

BEAM Plus Existing Schools

Assessment Manual

Version 1.0

(Beta 0)

05.2022

Disclaimers of BEAM Plus Existing Schools V1.0 (Beta 0)

The BEAM Plus Existing Schools V1.0 (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 Schools 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	<p>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. 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.</p>
BEAM Plus Existing Schools	<p>The BEAM Plus Existing Schools aims to be simple, practical, clear and educational in defining the key elements of green schools including leadership & learning, efficient use of resources, sustainable campus environment and health & wellbeing. During the development process, the following three fundamental principles were established:</p> <p>Unique – The assessment criteria are specific in assessing the environmental performance of existing schools in Hong Kong and are better defined with more assurance of the applicability of the criteria.</p> <p>Simple – A handy yet precise green building rating tool to assess the environmental performance of existing schools in Hong Kong.</p> <p>Education - Promoting behavioural change and increasing the awareness of sustainability among stakeholders including, but not limited to teachers, parents and students through BEAM Plus Certification.</p> <p>BEAM Plus Existing Schools puts emphasis on school top management commitment, adopting the 'Plan-Do-Check-Act' approach for continual improvement, and the foremost, drive behavioural change through education.</p>
BEAM Society Limited ("BSL")	<p>BEAM is owned and operated by BEAM Society Limited ("BSL"), an independent non-profit public body whose membership is drawn from various professionals and interest groups in Hong Kong's building construction and real estate sectors. BSL is committed to developing and implementing the BEAM Plus assessment tools, assessing green buildings and training green building practitioners.</p>
Hong Kong Green Building Council ("HKGBC")	<p>Hong Kong Green Building Council ("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 Assessors ("BAS").</p>
Development of BEAM Plus Existing Schools	<p>The development of BEAM Plus Existing Schools was led by a BSL Steering Committee comprising various practitioners and experts in the building industry. Industry stakeholders have been consulted via engagement workshops for feedback and opinion on areas, including, but not limited to the overall framework, assessment criteria, performance categories and their relative importance, submission requirement and grading methodology. The Steering Committee comprises:</p> <p>Convener – Mr Tony IP</p> <p>Members – Ms Vivian LEE, Ir Matt YAU, Ir Dr CS WONG, Ms Yvonne IEONG, Mr MK LEUNG, Ir Kenneth LI, Mr WONG Ka Leong, Mr WONG Wai Hou Keith, Ms CHAN May Kuen Sylvia, MH, Ir Alvin LO Tsz-yeung, Mr</p>

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Disclaimer

BEAM Plus Existing Schools has been prepared with the assistance and participation of various individuals and representatives from different organisations. The outcome represents a consensus, but unanimous support from each and every organisation and individual consulted is not implied. This documentation shall be revised 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, its members and Steering Committee 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 grading awarded by the use of BEAM Plus Existing Schools.

HKGBC offers a formal certification process of grading, this service provides independent third-party review of credit heads claimed to ensure all credit points can be demonstrated to be achieved by the provision of the necessary documentary evidence. The use of BEAM Plus Existing Schools without formal certification does not entitle the user or any other party to promote any grading awarded.

Application and Eligibility

BEAM Plus Existing Schools attempts to cover the management, operation and maintenance, education, health and wellbeing of existing primary and secondary schools.

BEAM Plus does not assess any unauthorised or any unauthorised portions of any buildings, i.e. any buildings or building works not complying with the Buildings Ordinance. 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

The project boundary to undergo the BEAM Plus Existing Schools assessment shall follow the site boundary of the schools and shall be consistent throughout the assessment period.

Certification Framework

Assessment under BEAM Plus Existing Schools focus on daily operation of the schools. Therefore, it is essential for the Applicant to have at least **one school calendar year** operational data of the school before registration.

Certification Process

Independent BEAM Assessors ("BAS") or BSL in-house BAS will be

assigned to each project to undertake the assessment works. The Technical Review Committee (“TRC”) 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. Details of the assessment procedures can be found in the BEAM Plus Procedures Manual (Assessment) which are available in HKGBC and BSL websites.

