr>
<tr><td>3</td><td>20%</td></tr>
<tr><td>4</td><td>25% or above</td></tr>
</table></td><td>All building types</td><td>6</td></tr>
<tr><td>MW-03-03</td><td>Action to Waste Reduction</td><td>(a) Waste Management Plan

1 credit point for developing and implementing WMP for building operations.

(b) Waste Stream Audit

1 credit point for conducting waste stream audit.

(c) Enhanced Waste Management Practices

1 credit point for developing and/ or implementing actions to improve recycling performance.</td><td>All building types</td><td>3</td></tr>
</table>

<table>
<tr><th></th><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td>MW-03-04</td><td>Waste Reduction Performance</td><td>(a) Reduction at Source

1 to 5 credit points for demonstrating an annual waste reduction by weight for the past 12 months meeting the prescribed requirements. Baseline year can be any year in the past 36 months.

<table><tr><th>Credit Point(s)</th><th>Annual Waste Reduction Percentage</th></tr><tr><td>1</td><td>2%</td></tr><tr><td>2</td><td>4%</td></tr><tr><td>3</td><td>6%</td></tr><tr><td>4</td><td>8%</td></tr><tr><td>5</td><td>10% or above</td></tr></table>
(b) Continual Improvement

2 credit points for demonstrating a continuous reduction trend of waste generation over the past 36 months.</td><td>All building types</td><td>7</td></tr>
<tr><td>MW-04-01</td><td>Best Practice on Material Usage</td><td>This credit head is not available under EB v3.0.</td><td></td><td></td></tr>
<tr><td>MW-04-02</td><td>Green Purchasing Practices</td><td>Maximum 6 credits for purchasing environmentally friendly or certified products for one (1) to three (3) types of consumable or durable goods in the past 12 months.

<table><tr><th>Credit Point(s)</th><th>Percentage of Environmentally Friendly or Certified Item for each type of consumable or durable goods</th></tr><tr><td>1</td><td>60%</td></tr><tr><td>2</td><td>80%</td></tr></table>
Types of consumables and durable goods are shown below:

<table><tr><th colspan="2">Consumable Goods/ Products</th></tr><tr><td>Batteries</td><td>Envelops, business card etc.</td></tr><tr><td>Paper towel and toilet tissue</td><td>Plastic bags</td></tr><tr><td>Printing paper</td><td>Toner cartridge</td></tr><tr><th colspan="2">Durable</th></tr><tr><td>Computers</td><td>Lamps</td></tr><tr><td>Paint</td><td>Office furniture</td></tr></table></td><td>All building types</td><td>6</td></tr>
</table>

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
6	**Energy Use (EU)**			**79**
EU-01-01	Minimum Energy Performance	1 credit point for conducting energy audit in accordance with the requirements stipulated in the Code of Practice for Building Energy Audit issued by Electrical and Mechanical Services Department, HKSAR.	All building types	1
EU-01-02	Metering and Monitoring	**(a) Metering Provisions** 1 credit point for equipping metering facilities to monitor and collect energy consumption data for landlord's electrical loads. 1 to 3 credit points for equipping metering facilities to monitor and collect energy consumption data for 2, 4 or 6 numbers of the following electrical loads of landlord controlled system: 1) Chiller; 2) Chiller plant; 3) Cooling tower plant; 4) Air side equipment; 5) Mechanical ventilation system 6) Lighting installation; 7) Lift and escalator systems; 8) Plumbing and drainage systems. 1 additional credit point for equipping metering facilities to monitor and collect energy consumption data for plug load/ receptable load/ small power of landlord controlled area. **(b) Performance Auditing** 1 credit point for equipping performance monitoring systems to monitor and collect operating performance data for the following landlord's controlled systems: 1) Chiller; 2) Chiller Plant; 3) Cooling tower plant; 4) Air side equipment; and 5) Mechanical ventilation system.	All building types	6
EU-01-03	Energy Consumption Monitoring	**(a) Building Energy Consumption** 1 credit point for providing total building energy consumption for landlord area for the past 12 months. **(b) Energy Breakdown of Electrical Loads** i) Air-conditioning system <u>Buildings with central A/C system</u> 1 to 2 credit points for providing	All building types	10 (for buildings with central A/C system); 8 (for buildings with de-centralised A/C

<table>
<tr><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td></td><td></td><td>energy consumption breakdown of water-side equipment for landlord area for the past 12 or 36 months:

a. Chiller plant;
b. Chiller; and
c. Cooling tower plant (if applicable).

1 to 2 credit points for providing energy consumption of air-side equipment (i.e. primary air unit, air handling units, etc. air distribution units) for landlord area for the past 12 or 36 months.

<u>Buildings with de-centralised A/C system only</u>

1 to 2 credit points for providing energy consumption of unitary/ VRV system for landlord area for the past 12 or 36 months.

ii) Other systems

1 to 2 credit points for providing energy consumption breakdown of any three of the following systems for landlord’s controlled area for the past 12 or 36 months:

a. Lighting system;
b. Mechanical ventilation system;
c. Lift and escalator systems; and
d. Plumbing and drainage systems.

(c) Analysis of Building Energy Consumption

1 credit point for conducting annual review and analysis of energy consumption.</td><td></td><td>system only)</td></tr>
<tr><td>EU-02-01</td><td>Energy Consumption Reduction</td><td>(a) Self-improvement of Energy Utilisation Index
1 to 10 credit points when annual energy utilisation index (EUI) is reduced in a percentage below compared with that of past 5 years.

<table><tr><th>Credit Point(s)</th><th>Percentage of reduction in EUI</th></tr><tr><td>1</td><td>≥ 2%</td></tr><tr><td>2</td><td>≥ 4%</td></tr><tr><td>3</td><td>≥ 6%</td></tr><tr><td>4</td><td>≥ 8%</td></tr></table></td><td>All building types</td><td>12</td></tr>
</table>

Credit Head	Credit Requirement	Extent of Application	Credit Point(s)

5	≥ 10%
6	≥ 12%
7	≥ 14%
8	≥ 16%
9	≥ 18%
10	≥ 20%

(b) Continuous Energy Consumption Reduction Trend

2 credit points when landlord's energy consumption is continuously reduced over past 3 years.

EU-02-02 | Energy Use Intensity (EUI) Benchmarking | Extent of Application: Part a) - Building types covered by EMSD benchmarking tools; Part b) - All building types | Credit Point(s): 12

(a) Benchmarking

1 to 4 credit points when the energy performance of the landlord's control area of the project achieves the below percentile under EMSD Benchmarking Tool.

Credit Point(s)	Percentile under EMSD Benchmarking Tool
1	40th
2	30th
3	20th
4	10th

(b) Zero-Carbon-Ready Building Certification

1 to 4 credit points when the landlord's controlled area of the project achieves the below ratings under Energy Performance Certificate of the Zero-Carbon-Ready Building Certification scheme.

Credit Point(s)	Rating under Energy Performance Certificate
1	Low
2	Extra Low
3	Super Low
4	Zero-Carbon-Ready

Additional 1 to 4 credit points when the whole building energy consumption of the project (i.e. both tenant and landlord areas are included) achieves the below ratings under Energy Performance Certificate of the scheme.

Credit Point(s)	Rating under Energy Performance Certificate
1	Low
2	Extra Low

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
		3 Super Low 4 Zero-Carbon-Ready		
EU-03-01	Retro-commissioning (RCx)	**(a) Planning Stage** 2 credit points to develop retro-commissioning plan for engineering systems. **(b) Investigation Stage** 2 credit points to identify and select energy saving opportunities. **(c) Implementation Stage** 2 credit points to implement the identified energy saving opportunities and conduct measurement and verification and prepare measurement and verification report. 1 credit point to develop a retro-commissioning final report. **(d) Ongoing Commissioning Stage** 1 credit point to develop an ongoing commissioning plan. 1 credit point to carry out ongoing commissioning in accordance with ongoing commissioning plan.	All building types	9
EU-03-02	Peak Demand Management	**(a) Development of Peak Demand Management Plan** 1 credit point for developing Peak Demand Management Plan. **(b) Execution of Peak Demand Management Plan** 1 credit point for execution of the Peak Demand Management Plan.	All building types	2

<table>
<tr><td>EU-03-03</td><td>Water-side Plant Efficiency</td><td>(a) Performance of Chiller

2 credit points when the coefficient of performance for chiller meets the threshold as stipulated in latest edition of Building Energy Code.

(b) Performance of Cooling Tower

1 to 2 credit points when cooling tower meets the thresholds below:

<table><tr><th rowspan="2">Credit Point(s)</th><th colspan="2">Water flow per unit tower fan motor power (L/s per kW)</th></tr><tr><th>Centrifugal fans</th><th>Propeller/ axial fans</th></tr><tr><td>1</td><td>1.6</td><td>3.2</td></tr><tr><td>2</td><td>1.5</td><td>3.0</td></tr></table></td><td>All building types</td><td>4</td></tr>
<tr><td>EU-03-04</td><td>Air Distribution System Efficiency</td><td>1 to 2 credit points when the efficiency of air handling units (AHUs) and/or primary air unit (PAUs) meet the thresholds below:

<table><tr><th rowspan="2">Credit Point(s)</th><th colspan="2">Efficiency of air distribution system (Rated fan power per unit air flow rate, W per L/s)</th></tr><tr><th>Constant speed fan</th><th>Variable speed fan</th></tr><tr><td>1</td><td>1.5</td><td>2.0</td></tr><tr><td>2</td><td>1.6</td><td>1.9</td></tr></table></td><td>All building types</td><td>2</td></tr>
<tr><td>EU-03-05</td><td>Maximum Allowable Fan Power for Mechanical Ventilation System</td><td>1 to 2 credit points when mechanical ventilation fans meet the thresholds below:

<table><tr><th rowspan="2">Credit Point(s)</th><th colspan="2">Efficiency of mechanical ventilation system (Rated fan power per unit air flow rate, W per L/s)</th></tr><tr><th>Constant speed fan</th><th>Variable speed fan</th></tr><tr><td>1</td><td>1.5</td><td>2.0</td></tr><tr><td>2</td><td>1.6</td><td>1.9</td></tr></table></td><td>All building types</td><td>2</td></tr>
<tr><td>EU-03-06</td><td>Maximum Allowable Lighting Power Density</td><td>1 to 3 credit points when total lighting power of at least 90% of landlord’s controlled area reduce 0 to 4% compared with latest edition of Building Energy Code (BEC):

<table><tr><th>Credit Point(s)</th><th>Percentage of reduction in lighting power</th></tr><tr><td>1</td><td>Fulfilment of latest edition of BEC</td></tr><tr><td>2</td><td>2%</td></tr><tr><td>3</td><td>4%</td></tr></table></td><td>All building types</td><td>3</td></tr>
</table>

<table>
<tr>
<td>EU-04-01</td>
<td>Renewable and Alternative Energy Systems</td>
<td>
(a) On-site Renewable Energy Application

1 to 10 credit points for using on-site renewable energy systems to offset annual building energy consumption.
<table>
<tr><th>Credit Point(s)</th><th>Percentage of Annual Building Energy Consumption</th></tr>
<tr><td>1</td><td>0.2%</td></tr>
<tr><td>2</td><td>0.4%</td></tr>
<tr><td>3</td><td>0.6%</td></tr>
<tr><td>4</td><td>0.8%</td></tr>
<tr><td>5</td><td>1.0%</td></tr>
<tr><td>6</td><td>1.2%</td></tr>
<tr><td>7</td><td>1.4%</td></tr>
<tr><td>8</td><td>1.6%</td></tr>
<tr><td>9</td><td>1.8%</td></tr>
<tr><td>10</td><td>2.0%</td></tr>
</table>
(b) Renewable Energy Certificate

1 to 5 credit point(s) for purchasing renewable energy certificate to offset annual landlord energy consumption.
<table>
<tr><th>Credit Point(s)</th><th>Percentage of Annual Building Energy Consumption</th></tr>
<tr><td>1</td><td>10%</td></tr>
<tr><td>2</td><td>20%</td></tr>
<tr><td>3</td><td>30%</td></tr>
<tr><td>4</td><td>40%</td></tr>
<tr><td>5</td><td>50%</td></tr>
</table>
</td>
<td>All building types</td>
<td>15</td>
</tr>
<tr>
<td>EU-04-02</td>
<td>Carbon Footprint Management</td>
<td>1 credit point for conducting carbon audit to measure all Greenhouse Gas emissions in Scopes 1, 2 and water and paper use under Scope 3 plus one additional GHG emission in Scope 3 in accordance with The Greenhouse Gas Protocol.</td>
<td>All building types</td>
<td>1</td>
</tr>
</table>

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
7	**Water Use (WU)**			**33**
WU-00-01	Minimum Water Saving Performance	This credit head is not available under EB v3.0.		
WU-01-01	Use of Water Efficient Flow Devices	1 or 2 credit points when 80% or 100% of all installed water taps and shower heads for bathing (if any) are certified with Water Efficiency Labelling Scheme (WELS) Grade 1 or equipped with WELS Grade 1 flow controllers.	All building types	2
WU-01-02	Water Efficient Irrigation	**(a) Efficient irrigation** 1 credit point for demonstrating the use of smart irrigation technology/ system for irrigation. **(b) Limited use of fresh water** 2 credit points for demonstrating the annual usage of fresh water for irrigation does not exceed 5% of the total annual fresh water consumptions.	Project with soft landscape area more than 200m^2	3
WU-01-03	Water Efficient Appliances	This credit head is not available under EB v3.0.		
WU-01-04	Water Leakage Detection	1 credit point for installing water leakage detection systems in all municipal potable water tank and pump rooms.	All building types	1
WU-01-05	Twin Tank System	This credit head is not applicable under EB v3.0.		
WU-01-06	Cooling Tower Water	This credit head is not applicable under EB v3.0.		
WU-02-01	Effluent Discharge to Foul Sewers	**(a) Water closets** 1 credit point when all installed water closets are dual flush with Water Efficiency Labelling Scheme (WELS) Grade 1. **(b) Urinals** 1 credit point for demonstrating when all installed urinals are sensor types with Water Efficiency Labelling Scheme (WELS) Grade 1.	All building types	2
WU-03-01	Water Recycling	**(a) Water recycling feasibility study** 1 credit point for conducting feasibility study to evaluate the potential of installing water recycling system. **(b) Water recycling systems** 1 credit point for the application of water recycling system.	All building types	4

<table>
<tr><th></th><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td></td><td></td><td>(c) Water recycling

2 credit points for demonstrating the annual amount of rainwater harvesting and/ or grey and/ or black water recycling is at least 5% of the total annual fresh water consumptions.</td><td></td><td></td></tr>
<tr><td>WU-04-01</td><td>Smart Water Metering</td><td>(a) Building-level metering

1 credit point for demonstrating the provision of smart water meter to monitor the total fresh water consumptions for the landlord and all the tenants.

(b) Sub-metering for major systems

2 credit points for demonstrating the provision of smart water meter to monitor the fresh water consumptions for at least two other water sub-systems.</td><td>All building types</td><td>3</td></tr>
<tr><td>WU-04-02</td><td>Fresh Water Consumption Monitoring and Reduction</td><td>(a) Fresh water consumptions

1 credit point for providing total fresh water consumption record for the past 36 months for the landlord-controlled area.

1 credit point for providing total fresh water consumption record for the past 36 months for the tenant’s area.

(b) Fresh water consumptions breakdown

Maximum 3 credit points for providing fresh water consumption breakdown for two (2) to four (4) water sub-systems in the past 36 months.

<table><tr><th>Credit Point(s)</th><th>Fresh water consumption breakdown for</th></tr><tr><td>1</td><td>Any two (2) water sub-systems</td></tr><tr><td>2</td><td>Any three (3) water sub-systems</td></tr><tr><td>3</td><td>Any four (4) water sub-systems</td></tr></table>
(c) Self-improvement

1 to 5 credit points for demonstrating a net percentage on fresh water consumptions reduction over the past 36 months.

<table><tr><th>Credit Point(s)</th><th>Net Percentage on Fresh water Consumptions Reduction per Year</th></tr><tr><td>1</td><td>2%</td></tr><tr><td>2</td><td>4%</td></tr><tr><td>3</td><td>6%</td></tr></table></td><td>All building types</td><td>12</td></tr>
</table>

Credit Head		Credit Requirement	Extent of Application	Credit Point(s)
		4 | 8% 5 | ≥ 10%		
		(d) Continuous reduction trend 2 credit points for demonstrating a continuous reduction trend on the annual landlord fresh water consumptions over the past 36 months.		
WU-04-03	Water Quality Survey	This credit head is not applicable under EB v3.0.		
WU-04-04	Water Efficiency Index (WEI) Benchmarking	2 credit points when the Water Efficiency Index (WEI) of landlord-controlled area meets the prescribed thresholds.	All building types	2
WU-04-05	Quality and Safety of Water Supply	**(a) Water supply system safety inspection** 2 credit points for conducting routine inspection in accordance with the Guidelines for Drinking Water Safety Plans for Buildings in Hong Kong. **(b) Water audit** 2 credit points for conducting a water audit and maintain a water use inventory.	All building types	4

<table>
<tr><th></th><th>Credit Head</th><th>Credit Requirement</th><th>Extent of Application</th><th>Credit Point(s)</th></tr>
<tr><td>8</td><td colspan="2">Health and Wellbeing (HWB)</td><td></td><td>28</td></tr>
<tr><td>HWB-00-01
(Core)</td><td>Minimum Ventilation Performance</td><td>This credit head is not applicable under EB v3.0.</td><td></td><td></td></tr>
<tr><td>HWB-01-01</td><td>Ventilation Performance</td><td>2 credit points if normally occupied spaces of the building are supplied with adequate quantity of outdoor air, which is in compliance with the minimum requirements of ANSI/ASHRAE 62.1-2022.</td><td>Normally occupied spaces with mechanical ventilation system</td><td>2</td></tr>
<tr><td>HWB-01-02</td><td>Air Filtration and Purification Treatment</td><td>(a) Particle filtration

1 credit point for installing air filters with MERV rating of 12 in the fresh air intake system.

(b) Air purification treatment

1 credit point for providing air purification technique in the ventilation system or standalone air purification device at the communal spaces.</td><td>All building types</td><td>2</td></tr>
<tr><td>HWB-01-03</td><td>Continuous IAQ Monitoring</td><td>1 to 2 credit points for installing an IAQ sensor for every 500m^2 and at least one (1) per floor to measure at least four (4)/ six (6) of the following parameters in a normally occupied or common space within the assessment boundary:

<table><tr><th colspan="4">List of Parameters</th></tr><tr><td>$PM_{2.5}$</td><td>PM_{10}</td><td>Carbon dioxide</td><td>Total VOCs</td></tr><tr><td>Nitrogen dioxide</td><td>Ozone</td><td>Carbon monoxide</td><td>Formaldehyde</td></tr></table>
1 additional credit point for setting up a notification system to inform the building management if any of the above monitored parameters fail to meet the IAQ (Good Class) requirements of IAQ certification scheme.</td><td>All building types</td><td>3</td></tr>
<tr><td>HWB-02-01</td><td>Thermal Comfort Monitoring</td><td>(a) Temperature and humidity control

1 credit point for demonstrating the temperature and the relative humidity meet the prescribed criteria in the communal areas.

(b) Continuous monitoring

1 credit point for installing sensors for continuous monitoring.</td><td>All building types</td><td>2</td></tr>
</table>

HWB-03-01	Indoor Acoustic Environment	**(a) Background Noise Level** 1 credit point for demonstrating background noise levels within the prescribed criteria. **(b) Reverberation time** 1 credit point for demonstrating that the reverberation time in the applicable areas meets the prescribed criteria of given types of space. **(c) Noise isolation** 1 credit point for demonstrating airborne noise isolation between spaces fulfils the prescribed criteria.	All building types	3
HWB-04-01	Acceptable Lighting Performance	**(a) Lighting performance in normally occupied spaces** 1 credit point for demonstrating the illuminance level, unified glare rating limit and uniformity in normally occupied spaces meet the prescribed area. **(b) Lighting performance in not normally occupied spaces** 1 credit point for demonstrating the illuminance level and unified glare rating limit in not normally occupied spaces meet the prescribed criteria.	All building types	2
HWB-04-02	Human-centric Lighting	1 credit point for providing colour-tuneable lighting fixture for more than 50% of normally occupied spaces.	All building types	1
HWB-04-03	Daylight	1 credit point for at least 80% of normally occupied space in the building having a glazing-to-floor ratio of no less than 10%.	All building types	1
HWB-05-01	Inclusive Design	**(a) Universal Accessibility** 1 to 2 credit points for providing at least five (5)/ ten (10) applicable enhanced provisions as stipulated in the “Recommended Design Requirements” of the latest version of Design Manual - Barrier Free Access issued by Buildings Department. **(b) Family Friendly Facilities** 1 credit point for providing at least three (3) family friendly facilities in the communal areas of the building.	All building types	3

		List of family friendly features		
		Dedicated play areas for children with shaded seating areas for care-takers	At least one water closet for family in each male and female washroom	
		At least one standalone family washroom	Baby care facility	
		Private breast-feeding room	Others to be proposed by the Applicant	
HWB-05-02	Biophilic Design	1 credit point for providing at least three (3) of the following biophilic design features/ strategies in the communal areas of the building.	All building types	1
		List of amenities for biophilic design features/ strategies		
		Provision of potted plants or plant walls	Indoor water fountain/ pond/ fish tank	Natural sound background music
		Artwork with natural materials	Image with nature views	Others to be proposed by the Applicant
HWB-05-03	Considerable Workspaces	This credit head is not applicable under EB v3.0.		
HWB-05-04	Amenities for Operation and Maintenance	1 to 2 credit points for providing at least three (3)/ six (6) of the following amenities/ features.	All building types	2
		List of amenities for operation and maintenance		
		Aerial working platform	Cat ladder	Central control room
		Gondola	Fall arrest system	Guard room
		Maintenance platform for building services installation	Maintenance workshop	Moveable working platform
		Others to be proposed by the Applicant		
HWB-06-01	Healthy and Active Living	1 credit point for providing at least two of the following healthy and active living features.	All building types	1
		Healthy and active living features		
		Provide artwork	Staircase for building users is accessible to all occupied floors	
		Install way-finding signage or infographic to encourage stair use	Provide feature that promote physical activity for building users	
		Others to be proposed by Applicant		
HWB-06-02	Water Quality Survey and Access to Drinking Water	**(a) Water Quality Survey** 1 credit point for demonstrating that the quality of drinking water meets WSD's latest guideline [1].	All building types	2

Parameter(s)	Criteria
Chemical and Physical	
Turbidity	≤ 3.0 NTU
Colour	≤ 5 Hazen Unit
pH at 25°C	≥ 6.5 and ≤ 9.5
Free Residual Chlorine	> 0 mg/L and ≤ 1.5 mg/L
Conductivity at 25°C	≤ 500 µS/cm
Metals	
Lead	≤ 10 µg/L
Chromium	≤ 50 µg/L
Nickel	≤ 70 µg/L
Cadmium	≤ 3 µg/L
Copper	≤ 2000 µg/L
Antimony	≤ 20 µg/L
Bacteriological	
Heterotrophic Plate Count	≤ 20 cfu/mL
E. Coli	0 cfu/100 mL

The water quality survey should be conducted by a HOKLAS accredited laboratory and water sampling should follow the latest WSD's water sampling protocol.

The sampling locations and frequency shall be as follows:

a. All potable water tank(s) on yearly basis;
b. Furthest point of each distribution route which is for drinking purpose on yearly basis; and
c. All water dispensers on quarterly basis.

(b) Access to Drinking Water

1 credit point for providing at least one water dispenser which is accessible to building users. The water dispenser shall be capable for refilling water bottle.

HWB-06-03	Physical Activity and Mental Health Programme	1 credit point for organising physical activity and/or mental health programme for the building users on quarterly basis.	All building types	1

HWB-06-04	Health Protection	1 to 2 credit points for providing at least three (3)/ six (6) of the following health protection measures/ features.	All building types	2

List of health protection measures/ features		
Clinic room	Contactless devices	Anti-virus coating
Hand washing stations (other than those in washroom)	AED	First aid kit
Blood pressure meter	Oximeter	Face mask
Body temperature checking	Disinfectant wipe	Healthy entrance
Others to be proposed by the Applicant		

	Credit Head	Credit Requirement	Extent of Application	Credit Point(s)
9	**Innovations and Additions (IA)**			**20**
IA-01-01	Innovations and Additions	Maximum 20 credit points for IA.	All building types	

2. Management

An effective management of building operations and maintenance is the key factor for better environmental performance of the building, especially for existing buildings. The ‘Management’ category assesses the overarching management system, policies and procedures put in place, staffing and resources, and the involvement of building users to ensure buildings are operating in their maximum sustainable potential.

2 Management

MAN-00 Basic Requirement

MAN-00-01 Green Purchasing Plan

This credit head is not applicable under EB v3.0.

2 Management

MAN-01 EHS and Energy Management

MAN-01-01 EHS and Energy Management System

This credit head is not applicable under EB v3.0.

2 Management **MAN-01 EHS and Energy Management**

MAN-01-02 Building Environmental Excellence

Extent of Application All building types

Objective Recognise the effort of achieving previous BEAM/ BEAM Plus certifications and/ or similar awards organised by other organisations.

Credit point(s) Attainable 4

Credit Requirement

(a) Complimentary Certification

1 credit point for the building being certified with final certification rating by any of the following BEAM Plus Assessment Tools:

BEAM Plus Assessment Tools	Bronze or Silver Rating	Gold or Platinum Rating
New Buildings (NB)	1	2
Existing Buildings (EB) (Comprehensive Scheme)		
The certification should be valid at the time of first assessment submission.		

(b) Environmental Excellence Certificate

1 to 2 credit points if the building has obtained one (1) or two (2) of the following environmental awards/ certification schemes/ campaign:

a. IAQ Certification Scheme;
b. Quality Water Supply Scheme for Buildings – Fresh Water (Management System);
c. Quality Water Supply Scheme for Buildings – Flushing Water;
d. Waste Certificate;
e. Energy Certificate;
f. IAQ Certificate;
g. Carbon Reduction Certificate;
h. Hong Kong Awards for Environmental Excellence (HKAEE) – Property Management Sector Award;
i. ISO 14001 Certificate;
j. ISO 50001 Certificate; and
k. Other green building related awards/ certification schemes/ campaigns which are not listed above.

The certification should be valid at the time of first assessment submission. For the certificate(s) without expiry date, it shall be only considered as valid when it was awarded less than 60 months prior to the time of first assessment submission.

Assessment

(a) Complimentary Certification

1. Provide supporting documentation showing the attainment of BEAM Plus NB/ EB (Comprehensive Scheme) certification at the time of first assessment submission.

(b) Environmental Excellence Certificate

1. Provide supporting documentation showing the attainment of the certificate(s) issued by a recognisable association at the time of first assessment submission.

Submittals

(a) Complimentary Certification

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-01-02a_00	EB submission form for MAN-01-02a	√	√
MAN-01-02a_01	Supporting documentation showing the attainment of BEAM Plus NB/ EB (Comprehensive Scheme) certification	√	√

(b) Environmental Excellence Certificate

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-01-02b_00	EB submission form for MAN-01-02b	√	√
MAN-01-02b_01	Supporting documentation showing the attainment of the certificate(s) issued by a recognisable association	√	√

Remarks

(a) Additional Information

BEAM Plus Project Directory & Statistics. Hong Kong Green Building Council. [ONLINE] Available at: https://www.hkgbc.org.hk/eng/beam-plus/beam-plus-dir-stat/index.jsp [Accessed Mar 2024]

(b) Related Credit Heads

2 Management **MAN-02 ESG Disclosure**

MAN-02-01 Environmental, Social and Governance (ESG) Disclosure

Extent of Application All building types

Objective Encourage building owner/ management company to have ESG reporting and disclose its sustainability performance to the public.

Credit point(s) Attainable 2

Credit Requirement

(a) ESG Committee

1 credit point for establishment of a committee to oversee the building ESG issues.

(b) Policies On ESG Issues

1 credit point if building is supported by at least five (5) different policies on ESG issues.

Assessment

(a) ESG Committee

1. ESG Committee shall be formulated by building-in-charge, supervisory staff or his / her representative(s) for property management and engineering of the building.
2. ESG Committee can be building level or corporate level.
3. Provide an organisation chart indicating the responsibility and job duties of each member of ESG Committee.
4. Provide a copy of Terms of Reference of the ESG Committee within the past 12 months at the time of first assessment submission. Confidential/ sensitive information on the Terms of Reference is not required and could be excluded.

(b) Policies On ESG Issues

1. Provide at least five (5) different policies on ESG issues:

Environmental

a. Emissions
b. Use of Resources
c. The Environment and Natural Resources
d. Climate Change

Social

a. Employment
b. Health and Safety
c. Development and Training
d. Labour Standards
e. Supply Chain Management
f. Product Responsibility
g. Anti-corruption
h. Community Investment

Governance

a. Board Diversity
b. Whistleblowing

At least one (1) policy shall be covered for each aspect.

2. The policies shall be endorsed by building-in-charge or the top management of building owner/ building management company.

Submittals

(a) ESG Committee

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-02-01a_00	EB submission form for MAN-02-01a	√	√
MAN-02-01a_01	Organisation chart indicating the responsibility and job duties of each member of ESG Committee	√	√
MAN-02-01a_02	A copy of Terms of Reference of the ESG Committee within the past 12 months at the time of first assessment submission.	√	√

(b) Policies On Environmental Issues

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-02-01b_00	EB submission form for MAN-02-01b	√	√
MAN-02-01b_01	Five (5) endorsed policies on different issues	√	√

Remarks

(a) Additional Information

GRESB, 2023 Real Estate Standard and Reference Guide. [ONLINE] Available at: https://documents.gresb.com/generated_files/real_estate/2023/real_estate/reference_guide/complete.html#management-policies [Accessed Mar 2024]

HKEX, Environmental, Social and Governance Reporting Guide. [ONLINE] Available at: https://en-rules.hkex.com.hk/sites/default/files/net_file_store/HKEX4476_3841_VER18584.pdf [Accessed Jul 2024]

(b) Related Credit Heads

2 Management **MAN-02 ESG Disclosure**

MAN-02-02 Net-zero Transition Plan

Extent of Application All building types

Objective Encourage the building management to implement systematic environmental management system and achieve net-zero by 2050.

Credit point(s) Attainable 8

Credit Requirement

(a) Environmental Management System

1 credit point for demonstrating that environmental management system (EMS) either follow their internal company guideline or other international standards, shall be in place.

Alternatively,

- Provide a copy of ISO 14001 Certificate and the certification should be valid at the time of first assessment submission.

(b) Roadmap to Net Zero

1 credit point for establishment of mid-term absolute Scopes 1 and 2 GHG emissions reduction target.

1 credit point for establishment of mid-term Scope 3 GHG emissions reduction target.

2 credit points for the building management's commitment to achieving net zero by 2050.

2 additional credit points if the carbon reduction target is validated by Science Based Targets initiative (SBTi).

1 credit point will be awarded if the building owner discloses its net-zero transition plan and targets to the public.

Assessment

(a) Environmental Management System

1. EMS shall be applied to the building owner/ building management company.

2. Provide an internal checklist covering EMS of the individual building project/ each building project in the building portfolio addressing the following elements:

   a. Auditing criteria to the internal audit;
   b. Auditing criteria's compliance with the relevant management standard;
   c. Whether the management practices are adhering to the auditing criteria; and
   d. Implementation timeline for the non-compliance criteria.

3. Provide a cover page of the internal audit checklist with a timestamp to demonstrate that the internal audit has been conducted within the recent 12 months of the first assessment submission; and

4. The internal audit checklist shall be endorsed by the:

   a. Representative employee [1] of the Building Management Company, whom has been appointed by the company's director or the management committee to oversee the internal auditing process and to ensure the objectivity and impartiality of the auditing process; and
   b. Director/ Chairperson of the management committee showing that he/she confirms on the findings of the internal audit checklist.

Alternatively,

- Provide a valid ISO 14001 certificate covering the individual building project/each building project in the building portfolio.

(b) Roadmap to Net Zero

1. The roadmap to net zero shall be applied to the building owner/ building management company and shall cover the individual building project/each building project in the building portfolio.

2. Provide GHG emissions reduction target of scopes 1, 2 and 3 emissions in mid-term (by 2035 latest). The target can be building level or corporate level and shall be endorsed by the top management of building owner/ building management company.

3. Provide a building management's commitment statement for the building to achieving net zero by 2050. The statement shall be endorsed by the top management of building owner/ building management company.

4. Provide supporting to demonstrate the net-zero target is validated by SBTi.

5. Provide evidence showing net-zero transition plan and targets are disclosed to the public.

Submittals

(a) Environmental Management System

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-02-02a_00	EB submission form for MAN-02-02a	√	√
MAN-02-02a_01	Endorsed internal checklist with cover page	√	√
MAN-02-02a_02	Valid ISO 14001 certificate covering the individual building project/each building project in the building portfolio	√	√

[1] Representative employee are those employees who have completed the relevant internal audit training through a professional training body. Certificate of completion shall be provided to demonstrate that the representative employee has completed the relevant internal audit training.

(b) Roadmap to Decarbonisation

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-02-02b_00	EB submission form for MAN-02-02b	√	√
MAN-02-02b_01	Endorsed reduction target of scopes 1 and 2	√	√
MAN-02-02b_02	Endorsed reduction target of scope 3	√	√
MAN-02-02b_03	Endorsed net zero target	√	√
MAN-02-02b_04	Records showing the reduction targets are validated by SBTi.	-	√
MAN-02-02b_05	Evidence showing net-zero transition plan and targets are disclosed to the public	-	√
MAN-02-02b_00	EB submission form for MAN-02-02b	√	√
MAN-02-02b_01	Endorsed reduction target of scopes 1 and 2	√	√

Remarks

(a) Additional Information

International Organisation for Standardisation, ISO 14000 Environmental Management. [ONLINE]
Available at:
https://www.iso.org/standards/popular/iso-14000-family
[Accessed Mar 2024]

Science-based targets, corporate net-zero tool. [ONLINE]
Available at:
https://sciencebasedtargets.org/resources/?tab=develop
[Accessed Mar 2024]

(b) Related Credit Heads

2 Management **MAN-02 ESG Disclosure**

MAN-02-03 Resilience Strategy

Extent of Application All building types

Objective Encourages consideration of an asset's exposure to a range of climate-related risks, for instance identification of flood risk and implement mitigation measures where required.

Credit point(s) Attainable 3

Credit Requirement

(a) Climate Related Physical Risks and Opportunities

1 credit point for detailing the climate related physical risks and opportunities identified, the methodology used for the assessment and the key metrics where applicable.

(b) Transition Risks and Opportunities

1 credit point for detailing the transition risks and opportunities identified, the methodology used for the assessment and the key metrics where applicable (Metrics should include energy, water, land use and waste management where relevant and applicable).

(c) Evaluation of Climate Resilience

1 credit point for conducting climate-related scenario analysis to evaluate their climate resilience in the face of extreme weather events.

Assessment

(a) Climate Related Physical Risks and Opportunities

1. Conduct a project specific climate change risk and adaptation assessment, aligned to the principles outlined by the International Sustainability Standards Board (ISSB), which published the International Financial Reporting Standards (IFRS) S2 Climate-related Disclosures.

2. The assessment shall follow the requirement under IFRS S2, which distinguishes climate-related risks in respect to physical risks (event-driven or acute risks; longer-term shifts or chronic risks).

3. The assessment report shall be endorsed by building-in-charge or the top management of building owner/ building management company.

(b) Transition Risks and Opportunities

1. Conduct a project specific climate change risk and adaptation assessment, aligned to the principles outlined by the International Sustainability Standards Board (ISSB), which published the International Financial Reporting Standards (IFRS) S2 Climate-related Disclosures.

2. The assessment shall follow the requirement under IFRS S2, which distinguishes climate-related risks in respect to Transition risks (those associated with moving to a lower-carbon economy).

3. The assessment report shall be endorsed by building-in-charge or the top management of building owner/ building management company.

(c) Evaluation of Climate Resilience

1. Conduct a project specific climate change risk and adaptation assessment, aligned to the principles outlined by the International Sustainability Standards Board (ISSB), which published the International Financial Reporting Standards (IFRS) S2 Climate-related Disclosures.

2. The assessment shall follow the requirement under IFRS S2, which distinguishes climate-related risks in respect to physical risks (event-driven or acute risks; longer-term shifts or chronic risks).

3. The climate-related scenario analysis shall follow the previously adopted Taskforce for Climate Related Financial Disclosures (TCFD) guidance that sets out types of scenario analysis, including quantitative, partially quantitative and qualitative.

4. The assessment report shall be endorsed by building-in-charge or the top management of building owner/ building management company.

Submittals

(a) Climate Related Physical Risks and Opportunities

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-02-03a_00	EB submission form for MAN-02-03a	√	√
MAN-02-03a_01	Assessment report for climate related physical risks and opportunities	-	√

(b) Transition Risks and Opportunities

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-02-03b_00	EB submission form for MAN-02-03b	√	√
MAN-02-03b_01	Assessment report for transition risks and opportunities	-	√

(c) Evaluation of Climate Resilience

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-02-03c_00	EB submission form for MAN-02-03c	√	√
MAN-02-03c_01	Assessment report for climate resilience	-	√

Remarks

(a) Additional Information

The IFRS Foundation, IFRS S2 Climate-related Disclosures. [ONLINE] Available at: https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures.html/content/dam/ifrs/publications/html-standards-issb/english/2023/issued/issbs2/ [Accessed Mar 2024]

(b) Related Credit Heads

2 Management **MAN-03 Staff Training**

MAN-03-01 Staff Training and Resources

Extent of Application All building types

Objective Ensure the staff training and technical resources are adequate for the Management, Operation and Maintenance (MO&M) of the individual building project/each building project in the building portfolio.

Credit point(s) Attainable 2

Credit Requirement

(a) BEAM Accredited and Professional Qualified Personnel

1 credit point for building-in-charge/ team lead of building management team of the building who is a formal property management practitioners (Tier 1) holder under the Property Management Services Ordinance (Cap.626) and has accredited with BEAM Pro qualification for EB v3.0.

(b) Staff Training

1 credit point for providing adequate and periodic training for the staff responsible for the M&OM of the individual building project/ each building project in the building portfolio.

Assessment

(a) BEAM Accredited and Professional Qualified Personnel

1. Provide an undertaking letter from the top management of building owner/ building management company confirming that building-in-charge/ team lead of building management team of the building has been employed for at least 12 months prior to the time of first assessment submission. Licence no of building-in-charge of the building shall be indicated in the undertaking letter.

2. Provide a screen capture from Property Management Services Authority register of licensees (online version) to show that building-in-charge/ team lead of building management team of the building is a formal property management practitioners (Tier 1) holder under the Property Management Services Ordinance (Cap.626) for at least 12 months prior to the time of first assessment submission.

3. Provide BEAM Professional certificate to show that building-in-charge/ team lead of building management team of the building is a BEAM Professional with EB v3.0 credential for at least 6 months prior to the time of first assessment submission; and

4. Organisation chart to demonstrate the line of authority of the building-in-charge.

(b) Staff Training

1. Provide the training records for the staff members responsible for MO&M for at least 12 months prior to the time of first assessment submission.

2. The topics of the training are not regulated but the training shall be related to MO&M and policies on ESG issues under credit head MAN-02-01b. The minimum training requirements are 15 hours and 6 hours per year for the building-in-charge and other staff respectively.

3. Only staff members of the Building Management Company are included in the assessment. Staff members of sub-contractors are excluded from the assessment.

Submittals

(a) BEAM Accredited and Professional Qualified Personnel

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-03-01a_00	EB submission form for MAN-03-01a	√	√
MAN-03-01a_01	Undertaking letter from the top management of building owner/ building management company	√	√
MAN-03-01a_02	Screen capture from Property Management Services Authority register of licensees (online version)	√	√
MAN-03-01a_03	BEAM Professional certificate	√	√
MAN-03-01a_04	Organisation chart	√	√

(b) Staff Training

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-03-01b_00	EB submission form for MAN-03-01b	√	√
MAN-03-01b_01	Training records for the staff members responsible for MO&M	-	√

Remarks

(a) Additional Information

Property Management Services Authority, register of licensees (online version). [ONLINE]
Available at:
https://eapplication.pmsa.org.hk/registers/#m-practitioners
[Accessed Mar 2024]

Hong Kong Green Building Council publishes the latest registers of BEAM Professionals and BEAM Affiliates on its website. [ONLINE]
Available at:
https://practitioner2.hkgbc.org.hk/index.php?r=Beam/Directory
[Accessed Mar 2024].

(b) Related Credit Heads

2 Management **MAN-03 Operation and Maintenance**

MAN-03-02 Building and Site Operation and Maintenance

This credit head is not applicable under EB v3.0.

2 Management **MAN-03 Operation and Maintenance**

MAN-03-03 Building Services Operation and Maintenance

This credit head is not applicable under EB v3.0.

2 Management **MAN-03 Operation and Maintenance**

MAN-03-04 Facility Management Plan

Extent of Application All building types

Objective Ensure that buildings and associated facilities are well-maintained, safe, and efficient.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for demonstrating that a facility management plan has been developed.

Assessment

1. Provide a facility management plan for routine facility management exercise and cover at least five (5) of the following aspects:
   a. Green purchasing;
   b. O&M for E&M systems (Electrical, Heating Ventilation and Air Conditioning, Plumbing and Drainage, Fire Services and Lift and Escalator, if applicable);
   c. O&M for Building structures (Building facade; Curtain wall; and External cladding);
   d. O&M for External facilities (Roads and pavements; Hard and soft landscape areas; Stairs & ramps; and Recreational facilities.);
   e. O&M for landscape;
   f. Green cleaning;
   g. Integrated Pest Management;
   h. IAQ management; and
   i. Renovations and/or Retrofitting.
2. Each aspect shall include the inspection procedure, list of measures to be adopted, a planned schedule for the next 12 months, feedback and communication channel.
3. The facility management plan shall be endorsed by building-in-charge or the top management of building owner/ building management company.
4. It is not necessary to submit O&M manual of the above E&M systems for assessment,

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-03-04_00	EB submission form for MAN-03-04	√	√
MAN-03-04_01	Endorsed facility management plan	√	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

2 Management **MAN-03 Operation and Maintenance**

MAN-03-05 Smart Facility Management

Extent of Application All building types

Objective Promote adoption of best practices and innovative technologies for continual improvement in E&M asset management.

Credit point(s) Attainable 6

Credit Requirement

(a) Predictive Maintenance Practices

1 to 2 credit points for implementing at least five (5)/ ten (10) applicable good practices as stipulated in Best Practices for Operation and Maintenance Service of HVAC, Electrical and Lift and Escalator installations.

2 credit points for implementing at least five (5) applicable best practices as stipulated in Best Practices for Operation and Maintenance Service of HVAC, Electrical and Lift and Escalator installations.

(b) Digitalised Facility Management

2 credits for adoption of digitalised facility management system.

Assessment

(a) Predictive Maintenance Practices

1. Provide a report detailing applicable good/ best practices as stipulated in Best Practices for Operation and Maintenance Service of HVAC, Electrical and Lift and Escalator installations.

2. One (1) best practice can be counted for one (1) good practice under the same key model framework of Best Practices for Operation and Maintenance Service.

(b) Digitalised Facility Management

1. Provide screenshots of the digitalised facility management system, which covers the following aspects:
   a. Maintenance requests;
   b. Inventory & supply management;
   c. Schedule requests for preventive maintenance;
   d. Work order management;
   e. Inspection and maintenance records management;
   f. Asset tracking; and
   g. Capital planning & forecasting.

2. Digitalised facility management system shall be a single platform with the following features as a minimum:
   a. Utilisation of information from sensory devices (e.g. leakage detection); and
   b. Centralised the management and tracking of all maintenance records. Building management team can plan, control, supervise technical staff, report issues, schedule maintenance, and assign work orders via mobile app or on a desktop.

Submittals

(a) Predictive Maintenance Practices

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-03-05a_00	EB submission form for MAN-03-05a	√	√
MAN-03-05a_01	Summary table listing the applicable good/ best practices, and their locations (if applicable)	√	√
MAN-03-05a_02	Drawings showing the practices (if applicable)	√	√
MAN-03-05a_03	Report showing justifications and details for each practice	√	√

(b) Digitalised Facility Management

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-03-05b_00	EB submission form for MAN-03-05b	√	√
MAN-03-05b_01	Screenshots of the digitalised facility management system	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department - Best Practices for Operation and Maintenance Service [ONLINE]
Available at:
https://bestpractice.emsd.gov.hk/en/
[Accessed Mar 2024]

(b) Related Credit Heads

2 Management **MAN-03 Operation and Maintenance**

MAN-03-06 BIM Integration

Extent of Application All building types

Objective Promote the use of BIM for asset management and facility management to support green and intelligent building approach.

Credit point(s) Attainable 3

Credit Requirement

(a) Maintenance of BIM Model

1 credit points for maintaining BIM model including as-built fixtures, finishes and equipment data.

(b) Use of BIM Model

2 additional credit points for using BIM model for asset management and facility management.

Assessment

(a) Maintenance of BIM Model

1. Provide screenshots of the asset information/ properties of BIM model to demonstrate that the following documents are already incorporated into the model:
   a. Fixtures;
   b. Finishes; and
   c. Equipment data.