Certification Fee

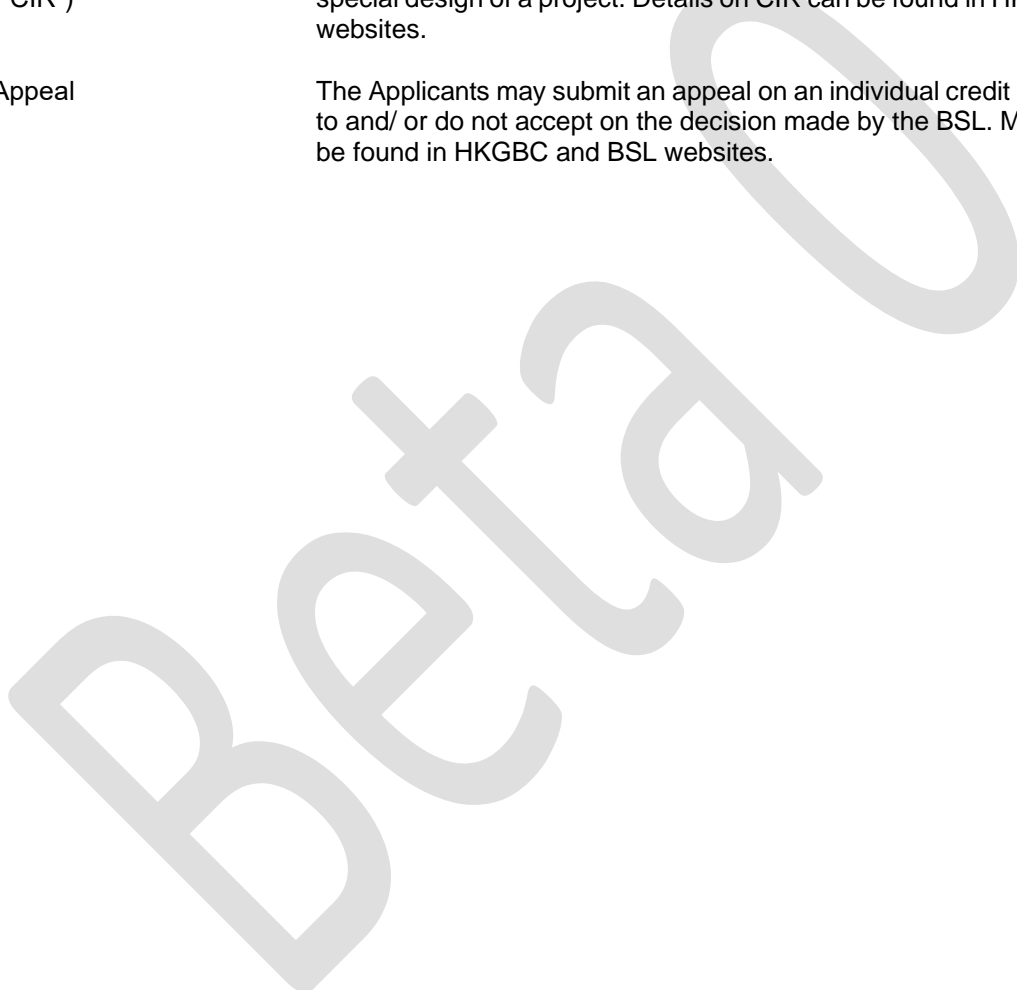
BEAM Plus Existing Schools certification fee comprises 2 parts, namely Registration Fee and Assessment Fee which are payable to HKGBC and BSL respectively. Details of the fee structure can be found in HKGBC and BSL websites.

Credit Interpretation Request (“CIR”)

CIR is designed to allow project teams to obtain specific guidance on whether certain BEAM Plus credit heads can be fulfilled pertaining to the special design of a project. Details on CIR can be found in HKGBC and BSL websites.

Appeal

The Applicants may submit an appeal on an individual credit if they disagree to and/ or do not accept on the decision made by the BSL. More details can be found in HKGBC and BSL websites.



1.2 Framework

Two-book system

BEAM Plus Existing Schools adopts a Two-book system, as outlined below, with an aim to facilitate the Applicant throughout the certification process:

Assessment Manual:

- The assessment manual sets out the overall assessment framework, design intention, assessment criteria and submittal requirement of each credit head; and
- Provide additional reference as extended reading materials for the users, making this manual as a green building reference book for existing schools.

Technical Guidebook:

- Provide further interpretation of the assessment requirement for each credit head;
- Illustrate with step-by-step calculation examples; and
- Provide calculation and document templates as reference.

Performance Categories

The assessment framework of BEAM Plus Existing Schools is formulated by five new performance categories in assessing the all-around environmental performance of an existing school, including education, leaderships, efficient use of resources, school ground, indoor environment, wellbeing and innovations & enhancements:

- i. Sustainable Leadership and Learning;
- ii. Efficient Use of Resources;
- iii. Sustainable Campus Environment;
- iv. Health, Comfort & Happiness; and
- v. Innovations and Enhancements.