(b) Use of BIM Model

1. Provide a narrative that demonstrate the quantified environmental benefit by using BIM for asset management and facility management to support green and intelligent building approach.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-03-06_00	EB submission form for MAN-03-06	√	√
MAN-03-06_01	Screenshots of the asset information/ properties of BIM model	√	√
MAN-03-06_02	A narrative, with calculation of environmental benefit and relevant supporting information, for the use of BIM for asset management and facility management	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department - Building Information Modelling - Asset Management (BIM-AM) [ONLINE]
Available at:
https://www.emsd.gov.hk/en/engineering_services/project_management_consultancy/highlights_of_work/bim_am/
[Accessed Mar 2024]
The Hong Kong Construction Industry Council – CIC BIM Standards. [ONLINE].
Available at:
https://www.bim.cic.hk/en/resources/publications?cate=3&keyword=.
[Accessed Mar 2024].

The American Institute of Architects (AIA) - The American G202™ – 2013, Project Building Information Modelling Protocol Form [ONLINE].
Available at:
https://contractdocs.aia.org/PreviewFiles/Preview_G202-2013%20OmniClass.pdf.
[Accessed Mar 2024].

(b) Related Credit Heads

2 Management **MAN-04 Green and Healthy Management**

MAN-04-01 Green Lease

Extent of Application All building types with tenant

Objective Encourage landlord-tenant collaboration in agreeing and implementing green goals.

Credit point(s) Attainable 4

Credit Requirement

(a) Green Lease Incentive

1 credit point for inclusion of measurable KPI/ sustainability tasks on carbon related reduction targets in the green lease.

(b) Green Lease Coverage

1 to 3 credit points for at least 5%/ 10%/ 15% by leased area of tenants are engaged with the green lease.

Assessment

(a) Green Lease Incentive

1. Provide a sample of typical tenancy agreement with green lease, at the time of first assessment submission and an undertaking letter from the top management of building owner/ building management company, specifying measurable KPI/ sustainability tasks on carbon related reduction targets. Confidential/ sensitive information on the tenancy agreement is not required and could be excluded.

2. Green lease shall incorporate clauses whereby the building owner and the tenant undertake specific responsibilities/obligations with regards to the sustainable operation/occupation of a property. For example, energy efficiency, water conservation, waste reduction/ management and sustainable renovation.

(b) Green Lease Coverage

1. Provide calculation of green lease coverage (%) by below equation:

$$\textbf{Green Lease Coverage}\ (\%) = \left(\frac{\sum \textbf{Leased Area With Green Lease}}{\textbf{Total Leased Area}}\right) \times \textbf{100}\%$$

2. Only leased area at the time of first assessment submission shall be included in the calculation.

3. Provide summary of leased area at the time of first assessment submission.

Submittals

(a) Green Lease Incentive

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-04-01b_00	EB submission form for MAN-04-01b	√	√
MAN-04-01b_01	A sample of typical tenancy agreement with green lease and an undertaking letter from the top management of building owner/ building management company	√	√

(b) Green Lease Coverage

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-04-01c_00	EB submission form for MAN-04-01c	√	√
MAN-04-01c_01	Calculation of green lease coverage	√	√
MAN-04-01c_02	Summary of leased area	√	√

Remarks

(a) Additional Information

Hong Kong Green building Council Limited - Green Tenancy Driver for Office Buildings [ONLINE]
Available at:
https://www.hkgbc.org.hk/eng/engagement/guidebooks/green-tenancy-driver/index.jsp
[Accessed Mar 2024]

(b) Related Credit Heads

2 Management **MAN-04 Green and Healthy Management**

MAN-04-02 Green Cleaning

This credit head is not applicable under EB v3.0.

2 Management **MAN-04 Green and Healthy Management**

MAN-04-03 Tenant Engagement Programme

Extent of Application All building types with tenants

Objective Encourage the building and its tenants to cooperate in good faith to improve carbon related performance.

Credit point(s) Attainable 5

Credit Requirement

(a) Capacity Building Programme(s)

1 credit point for organising capacity building programme(s) to the tenant for at least 25% of leased area.

(b) Free Carbon Audit To Tenants

1 credit point for offering free carbon audit to the tenants for at least 5% of leased area to help them identify carbon reduction opportunities.

1 additional credit point for assisting tenant to establish carbon related reduction percentage target based on the findings of carbon audit.

(c) Award For Recognition

1 credit point for organising award for recognition of excellence in carbon reduction of tenant.

(d) Carbon Related Pledge

1 credit point for implementing carbon related pledge, with measurable KPI/ sustainability tasks for at least 25% of leased area.

Assessment

(a) Capacity Building Programme

1. Provide a narrative outlining the details of capacity building programme(s), including name, date, content, attendance record of tenant and record photographs.

2. The content of capacity building programme(s) shall be related to enhancement of tenants' sustainability capabilities to drive carbon reduction.

3. The capacity building programme(s) shall be organised within 12 months prior to the time of first assessment submission.

4. Provide calculation of capacity building programme(s) coverage (%) by below equation:

$$\textbf{Capacity Building Programme(s) Coverage}\ (\%) = \left(\frac{\sum \textbf{Leased Area Taking Part in Capacity Building Programme}\ (\boldsymbol{s})}{\textbf{Total Leased Area}}\right) \times \mathbf{100}\%$$

5. Provide summary of leased area within the past 12 months at the time of first assessment submission.

6. Same tenant(s) joining different capacity building programmes shall not double counted.

(b) Free Carbon Audit To Tenant

1. Provide calculation of free carbon audit coverage (%) by below equation:

$$\textbf{Free Carbon Audit Coverage}\ (\%) = \left(\frac{\sum \textbf{Leased Area With Free Carbon Audit}}{\textbf{Total Leased Area}}\right) \times \mathbf{100}\%$$

2. Provide summary of leased area within the past 12 months at the time of first assessment submission.

3. Provide a copy of carbon audit report in accordance with the Greenhouse Gas Protocol.

4. The carbon audit report shall meet the following requirements:
   a. Conducted within the past 12 months at the time of first assessment submission;
   b. Endorsed by a certified carbon auditor;
   c. Included all emissions in Scopes 1 and 2; and
   d. Included water (if applicable) and paper use.

5. Provide carbon related reduction percentage target of Scopes 1 and 2 emissions, water (if applicable) and paper use in mid-term (by 2035) and long-term (by 2050). The target shall be endorsed by building-in-charge and the top management of tenant.

6. Building owner/ building management company is encouraged to assist tenant to establish carbon related reduction percentage target of scope 3 emissions.

(c) Award For Recognition

1. Provide a narrative outlining the details of award for recognition of excellence in carbon reduction of tenant, including name, date, content, attendance record of tenant and record photographs.

2. The content of award for recognition shall be related to enhancement of tenants' sustainability capabilities to drive carbon reduction.

3. The award for recognition shall be organised within 12 months prior to the time of first assessment submission.

(d) Carbon Related Pledge

1. Provide a narrative outlining the details of carbon related pledge, including name, date, measurable KPI/ sustainability tasks, signatory record and record photographs.

2. The pledge shall be organised within 12 months prior to the time of first assessment submission.

3. Provide calculation of pledge coverage (%) by below equation:

$$\textbf{Pledge Coverage}\ (\%) = \left(\frac{\sum \textbf{Leased Area Signing The Pledge}}{\textbf{Total Leased Area}}\right) \times \mathbf{100}\%$$

4. Provide summary of leased area within the past 12 months at the time of first assessment submission.

Submittals

(a) Capacity Building Programme(s)

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-04-03a_00	EB submission form for MAN-04-03a	√	√
MAN-04-03a_01	A narrative outlining the details of capacity building programme(s)	√	√
MAN-04-03a_02	Calculation of capacity building programme(s) coverage	-	√
MAN-04-03a_03	Summary of leased area within the past 12 months at the time of first assessment submission	-	√

(b) Free Carbon Audit To Tenant

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-04-03b_00	EB submission form for MAN-04-03b	√	√
MAN-04-03b_01	Calculation of free carbon audit coverage	-	√
MAN-04-03b_02	Summary of leased area within the past 12 months at the time of first assessment submission	-	√
MAN-04-03b_03	A copy of carbon audit report	√	√
MAN-04-03b_04	Endorsed carbon related reduction percentage target of Scopes 1 and 2 emissions in mid-term (by 2035) and long-term (by 2050)	√	√

(c) Award For Recognition

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-04-03c_00	EB submission form for MAN-04-03c	√	√
MAN-04-03c_01	A narrative outlining the details of award for recognition of excellence in carbon reduction of tenant	√	√

(d) Carbon Related Pledge

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MAN-04-03d_00	EB submission form for MAN-04-03d	√	√
MAN-04-03d_01	A narrative outlining the details of carbon related pledge	√	√
MAN-04-03d_02	Calculation of pledge coverage	-	√
MAN-04-03d_03	Summary of leased area within the past 12 months at the time of first assessment submission	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

3. Sustainable Site

Site location is important with regard to adequacy of local amenities and public transport provisions, reduction of travel needs and reliance on private vehicles. There is often an opportunity to enhance the quality of buildings through more thoughtful ‘greening’ and other features. The impacts on neighbouring developments and various discharges and emissions from the site can be significant throughout a building’s lifetime.

3 Sustainable Site **SS-01 Pollution Prevention and Control**

SS-01-01 Noise Control for Building Equipment

Extent of Application All building types

Objective Adopt proactive treatment to reduce the nuisance caused to the neighbours by noise from building services equipment.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for demonstrating the level of the intruding noise at the façade of the potential Noise Sensitive Receivers (NSRs) is in compliance with the criteria recommended in the Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites.

Assessment

2. Demonstrate the level of the intruding noise at the façade of the potential NSRs is in compliance with the criteria recommended in the Technical Memorandum.

3. Provide a noise prediction/ assessment report with detailed analysis, appropriate calculations and/ or measurements to demonstrate that the levels of the intruding noise at the façades of existing or planned noise sensitive receivers comply with the following assessment criteria:

    2.1 Provide a background noise measurement report with detailed monitoring records to support the ANL requirements of daytime, evening time and nighttime and background noise.

    2.2 On the basis of promoting good environmental design assessment, existing uses and land uses under statutory plans of Town Planning Ordinance should be examined to identify existing or planned noise sensitive developments. Where there is a piece of vacant land and no available information to verify its use, it should be assumed that it will become a noise sensitive receiver.

    2.3 Ideally, assessment should be made at 1m from the façade on the noise sensitive receiver. The compliance could be demonstrated by calculations and/ or measurements.

    2.4 If on-site measurement is opted for, compliance should be demonstrated by direct measurement of the intruding noise at the nearest location(s) of the representative noise sensitive receivers. Alternatively, under circumstances that access to the noise sensitive development is not granted for measurement, a combination of measurement at a nearby location with calculation adjustment, or a combination of sound power measurement at the intruding noise source and prediction of the noise level at the noise sensitive receivers based on the measured sound power and standard noise propagation equation, are permitted.

    2.5 The noise assessments shall be conducted in accordance with the Technical Memorandum.

2.6 Noise sensitive receivers should follow the Technical Memorandum. Only buildings external to the site boundary are assessed.

2.7 With reference to the Technical Memorandum and Noise Control Ordinance (NCO) (Cap. 400), noise emanating from domestic units does not fall under the purview of the Technical Memorandum, therefore, equipment in domestic units (i.e. domestic unit(s) in a residential building of the public/ private housing development and government quarters) should not be included in the assessment.

2.8 All major noise generating equipment in place other than domestic units in a residential building of public/ private housing development and government quarters should be assessed.

2.8.1 For areas served by central air-conditioning and ventilation systems, the major noise sources include air-cooled chillers, water cooling towers, air-cooled heat pumps, and axial and centrifugal fans (≥2.5kW each).

2.8.2 For areas served by de-centralised air-conditioning and ventilation systems, the major noise sources include outdoor air-conditioning units (with rated cooling capacity >7.1kW) and ventilating fans (i.e. axial and centrifugal fans ≥2.5kW each).

2.8.3 Only equipment provided by the developer/ owner is assessed.

2.9 All major fixed noise sources should be located and designed so that when assessed in accordance with the Technical Memorandum, the level of the intruding noise at 1m from the façade of the nearest sensitive receiver should be at least 5 dB(A) below the appropriate ANL shown in Table 2 of the Technical Memorandum or, in the case of the background being 5 dB(A) lower than the ANL, should not be higher than the background, in accordance with paragraph 4.2.13, Chapter 9 of the Hong Kong Planning Standards and Guidelines [3]. Applicants are required to justify the selected Area Sensitivity Rating (ASR).

2.10 The acoustic calculation and/ or measurement report should be endorsed by:

- Corporate Member of Hong Kong Institute of Acoustics; or
- Corporate/ certified/ full member of other international acoustic institution; or
- Member of HKIE (Building Services, Mechanical or Environmental discipline) with relevant experience in Acoustic/ Vibration Design.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-01-01_00	EB submission form for SS-01-01	√	√
SS-01-01_01	Summary table listing the nearest NSRs, building equipment sound level and quantities	√	√
SS-01-01_02	Location plan indicating the distance between NSRs and noise sources	√	√
SS-01-01_03	Equipment catalogues	√	√
SS-01-01_04	Calculation or measurement report	-	√

Remarks

(a) Additional Information

Environmental Protection Department - Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites. [ONLINE]. Available at: https://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/noise/guide_ref/files/tm_nondomestic.pdf. [Accessed July 2024]

Hong Kong Planning Standards and Guidelines, Chapter 9 Environment [ONLINE]. https://www.pland.gov.hk/pland_en/tech_doc/hkpsg/full/pdf/ch9.pdf [Accessed March 2024]

(b) Related Credit Heads

3 Sustainable Site **SS-01 Pollution Prevention and Control**

SS-01-02 Lighting Pollution Mitigation

Extent of Application All building types

Objective Minimise light pollution caused by external lighting.

Credit point(s) Attainable 2

Credit Requirement 1 credit point for switching off external lightings from 23:00 to 07:00.

1 additional credit point for switching off external lightings from 22:00 to 07:00.

Alternatively

- *2 credit points for no installation of external lighting.*

Assessment

1. Provide photo records of external area and exterior of the building.

2. Provide the following documents for demonstrating no external installed for the building:
   i. Layouts/ building services drawings demonstrating that there are no external lightings installed for the building;

3. Provide the following documents for demonstrating external lighting being switched off for abovesaid period:
   i. Layouts/ building services drawings highlighting all the external lightings;
   ii. Summary table listing the quantities and operation schedule of all external lightings;
   iii. Photo records of external lighting in both switch-on and switch-off state; and
   iv. External light management policy endorsed by top management for switching off the external light.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-01-02_00	EB submission form for SS-01-02	√	√
SS-01-02_01	Photo records of external area and exterior of the building	√	√
SS-01-02_02	Layouts/ building services drawings	√	√
SS-01-02_03	Summary table and operation schedule of all external lightings	√	√
SS-01-02_04	Photo records of external lighting in both switch-on and switch-off state	-	√
SS-01-02_05	External light management policy endorsed by top management	√	√

Remarks

(a) Additional Information

Task Force on External Lighting. Document for Engaging Stakeholders and the Public. [ONLINE]. Available at: https://www.eeb.gov.hk/sites/default/files/en/node3521/TFEL_Report_Eng.pdf [Accessed Mar 2024]

(b) Related Credit Heads

3 Sustainable Site **SS-02 Urban Biodiversity**

SS-02-01 Native Species

Extent of Application All building types

Objective Enhance the biodiversity of the site.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for providing diverse plant species with more than 20% to be native to Hong Kong climate condition.

Assessment

1. Greenery area is at least 5% of the site area.
2. Prepare a biodiversity survey report to demonstrate more than 20% of native or adaptive plant species are provided.
3. The report should include drawing showing the location of all the plants, calculation demonstration and photo records of all the plants.
4. Calculation is based on the soil area.
5. The biodiversity survey report should be endorsed by a qualified landscape architect or ecologist. Alternative measures proposed other than those listed for compliance is acceptable with justification.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-02-01_00	EB submission form for SS-02-01	√	√
SS-02-01_01	Biodiversity survey report	-	√

Remarks

(a) Additional Information

Guiding principles on use of native plant species in public works projects, Greening, Landscape and Tree Management Section (GLMTS), Development Bureau
[ONLINE] Available at:
https://www.greening.gov.hk/filemanager/greening/en/content_77/GuidelinesonUseofNativeSpecies-Textversionforwebsite_e.pdf

Pictorial Guide to Plant Resources for Skyrise Greenery in Hong Kong, Greening, Landscape & Tree Management Section, Development Bureau
[ONLINE] Available at: https://www.greening.gov.hk/en/greening-landscape/right-plant-right-place/skyrise-greenery/pictorial-guide-to-plant-resources-for-skyrise-gre/index.html

(b) Related Credit Heads

3 Sustainable Site **SS-03 Heat Island Reduction**

SS-03-01 Urban Heat Island Mitigation Measures

Extent of Application All building types

Objective Adopt various measures to mitigate urban heat island effect as to ensure the microclimate at the roof areas and reduce the temperature underneath, which in turn saving air-conditioning energy.

Credit point(s) Attainable 2

Credit Requirement 2 credit points for demonstrating listed strategies implemented for nonroof and roof area to meet the following requirement:

$$\frac{Area\ of\ nonroof\ with\ strategies}{0.5} + \frac{Area\ of\ high\ reflectance\ roof}{0.75} + \frac{Area\ of\ vegetated\ roof\ with\ strategies}{0.5} \geq Total\ nonroof\ area + Total\ roof\ area$$

List of strategies for nonroof area		
Greenery	Shading device	Blue spaces
Paving materials with solar reflectance (SR) of 0.33		
Other strategies proposed by the Applicant		

List of strategy for high reflectance roof
Roof Materials with Solar Reflectance Index (SRI) of 78 or above

List of strategies for vegetated roof	
Greenery	Roof farming
Other strategies proposed by the Applicant	

Assessment

1. Demonstrate the use of any combination of the strategies for the nonroof area and roof area with calculation, layout drawing and photo records.

   1.1 All greenery areas shall be measured based on the soil areas as shown on the drawings. Greenery in movable pots shall not be accounted. Reduction factor is not necessary for water feature.

   1.2 All roof farming areas shall be measured horizontally based on the soil areas as shown on the drawing.

   1.3 Areas occupied by mechanical equipment shall be excluded from total main roof area.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-03-01_00	EB submission form for SS-03-01	√	√
SS-03-01_01	Narrative of the strategies used with calculation	√	√
SS-03-01_02	Layout drawing	√	√
SS-03-01_03	Photo records of the strategies	-	√
SS-03-01_04	Catalogue or laboratory test reports of solar reflectance (SR) of paving materials	√	√
SS-03-01_05	Catalogue or laboratory test reports of solar reflectance index (SRI) of roof materials	√	√

Remarks

(a) Additional Information

Organic Farming, Agriculture, Fisheries and Conservation Department [ONLINE] Available at: https://www.afcd.gov.hk/english/agriculture/agr_orgfarm/agr_orgfarm.html [Accessed Mar 2024].

Greening, Landscape and Tree Management Section, Development Bureau
[ONLINE] Available at: http://www.greening.gov.hk/en/home/index.html [Accessed Mar 2024].

(b) Related Credit Heads

3 Sustainable Site **SS-04 Building-scale Climate Adaptation Measures**

SS-04-01 Building-scale Climate Adaptation Measures

Extent of Application All building types

Objective Enable the building to have a better adaptation to extreme climate events.

Credit point(s) Attainable 4

Credit Requirement Maximum 4 credit points for demonstrating one (1) to four (4) best practices on adapting buildings for aspect(s) below:

i) Heat waves;
ii) Typhoon;
iii) Lightning;
iv) Heavy precipitations;
v) Flooding; or
vi) Landslide.

Assessment

1. Provide an adaptation plan with respect to the concerned aspect listed in credit requirement for the project building. The plan should include the severity of the aspect and the potential outcome of the aspect to the project building.

2. Include corresponding solution(s) in the plan in response to the concerned aspect and elaborate how the solution(s) could enable the building to have a better adaptation to extreme climate events.

3. Submit the plan with the following:

   3.1 Description of the aspect, including the severity and potential outcome;

   3.2 Solution(s) in response to the aspect;

   3.3 Drawings of the solution(s); and

   3.4 Photo records of the solution(s).

4. The Applicant should refer to the European Union's publication: Building-scale Climate Adaptation Measures Best Practice Guidance for the assessment and solutions. Any other best practice guidelines should be submitted with the assessment report for substantiation if used.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-04-01_00	EB submission form for SS-04-01	√	√
SS-04-01_01	Adaptation plan	√	√

Remarks

(a) Additional Information

Building-scale Climate Adaptation Measures Best Practice Guidance, European Union
[ONLINE] Available at:
https://op.europa.eu/en/publication-detail/-/publication/b175c9cb-cc5b-11ed-a05c-01aa75ed71a1/language-en
[Accessed Mar 2024]

(b) Related Credit Heads

3 Sustainable Site **SS-05 Neighbourhood Integration**

SS-05-01 Neighbourhood Integration

Extent of Application All building types

Objective Integrate the project building with the neighbourhood community.

Credit point(s) Attainable 2

Credit Requirement

(a) Community Engagement

1 credit point for providing at least two (2) of the following items:

List of items	
On-site venues or public spaces for environmental programme	Permanent onsite display/ digital platform promoting local amenities
At least two (2) environmental related volunteer activities attended by employees of the building management team on a quarterly basis	At least one (1) community engagement programme promoting environmental related issues at no cost to public on a quarterly basis
Other features proposed by the Applicant	

(b) Community Space

1 credit point for providing at least two (2) of the following designated communal spaces/ strategies provided to occupants:

List of items	
On-site resting spaces with quality seating areas for public use at no cost	Outdoor garden with natural and restorative elements, such as trees, plants, water features, etc.
No smoking is allowed except designated smoking area which is not within 7.5m of all entrances and fresh air intake	On-site market selling local food organised regularly
Provision of canopy with a minimum width of 2m protected zone from wind-driven wind/ sunlight at outdoor/ semi-outdoor communal area	
Other features proposed by the Applicant	

Assessment

(a) Community Engagement

1. Provide a report detailing the community engagement items provided in this project.

2. The report should include summary table of items provided and drawings, photo records and information of each item.

3. If other features are proposed by the Applicant, an elaboration of how the features could meet the objective of this credit should be justified.

(b) Community Space

1. Provide a report detailing the community space items provided in this project.

2. The report should include summary table of items provided and drawings, photo records and information of each item.

3. If other features are proposed by the Applicant, an elaboration of how the features could meet the objective of this credit should be justified.

Submittals

(a) Community Engagement

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-05-01a_00	EB submission form for SS-05-01a	√	√
SS-05-01a_01	Report for community engagement	√	√

(b) Community Space

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-05-01b_00	EB submission form for SS-05-01b	√	√
SS-05-01b_01	Report for community space	√	√

Remarks

(a) Additional Information

Hong Kong Planning Standards and Guidelines. Chapter 3: Community Facilities, Planning Department [ONLINE] Available at: https://www.pland.gov.hk/pland_en/tech_doc/hkpsg/full/pdf/ch3.pdf [Accessed: Mar 2024]

Hong Kong Planning Standards and Guidelines. Chapter 4: Recreation, Open Space and Greening, Planning Department [ONLINE] Available at: https://www.pland.gov.hk/pland_en/tech_doc/hkpsg/full/pdf/ch4.pdf [Accessed Mar 2024]

(b) Related Credit Heads

3 Sustainable Site **SS-06 Low Carbon Commuting**

SS-06-01 Transportation Performance

Extent of Application All building types

Objective Promote low carbon commuting.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for achieving Accessibility Index of 15 or more for All building types of a development.

Assessment

1. Indicate the distances shown alongside unhampered walking routes within a walking distance of 1,000m from the site main entrance(s) to each public transport [2] stop or the main entrance of each station in vicinity on an A3-sized scaled drawing.

2. Provide evidence of service frequencies of the public transport.

3. Calculate the Accessibility Index (AI) for All building types of a development.

    3.1 Use service frequency data at peak periods for the calculation of waiting time.

    3.2 Adopt a walking speed of 80m per minute for the calculation of walk time.

    3.3 For a walking route using mechanical means to assist pedestrian movement, provide evidence to demonstrate:

        3.3.1 The mechanical means shall be in operation either at least between 7am to 7pm every day or a period that meets the specific needs of building users (occupancy pattern of the project to be justified by the Applicant);

        3.3.2 Mapping of the start and end points of the mechanical means shall be shown on a scaled drawing, and

        3.3.3 Calculation of the combined horizontal commuting time (walk times) plus horizontal commuting time of the mechanical means to the public transport services, wait time for vertical transportation to be excluded, with substantiation by supplier's information on the commuting speed of the mechanical installation. The combined horizontal commuting time to the public transport services shall not be more than 10 minutes.

4. Provide evidence issued by a government agency or a quasigovernment body for the targeted operation date of any future public transport services/ facilities. Future services/ facilities provisions not operable at the time of building completion will be accepted if they will be in operation no later than one year after the occupation of the proposed development.

5. For a site served by dedicated shuttle service vehicles for the development and to be considered under the AI method, provide the following:

5.1 Notification of services provisions by the service provider to building users confirming that:

5.1.1 Routes and stops of the shuttle services providing connection links to the public transport,

5.1.2 Capacity of the shuttle service vehicles,

5.1.3 Locations of the shuttle service drop-off/ pick-up points, and

5.1.4 Operating frequency of the services.

5.2 Justification of the adequacy of the service if the capacity of the shuttle service vehicles is below 16 passengers.

5.3 An undertaking letter by the developer/ property owner for the provision of the shuttle service for a minimum of 5 years. A minimum of 1 year rolling contract in place with the service provider submitted.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-06-01_00	EB submission form for SS-06-01	√	√
SS-06-01_01	Calculation for Accessibility Index	√	√
SS-06-01_02	Evidence of service frequencies of public transport	√	√
SS-06-01_03	Evidence for the operating hours and required information of mechanical means to assist pedestrian movement, and calculation of the combined horizontal commuting time	√	√
SS-06-01_04	Evidence issued by a government agency or a quasi-government body for the targeted operation dates of any future public transport services/ facilities	√	√
SS-06-01_05	Layout drawing for drop-off/ pick-up point(s) of shuttle service vehicles	√	√

Remarks

(a) Additional Information

Public Transport Accessibility Levels, Transport for London [ONLINE] Available at: https://data.london.gov.uk/dataset/public-transport-accessibility-levels [Accessed Mar 2024]

(b) Related Credit Heads

3 Sustainable Site **SS-06 Low Carbon Commuting**

SS-06-02 Promotion of Public Transportation

Extent of Application All building types

Objective Promote public transportation.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for providing at least two (2) of the following strategies to occupants that facilitate the use of public transportation:

List of strategies	
Permanent display of nearby public transportations information	Designated parking spaces for shuttle bus
Shuttle bus service to nearby MTR station/ Public Transport Interchange	Number of parking spaces at or below the maximum number allowable by code
Other features proposed by the Applicant	

Assessment

1. Provide a report detailing the promotion of public transportation items provided in this project.
2. The report should include summary table of items provided and drawing, photo records and information of each item.
3. If other features are proposed by the Applicant, an elaboration of how the features could meet the objective of this credit should be justified.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-06-02_00	EB submission form for SS-06-02	√	√
SS-06-02_01	Report for promotion of public transportation	√	√

Remarks

(a) Additional Information

Public Transport in Hong Kong, Transport Department
[ONLINE] Available at:
http://www.td.gov.hk/en/transport_in_hong_kong/public_transport/
[Accessed Mar 2024]

Internal Transport Facilities, Planning Department
[ONLINE] Available at:
https://www.pland.gov.hk/file/tech_doc/hkpsg/sum/pdf/sum_ch8_en.pdf [Accessed Mar 2024]

(b) Related Credit Heads

3 Sustainable Site **SS-06 Low Carbon Commuting**

SS-06-03 Active Commuting Support

Extent of Application All building types

Objective Promote active commuting.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for providing at least two (2) of the following facilities in supporting active commuting:

List of facilities	
Regular occupants' access to showers	Regular occupants' access to lockers
Designated spaces of cycling parking for regular occupants	Designated areas for bicycle washing & maintenance
Other features proposed by the Applicant	

Assessment

1. Provide a report detailing the active community support items provided in this project.
2. The report should include summary table of items provided and drawing, photo records and information of each item.
3. Cycling parking facilities should comply with the requirements in Section 6 – Cycling of Internal Transport Facilities presented in the Chapter 8 of HKPSG or Transport Department's requirements.
4. For non-residential projects or non-residential portion of mixed-use projects, 1 shower and / or locker should be provided for the first 100 regular building occupants (excluding occasional visitors) and one additional shower facility for every additional 150 regular building occupants.
5. If other features are proposed by the Applicant, an elaboration of how the features could meet the objective of this credit should be justified.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-06-03_00	EB submission form for SS-06-03	√	√
SS-06-03_01	Report for active community support	√	√

Remarks

(a) Additional Information

Hong Kong Planning Standards and Guidelines. Chapter 8: Internal Transport Facilities, Planning Department [ONLINE] Available at: https://www.pland.gov.hk/file/tech_doc/hkpsg/full/pdf/ch8.pdf [Accessed Jul 2024]

(b) Related Credit Heads

3 Sustainable Site **SS-06 Low Carbon Commuting**

SS-06-04 EV Charging Facilities

Extent of Application Buildings with carpark

Objective Promote the use of electric vehicles.

Credit point(s) Attainable 4

Credit Requirement 2 credit points for providing medium chargers (≥ 7kW) for at least 5% of all parking spaces for private cars, motorcycles and light good vehicles.

1 credit point for providing at least two (2) EV quick chargers (≥ 50kW) in the carpark.

1 credit point for providing at least one (1) quick charger (≥ 100kW) in the carpark area for coach, light bus or medium / heavy goods vehicle.

Assessment

1. Provide a summary report for the calculation of the percentage of EV medium chargers provided with respect to all parking spaces.
2. Provide schematic drawings and photos of the EV medium chargers and quick chargers for all parking spaces.
3. Provide the catalogues of the EV medium chargers and quick chargers installed.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
SS-06-04_00	EB submission form for SS-06-04	√	√
SS-06-04_01	Summary report of EV chargers	√	√
SS-06-04_02	Schematic drawings for the EV chargers	√	√
SS-06-04_03	Photo records of the EV chargers	-	√
SS-06-04_04	Catalogues of the EV chargers	√	√

Remarks

(a) Additional Information

Promotion of Electric Vehicles, Environmental Protection Department [ONLINE] Available at: https://www.epd.gov.hk/epd/english/environmentinhk/air/promotion_ev/promotion_ev.html [Accessed Mar 2024]

(b) Related Credit Heads

4. Material and Waste

The amount and types of materials used and the waste generated in operation and maintenance and fitting-out of buildings represents a significant use of natural resources. There are opportunities to reduce environmental impacts through interior design methods and choice of materials and products, in terms of extracted raw materials, emissions, and embodied energy. Discussion on waste management is more critical than before. It is important to encourage the stakeholders to recognise the importance of the waste management for existing buildings.

4 Material and Waste **MW-00** **Basic Requirement**

MW-00-P1 **Minimum Waste Handling Facilities**

This credit head is not applicable under EB v3.0.

4 Material and Waste **MW-01** **Use of Materials**

MW-01-01 **Building Re-use**

This credit head is not applicable under EB v3.0.

4 Material and Waste **MW-01** **Use of Materials**

MW-01-02 **Modular and Standardised Design**

This credit head is not applicable under EB v3.0.

4 Material and Waste **MW-01 Use of Materials**

MW-01-03 Prefabrication

This credit head is not applicable under EB v3.0.

4 Material and Waste

MW-01-01 Use of Materials

MW-01-04 Design for Durability and Resilience

This credit head is not applicable under EB v3.0.

4 Material and Waste **MW-02** **Selection of Materials**

MW-02-01 **Sustainable Forest Products**

This credit head is not applicable under EB v3.0.

4 Material and Waste **MW-02** **Selection of Materials**

MW-02-02 **Recycled Materials**

This credit head is not applicable under EB v3.0.

4 Materials and Waste **MW-02 Selection of Materials**

MW-02-03 Ozone Depleting Substances

Extent of Application All building types

Objective Reduce the release of harmful ozone-depleting substances into the atmosphere.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for demonstrating all the equipment (both newly purchased and existing) using the refrigerants with Global Warming Potential (GWP) ≤50.

Alternatively,

- *1 credit point for demonstrating a phased programme of refrigerant replacement for existing equipment with refrigerant GWP value > 50.*

- *1 credit point for demonstrating all the equipment (both newly purchased and existing) using refrigerants with a combined value less than or equal to the threshold for the combined contribution to ozone depletion and global warming potential.*

Assessment

1. Provide summary table listing the newly purchased and existing equipment, type, model number and refrigerant type.

2. Provide equipment catalogue or technical sheets to demonstrate the refrigerant type of all the equipment.

3. Provide photo record(s) for all the equipment using refrigerants.

4. Provide a phase out plan for detailing the following as a minimum (if applicable):

   4.1 Objectives;
   4.2 List of equipment with ozone depleting substances; and
   4.3 Phase out schedule

5. Demonstrate the newly purchased and existing equipment using refrigerants shall fulfil the following equation which determines a maximum threshold for the combined contributions to ozone depletion and global warming potentials (if applicable):

$$LCGWP + LCODP \times 10^5 \leq 13$$

LCODP = [GWPr x (Lr x Life + Mr) x Rc] / Life

GWPr = [ODPr x (Lr x Life + Mr) x Rc] / Life

ODPr = Ozone Depletion Potential of Refrigerant (0 to 0.2kg CFC 11/kg r)

Lr Refrigerant Leakage Rate (0.5% to 0.2%; default of 2% unless otherwise demonstrated)

Mr = End-of-life Refrigerant Loss (2% to 10%, default of 10% unless otherwise demonstrated)

Rc = Refrigerant Charge

Life = Equipment Life (default based on equipment type as listed in table below, unless otherwise demonstrated)

Equipment	Default Equipment Life
Window air-conditioner, hear pump	10 years
Unitary, split, packaged air-conditioner, package heat pump	15 years
Reciprocating and scroll compressor, reciprocating chiller	20 years
Absorption chiller	23 years
Water-cooled packaged air-conditioner	24 years
Centrifugal chiller	25 years

6. The newly purchased equipment is defined as the equipment that is purchased within the past 12 months.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-02-03_00	EB submission form for MW-02-03	√	√
MW-02-03_01	Summary table listing all the newly purchased and existing equipment, type, model number and refrigerant type	-	√
MW-02-03_02	Equipment catalogue or technical sheets to demonstrate the refrigerant type of the equipment.	√	√
MW-02-03_03	Phase out plan of refrigerant replacement for existing equipment (if applicable)	√	√
MW-02-03_04	Calculation of all equipment using refrigerant for the combined contributions to ozone depletion and global warming potentials	-	√

Remarks

(a) Additional Information

Environmental Protection Department. A Concise Guide to the Ozone Layer Protection Ordinance [ONLINE]. Available at: https://www.epd.gov.hk/epd/english/laws_regulations/comp_guides/files/cgto_olpo_eng.pdf
[Accessed Mar 2024]

Environmental Protection Department. A Concise Guide to the Ozone Layer Protection (Controlled Refrigerants) Regulation. [ONLINE]. Available at: https://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/air/ozone_layer_protection/files/GN2014P014-2014ar-e%20201604.pdf

[Accessed Mar 2024].

Environmental Protection Department. Ozone Layer Protection [ONLINE]. Available at: https://www.epd.gov.hk/epd/english/environmentinhk/air/ozone_layer_protection/wn6_info.html
[Accessed Mar 2024]

Environmental Protection Department. Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Institutional Purposes) in Hong Kong. [ONLINE]. Available at: https://www.epd.gov.hk/epd/sites/default/files/epd/gn_pdf/GN2014P097-2014c-e.pdf
[Accessed Mar 2024]

USGBC. LEED v4.1 for Building Operation and Maintenance.

(b) Related Credit Heads

4 Materials and Waste **MW-02** **Selection of Materials**

MW-02-04 **Regional Materials**

This credit head is not applicable under EB v3.0.

4 Materials and Waste **MW-02 Selection of Materials**

MW-02-05 Use of Green Products

Extent of Application All building types

Objective Encourage the use of certified green products during renovation/ major retrofitting works that have low environmental impacts.

Credit point(s) Attainable 6

Credit Requirement **(a) Green Building Components**

1-3 credit points for demonstrating at least 30%/ 50%/ 70% by cost of the renovated building components are certified green products endorsed by Construction Industry Council (CIC) Green Product Certification, or regionally or internationally recognised standard.

Types of building components are shown below:

Building Components			
Panel Board	Ceramic Tile	Adhesive & Sealant	Stone
Paint & Coating	Pavement Block	Thermal Insulation	Ready-mixed Concrete
Plant-based Fibre Composite	Block for Internal Partition		

(b) Green Building Services Systems

1-3 credit points for demonstrating at least 30%/ 50%/ 70% by cost of the additional/ replaced building services systems in major retrofitting works are certified green products endorsed by Construction Industry Council (CIC) Green Product Certification, or regionally or internationally recognised standard.

Types of building services systems are shown below:

Building Services Systems			
Thermal Insulations	VRF Split Type System	Cooling Tower	Air-handling Unit
Fan Coil Unit	Chiller	Water Pump	Cable & Wire
Lighting (LED lighting, Compact Fluorescent Lamp Bulb, Electronic Ballast)			

Assessment **(a) Green Building Components**

1. Only renovated building components that is completed within the past 12 months at the time of first submission shall be assessed.

2. Provide the percentage calculation of all the items including certified green building products.

$$\frac{\sum Renovated\ Green\ Building\ Component\ (\$)}{\sum Renovated\ Building\ Component\ (\$)} \text{ x } 100\%$$

3. Include a summary table listing the type of renovated building components, product name/ serial no., manufacturer, certification body, calculation and reference source.

4. Provide certificate(s) of the green building product(s).

5. Provide dated photo record(s).

6. For any green products, which have been certified under other internationally recognised schemes, the Applicant should refer to the list of worldwide recognised Green Building Product Certifications and Standards under HKGBC's Eco-Product Directory (https://epdir.hkgbc.org.hk/isubpagex.php?serial=31) or provide the product's technical information with justification for BSL's consideration.

(b) Green Building Services Systems

1. Only additional/ replaced building services systems in major retrofitting works completed within the past 12 months at the time of first submission shall be assessed. The Applicant shall make reference to Building Energy Efficiency Ordinance (Cap. 610) for the definition of major retrofitting works.

2. Provide the percentage calculation of all the items including certified green building services products.

$$\frac{\sum Retrofitted\ Green\ Building\ Services\ Systems\ (\$)}{\sum Retrofitted\ Building\ Services\ Systems\ (\$)} \text{ x } 100\%$$

3. Include a summary table listing the type of retrofitted building services systems, product name/ serial no., manufacturer, certification body, calculation and reference source.

4. Provide certificate(s) of the green building services product(s).

5. Provide dated photo record(s).

6. For any green products, which have been certified under other internationally recognised schemes, the Applicant should refer to the list of worldwide recognised Green Building Product Certifications and Standards under HKGBC's Eco-Product Directory (https://epdir.hkgbc.org.hk/isubpagex.php?serial=31) or provide the product's technical information with justification for BSL's consideration.

Submittals

(a) Green Building Components

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-02-05a_00	EB submission form for MW-02-05a	√	√
MW-02-05a_01	Summary table listing the type of renovated building components, product name/ serial no., manufacturer, certification body, percentage calculation and reference source.	√	√
MW-02-05a_02	Layout drawing(s) showing the provision(s)	-	√
MW-02-05a_03	Dated photo record(s) showing the provision(s)	-	√
MW-02-05a_04	Certificate(s) of the green building product(s)	√	√

(b) Green Building Services Systems

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-02-05b_00	EB submission form for MW-02-05b	√	√
MW-02-05b_01	Summary table listing the type of retrofitted building services systems, product name/ serial no., manufacturer, certification body, percentage calculation and reference source.	√	√
MW-02-05b_02	Layout drawing(s) showing the provision(s)	-	√
MW-02-05b_03	Dated photo record(s) showing the provision(s)	-	√
MW-02-05b_04	Certificate(s) of the green building services product(s)	-	√

Remarks

(a) Additional Information

CIC Green Product Certification [ONLINE]. Available at: http://cicgpc.hkgbc.org.hk
[Accessed Mar 2024]

HKGBC's Eco-Product Directory [ONLINE]. Available at: https://epdir.hkgbc.org.hk/isubpagex.php?serial=31
[Accessed Mar 2024]

(b) Related Credit Heads

4 Materials and Waste **MW-02 Selection of Materials**

MW-02-06 Life Cycle Costing

Extent of Application All building types

Objective Encourage the use of life cycle costing to facilitate investigation of potential design options, specifications, operation and maintenance.

Credit point(s) Attainable 2

Credit Requirement 2 credit points for conducting life cycle costing analysis for active systems when undertaking major retrofitting works.

Assessment

1. The Applicant shall make reference to Building Energy Efficiency Ordinance (Cap. 610) for the definition of major retrofitting works. Only major retrofitting works that is completed or commenced within the past and next 12 months at the time of first submission shall be assessed.

2. Conduct life cycle costing analysis with design options for all of the following active systems (if presented in the retrofitting scope) when undertaking major retrofitting works:

   2.1 Hot water system;
   2.2 Interior lighting system;
   2.3 Air-conditioning system;
   2.4 Lift & escalators;
   2.5 Plumbing and drainage systems; and
   2.6 Electrical system.

3. The life cycle costing analysis can be non-discounted and should include the following costs:
   3.1 Acquisition (supply and installation costs);
   3.2 Operation (utilities); and
   3.3 Maintenance (replacements, planned maintenance and management costs).

   While developing design options, the applicant should consider different configurations and specifications, for example, initial costs, number of equipment units involved, equipment efficiency and lifespan, etc.

4. Indicate cost of each design option of active system over 20, 30, 40 and 50 years and highlight which design option will have the lowest life cycle cost at the 50th year.

5. Prepare a life cycle costing report including all the assumptions made and the results of life cycle costing.

6. Substantiate the costs with catalogues, suppliers' recommendations or quotation. Cost approximations suggested by Quantitative Surveyor are also accepted. No professional life cycle software is required for this study.

7. The life cycle costing report should include at least the below items with a minimum of 8 A4 pages:

   7.1 Executive summary;
   7.2 Project description with retrofitting scope;

7.3 System options to be considered;
7.4 Life cycle costing and analysis; and
7.5 Conclusion.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-02-06_00	EB submission form for MW-02-06	√	√
MW-02-06_01	Life cycle costing report	√	√

Remarks

(a) Additional Information

ISO 15686-5:2008 Buildings & constructed assets – Service life planning – Part 5: Life cycle costing

(b) Related Credit Heads

4 Material and Waste **MW-03** **Waste Reduction**

MW-03-01 **Adaptability and Deconstruction**

This credit head is not applicable under EB v3.0.

4 Materials and Waste **MW-03 Waste Reduction**

MW-03-02 Enhanced Waste Handling Facilities

Extent of Application All building types

Objective Reduce pressure on landfill sites by promoting recycling of waste materials.

Credit point(s) Attainable 6

Credit Requirement **(a) Recyclables Collection**

1 to 2 credit points for demonstrating the provisions of on-site recycling facilities of any three (3)/ five (5) of the following waste streams:

Credit Point(s)			
Paper/ Carboard, Metal, Plastics and Glass	Regulated Electrical Equipment (REE)	Tetra Pack	Clothes
Fluorescent Lamps and Tubes	Rechargeable Batteries	Small Electrical Appliances (cookers, toasters, ovens, irons, hair-dryers, phones, etc.)	
Dried/ Canned Food	Food Waste	Restaurant Waste (Used Cooking Oils, Grease Trap Waste)	
Other recyclables may be proposed at the discretion of the Applicant			

(b) Recycling Performance

1 to 4 credit points for demonstrating the annual recycling percentage by weight over the past 12 months meeting the prescribed requirements.

Credit Point(s)	Annual Recycling Percentage
1	10%
2	15%
3	20%
4	25% or above

Assessment **(a) Recyclables Collection**

1. Provide at least one storage bin/ storage area for recycling for each recyclable stream. Same type of recycling facilities in multiple locations can only be counted once. The size of the recycling facilities and collection frequency are not regulated. The facilities shall be placed in a prominent location (i.e. cannot be located in a car park or other unoccupied spaces).

2. Provide collection organisation/ recycler information.

3. Provide sample recycling record of each applicable recyclables.

(b) Recycling Performance

1. Provide waste flow table with all waste and recycle records for the past 12 months.

2. Calculate the annual recycling percentage with the support of all waste and recycle records.

Submittals

(a) Recyclables Collection

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-03-02a_00	EB submission form for MW-03-02a	√	√
MW-03-02a_01	Drawings showing the locations of the recycling facilities	√	√
MW-03-02a_02	Dated photo record(s) showing the provision of facilities	-	√
MW-03-02a_03	Collection organisation/ recycler information, including company name, address and contact information	√	√
MW-03-02a_04	Sample recycling record of each applicable recyclables	-	√

(b) Recycling Performance

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-03-02b_00	EB submission form for MW-03-02b	√	√
MW-03-02b_01	Waste flow table with all waste and recycle records	√	√
MW-03-02b_02	Calculation on annual recycling percentage	√	√

Remarks

(a) Additional Information

None.

(b) Related Credit Heads

4 Materials and Waste **MW-03 Waste Reduction**

MW-03-03 Action to Waste Reduction

Extent of Application All building types

Objective Encourage best practices for the management of waste, including minimising, sorting, recycling and disposal of waste.