In order to identify the nature of the credit head, attribute of icons are employed to differentiate each of the credit head to align with the seven building performance categories in BEAM Plus family.

Sustainable Leadership and Learning

This section focuses on policies, procedures and strategies implemented to ensure schools are operated in an integrated sustainable manner. The following elements are assessed under this performance category:



Top Management Commitment	Environmental Plan & Policy	Target Setting
Environmental Education	Communication & Engagement	Evaluation
Partnership	Knowledge Sharing	Green Prefect

Efficient Use of Resources

Efficient use of resources helps not only to reduce energy and water consumptions, and school carbon footprint, but also contributes in promoting circular economy through recycling and upcycling processing. The following elements are assessed under this performance category:



Energy Saving	Decarbonisation	Renewable Energy
Waste Management	Recycling Practices & Facilities	Resources Management
Efficient & Smart Equipment	Smart Monitoring	Resources Auditing & Usage Benchmarking

Sustainable Campus Environment

This section focuses on school campus environment, from microclimate and biodiversity enhancement to integration with neighbourhood community and preventive measures in response to extreme weather conditions. The following elements are assessed under this performance category:



School Greening	Biodiversity	Nature Conservation
Urban Agriculture	Barrier Free Access	Community Engagement
Climate Resilience		

Health, Comfort & Happiness

This section focuses on school indoor environmental quality and health & wellbeing of school occupants, from healthy lifestyles, mindfulness, to comfort and happiness. The following elements are assessed under this performance category:



Air Quality	Natural Ventilation	Lighting Quality
Acoustics	Healthy Living	Hygiene
Pandemic Response		

Enhancements and Innovations

In this section, schools are encouraged to adopt innovative green features and/or green ideas to improve the school's environmental performance and Applicants are encouraged to submit proposals for BSL consideration.

Credit Allocation

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

Prerequisites

Prerequisites are not applicable under BEAM Plus Existing Schools.

Bonus Credit Points

The Applicant is encouraged to pursue Bonus credit point under the Enhancements and Innovations of BEAM Plus Existing Schools. Bonus credit points are counted towards the total number of credits qualifying for an award classification. A maximum of 10 Bonus credit points could be submitted for achieving a higher score in the assessment.

Submission Checklist

The submission checklist is a one-stop checklist for the users to provide project information, credit point achievement and document checklist to guide the users in preparation of the submission process.

Determination of
Overall Grade

The final certificate grading awarded to schools certified under BEAM Plus Existing Schools is subject to the following conditions:

Grade	Requirement
Green	Overall score: ≥ 50
Outstanding Performance	% of credit point achievement under each performance category: ≥ 70%



To achieve the theme 'simple', BEAM Plus Existing Schools embraces the following features:

- No Pre-requisite requirements;
- No Category weighting factors for different performance categories; and
- No Area weighting.

Beta

1.3 Summary Table

Performance Category	Sub-Performance Category	Credit Head Items	Credit Point
	Top Management Involvement	01 School Environmental Management	6
		02 Good Environmental Practices	15
	Environmental Education	03 Staff Awareness	1
		04 Green Prefect	1
		05 School Environmental Education	2
		06 Environmental Activities	5
	Engagement	07 Environmental Corner	2
		08 Environmental Communication	1
	Eco-Friendly Facilities	09 Energy Efficient Equipment	4
		10 Energy Efficient Measures	6
		11 On-site Renewable Energy Application	2
		12 Water Efficient Fixtures	4
		13 Water Efficient Measures	5
	Monitoring and Benchmarking Decarbonisation Data Disclosure	14 Recycling Facilities	3
		15 School Environmental Performance	9
	Biodiversity	16 Carbon Audit	1
		17 Environmental Data Disclosure	1
	Low-carbon Transport Amenities	18 Greening Schools	5
		19 School Agriculture	1
	Climate Resilience	20 Low Carbon Transport	2
		21 Neighbourhood Amenities	1
	Indoor Environmental Quality	22 Shared Use of Facilities	1
		23 Extreme Weather Response Measures	5
		24 Indoor Air Quality	1
	Healthy Living	25 Openable Windows for Fresh Air	1
		26 Lighting Quality	2
		27 Background Noise	1
		28 Drinking Water Quality	1
Pandemic Response	29 Healthy Lifestyles	6	
	30 Pandemic Response Measures	5	
	Enhancements and Innovations	- Innovative Green Features and Green Ideas	10 B
Total Credit Points			100 + 10 B