Credit point(s) Attainable 3

Credit Requirement

(a) Waste Management Plan

1 credit point for developing and implementing WMP for building operations.

(b) Waste Stream Audit

1 credit point for conducting waste stream audit.

(c) Enhanced Waste Management Practices

1 credit point for developing and/or implementing actions to improve recycling performance.

Assessment

(a) Waste Management Plan

1. Provide a Waste Management Plan (WMP) endorsed by top management of Building Owner/ Building Management Company, including the following content as minimum:

   1.1. Objectives;
   1.2. Responsibility;
   1.3. Waste minimisation programme;
   1.4. Waste recycle/ reuse programme;
   1.5. Waste data collection system;
   1.6. Influence on building users (e.g. training/ workshop/ campaign);
   1.7. Resource allocation;
   1.8. Training for staff; and
   1.9. Reporting to top management.

2. Provide records such as monthly reports or photo records showing the WMP was properly implemented.

(b) Waste Stream Audit

1. Provide a waste audit report that identifies the types and quantities of waste that are expected regularly (from day to day use) etc. The audit should determine the amounts of materials that have potential for reducing or recycling. Site survey and recommendations are required.

2. The waste stream audit shall be conducted within the past 12 months at the time of first submission.

(c) Enhanced Waste Management Practices

1. Demonstrate actions are developed and/ or implemented to improve recycling performance.

Submittals

(a) Waste Management Plan

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-03-03a_00	EB submission form for MW-03-03a	√	√
MW-03-03a_01	Endorsed WMP	√	√
MW-03-03a_02	Implementation records of WMP	-	√

(b) Waste Stream Audit

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-03-03b_00	EB submission form for MW-03-03b	√	√
MW-03-03b_01	Waste Audit Report	√	√

(c) Enhanced Waste Management Practices

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-03-03c_00	EB submission form for MW-03-03c	√	√
MW-03-03c_01	Action plan/ implementation records for recycling performance improvement	-	√

Remarks

(a) Additional Information

Environmental Protection Department – Green Office and Property Management – Waste Reduction and Recycling Information Booklet [ONLINE] Available at: https://www.wastereduction.gov.hk/sites/default/files/resources_centre/Green_Office_and_Property_Management-Waste_Reduction_and_Recycling_Information_Booklet.pdf [Accessed Mar 2024]

(b) Related Credit Heads

4 Materials and Waste **MW-03 Waste Reduction**

MW-03-04 Waste Reduction Performance

Extent of Application All building types

Objective Promote waste reduction and advocate the continual improvement for waste management

Credit point(s) Attainable 7

Credit Requirement

(a) Reduction at Source

1 to 5 credit points for demonstrating an annual waste reduction by weight for the past 12 months meeting the prescribed requirements. Baseline year can be any year in the past 36 months.

Credit Point(s)	Annual Waste Reduction Percentage
1	2%
2	4%
3	6%
4	8%
5	10% or above

(b) Continual Improvement

2 credit points for demonstrating a continuous reduction trend of waste generation over the past 36 months.

Assessment

(a) Reduction at Source

1. Provide waste flow table with all waste records for the past 12 months and the baseline year.

2. Calculate the annual waste reduction percentage.

(b) Continual Improvement

1. Provide waste flow table with all waste records for the past 36 months.

2. Calculate the annual waste reduction percentage for the past 36 months and demonstrate there are continuous waste reduction for each year.

Submittals

(a) Reduction at Source

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-03-04a_00	EB submission form for MW-03-04a	√	√
MW-03-04a_01	Waste flow table with all waste records for the past 12 months and the baseline year	√	√
MW-03-04a_02	Calculation on annual waste reduction percentage	√	√

(b) Continual Improvement

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-03-04b_00	EB submission form for MW-03-04b	√	√
MW-03-04b_01	Waste flow table with all waste records for the past 36 months	√	√
MW-03-04b_02	Calculation on annual waste reduction percentage for the past 36 months	√	√

Remarks

(a) Additional Information

None.

(b) Related Credit Heads

4 Material and Waste **MW-04** **Best Practice on Material Usage**

MW-04-01 **Best Practice on Material Usage**

This credit head is not applicable under EB v3.0.

4 Materials and Waste **MW-04 Best Practice on Material Usage**

MW-04-02 Green Purchasing Practices

Extent of Application All building types

Objective Encourage adoption of green purchasing practices to reduce environmental impacts of product used.

Credit point(s) Attainable 6

Credit Requirement Maximum 6 credits for purchasing environmentally friendly or certified products for one (1) to three (3) types of consumable or durable goods in the past 12 months.

Credit Point(s)	Percentage of Environmentally Friendly or Certified Item for each type of consumable or durable goods
1	60%
2	80%

Types of consumables and durable goods are shown below:

Consumable Goods/ Products	
Batteries	Envelops, business card etc.
Paper towel and toilet tissue	Plastic bags
Printing paper	Toner cartridge
Durable	
Computers	Lamps
Paint	Office furniture

Assessment

1. Provide the percentage calculation (by mass/ cost/ volume/ number of pieces) of each type of environmentally friendly/ certified product.
2. Provide a summary table listing the product type, manufacturer, quantities, and environmental attribute.
3. Provide document(s) to substantiate the environmental attributes.
4. Provide sample photo record(s) of the environmentally friendly/ certified products.
5. The Applicant may make reference to the Green Specifications published by Environmental Protection Department (EPD) [1] for environmentally friendly products or provide the product's technical information with justification for BSL's consideration.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
MW-04-02_00	EB submission form for MW-04-02	√	√
MW-04-02_01	Calculation showing the percentage of environmentally friendly/ certified product(s)	√	√
MW-04-02_02	Summary of environmentally friendly/ certified products	√	√
MW-04-02_03	Supporting documents showing the environmental attributes	√	√
MW-04-02_04	Sample photo record(s) of the environmentally friendly/ certified product(s)	-	√

Remarks

(a) Additional Information

[1] Environmental Protection Department – Green Specifications [ONLINE] Available at: https://www.epd.gov.hk/epd/english/how_help/green_procure/green_spec.html [Accessed Mar 2024]

(b) Related Credit Heads

5. Energy Use

An objective of EB v3.0 is to encourage thorough evaluation of the performance of building and services system designs, and greater investments into measures that will help to improve the energy performance of existing buildings, so as to reduce energy consumption and the associated environmental impacts, and summer peak electricity demand.

The assessment of the building and engineering systems is performance based as far as possible, but credits are also given to features which have proven to contribute to energy efficiency and conservation. Credits are given when management, operation and maintenance practices seek to achieve continual improvements in energy performance.

5 Energy Use EU-01 Building Energy Analysis

EU-01-01 Minimum Energy Performance

Extent of Application

All building types

Objective

Encourage the project building operator to monitor and review the energy performance of the building services installation through energy audit.

Credit point(s) Attainable

1

Credit Requirement

1 credit point for conducting energy audit in accordance with the requirements stipulated in the Code of Practice for Building Energy Audit issued by Electrical and Mechanical Services Department, HKSAR.

Assessment

1. Provide an energy audit report confirming that an energy audit has been completed in accordance with the requirements stipulated in the Code of Practice for Building Energy Audit issued by Electrical and Mechanical Services Department, HKSAR.

2. The energy audit report shall meet the following requirements:

   2.1. Conducted within past 5 years from the date of submission;

   2.2. Endorsed by a Registered Energy Assessor (REA) with REA registration number stated in the report; and

   2.3. Include all elements as stipulated in the Code of Practice for Building Energy Audit issued by Electrical and Mechanical Services Department HKSAR.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-01-01_00	EB submission form for EU-01-01	√	√
EU-01-01_01	REA endorsed energy audit report	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department, Code of Practice for Building Energy Audit 2021 Edition (EAC 2021). [ONLINE]. Available at: https://www.emsd.gov.hk/beeo/en/pee/EAC_2021.pdf [Accessed Mar 2024]

Electrical and Mechanical Services Department, Technical Guidelines on Energy Audit Code 2021 Edition (TG-EAC 2021). [ONLINE]. Available at: https://www.emsd.gov.hk/beeo/en/pee/TG-EAC_2021.pdf [Accessed Mar 2024]

(b) Related Credit Heads

None

5 Energy Use **EU-01 Building Energy Analysis**

EU-01-02 Metering and Monitoring

Extent of Application All building types

Objective Ensure building operators to measure, monitor the performance of building engineering systems, facilitate auditing works and develop improvement plans for the systems.

Credit point(s) Attainable 6

Credit Requirement

(a) Metering Provisions

1 credit point for equipping metering facilities to monitor and collect energy consumption data for landlord's electrical loads.

1 to 3 credit points for equipping metering facilities to monitor and collect energy consumption data for 2, 4 or 6 numbers of the following electrical loads of landlord controlled system:

1) Chiller;
2) Chiller plant;
3) Cooling tower plant;
4) Air side equipment;
5) Mechanical ventilation system (rated power ≥2.5kW);
6) Lighting installation;
7) Lift and escalator systems;
8) Plumbing and drainage systems.

1 additional credit point for equipping metering facilities to monitor and collect energy consumption data for plug load/ receptable load/ small power of landlord controlled area.

(b) Performance Auditing

1 credit point for equipping performance monitoring systems to monitor and collect operating performance data for the following landlord's controlled systems:

1) Chiller;
2) Chiller Plant;
3) Cooling tower plant;
4) Air side equipment; and
5) Mechanical ventilation system.

Assessment

(a) Metering Provisions

1. Provide separate metering facilities to collect building level energy consumption for landlord's controlled area.

2. Provide metering facilities for the following individual installation in landlord's controlled area, where present in the project:

   2.1. Energy consumption of each chiller,
   2.2. Energy consumption of each equipment in chiller/ heating plant;
   2.3. Energy consumption of each cooling tower plant; and

2.4. Energy consumption of each equipment in HVAC air-side system (i.e. air handling unit, and primary air unit).

3. Provide metering facilities for collecting energy consumption data of the following installations in landlord's controlled area, where present in the project, allowing one single meter for each type of installation:

   3.1. Energy consumption of mechanical ventilation system (rated power ≥2.5kW);
   3.2. Energy consumption of lighting system;
   3.3. Energy consumption of lift and escalator system;
   3.4. Energy consumption of plumbing and drainage system; and
   3.5. Energy consumption of plug load/ receptable load/ small power.

4. Energy monitoring system covers the energy consumption of the equipment. Electrical metering should comply with BS EN accuracy class 1 or equivalent.

5. Monitoring record should be at intervals of one hour or less and capable to record both consumption and demand (i.e. kWh and kW).

6. The entire energy monitoring system is capable to store metering data for at least 36 months.

(b) Performance Auditing

1. Provide performance auditing monitoring system for all the following systems in landlord's controlled area:

   1.1. Chiller;
   1.2. Chiller plant;
   1.3. Cooling tower plant (if applicable);
   1.4. Air side equipment; and
   1.5. Mechanical ventilation system.

2. Performance auditing monitoring system covers operating characteristics as summarised as below:

System (if applicable)	Monitoring Parameter
Chiller	- Chilled/ condenser water supply & return water temperature (°C) - Chilled/ condenser water flow rate (m^3/s) - Water pressure (kPa) - Cooling capacity
Chiller Plant	- Chilled/ condenser water supply & return water temperature (°C) - Chilled/ condenser water flow rate (m^3/s) - Water pressure (kPa) - Cooling capacity
Cooling tower plant	- Air flow rate (m^3/s) - Pressure head (Pa)
Air side equipment - Primary air/ air handling units	- Supply and return air temperature (°C) - Flow rate (m^3/s) - Pressure (Pa)

Mechanical ventilation system - Carpark ventilation - Mechanical ventilation (≥2.5kW each)	- CO/ NOx concentration level, if applicable - Flow rate (m^3/s) - Pressure (Pa)

3. Sensors for operating performance monitoring should meet the minimum accuracy requirements in ASHRAE Standard 114 or similar equivalent.

4. Monitoring record should be at intervals of 30-minute or less and capable to record the operating performance data for at least 36 months.

Submittals

(a) Metering Provisions

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-01-02a_00	EB submission form for EU-01-02a	√	√
EU-01-02a_01	Electrical schematics highlighting the metering locations	√	√
EU-01-02a_02	Electrical load breakdown summary table of metering	-	√
EU-01-02a_03	Schematic drawings and point schedule of BMS	√	√
EU-01-02a_04	Catalogues of metering facilities/ BMS	√	√
EU-01-02a_05	Record photos of metering system	-	√

(b) Performance Auditing

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-01-02b_00	EB submission form for EU-01-02b	√	√
EU-01-02b_01	Schematic drawings and point schedule of BMS	√	√
EU-01-02b_02	Catalogues of monitoring facilities/ BMS	√	√
EU-01-02b_03	Record photos of BMS showing the logging of operating performance data	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

EU-01-03 Energy Consumption Monitoring

5 Energy Use **EU-01 Building Energy Analysis**

EU-01-03 Energy Consumption Monitoring

Extent of Application All building types

Objective Encourage building operators to make good use of the monitoring facilities to review the energy performance of the building in regular basis.

Credit point(s) Attainable 10 (for buildings with central A/C system);
8 (for buildings with de-centralised A/C system only)

Credit Requirement

(d) Building Energy Consumption

1 credit point for providing total building energy consumption for landlord area for the past 12 months.

(e) Energy Breakdown of Electrical Loads

i) Air-conditioning system
Buildings with central A/C system
1 to 2 credit points for providing energy consumption breakdown of water-side equipment for landlord area for the past 12 or 36 months:

a. Chiller plant;
b. Chiller; and
c. Cooling tower plant (if applicable).

1 to 2 credit points for providing energy consumption of air-side equipment (i.e. primary air unit, air handling units, etc. air distribution units) for landlord area for the past 12 or 36 months.

Buildings with de-centralised A/C system only

1 to 2 credit points for providing energy consumption of unitary/ VRV system for landlord area for the past 12 or 36 months.

ii) Other systems

1 to 2 credit points for providing energy consumption breakdown of any three of the following systems for landlord's controlled area for the past 12 or 36 months:

a. Lighting system;
b. Mechanical ventilation system;
c. Lift and escalator systems; and
d. Plumbing and drainage systems.

(f) Analysis of Building Energy Consumption

1 credit point for conducting annual review and analysis of energy consumption.

Assessment

(a) Building Energy Consumption

1. Provide energy consumption records for landlord area for the past 12 months.

2. Provide a summary table of the annual energy consumption for the past 12 months.

(b) Energy Breakdown of Electrical Loads

1. Provide energy consumption records for different electrical loads for past the 12 or 36 months:

   Air-conditioning system
   a. Chiller
   b. Chiller plant
   c. Cooling tower plant
   d. Unitary/ VRV A/C systems (only applicable for buildings with de-centralised A/C system)

   Other systems
   a. Lighting system
   b. Mechanical ventilation system
   c. Lift and escalator systems
   d. Plumbing and drainage systems

2. Provide a summary table of the annual energy breakdown for the past 12 or 36 months.

(c) Analysis of Building Energy Consumption

1. Provide report demonstrating energy consumption is reviewed in annual basis. The report shall include:

   1.1. Monthly energy consumption summary table and chart for the past 24 months;
   1.2. Analysis of annual energy consumption trend and pattern of different electrical loads;
   1.3. Recommendation and action plan for improving energy performance of building, if any.

Submittals

(a) Building Energy Consumption

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-01-03a_00	EB submission form for EU-01-03a	√	√
EU-01-03a_01	Energy consumption data records for landlord's controlled area for the past 12 months from the date of submission	-	√
EU-01-03a_02	Summary table of energy consumption for landlord's controlled area	-	√

(b) Energy Breakdown of Electrical Loads

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-01-03b_00	EB submission form for EU-01-03b	√	√
EU-01-03b_01	Energy consumption data records of breakdown for electrical loads for the past 12 or 36 months from the date of submission	-	√
EU-01-03b_02	Summary table of energy breakdown for electrical loads	-	√

(c) Analysis of Building Energy Consumption

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-01-03c_00	EB submission form for EU-01-03c	√	√
EU-01-03c_01	Review report of building energy consumption within 12 months from the date of submission	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

EU-01-02 Metering and Monitoring

5 Energy Use **EU-02 Energy Saving Performance**

EU-02-01 Energy Consumption Reduction

Extent of Application All building types

Objective Reduce the building energy consumption and consequent carbon dioxide (CO_2) towards carbon neutrality

Credit point(s) Attainable 12

Credit Requirement

(a) Self-improvement of Energy Utilisation Index

1 to 10 credit points when annual energy utilisation index (EUI) is reduced in a percentage below compared with that of past 5 years.

Credit Point(s)	Percentage of reduction in EUI
1	≥ 2%
2	≥ 4%
3	≥ 6%
4	≥ 8%
5	≥ 10%
6	≥ 12%
7	≥ 14%
8	≥ 16%
9	≥ 18%
10	≥ 20%

(b) Continuous Energy Consumption Reduction Trend

2 credit points when landlord's energy consumption is continuously reduced over past 3 years.

Assessment

(a) Self-improvement of Energy Consumption

1. Provide summary table with supporting documents such as electricity bills, metering records for the energy consumption of past 1st to 12th months (assessment period) and past 25th to 60th months (baseline period).

2. Provide calculation for the percentage of reduction of energy utilisation index of the landlord's controlled area of the assessment period compared with that of baseline period.

(b) Continuous Energy Consumption Reduction Trend

1. Provide annual comparison of energy consumption demonstrating continuous reduction throughout 3 years.

Submittals

(a) Self-improvement of Energy Consumption

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-02-01a_00	EB submission form for EU-02-01a	√	√
EU-02-01a_01	Summary table of energy consumption of baseline and assessment period	√	√
EU-02-01a_01	Calculation of percentage of reduction of EUI	√	√
EU-02-01a_02	Energy consumption records of baseline and assessment period	√	√

(b) Continuous Energy Consumption Reduction Trend

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-02-01b_00	EB submission form for EU-02-01	√	√
EU-02-01b_01	Calculation of annual reduction of energy consumption	√	√
EU-02-01b_02	Energy consumption records of the past 36 months	√	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

None

5 Energy Use **EU-02 Energy Saving Performance**

EU-02-02 Energy Use Intensity (EUI) Benchmarking

Extent of Application
a) Building types covered by EMSD benchmarking tools;
b) All building types

Objective
Enable peer review of the building energy performance and disclose the energy performance to advocate industry to set target and improvement for carbon neutrality.

Credit point(s) Attainable 12

Credit Requirement

(a) Benchmarking

1 to 4 credit points when the energy performance of the landlord's control area of the project achieves the below percentile under EMSD Benchmarking Tool.

Credit Point(s)	Percentile under EMSD Benchmarking Tool
1	40th
2	30th
3	20th
4	10th

(b) Zero-Carbon-Ready Building Certification

1 to 4 credit points when the landlord's controlled area of the project achieves the below ratings under Energy Performance Certificate of the Zero-Carbon-Ready Building Certification scheme.

Credit Point(s)	Rating under Energy Performance Certificate
1	Low
2	Extra Low
3	Super Low
4	Zero-Carbon-Ready

Additional 1 to 4 credit points when the whole building energy consumption of the project (i.e. both tenant and landlord areas are included) achieves the below ratings under Energy Performance Certificate of the scheme.

Credit Point(s)	Rating under Energy Performance Certificate
1	Low
2	Extra Low
3	Super Low
4	Zero-Carbon-Ready

Assessment

(a) Benchmarking

1. Conduct benchmarking by EMSD Benchmarking Tool for the project building.

2. The data used for the benchmarking shall be within the past 12 months at the time of submission.

3. Provide the benchmarking result obtained from EMSD.

(b) Zero-Carbon-Ready Building Certification

1. Apply for the Zero-Carbon-Ready Building Certification and engage an Energy Assessor-ZCRB to conduct an independent assessment.

2. Provide the valid Energy Performance Certificate.

Submittals

(a) EMSD Benchmarking

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-02-02a_00	EB submission form for EU-02-02a	√	√
EU-02-02a_01	Screenshot showing the input parameters for EMSD benchmarking tool	√	√
EU-02-02a_02	Supporting documents of the input parameters	√	√
EU-02-02a_03	Benchmarking result showing the percentile of the project's subgroup	√	√

(b) Zero-Carbon-Ready Building Certification

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-02-02b_00	EB submission form for EU-02-02b	√	√
EU-02-02b_01	Valid Energy Performance Certificate issued by HKGBC	-	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department. Energy Consumption Indicators & Benchmarking Tools. [ONLINE]
Available at: https://ecib.emsd.gov.hk/index.php/en/

Hong Kong Green Building Council Limited. Zero-Carbon-Ready Building Certification Scheme. [ONLINE]
Available at: https://zcrbc.hkgbc.org.hk/

(b) Related Credit Heads

None

5 Energy Use **EU-03 Building Energy Optimisation**

EU-03-01 Retro-commissioning (RCx)

Extent of Application All building types

Objective Promote energy saving through a systematic process to identify operational improvements to enhance building energy efficiency.

Credit point(s) Attainable 9

Credit Requirement

(a) Planning Stage

2 credit points to develop retro-commissioning plan for engineering systems.

(b) Investigation Stage

2 credit points to identify and select energy saving opportunities.

(c) Implementation Stage

2 credit points to implement the identified energy saving opportunities and conduct measurement and verification and prepare measurement and verification report.

1 credit point to develop a retro-commissioning final report.

(d) Ongoing Commissioning Stage

1 credit point to develop an ongoing commissioning plan.

1 credit point to carry out ongoing commissioning in accordance with ongoing commissioning plan.

Assessment

(a) Planning Stage

1. Develop a RCx plan with the following contents in minimum:

   1.1. General description of the engineering systems identified;
   1.2. Scope of RCx;
   1.3. Description of RCx team with their roles and responsibilities;
   1.4. Master programme of RCx;
   1.5. Observation from the initial walk-through and interview of O&M staff/ building operators;
   1.6. Review of energy performance of the building;
   1.7. Initial analysis of engineering systems below in minimum:
      1.7.1 HVAC system, including water side and air side equipment;
      1.7.2 Lighting system; and
      1.7.3 Lift & escalator system.
   1.8. Findings in planning stage.

2. The RCx plan shall be endorsed by a RCx Professional.

(b) Investigation Stage

1. Provide an RCx investigation report with the following contents in minimum:

    1.1. Detail analysis of engineering systems with the trend logged data, including:
    1.2. Identification of potential energy saving opportunities (ESOs);
    1.3. Proposed measurement and verification (M&V) methods for the proposed ESOs; and
    1.4. List of selected ESOs.

2. The RCx investigation report shall be endorsed by a RCx Professional.

(c) Implementation Stage

1. Implement of the selected ESOs in investigation stage and provide implementation records including:

    1.1. Purchase records/ work order of the improvement works;
    1.2. On-site photo records; and
    1.3. Testing & commissioning records.

2. Perform measurement and verification of energy saving performance as agreed and reported in RCx investigation report for each implemented ESO. The M&V report shall be prepared with the following content:

    2.1 List of implemented ESOs;
    2.2 ESOs that were planned but not implemented;
    2.3 Changes in implemented ESOs as per original plans;
    2.4 Documentation of facility adjustments; and
    2.5 Energy performance or energy improvement results.

3. Provide an RCx final report with the following contents in minimum:

    3.1. Executive Summary;
    3.2. Current facility requirement;
    3.3. The findings log with descriptions of the implemented measures;
    3.4. Updated savings estimates and actual improvement costs;
    3.5. The Central Control & Monitoring System (CCMS) trending plan and data logger diagnostic/monitoring plan;
    3.6. All completed equipment and system investigation tests and results;
    3.7. Recommended frequency for re-commissioning;
    3.8. Complete documentation of revised or new control sequences, if any;
    3.9. Recommendations for maintaining the new improvements;
    3.10. Training Summary including training materials; and
    3.11. A list of capital improvements recommended for further investigation.

4. RCx implementation report and M&V report shall be endorsed by a RCx Professional.

(d) On-going Commissioning Stage

1. Develop an ongoing commissioning plan with the following contents in minimum:

   1.1. Roles and responsibilities;
   1.2. Policies and procedures for updating building documentation;
   1.3. Requirement for tracking energy and system performance;
   1.4. Collection of operational data for continuous energy use analysis; and
   1.5. Recommendation of periodically re-commissioning of the building systems.

2. Carry out on-going commissioning in accordance with the on-going commissioning plan. The implementation records may include:

   2.1 Energy and system performance record and operational data;
   2.2 Review/ inspection report of system performance; and
   2.3 On-site photo records of re-commissioning.

3. On-going commissioning plan shall be endorsed by a RCx Professional.

Submittals

(a) Planning Stage

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-01a_00	EB submission form for EU-03-01a	√	√
EU-03-01a_01	RCx plan endorsed by RCx Professional	√	√
EU-03-01a_02	Certificate of RCx Professional [or] Screenshot of HKGBC RCx Directory	√	√

(b) Investigation Stage

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-01b_00	EB submission form for EU-03-01b	√	√
EU-03-01b_01	RCx investigation report endorsed by RCx Professional	-	√

(c) Implementation Stage

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-01c_00	EB submission form for EU-03-01c	√	√
EU-03-01c_01	RCx implementation report endorsed by RCx Professional	-	√
EU-03-01c_02	Implementation records of the implemented energy saving opportunities	-	√
EU-03-01c_03	Measurement and verification records of the implemented energy saving opportunities	-	√
EU-03-01c_04	Measurement and verification report	-	√
EU-03-01c_05	RCx final report endorsed by RCx Professional	-	√
EU-03-01c_06	Ongoing commissioning plan endorsed by RCx Professional	-	√

(d) Ongoing Commissioning Stage

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-01d_00	EB submission form for EU-03-01d	√	√
EU-03-01d_01	On-going commissioning plan endorsed by RCx Professional	√	√
EU-03-01d_02	Records demonstrating implementation in accordance with the on-going commissioning plan	-	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department. Technical Guidelines on Retro-commissioning. [ONLINE] Available at: https://www.energysaving.gov.hk/filemanager/template/common/pdf/rcx/EMSD-TG-RCx-Main-Content-Eng.pdf

(b) Related Credit Heads

None

5 Energy Use **EU-03 Building Energy Optimisation**

EU-03-02 Peak Demand Management

Extent of Application All building types

Objective Enhance efficiency of energy generation and distribution through demand side management and achieve peak demand reduction.

Credit point(s) Attainable 2

Credit Requirement

(a) Development of Peak Demand Management Plan

1 credit point for developing Peak Demand Management Plan.

(b) Execution of Peak Demand Management Plan

1 credit point for execution of the Peak Demand Management Plan.

Assessment

(a) Development of Peak Demand Management Plan

1. Develop Peak Demand Management (PDM) Plan with the contents below:

   1.1 Identification of condition(s) requiring peak demand response, including but not limited to extreme weather (e.g. ambient temperature is higher than 33 ^{o}C);
   1.2 Potential for demand response participation;
   1.3 Strategies for reducing peak demand;
   1.4 Procedures and responses to execute the program measures for adjustment of operation of building systems in response to the potential event(s); and
   1.5 Description of end-use systems that will be affected, such as HVAC or lighting, etc., on a stand-alone or integrated basis, during participation in demand response events.

2. The plan shall be endorsed by building-in-charge or the top management of building owner/ building management company.

(b) Execution of Peak Demand Management Plan

1. Provide the implementation records of peak demand response strategies as stipulated in the PDM Plan.

2. Provide calculation of peak demand reduction of the event period compared with the baseline peak demand to demonstrate the peak demand is reduced of the adopted peak demand response strategies.

3. The baseline peak demand is defined as average hourly load of the event period of the three highest-load days in the 10 preceding non-event days.

4. Peak demand response shall be made in form of pre-programmed measures. Reduction made by directly turning off end-use system(s) is not eligible for credit attainment.

Submittals

(a) Development of Peak Demand Management Plan

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-02a_00	EB submission form for EU-03-02a	√	√
EU-03-02a_01	Peak Demand Management Plan endorsed by building-in-charge or the top management	√	√

(b) Execution of Peak Demand Management Plan

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-02b_00	EB submission form for EU-03-02b	√	√
EU-03-02b_01	Implementation records of peak demand response strategies	-	√
EU-03-02b_02	Calculation of peak demand reduction of PDM event(s)	-	√
EU-03-02b_03	Metering records of the hourly load of the event period on event day and the 10 preceding non-event days	-	√

Remarks

(a) Additional Information

CLP Power Hong Kong Limited, Peak Demand Management. [ONLINE] Available at: https://www.clp.com.hk/en/business/low-carbon-solutions/energy-management/peak-demand-management

(b) Related Credit Heads

None

5 Energy Use **EU-03 Building Energy Optimisation**

EU-03-03 Water-side Plant Efficiency

Extent of Application All types of building with central A/C systems

Objective Improve the water side A/C system efficiency through continuous optimisation and system upgrade.

Credit point(s) Attainable 4

Credit Requirement

(a) Performance of Chiller

2 credit points when the coefficient of performance for chiller meets the threshold as stipulated in latest edition of Building Energy Code.

(b) Performance of Cooling Tower

1 to 2 credit points when cooling tower meets the thresholds below:

Credit Point(s)	Water flow per unit tower fan motor power (L/s per kW)	
	Centrifugal fans	Propeller/ axial fans
1	1.6	3.2
2	1.5	3.0

Assessment

(a) Performance of Chiller

1. Provide equipment schedule summarising the installed chillers supported with the annotated HVAC schematic and layout drawings for water side system.

2. Provide calculation for Coefficient of Performance (COP) of chillers. The lowest COP of the chiller will be assessed for the credit attainment.

$$COP = \frac{\text{Cooling capacity of chiller (kW)}}{\text{Rated input power (kW)}}$$

3. Provide catalogue and/or technical specification of the installed chiller showing the full load and part load performance.

(b) Performance of Cooling Tower

1. Provide equipment schedule summarising the installed cooling towers supported with the annotated HVAC schematic and layout drawings for water side system.

2. Provide calculation for efficiency of cooling tower. The lowest efficiency of the cooling tower will be assessed for the credit attainment.

$$Efficiency = \frac{\text{Condenser water flow rate (L/s)}}{\text{Rated fan motor power (kW)}}$$

3. Provide catalogue of the installed cooling tower.

Submittals

(a) Performance of Chiller

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-03a_00	EB submission form for EU-03-03a	√	√
EU-03-03a_01	Equipment schedule of installed chiller(s)	√	√
EU-03-03a_02	Annotated HVAC schematic and layout drawings for chiller(s)	√	√
EU-03-03a_03	Calculation of COP of installed chiller(s)	√	√
EU-03-03a_04	Catalogue of installed chiller(s)	√	√

(b) Performance of Cooling Tower

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-03b_00	EB submission form for EU-03-03b	√	√
EU-03-03b_01	Equipment schedule of installed cooling tower(s)	√	√
EU-03-03b_02	Annotated HVAC schematic and layout drawings for cooling tower(s)	√	√
EU-03-03b_03	Calculation of Water flow per unit tower fan motor power of installed cooling tower(s)	√	√
EU-03-03b_04	Catalogue of installed cooling tower(s)	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department, Code of Practice for Building Energy Audit 2021 Edition (EAC 2021). [ONLINE] Available at: https://www.emsd.gov.hk/beeo/en/pee/EAC_2021.pdf [Accessed Mar 2024]

(b) Related Credit Heads

None

5 Energy Use **EU-03 Building Energy Optimisation**

EU-03-04 Air Distribution System Efficiency

Extent of Application All types of building with central A/C systems

Objective Improve the air side A/C system efficiency through continuous optimisation and system upgrade.

Credit point(s) Attainable 2

Credit Requirement

1 to 2 credit points when the efficiency of air handling units (AHUs) and/or primary air unit (PAUs) meet the thresholds below:

Credit Point(s)	Efficiency of air distribution system (Rated fan power per unit air flow rate, W per L/s)	
	Constant speed fan	Variable speed fan
1	1.5	2.0
2	1.6	1.9

Assessment

1. Provide equipment schedule summarising the installed air handling units and/or primary air units.
2. Only air distribution system fan power higher than 2.5kW and individual fan motor power higher than 1kW will be assessed.
3. Provide annotated HVAC schematic and layout drawings for the concerned air distribution system.
4. Provide calculation for efficiency of AHUs and/or PAUs. The lowest efficiency of the ventilation fan will be assessed for the credit attainment.

$$Efficiency = \frac{\text{Rated fan power (W)}}{\text{Air flow rate (L/s)}}$$

5. Provide catalogue and/or technical specification of the installed AHUs and/or PAUs.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-04_00	EB submission form for EU-03-04	√	√
EU-03-04_01	Equipment schedule of installed primary air unit(s) and air handling unit(s)	√	√
EU-03-04_02	Annotated HVAC schematic and layout drawings for air distribution system	√	√
EU-03-04_03	Catalogue of installed primary air unit(s) and air handling unit(s)	√	√
EU-03-04_04	Calculation of rated fan power per unit air flow rate of installed primary air unit(s) and air handling unit(s)	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department, Code of Practice for Building Energy Audit 2021 Edition (EAC 2021). [ONLINE] Available at: https://www.emsd.gov.hk/beeo/en/pee/EAC_2021.pdf
[Accessed Mar 2024]

(b) Related Credit Heads

None

5 Energy Use **EU-03 Building Energy Optimisation**

EU-03-05 Maximum Allowable Fan Power for Mechanical Ventilation System

Extent of Application All building types

Objective Improve the ventilation fan efficiency through continuous optimisation and system upgrade.

Credit point(s) Attainable 2

Credit Requirement 1 to 2 credit points when mechanical ventilation fans meet the thresholds below:

Credit Point(s)	Efficiency of mechanical ventilation system (Rated fan power per unit air flow rate, W per L/s)	
	Constant speed fan	Variable speed fan
1	1.5	2.0
2	1.6	1.9

Assessment

1. Provide equipment schedule summarising the installed ventilation fans.
2. Only mechanical system fan power higher than 2.5kW will be assessed.
3. Provide annotated HVAC schematic and layout drawings for the concerned equipment.
4. Provide calculation for efficiency of ventilation fans. The lowest efficiency of the ventilation fan will be assessed for the credit attainment.

$$Efficiency = \frac{\text{Rated fan power (W)}}{\text{Air flow rate (L/s)}}$$

5. Provide catalogue and/or technical specification of the installed ventilation fans.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-05_00	EB submission form for EU-03-05	√	√
EU-03-05_01	Equipment schedule of installed ventilation fans	√	√
EU-03-05_02	Annotated HVAC schematic and layout drawings for ventilation fans	√	√
EU-03-05_03	Catalogue of installed ventilation fans	√	√
EU-03-05_04	Calculation of rated fan power per unit air flow rate of applicable ventilation fans	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department, Code of Practice for Building Energy Audit 2021 Edition (EAC 2021). [ONLINE] Available at: https://www.emsd.gov.hk/beeo/en/pee/EAC_2021.pdf
[Accessed Mar 2024]

(b) Related Credit Heads

None

5 Energy Use **EU-03 Building Energy Optimisation**

EU-03-06 Maximum Allowable Lighting Power Density

Extent of Application All building types

Objective Improve the lighting power density through continuous optimisation and system upgrade.

Credit point(s) Attainable 3

Credit Requirement 1 to 3 credit points when total lighting power of at least 90% of landlord's controlled area reduce 0 to 4% compared with latest edition of Building Energy Code (BEC):

Credit Point(s)	Percentage of reduction in lighting power
1	Fulfilment of latest edition of BEC
2	2%
3	4%

Assessment

1. Provide space area schedule for the concerned spaces for assessment. The area shall be at least 90% of the total landlord controlled area.

2. Provide lighting schedule summarising the installed types of lighting fixtures.

3. Provide annotated lighting layout drawings for the concerned spaces.

4. Provide calculation for reduction of total lighting power compared with the baseline power in accordance with latest edition of BEC.

$$Reduction\ \% = (1 - \frac{\sum_i LPD_{Design,i} \times Area_i}{\sum_i LPD_{BEC.i} \times Area_i}) \times 100\%$$

where,
i is the concerned space for assessment;
LPD_{Design} is the lighting power density of as-built designated type of space; and
LPD_{BEC} is the lighting power density of designated type of space as stipulated in latest edition of BEC.

5. Provide catalogue and/or technical specification of the installed lighting fixtures.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-03-06_00	EB submission form for EU-03-06	√	√
EU-03-06_01	Space area schedule of the concerned space for assessment	√	√
EU-03-06_02	Installed lighting schedule	√	√
EU-03-06_03	Annotated lighting layout drawings showing the concerned space for assessment	√	√
EU-03-06_04	Catalogue of installed lighting fixtures	√	√
EU-03-06_05	Calculation of lighting power reduction percentage	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department, Code of Practice for Building Energy Audit 2021 Edition (EAC 2021). [ONLINE] Available at: https://www.emsd.gov.hk/beeo/en/pee/EAC_2021.pdf [Accessed Mar 2024]

(b) Related Credit Heads

None

5 Energy Use **EU-04 Net-zero Ready Operations**

EU-04-01 Renewable and Alternative Energy Systems

Extent of Application All building types

Objective Encourage the wider application of renewable energy sources in buildings.

Credit point(s) Attainable 15

Credit Requirement

(a) On-site Renewable Energy Application

1 to 10 credit points for using on-site renewable energy systems to offset annual building energy consumption.

Credit Point(s)	Percentage of Annual Building Energy Consumption
1	0.2%
2	0.4%
3	0.6%
4	0.8%
5	1.0%
6	1.2%
7	1.4%
8	1.6%
9	1.8%
10	2.0%

(b) Renewable Energy Certificate

1 to 5 credit point(s) for purchasing renewable energy certificate to offset annual landlord energy consumption.

Credit Point(s)	Percentage of Annual Building Energy Consumption
1	10%
2	20%
3	30%
4	40%
5	50%

Assessment

(a) On-site Renewable Energy Application

1. Calculate the percentage of annual energy consumption obtained from the on-site renewable energy sources with the annual landlord energy consumption.

$$\frac{\text{Annual energy generated by on} - \text{site renewable energy systems (kWh)}}{\text{Annual landlord energy consumption (kWh)}}$$

2. Energy use and losses by the systems shall be discounted from the output;

3. To demonstrate the amount of energy generation from renewable energy sources, calculation shall be provided for system operate less than 1 year; or measurement shall be provided for system operate for more than 1 year;

4. The calculation shall be referenced to the energy generation/ consumption in past 12 months from the date of submission.

(b) Renewable Energy Certificate

1. Calculate the percentage of annual energy consumption obtained from the on-site renewable energy sources with the annual landlord energy consumption.

$$\frac{\text{Renewable energy purchased from the Authority (kWh)}}{\text{Annual landlord energy consumption (kWh)}}$$

2. The calculation shall be referenced to the energy consumption in past 12 months from the date of submission.

Submittals

(a) On-site Renewable Energy Application

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-04-01a_00	EB submission form for EU-04-01a	√	√
EU-04-01a_01	Calculation for percentage of annual on-site renewable energy generation and annual electricity consumption	√	√
EU-04-01a_02	Electrical bills and/or metering records for annual on-site renewable energy generation and annual electricity consumption	-	√
EU-04-01a_03	Manufacturer specification/ catalogue of the renewable energy system(s)	√	√
EU-04-01a_04	As-built drawings of the renewable energy system(s)	√	√
EU-04-01a_05	On-site photos of the renewable energy system(s)	-	√

(b) Renewable Energy Certificate

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-04-01b_00	EB submission form for EU-04-01b	√	√
EU-04-01b_01	Calculation for percentage of renewable energy purchased and annual electricity consumption	√	√
EU-04-01b_02	Renewable Energy Certificate issued by the Authority	-	√
EU-04-01b_03	Electrical bills and/or metering records for annual electricity consumption	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

None

5 Energy Use **EU-04 Net-zero Ready Operations**

EU-04-02 Carbon Footprint Management

Extent of Application All building types

Objective Encourage building owner to assess carbon emissions for setting emission reduction targets, and progress toward carbon neutrality.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for conducting carbon audit to measure all Greenhouse Gas emissions in Scopes 1, 2 and water and paper use under Scope 3 plus one additional GHG emission in Scope 3 in accordance with The Greenhouse Gas Protocol.

Assessment

1. Provide a carbon audit or Greenhouse Gas (GHG) emission audit report in accordance with the Greenhouse Gas Protocol.

2. The carbon audit report shall meet the following requirements:

   2.1. Carbon audit was conducted within 3 years from the date of submission;

   2.2. Endorsed by a certified carbon auditor;

   2.3. Include all emissions in Scopes 1 and 2; and

   2.4. Apart from water and paper use, 1 additional GHG emission shall be included for emission in Scope 3.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
EU-04-02_00	EB submission form for EU-04-02	√	√
EU-04-02_01	Carbon audit report endorsed by qualified services provider	√	√

Remarks

(a) Additional Information

Electrical and Mechanical Services Department, Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, Residential or Intuitional Purposes) in Hong Kong.

The World Business Council for Sustainable Development and Word Resources Institute, The Greenhouse Gas Protocol.

(b) Related Credit Heads

None

6. Water Use

Water is known to be in scarce supply in many parts of the world. Globally, water storage is already a major issue. International cooperation is essential in tackling the global water shortage problem. Sharing best practices, technologies, and resources can help countries facing water scarcity find innovative solutions and work towards sustainable water management.

6 Water Use

WU-00 Basic Requirement

WU-00-01 Minimum Water Saving Performance

This credit head is not applicable under EB v3.0.

6 Water Use **WU-01 Water Conservation**

WU-01-01 Use of Water Efficient Flow Devices

Extent of Application All building types

Objective Reduce the consumption of fresh water through the application of water saving devices that have proven performance and reliability.

Credit point(s) Attainable 2

Credit Requirement 1 or 2 credit points when 80% or 100% of all installed water taps and shower heads for bathing (if any) are certified with Water Efficiency Labelling Scheme (WELS) Grade 1 or equipped with WELS Grade 1 flow controllers.

Assessment

1. Demonstrate that all water taps and shower heads for bathing (if any) installed at the locations under the control of the landlord are certified with Water Efficiency Labelling Scheme (WELS) Grade 1 or equipped with WELS Grade 1 flow controllers.

2. Water taps for cleansing and/ or irrigation are excluded from assessment.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-01-01_00	BEAM Plus EB submission form for WU-01-01	√	√
WU-01-01_01	Schedule of water taps and shower heads for bathing (if any) installed at the locations under the control of the landlord	√	√
WU-01-01_02	Manufacturer's specification or catalogues of water taps and shower heads for bathing (if any) with WELS certificate [or] Manufacturer's specification or catalogues of flow controllers with WELS certificate	√	√
WU-01-01_03	On-site photographs of the water efficient flow devices	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

None

6 Water Use **WU-01 Water Conservation**

WU-01-02 Water Efficient Irrigation

Extent of Application Project with soft landscape area more than 200m^2

Objective Reduce the reliance on fresh water for irrigation.

Credit point(s) Attainable 3

Credit Requirement

(a) Efficient irrigation

1 credit point for demonstrating the use of smart irrigation technology/ system for irrigation.

(b) Limited use of fresh water

2 credit points for demonstrating the annual usage of fresh water for irrigation does not exceed 5% of the total annual fresh water consumptions.

Assessment

(a) Efficient irrigation

1. Demonstrate that smart irrigation technology/ system is adopted for irrigation of soft landscape area that under the control of the landlord.

2. The smart irrigation technology/ system should be capable to determine the irrigation need of the landscape using weather or soil moisture data and automatically adjust the use of irrigation water based on the identified need.

(b) Limited use of fresh water

1. Demonstrate the annual usage of fresh water for irrigation does not exceed 5% of the total annual fresh water consumptions, by comparing the water bill/ metering data for irrigation water consumption and the total landlord fresh water consumptions. Both numerator and denominator shall be current year data.

$$\frac{\text{Annual irrigation water consumption } (\text{m}^3)}{\text{Total annual landlord fresh water consumption } (\text{m}^3)} \text{ x } 100\%$$

2. The Applicant shall compute the comparison of water consumption by the water bills or metering data. Standard data log sheet endorsed by Building-in-charge is also acceptable.

Submittals

(a) Efficient irrigation

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-01-02a_00	EB submission form for WU-01-02a	√	√
WU-01-02a_01	Schematic and layout drawings illustrating the irrigation system	√	√
WU-01-02a_02	Narrative description for smart irrigation technology/ system adopted	√	√

(b) Limited use of fresh water

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-01-02b_00	EB submission form for WU-01-02b	√	√
WU-01-02b_01	Calculation for annual irrigation water consumption and total annual fresh water consumptions	√	√
WU-01-02b_02	Water bills/ metering data for annual irrigation water consumption and total annual fresh water consumptions [or] Endorsed standard data log sheet for annual irrigation water consumption and total annual fresh water consumptions	√	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

WU-03-01 Water Recycling

WU-04-02 Freshwater Consumption Monitoring and Reduction

6 Water Use

WU-01 Water Conservation

WU-01-03 Water Efficient Appliances

This credit head is not applicable under EB v3.0.

6 Water Use **WU-01 Water Conservation**

WU-01-04 Water Leakage Detection

Extent of Application All building types

Objective Identify water leakage once detected for the arrangement of maintenance work.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for installing water leakage detection systems in all municipal potable water tank and pump rooms.

Assessment

1. Demonstrate that water leakage detection systems are installed in all municipal potable water tank and pump rooms serving fresh water supply system, flushing water system (if using fresh water for flushing), cleansing water system, irrigation water system, and air conditioning system (e.g. make-up water tanks and pumps for fresh water cooling towers).
2. Water tank and pump rooms serving only non-potable water system or fire services system are not assessed.
3. Water tank and pump rooms which have multiple water tanks and/ or pumps should have at least one water leakage detection system.
4. The detection systems should be capable to automatically alert the operator or the security guard and to identify the room with leakage when leakage occurs.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-01-04_00	EB submission form for WU-01-04	√	√
WU-01-04_01	System description of the water leakage system	√	√
WU-01-04_02	Plumbing schematic drawing(s) and plumbing layout drawings, highlighting the provisions of water leakage detection systems in all water tank rooms	√	√
WU-01-04_03	Equipment catalogues of the water leakage detectors	√	√
WU-01-04_04	On-site photographs of the water leakage detectors	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

None

6 Water Use **WU-01 Water Conservation**

WU-01-05 Twin Tank System

This credit head is not applicable under EB v3.0.

6 Water Use

WU-01 Water Conservation

WU-01-06 Cooling Tower Water

This credit head is not applicable under EB v3.0.

6 Water Use WU-02 Effluent

WU-02-01 Effluent Discharge to Foul Sewers

Extent of Application All building types

Objective Reduce the volumes of sewage discharged from buildings thereby reducing burdens on municipal sewage supply and treatment facilities.

Credit point(s) Attainable 2

Credit Requirement

(a) Water closets

1 credit point when all installed water closets are dual flush with Water Efficiency Labelling Scheme (WELS) Grade 1.

(b) Urinals

1 credit point for demonstrating when all installed urinals are sensor types with Water Efficiency Labelling Scheme (WELS) Grade 1.

Assessment

(a) Water Closets

1. Demonstrate that all water closets installed at the locations under the control of the landlord are dual flush with Water Efficiency Labelling Scheme (WELS) Grade 1.

2. Single flush water closets with Water Efficiency Labelling Scheme (WELS) Grade 1 are acceptable in disabled toilets.

(b) Urinals

1. Demonstrate that all installed urinals at the locations under the control of the landlord are sensor types with Water Efficiency Labelling Scheme (WELS) Grade 1.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-02-01_00	EB submission form for WU-02-01	√	√
WU-02-01_01	Schedule of water closets and/ or urinals installed at the locations under the control of the landlord	√	√
WU-02-01_02	Manufacturer's specification or catalogues of water closets and/ or urinals with WELS certificate	√	√
WU-02-01_03	On-site photographs of the water closets and/ or urinals	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

None

6 Water Use **WU-03 Water Harvesting and Recycling**

WU-03-01 Water Recycling

Extent of Application All building types

Objective Encourage harvesting of rainwater and recycling of grey water to reduce the consumption of fresh water.

Credit point(s) Attainable 4

Credit Requirement

(a) Water recycling feasibility study

1 credit point for conducting feasibility study to evaluate the potential of installing water recycling system.

(b) Water recycling systems

1 credit point for the application of water recycling system.

(c) Water recycling

2 credit points for demonstrating the annual amount of rainwater harvesting and/ or grey and/ or black water recycling is at least 5% of the total annual fresh water consumptions.

Assessment

(a) Water recycling feasibility study

1. Conduct a feasibility study to evaluate the potential of installing water recycling system. The feasibility study report should include the following:

1.1. Background

1.1.1. Potential catchment of rainwater, grey and/ or black water;

1.1.2. Seasonal variations of collection of rainwater, grey and/ or black water from potential catchment;

1.1.3. Potential users of recycled water; and

1.1.4. Relevant quality standards for recycled water.

1.2. Technical considerations of water recycling system

1.2.1. Description of the proposed system(s);

1.2.2. Expected annual yield of recycled water; and

1.2.3. Site constraint identified.

1.3. Economics of water recycling system

1.3.1. Upfront installation costs;

1.3.2. Anticipated maintenance cost;

1.3.3. Anticipated cost saving; and

1.3.4. Payback period.

1.4. Conclusions

1.4.1. Conclude whether the harnessing of recycled water is feasible for the project;

1.4.2. Recommendation to refine the water recycling system when feasible (if any).

2. Note that the feasibility study imposes no obligation for implementation but encourages consideration of recycled water harnessing.

(b) Water recycling systems

1. Demonstrate the application of water recycling system with schematic diagrams showing the general arrangement and on-site photos.

(c) Water recycling

1. Demonstrate that the expected potable water saving by the water recycling system is at least 5% or more of the total annual landlord fresh water consumptions. Both numerator and denominator shall be current year data.

$$\frac{\text{Annual recycled water consumption } (\text{m}^3)}{\text{Total annual landlord fresh water consumption } (\text{m}^3)} \text{ x } 100\%$$

2. The Applicant shall compute the annual landlord fresh water consumptions in the potable water saving calculation by the water bills or metering data. Standard data log sheet endorsed by Building-in-charge is also acceptable.

3. The potable water saving can be determined by the meter reading of amount of harvested rainwater, recycled grey and/ or black water consumption or by estimation of the annual yield of recycled water.

Submittals

(a) Water recycling feasibility study

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-03-01a_00	EB submission form for WU-03-01a	√	√
WU-03-01a_01	Feasibility study report	√	√

(b) Water recycling systems

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-03-01b_00	EB submission form for WU-03-01b	√	√
WU-03-01b_01	System description of the water recycling system	√	√
WU-03-01b_02	Plumbing and/ or drainage schematic and plumbing layout drawings of the water recycling system	√	√
WU-03-01b_03	On-site photographs of the water recycling system(s)	-	√

(c) Water recycling

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-03-01c_00	EB submission form for WU-03-01c	√	√
WU-03-01c_01	Calculation on the potable water saving	√	√
WU-03-01c_02	Water bills/ metering data for total annual fresh water consumptions [or] Endorsed standard data log sheet for total annual fresh water consumptions	√	√

Remarks

(a) Additional Information

(b) Related Credit Heads

WU-01-02 Water Efficient Irrigation

WU-04-02 Freshwater Consumption Monitoring and Reduction

6 Water Use **WU-04 Water Management**

WU-04-01 Smart Water Metering

Extent of Application All building types

Objective Enable building operators to measure, monitor and develop measures for improving water consumptions performance of the building.

Credit point(s) Attainable 3

Credit Requirement

(a) Building-level metering

1 credit point for demonstrating the provision of smart water meter to monitor the total fresh water consumptions for the landlord and all the tenants.

(b) Sub-metering for major systems

2 credit points for demonstrating the provision of smart water meter to monitor the fresh water consumptions for at least two other water sub-systems.

Assessment

(a) Building-level metering

1. Demonstrate the provision of smart water meter to monitor and collect monthly total fresh water consumptions for the landlord and all the tenants.

2. The smart meters should be able to display metered data, trending of water consumption and relevant parameters, and with data logging capability/ connected to Building Management System (BMS) or any cloud server serving the purpose of monitoring the water consumptions performance.

(b) Sub-metering for major systems

1. Demonstrate the provision of smart water meter to monitor and collect monthly total fresh water consumptions for at least two of the following water sub-systems:

Water sub-systems	
Irrigation	Cleansing
Water features/ pools	Other process water

2. The smart meters should be able to display metered data, trending of water consumption and relevant parameters, and with data logging capability/ connected to Building Management System (BMS) or any cloud server serving the purpose of monitoring the water consumptions performance.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-04-01a_00	EB submission form for WU-04-01a	√	√
WU-04-01a_01	Narrative of the water metering and/ or sub-metering system	√	√
WU-04-01a_02	Plumbing schematic diagrams or layout drawings showing the provisions of the water metering	√	√
WU-04-01a_03	On-site photographs of the water meters	-	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

None

6 Water Use **WU-04 Water Management**

WU-04-02 Fresh Water Consumption Monitoring and Reduction

Extent of Application All building types

Objective Enable building operators to measure and monitor the freshwater consumptions of different water sub-systems and develop measures to encourage continual improvement in reducing fresh water consumption.

Credit point(s) Attainable 12

Credit Requirement

(a) Fresh water consumptions

1 credit point for providing total fresh water consumption record for the past 36 months for landlord-controlled area.

1 credit point for providing total fresh water consumption record for the past 36 months for tenant's area.

(b) Fresh water consumptions breakdown

Maximum 3 credit points for providing fresh water consumption breakdown for two (2) to four (4) water sub-systems in the past 36 months.

Credit Point(s)	Fresh water consumption breakdown for
1	Any two (2) water sub-systems
2	Any three (3) water sub-systems
3	Any four (4) water sub-systems

(c) Self-improvement

1 to 5 credit points for demonstrating a net percentage on fresh water consumptions reduction over the past 36 months.

Credit Point(s)	Net Percentage on Fresh water Consumptions Reduction per Year
1	2%
2	4%
3	6%
4	8%
5	≥ 10%

(d) Continuous reduction trend

2 credit points for demonstrating a continuous reduction trend on the annual landlord fresh water consumptions over the past 36 months.

Assessment

(a) Fresh water consumptions

1. Provide fresh water consumption records for landlord and/ or tenant area for the past 36 months.

2. Provide plumbing schematic diagrams and layout drawings

illustrating the location of water meters for landlord and/ or tenant area.

3. The Applicant shall present the monthly fresh water consumption records with the water bills or metering data. Standard data log sheet endorsed by Building-in-charge is also acceptable.

(b) Fresh water consumptions breakdown

1. Provide fresh water consumption breakdown for two (2) to four (4) of the following water sub-systems in the past 36 months.

Water sub-systems	
Irrigation	Cleansing
Water features/ pools	Other process water
Indoor plumbing fixture and fittings	

2. The Applicant shall present the monthly fresh water consumption breakdown with the water bills or metering data. Standard data log sheet endorsed by Building-in-charge is also acceptable.

(c) Self-improvement

1. Compute the net percentage on fresh water consumptions reduction by the water bills or metering data. The numerator shall be the water consumption of current year, while the denominator could be any years within the past 36 months.

$$(1 - \frac{\text{Current year annual landlord fresh water consumption } (\text{m}^3)}{\text{Baseline year annual landlord fresh water consumption } (\text{m}^3)}) \text{ x } 100\%$$

(d) Continuous reduction trend

1. Compute the annual percentage of landlord fresh water consumptions reduction over the past 36 months, and demonstrate a continuous reduction trend for each year.

Submittals

(a) Fresh water consumptions

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-04-02a_00	EB submission form for WU-04-02a	√	√
WU-04-02a_01	Plumbing schematic diagrams and layout drawings showing the water meters	√	√
WU-04-02a_02	Water bills/ metering data with monthly summary for fresh water consumptions [or] Endorsed standard data log sheet with monthly summary for fresh water consumptions	√	√

(b) Fresh water consumptions breakdown

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		PA	FA
WU-04-02b_00	EB submission form for WU-04-02b	√	√
WU-04-02b_01	Water bills/ metering data with monthly breakdown summary for fresh water consumptions [or] Endorsed standard data log sheet with monthly breakdown summary for fresh water consumptions	√	√

(c) Self-improvement

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		PA	FA
WU-04-02c_00	EB submission form for WU-04-02c	√	√
WU-04-02c_01	Calculation on net percentage on fresh water consumptions reduction	√	√

(d) Continuous reduction trend

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		PA	FA
WU-04-02d_00	EB submission form for WU-04-02d	√	√
WU-04-02d_01	Calculation on annual percentage of landlord fresh water consumptions reduction	√	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

WU-01-02 Water Efficient Irrigation

WU-03-01 Water Recycling

WU-04-04 Water Efficiency Index (WEI) Benchmarking

6 Water Use **WU-04** **Water Management**

WU-04-03 **Water Quality Survey**

This credit head is not applicable under EB v3.0.

6 Water Use

WU-04 Water Management

WU-04-04 Water Efficiency Index (WEI) Benchmarking

Extent of Application All building types

Objective Enable benchmarking of fresh water consumptions performance.

Credit point(s) Attainable 2

Credit Requirement 2 credit points when the Water Efficiency Index (WEI) of landlord-controlled area meets the prescribed thresholds.

Assessment

1. Provide calculation for the Water Efficiency Index (WEI) of current year for the landlord-controlled area and demonstrate that the project WEI is less than the following sector's median value.

Sector	Median value
Office Buildings (With Cooling Tower)	1.0 m^3/ m^2/ year
Office Buildings (Without Cooling Tower)	0.8 m^3/ m^2/ year
Retail (With Cooling Tower)	1.3 m^3/ m^2/ year
Retail (Without Cooling Tower)	1.1 m^3/ m^2/ year
Hotels (5-star)	0.62 m^3/ guestnights
Hotels (4-star or below)	0.35 m^3/ guestnights
Tertiary education	11.5 L/ school population/ school days

For sector that is not listed in the above table, the median value shall be proposed by the Applicant with substantiation.

For a composite building that involves more than one (1) abovementioned sectors, separated WEI shall be calculated to demonstrate the compliance.

2. The calculation methodology of WEI with consideration of business activity indicators for each sector are summarised below:

2.1. Office Buildings:

$$\frac{\text{Annual fresh water consumption } (m^3/year)}{\text{GFA } (m^2)}$$

2.2. Retail:

$$\frac{\text{Annual fresh water consumption (Exclude Toilet) } (m^3/year)}{\text{GFA } (m^2)}$$

2.3. Hotels:

$$\frac{\text{Annual fresh water consumption } (m^3/year)}{\text{No. of guestnights}}$$

2.4. Tertiary education

$$\frac{\text{Annual fresh water consumption } (\text{m}^3/year)}{(\text{School population x No. of school days in a year})}$$

School population shall include no. of students and no. of staff.

3. The Applicant shall compute the WEI by the water bills or metering data. Fresh water consumption for landlord-controlled area including cooling tower, irrigation, water features, swimming pool, etc. shall be included. Standard data log sheet endorsed by Building-in-charge is also acceptable.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-04-04_00	EB submission form for WU-04-04	√	√
WU-04-04_01	WEI Calculation	√	√
WU-04-04_02	Water bills/ metering data for total annual fresh water consumptions [or] Endorsed standard data log sheet for total annual fresh water consumptions	√	√
WU-04-04_03	Substantiation for number of guestnights, school population and/ or school days adopted in the calculation (if applicable)	√	√
WU-04-04_04	Substantiation for the adopted threshold(s) of WEI (if applicable)	√	√

Remarks

(a) Additional Information

PUB, Singapore's National Water Agency. Sectoral Water Efficiency Benchmark. [ONLINE] Available at: https://www.pub.gov.sg/Public/WaterLoop/Water-Conservation/Resources-on-Water-Efficiency-Measures/Sectoral-Water-Efficiency-Benchmark [Accessed Mar 2024]

(b) Related Credit Heads

WU-04-02 Fresh Water Consumption Monitoring and Reduction

6 Water Use **WU-04 Water Management**

WU-04-05 Quality and Safety of Water Supply

Extent of Application All building types

Objective Encourage Building Owner/ Building Management Company to maintain the plumbing systems in good condition to ensure the building users can enjoy good quality of water.

Credit point(s) Attainable 4

Credit Requirement

(a) Water supply system safety inspection

2 credit points for conducting routine inspection in accordance with the Guidelines for Drinking Water Safety Plans for Buildings in Hong Kong.

(b) Water audit

2 credit points for conducting a water audit and maintain a water use inventory.

Assessment

(a) Water supply system safety inspection

1. Develop and provide risk assessment summary table and routine water safety checklist for the project building, with reference to Part C to E in Annex I of the Guidelines for Drinking Water Safety Plans for Buildings in Hong Kong [1].

2. Conduct inspection according to the typical frequency identified in the routine water safety checklist, and provide inspection records for the past 12 months.

(b) Water audit

1. Provide a water audit report for all areas of water use, but may exclude water consumption by tenants. The report shall include:

1.1. Water supply system

1.1.1. General description with building characteristics;

1.1.2. Water supply flow diagram(s); and

1.1.3. Inspection of equipment, devices and processes across the site as part of preparing a usage inventory investigation of consumption by major equipment, devices and processes;

1.2. Water Safety

1.2.1. Identification of significant hazards, hazardous events and control measures;

1.2.2. Implementation of corrective actions in response to adverse findings (if any); and

1.2.3. Implementation of documentation and records control, such as training, operation and maintenance records,

etc.

1.3. Water conservation

1.3.1. Breakdown of usage across the site and site activities, reconciled against total metered water consumption;

1.3.2. Investigation of water usage trends and patterns; and

1.3.3. Recommendation and water conservation opportunity (if any).

2. When Water Safety Plan for Buildings (WSPB) is implemented for the project building(s), content as stipulated under section 1.2 could be presented in form of the Drinking Water Safety Plans for Building Audit Checklist as required in the WSPB.

3. The water audit shall be conducted by an external third party or internal staff that not involved in the implementation of the water supply system safety inspection.

4. The audit frequency should not be lower than once every two years.

Submittals

(a) Water supply system safety inspection

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-04-05a_00	EB submission form for WU-04-05a	√	√
WU-04-05a_01	Risk assessment summary table	√	√
WU-04-05a_02	Routine Water Safety Checklist	√	√
WU-04-05a_03	Inspection records for the past 12 months	√	√

(b) Water audit

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
WU-04-05b_00	EB submission form for WU-04-05b	√	√
WU-04-05b_01	Water audit report	√	√

Remarks

(a) Additional Information

[1] Water Supplies Department. Water Safety Plan for Buildings. [ONLINE] Available at: https://www.wsd.gov.hk/en/water-safety/water-safety-in-buildings/index.html [Accessed Mar 2024]

(b) Related Credit Heads

7. Health and Wellbeing

This section considers the broader perspectives of sustainable interior spaces as well as the occupants' health and wellbeing. The broader sustainable issues include provisions of hygiene and amenities maintenance provided in the building, which have impact on the quality of working and living environments.

Indoor environmental quality includes indoor air quality and ventilation provisions that safeguard health. Considerations of health and wellbeing also include thermal comfort, lighting, acoustic and noise, impact on wellbeing, comfort and productivity.

7 Health and Wellbeing HWB-00 Basic Requirement

HWB-00-01 Minimum Ventilation Performance

This credit head is not applicable under EB v3.0.

7 Health and Wellbeing HWB-01 Indoor Air Quality

HWB-01-01 Ventilation Performance

Extent of Application Normally occupied spaces with mechanical ventilation system

Objective Ensure that a minimum quantity of outdoor air is supplied to spaces in the project in order to support the well-being and comfort of the occupants.

Credit point(s) Attainable 2

Credit Requirement 2 credit points if normally occupied spaces of the building are supplied with adequate quantity of outdoor air, which is in compliance with the minimum requirements of ANSI/ASHRAE 62.1-2022.

Assessment

1. Provide calculation of minimum amount of outdoor air as required by ANSI/ASHRAE 62.1-2022 or later.
2. Measure the total amount of outdoor air being delivered to individual tenant space and normal occupied landlord area. Measurements can be made directly or by installed flow measurement devices in the air side system. The instruments/ sensors for measurement shall be calibrated in accordance with manufacturer's recommendation.
3. Demonstrate that the measured results shall be equal or larger than calculated minimum amount of outdoor air of each individual tenant space and normal occupied landlord area.
4. For direct measurement, a minimum of 5 points across each sectional area of duct shall be taken.
5. The measured results and calculation shall be endorsed by building-in-charge.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-01-01_00	EB submission form for HWB-01-01	√	√
HWB-01-01_01	Calculation of minimum amount of outdoor air	√	√
HWB-01-01_02	Measurement results of total amount of outdoor air	-	√
HWB-01-01_03	Layout plan indicating the measurement points	√	√

Remarks

(a) Additional Information

ANSI/ASHRAE 62.1-2022 - Ventilation And Acceptable Indoor Air Quality. [ONLINE]
Available at:
https://webstore.ansi.org/standards/ashrae/ansiashrae622022
[Accessed Apr 2024]

(b) Related Credit Heads

7 Health and Wellbeing **HWB-01 Indoor Air Quality**

HWB-01-02 Air Filtration and Purification Treatment

Extent of Application All building types

Objective Enhance the quality of indoor air by employing effective media or techniques to eliminate contaminants and pollutants

Credit point(s) Attainable 2

Credit Requirement

(a) Particle filtration

1 credit point for installing air filters with MERV rating of 12 in the fresh air intake system.

(b) Air purification treatment

1 credit point for providing air purification technique in the ventilation system or standalone air purification device at the communal spaces.

Assessment

(a) Particle filtration

1. Provide details of the air filter to demonstrate its MERV rating can achieve 12 or above.

(b) Air purification treatment

1. Specify the air treatment methods being used and the corresponding indoor air pollutants that have been tackled.
2. Demonstrate that the intake ventilation systems are served with air purification device.
3. Area coverage of the standalone air purifier to meet sizable requirement should be referred to manufacturer's recommendation.

Submittals

(a) Particle filtration

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-01-02a_00	EB submission form for HWB-01-02a	√	√
HWB-01-02a_01	Catalogue of the filter	√	√
HWB-01-02a_02	Photo records of the filter installed	√	√

(b) Particle filtration

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-01-02b_00	EB submission form for HWB-01-02b	√	√
HWB-01-02b_01	Catalogue of the air purification device or the standalone air purifier	√	√
HWB-01-02b_02	Photo records of the air purification device or the standalone air purifier installed.	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-01 Indoor Air Quality**

HWB-01-03 Continuous IAQ Monitoring

Extent of Application All building types

Objective Promote building occupants' comfort, wellbeing and productivity by continuous monitoring of indoor air quality

Credit point(s) Attainable 3

Credit Requirement 1 to 2 credit points for installing an IAQ sensor for every 500m^2 and at least one (1) per floor to measure at least four (4)/ six (6) of the following parameters in a normally occupied or common space within the assessment boundary:

List of Parameters			
$PM_{2.5}$	PM_{10}	Carbon dioxide	Total VOCs
Nitrogen dioxide	Ozone	Carbon monoxide	Formaldehyde

1 additional credit point for setting up a notification system to inform the building management if any of the above monitored parameters fail to meet the IAQ (Good Class) requirements of IAQ certification scheme.

Assessment

1. Provide a narrative demonstrating compliance with the credit requirements.
2. Demonstrate the IAQ notification system for the assessment boundary.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-01-03_00	EB submission form for HWB-01-03	√	√
HWB-01-03_01	Layout plan with the locations of all IAQ monitors within the assessment boundary	√	√
HWB-01-03_02	Catalogue of IAQ monitor employed	√	√
HWB-01-03_03	Sample photo record(s) of the IAQ monitors installed	-	√
HWB-01-03_04	Narrative showing the communication protocol between the notification system and the building management	√	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-02 Thermal Comfort**

HWB-02-01 Thermal Comfort Monitoring

Extent of Application All building types

Objective Provide an acceptable thermal environment to the building users.

Credit point(s) Attainable 2

Credit Requirement

(a) Temperature and humidity control

1 credit point for demonstrating the temperature and the relative humidity meet the prescribed criteria in the communal areas.

(b) Continuous monitoring

1 credit point for installing sensors for continuous monitoring.

Assessment

(a) Temperature and humidity control

1. Provide on-site measurement reports to demonstrate the temperature and relative humidity meet the following criteria:

Temperature	Relative humidity
25.5ºC ± 1.5 ºC	40% to 70%

2. The measurements shall be conducted in summer and winter respectively.

3. The measurement method and number of measurement points required shall make reference from the IAQ Certification Guideline.

(b) Continuous monitoring

1. Submit the technical specification of the sensor to demonstrate the sensor is capable to measure temperature and relative humidity.

2. All data collected would be available to the building users by means of display screen or website/ mobile application.

3. The measured data shall be able to update every 15 minutes.

Submittals

(a) Temperature and humidity control

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-02-01a_00	EB submission form for HWB-03-01a	√	√
HWB-02-01a_01	Thermal comfort measurement report	-	√

(b) Continuous monitoring

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-02-0ba_00	EB submission form for HWB-03-01b	√	√
HWB-02-0ba_01	Technical specification of the sensor	√	√
HWB-02-0ba_02	Layout plan showing the installation location of the sensor	√	√
HWB-02-0ba_02	Photo records of the installed sensor	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-03 Acoustical Comfort**

HWB-03-01 Indoor Acoustic Environment

Extent of Application All building types

Objective Ensure the normally occupied spaces have a pleasant acoustic environment.

Credit point(s) Attainable 3

Credit Requirement

(a) Background Noise Level

1 credit point for demonstrating background noise levels within the prescribed criteria.

(b) Reverberation time

1 credit point for demonstrating that the reverberation time in the applicable areas meets the prescribed criteria of given types of space.

(c) Noise isolation

1 credit point for demonstrating airborne noise isolation between spaces fulfils the prescribed criteria.

Assessment

(a) Internal Noise Level

1. Demonstrate the background noise level of the normally occupied space arising from external noise source and internal building services equipment is within below criteria by computer simulation or measurement depending on the Applicant's preference. NR and NC value should be consistently used in the project.

Types of Space	Required NR/NC
Classroom Conference room Clinic Library Hotel and serviced apartment Residential flat	35
Clubhouse Office	40
Shopping mall	45
Leisure & Entertainment	50

For on-site measurement, the measurement should be based on an equivalent continuous sound level of 5 minutes [L_{eq} (5mins)] with the HVAC&R system operating under normal condition.

(b) Reverberation time

1. Demonstrate the mid-frequency reverberation time (RT) of the interior spaces is within below criteria by computer simulation or measurement depending on the Applicant's preference.

The average reverberation time for mid frequencies (500Hz, 1kHz and 2kHz) shall not exceed:

Types of Space	RT (second)
Conference room Clinic Hotel and serviced apartment Office Residential flat	0.6
Classroom Clinic Library	0.8
Clubhouse Shopping mall	1.5
Leisure & Entertainment	2.0

(c) Noise isolation

1. Demonstrate airborne noise isolation between spaces fulfilling the prescribed criteria.

   Compliance should be demonstrated by computer simulation or measurements depending on the Applicant's preference. The performance of the weighted Sound Reduction Index (SRI) or Level Difference should fulfil the requirements as stated in below table:

Type of Premises	Weighted SRI	Level Difference
Between classrooms	R_w 37	$D_{nT,w}$ 31
Between offices/ conference rooms/ retail shops	R_w 44	$D_{nT,w}$ 38
Between hotel rooms/ serviced apartments/ function rooms/ activity rooms	R_w 52	$D_{nT,w}$ 46
Between plantrooms/ circulation space	R_w 52	$D_{nT,w}$ 46

Note:
Measuring equipment shall conform to the accuracy requirements given by IEC 61672-1 [1] Class 1 requirements, or equivalent.

The assessment should take into account noise from building services equipment under normal operation mode.

All acoustic calculations or measurement reports for this credit should be endorsed by a Corporate Member of Hong Kong Institute of Acoustics or equivalent.

Submittals

(a) Internal Noise Level

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-03-01a_00	EB submission form for HWB-03-01a	√	√
HWB-03-01a_01	Layout plan	√	√
HWB-03-01a_02	Measurement report for internal noise level	-	√
HWB-03-01a_03	Calibration certificate for all sound level meters	-	√
HWB-03-01a_04	Simulation report for internal noise level	-	√

(b) Reverberation time

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-03-01b_00	EB submission form for HWB-03-01b	√	√
HWB-03-01b_01	Layout plan	√	√
HWB-03-01b_02	Measurement report for reverberation time	-	√
HWB-03-01b_03	Calibration certificate for all sound level meters	-	√
HWB-03-01b_04	Calculation sheets/ Simulation report for reverberation time	-	√

(c) Noise isolation

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-03-01c_00	EB submission form for HWB-03-01c	√	√
HWB-03-01c_01	Layout plan	√	√
HWB-03-01c_02	Schedule of the rooms within the assessment boundary	√	√
HWB-03-01c_03	Measurement report for noise isolation	-	√
HWB-03-01c_04	Calibration certificate for all sound level meters	-	√
HWB-03-01c_05	Simulation report for noise isolation	-	√
HWB-03-01c_06	Construction details of the partition walls	√	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-04 Lighting Comfort**

HWB-04-01 Acceptable Lighting Performance

Extent of Application All building types

Objective Ensure optimal visual comfort for building users.

Credit point(s) Attainable 2

Credit Requirement

(a) Lighting performance in normally occupied spaces

1 credit point for demonstrating the illuminance level, unified glare rating limit and uniformity in normally occupied spaces meet the prescribed area.

(b) Lighting performance in not normally occupied spaces

1 credit point for demonstrating the illuminance level and unified glare rating limit in not normally occupied spaces meet the prescribed criteria.

Assessment

(a) Lighting performance in normally occupied spaces

1. Demonstrate the illuminance level, UGR limit and uniformity in normally occupied spaces regarding the lighting performance criteria complied with the requirements as stipulated in the SLL Lighting Handbook equivalent.

2. The Applicant can choose to demonstrate the compliance by either measurements or modelling.

(b) Lighting performance in not normally occupied spaces

1. Demonstrate the illuminance level and UGR limit in not normally occupied spaces regarding the lighting performance criteria complied with the requirements as stipulated in the SLL Lighting Handbook equivalent.

2. The Applicant can choose to demonstrate the compliance by either measurements or modelling.

Submittals

(a) Lighting performance in normally occupied spaces

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-04-01a_00	EB submission form for HWB-04-01a	√	√
HWB-04-01a_01	Lighting layout plan	√	√
HWB-04-01a_02	Light fitting schedule	√	√
HWB-04-01a_03	Measurement or modelling report	-	√

(b) Lighting performance in normally occupied spaces

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-04-01b_00	EB submission form for HWB-04-01a	√	√
HWB-04-01b_01	Lighting layout plan	√	√
HWB-04-01b_02	Light fitting schedule	√	√
HWB-04-01b_03	Measurement or modelling report	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-04 Lighting Comfort**

HWB-04-02 Human-centric Lighting

Extent of Application All building types

Objective Enhance the visual comfort and physiological responses of building users to light.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for providing colour-tuneable lighting fixture for more than 50% of normally occupied spaces.

Assessment

1. Demonstrate the lighting fixtures installed in normally occupied spaces are with the function to adjust the colour temperature, either automatically or manually.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-04-02_00	EB submission form for HWB-04-02	√	√
HWB-04-02_01	Lighting layout plan	√	√
HWB-04-02_02	Light fitting schedule	√	√
HWB-04-02_03	Calculation showing the spaces with colour-tuneable lighting fixture	-	√
HWB-04-02_04	Photos of the colour-tuneable lighting fixture	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-04 Lighting Comfort**

HWB-04-03 Daylight

Extent of Application All building types

Objective Introduce daylight into indoor environment and reduce the reliance on artificial lighting.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for at least 80% of normally occupied space in the building having a glazing-to-floor ratio of no less than 10%.

Assessment

1. Conduct calculation to demonstrate that at least 80% of normally occupied space in the building having a glazing-to-floor ratio of no less than 10%.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-04-03_00	EB submission form for HWB-04-03	√	√
HWB-04-03_01	Layout and elevation plan showing the size of the glazing	√	√
HWB-04-03_02	Calculation indicating the glazing-to-floor ratio of applicable space	√	√
HWB-04-03_03	Calculation demonstrating at least 80% of normally occupied space in the building having a glazing-to-floor ratio of no less than 10%	√	√
HWB-04-03_04	Photos showing the glazing	√	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-05 Human Scaled Living**

HWB-05-01 Inclusive Design

Extent of Application All building types

Objective Encourage user-friendly features in the design of outdoor or semi-outdoor communal and private spaces at different levels of a building.

Credit point(s) Attainable 3

Credit Requirement

(a) Universal Accessibility

1 to 2 credit points for providing at least five (5)/ ten (10) applicable enhanced provisions as stipulated in the "Recommended Design Requirements" of the latest version of Design Manual - Barrier Free Access issued by Buildings Department.

(b) Family Friendly Facilities

1 credit point for providing at least three (3) family friendly facilities in the communal areas of the building.

List of family friendly features	
Dedicated play areas for children with shaded seating areas for care-takers	At least one water closet for family in each male and female washroom
At least one standalone family washroom	Baby care facility
Private breast-feeding room	Others to be proposed by the Applicant

Assessment

(a) Universal Accessibility

1. Provide a report detailing applicable enhanced provisions as stipulated in the "Recommended Design Requirements" of latest Barrie Free Access Manual.

(b) Family Friendly Facilities

1. Provide a report detailing the provided family friendly facilities.
2. Signage shall be provided to guide the building users to the provided family friendly features.

Submittals

(a) Universal Accessibility

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-05-01a_00	EB submission form for HWB-05-01a	√	√
HWB-05-01a_01	Summary table listing the enhanced provisions and their locations	√	√
HWB-05-01a_02	Photos of the enhanced provisions	-	√

(b) Family Friendly Features

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-05-01b_00	EB submission form for HWB-05-01b	√	√
HWB-05-01b_01	Summary table listing the family friendly features their locations	√	√
HWB-05-01b_02	Photos of the family friendly features	-	√

Remarks

(a) Additional Information

[1] Design Manual - Barrier Free Access 2008 (2024 Edition), Buildings Department. [ONLINE] Available at: https://www.bd.gov.hk/doc/en/resources/codes-and-references/code-and-design-manuals/BFA2008_e.pdf
[Accessed Mar 2024]

(b) Related Credit Heads

7 Health and Wellbeing **HWB-05 Human Scaled Living**

HWB-05-02 Biophilic Design

Extent of Application All building types

Objective Encourage building occupants to have constant interaction with natural surroundings to nurture the innate human-nature connection and to address human psychological need to be around life and life-like processes.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for providing at least three (3) of the following biophilic design features/ strategies in the communal areas of the building.

List of amenities for biophilic design features/ strategies		
Provision of potted plants or plant walls	Indoor water fountain/ pond/ fish tank	Natural sound background music
Artwork with natural materials	Image with nature views	Others to be proposed by the Applicant

Assessment

1. Provide a summary table illustrating the provision of the biophilic design features/ strategies and their locations.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-05-02_00	EB submission form for HWB-05-02	√	√
HWB-05-02_01	Summary table of the biophilic design features/ strategies adopted	√	√
HWB-05-02_02	Photo record(s) of the biophilic design features/ strategies adopted	-	√
HWB-05-02_03	Video showing the natural sound background music provision.	-	√

Remarks

(a) Additional Information

Biophilic Design Case Studies. Terrapin Bright Green. [ONLINE] Available at: https://www.terrapinbrightgreen.com/report/biophilic-design-case-studies/
[Accessed Mar 2024]

(b) Related Credit Heads

7 Health and Wellbeing **HWB-05 Human Scaled Living**

HWB-05-03 Considerable Workspaces

This credit head is not applicable under EB v3.0.

7 Health and Wellbeing **HWB-05 Human Scaled Living**

HWB-05-04 Amenities for Operation and Maintenance

Extent of Application All building types

Objective Facilitate the building maintenance personnel in carrying out operation and maintenance activities in a safe and efficient manner.

Credit point(s) Attainable 2

Credit Requirement 1 to 2 credit points for providing at least three (3)/ six (6) of the following amenities/ features.

List of amenities for operation and maintenance		
Aerial working platform	Cat ladder	Central control room
Gondola	Fall arrest system	Guard room
Maintenance platform for building services installation	Maintenance workshop	Moveable working platform
Others to be proposed by the Applicant		

Assessment

1. Provide a summary table illustrating the provision of the amenities and their locations.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-05-04_00	EB submission form for HWB-05-04	√	√
HWB-05-04_01	Summary table of the amenities provided	√	√
HWB-05-04_02	Photo record(s) of the amenities provided	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-06 Healthy Living**

HWB-06-01 Healthy and Active Living

Extent of Application All building types

Objective Improve the living/ working experience and enhance the health of the building users

Credit point(s) Attainable 1

Credit Requirement 1 credit point for providing at least two of the following healthy and active living features.

Healthy and active living features	
Provide artwork	Staircase for building users is accessible to all occupied floors
Install way-finding signage or infographic to encourage stair use	Provide feature that promote physical activity for building users
Others to be proposed by Applicant	

Assessment

1. Prepare a summary table listing the healthy and active living features provided and their locations.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-06-01_00	EB submission form for HWB-06-01	√	√
HWB-06-01_01	Summary table listing the healthy and active living measures provided and their locations	√	√
HWB-06-01_02	Photo record(s) of the healthy and active living measures	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-06 Healthy Living**

HWB-06-02 Water Quality Survey and Access to Drinking Water

Extent of Application All building types

Objective Ensure the quality of drinking water delivered to the building occupants and promote health

Credit point(s) Attainable 2

Credit Requirement

(a) Water Quality Survey

1 credit point for demonstrating that the quality of drinking water meets WSD's latest guideline [1].

Parameter(s)	Criteria
Chemical and Physical	
Turbidity	≤ 3.0 NTU
Colour	≤ 5 Hazen Unit
pH at 25°C	≥ 6.5 and ≤ 9.5
Free Residual Chlorine	> 0 mg/L and ≤ 1.5 mg/L
Conductivity at 25°C	≤ 500 µS/cm
Metals	
Lead	≤ 10 µg/L
Chromium	≤ 50 µg/L
Nickel	≤ 70 µg/L
Cadmium	≤ 3 µg/L
Copper	≤ 2000 µg/L
Antimony	≤ 20 µg/L
Bacteriological	
Heterotrophic Plate Count	≤ 20 cfu/mL
E. Coli	0 cfu/100 mL

The water quality survey should be conducted by a HOKLAS accredited laboratory and water sampling should follow the latest WSD's water sampling protocol.

The sampling locations and frequency shall be as follows:

d. All potable water tank(s) on yearly basis;
e. Furthest point of each distribution route which is for drinking purpose on yearly basis; and
f. All water dispensers on quarterly basis.

(b) Access to Drinking Water

1 credit point for providing at least one water dispenser which is accessible to building users. The water dispenser shall be capable for refilling water bottle.

Assessment

(a) Water Quality Survey

1. Provide plumbing schematic and layout drawing(s) with all sampling points and distribution route clearly indicated to demonstrate that water sampling has been taken at farthest point(s) of use in the drinking water distribution system.

2. Provide water quality survey report issued by the HOKLAS laboratory under the food, environmental testing category to demonstrate that the result of the water quality survey meets the referenced drinking water supply standard.

(b) Access to Drinking Water

1. Provide layout drawing to demonstrate the provision of the water dispenser.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-06-02_00	EB submission form for HWB-06-02	√	√
HWB-06-02_01	Plumbing schematic and layout drawings	√	√
HWB-06-02_02	Water quality survey report	-	√
HWB-06-02_03	Photo record(s) of the water dispenser	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

7 Health and Wellbeing **HWB-06 Healthy Living**

HWB-06-03 Physical Activity and Mental Health Programme

Extent of Application All building types

Objective Promote physical activity and mental health to the building users.

Credit point(s) Attainable 1

Credit Requirement 1 credit point for organising physical activity and/or mental health programme for the building users on quarterly basis.

Assessment

1. Provide a schedule to illustrate the physical activity and/or mental health programme held in the past 12 months.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-06-03_00	EB submission form for HWB-06-02	√	√
HWB-06-03_01	Schedule illustrating the physical activity and/or mental health programme held in the past 12 months.	√	√
HWB-06-03_02	Photo(s) or promotional flyer of each organised event.	√	√

Remarks

(a) Additional Information

As defined by the World Health Organisation, mental health is a state of well-being in which an individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community. Mental health is fundamental to maintaining personal health as well as the functioning of the community. There is no health without mental health.

[1] World Health Organization. Mental health. [ONLINE] Available at: https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response [Accessed Mar 2024]

(b) Related Credit Heads

7 Health and Wellbeing **HWB-06 Healthy Living**

HWB-06-04 Health Protection

Extent of Application All building types

Objective Safeguard the health of the building users.

Credit point(s) Attainable 2

Credit Requirement 1 to 2 credit points for providing at least three (3)/ six (6) of the following health protection measures/ features.

List of health protection measures/ features		
Clinic room	Contactless devices	Anti-virus coating
Hand washing stations (other than those in washroom)	AED	First aid kit
Blood pressure meter	Oximeter	Face mask
Body temperature checking	Disinfectant wipe	Healthy entrance
Others to be proposed by the Applicant		

Assessment

1. Prepare a summary tables listing the health protection measures/ features provided and their locations.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
HWB-06-04_00	EB submission form for HWB-06-04	√	√
HWB-06-04_01	Summary table listing the health protection measures/ features provided and their locations	√	√
HWB-06-04_02	Photo record(s) of the health protection measures/ features	-	√

Remarks

(a) Additional Information

(b) Related Credit Heads

8. Innovations and Additions

BEAM encourages innovative and/or new techniques that are yet to be found in the mainstream application in the industry addressing sustainability objectives for the buildings.

This section allows the Applicant to submit any innovative techniques or performance enhancements, where additional environmental benefits can be provided, on top of those covered in this manual for consideration of the award of credit point(s).

The Applicant shall be solely responsible to submit qualitative and/ or quantitative evidence for BEAM Society Limited Assessment Sub-Committee (BSL ASC) review and approval.

Generally, the submission materials shall comprehensively detail the benefits, environmental impacts averted, or exemplary performance achieved as compared to the existing criteria.

8 Innovations and Additions

IA-01 Innovations and Additions

IA-01-01 Innovations and Additions

Extent of Application

All building types

Objective

Encourage innovative and/ or new techniques/ practices/ design that are yet to find in the mainstream application in Hong Kong addressing sustainability objectives for existing buildings.

Credit point(s) Attainable

Maximum 20 credit points for IA.

Assessment

1. Present evidence of the application of new practices, technologies and/ or techniques that are (a) not described in this manual; or (b) not market mainstream implementation; or (c) that have multiple aspects achievement; or (d) performance enhancement; and the associated benefits in addressing sustainability objectives for existing buildings:

    1.1. Identify the sustainability objectives addressed by the proposed innovative applications;

    1.2. Detail the methods and criteria that evaluate the benefits and effectiveness of the applications (quantifiable performance indicators are to be proposed if applicable);

    1.3. Justify the number of credit points for the proposed applications. Maximum number of credit points for each proposed application is limited to two (2);

    1.4. Provide evidence of the implementation of the applications; and

    1.5. Evaluate preliminary achievements and propose suggestion for improvement of the applications.

The assessor will refer the proposal to the BSL Assessment Sub-Committee who will consider each application on its merits.

Submittals

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
IA-01-01_00	BI submission form for IA-01-01	√	√
IA-01-01_01	Report on the objectives, evaluating method and criteria, and proposed number of credit points for the innovative techniques	√	√
IA-01-01_02	Report on the evidence of implementation and evaluation of preliminary achievements/ proposed improvements for the innovative techniques	√	√

Remarks

(a) Additional Information

None

(b) Related Credit Heads

9. Appendices

9.1 Glossary

Biophilic Design

Designing for people as a biological organism and respecting the mind-body systems as indicators of health and well-being in the context of what is locally appropriate and responsive.

Certificate Validity

Certificate Validity refers to the duration for which a BEAM Plus certificate and rating remains effective and officially recognised by the HKGBC.

FSC Certification

A certification system for timber products which confirms that timber has been harvested in a sustainable manner.

Global Warming Potential

Global Warming Potential, GWP, provides a measure of the potential for damage that a chemical has relative to one unit of carbon dioxide, the primary greenhouse gas.

Hydro-chlorofluorocarbons

HCFCs cause ozone depletion when released into the atmosphere.

Interior General Lighting

Interior general lighting provides a substantially uniform level of illumination in an area. General lighting shall not include decorative lighting or lighting that provides a dissimilar level of illumination to serve a specialised application or feature within such area.

Normally Occupied Spaces

Normally occupied spaces are enclosed areas where people normally stay more than 1 hour. Spaces which are not used daily but will be occupied for more than 1 hour being used, are considered as normally occupied spaces. Refer to Appendix 10.2 for examples of normally occupied spaces.

Not Normally Occupied Spaces

Not normally occupied spaces are enclosed areas within the building where people normally stay less than 1 hour. Refer to Appendix 10.2 for examples of not normally occupied spaces.

Primary Zone

The 15m vertical zone of a site along the abutting street level. The greenery in this zone is for providing visual contacts or access from a street through common parts of the building for enhancing the walkability of urban space to the public, visitors or occupiers. The top level of soil or similar base for planting should be taken as the reference level for inclusion in the Primary Zone.

Unoccupied Spaces

Unoccupied spaces are areas within the building where the primary function is not intended for human activities. These spaces are occupied by the occupants for a short period of time and only occasionally. Refer to Appendix 10.2 for examples of unoccupied spaces.

9 Appendices

9.2 Space Type

BEAM Plus considers indoor environmental quality as a key to sustain occupants' health and wellbeing. To assist the Applicant in designing a more thorough and satisfactory strategies, BEAM Plus imposes high requirements on indoor environmental quality covering ventilation, air quality, acoustics and lighting.

As the impacts of indoor environmental quality are dependent on the level of interaction between the occupants and the indoor spaces where they spend their time in, it is crucial for the Applicant to understand and identify the level of usage of each indoor space. To facilitate assessment, the Applicant should prepare a schedule including all spaces present within the building and their respective location. The spaces should be categorised into the following three types (refer to Glossary for definitions):

- Normally occupied spaces
- Not normally occupied spaces
- Unoccupied spaces

Space Usage of *normally occupied spaces*

- Auditorium
- Concourse
- Conference room
- Food and beverage dining space
- Front desk
- Gallery space
- Gymnasium
- Information desk
- Meeting room
- Open office
- Private office
- Reception

Space Usage of *not normally occupied spaces*

- Break room
- Copy rooms
- Corridor
- Entrance lobby (other than hotel)
- Lift lobby
- Pantry
- Staircases
- Toilet

Space Usage of *unoccupied spaces*

- Car park
- Emergency exit corridor
- Mechanical and electrical rooms
- Storeroom
- Warehouse