2	Sustainable Leadership and Learning	<p>2.1 Top Management Involvement 2.2 Environmental Education 2.3 Engagement</p>
	Introduction	<p>An effective management is the key factor for better environmental performance. This performance category assesses the overarching school leadership, from top management commitment, sustainable awareness to environmental education and engagement. The objective of this performance category aims to drive behavioural change of school users through soft-side measures and education.</p>
2.1	Top Management Involvement	<p>01 School Environmental Management 02 Good Environmental Practices</p>
	Background	<p>To encourage school's top management to commit in the improvement of school environmental performance in terms of energy, water and waste recycling through setting up policy, target, planning, engagement and implementing good environmental practices.</p>
2.2	Environmental Education	<p>03 Staff Awareness 04 Green Prefect 05 School Environmental Education 06 Environmental Activities</p>
	Background	<p>Staff skills and experience are important in improving school environmental performance. Adequate training for school staff is therefore essential to enhance awareness among teachers and staff on school's environmental and sustainability performance, i.e., concept of train the trainer.</p> <p>Proactive education and organising various types of school-wise activities can help enhancing student's environmental awareness, to develop green habits and act as role model for peers in school on environmental protection and sustainability issues through engagement and participation.</p>
2.3	Engagement	<p>07 Environmental Corner 08 Environmental Communication</p>
	Background	<p>Effective communication, both internal and external, ensures exchanging of environmental knowledge and offers feedback channel to improve school's environmental performance.</p>

2 **Sustainable Leadership and Learning**

01 School Environmental Management

Objective

Encourage high level's commitment in improving school's environmental performance.

Credit point(s) Attainable

6

Credit Requirement

Credit Points	Credit Requirement
Environmental Policy	
1	Provide an endorsed environmental policy.
Environmental Targets	
1	Set up environmental objectives and targets for school.
Environmental Plan	
2	Provide an endorsed environmental management plan.
Green Purchasing Plan	
1	Provide an endorsed green purchasing plan.
Electronic Operation and Maintenance ("O&M") Facility	
1	Setup an electronic O&M platform in school.

Assessment Criteria

- a) Environmental Policy

The Applicant shall provide an environmental policy endorsed by the school top management to demonstrate the commitment.
- b) Environmental Targets

The Applicant shall provide the environmental objectives and targets endorsed by the school top management.
- c) Environmental Management Plan







Maximum two (2) credit points could be achieved with the environmental management plan covering at least two (2) of the following aspects:

 - i. Energy;
 - ii. Water;
 - iii. Waste; or
 - iv. Carbon footprint reduction.
- d) Green Purchasing Plan

The green (or environmental) purchasing plan shall include the procurement procedures and/or requirements for both on-going consumables and durable goods.
- e) Electronic Operation and Maintenance Facility

The Applicant shall provide a narrative to describe the electronic operation and maintenance ("O&M") platform adopted in school.

Submittals

Types	Schedule of Supporting Documents
a) Environmental Policy	
	1. A copy of environmental policy endorsed by school's principal or his/ her delegate.
b) Environmental Target	
	1. A copy of environmental objectives and targets endorsed by school's principal or his/ her delegate.
c) Environmental Plan	
	1. A copy of environmental management plan endorsed by school's principal or his/ her delegate.
d) Green Purchasing Plan	
	1. A copy of green purchasing plan endorsed by school's principal or his/ her delegate.
e) Electronic Operation and Maintenance Facility	
	1. One-page narrative describing the electronic O&M platform.
	2. Screenshot records showing the following documents are uploaded to the electronic platform: <ul style="list-style-type: none"> i. School layout plan; ii. Engineering drawings; and iii. O&M instructions.

Attribute



Management

Additional Information

1. Environmental Protection Department, Green Procurement. [ONLINE]. Available at: https://www.epd.gov.hk/epd/english/how_help/green_procure/green_procure.html
2. WWF-Hong Kong, School Procurement Policy. [ONLINE]. Available at: https://d3q9070b7kewus.cloudfront.net/downloads/wwf_school_procurement_policy.pdf
3. School Purchase Green, School Green Product Platform. [ONLINE]. Available at: <https://www.schoolpurchasegreen.com/>
4. U.S. Environmental Protection Agency, Healthy School Environments. [ONLINE]. Available at: <https://www.epa.gov/schools>

2 **Sustainable Leadership and Learning**

02 Good Environmental Practices

Objective

Adopt good environmental practices to uplift school's environmental performance.

Credit point(s) Attainable

15

Credit Requirement

Credit Points	Credit Requirement
Energy Conservation	
5	Implement at least five (5) good energy conservation practices.
Water Conservation	
5	Implement at least five (5) good water conservation practices.
Waste & recycling	
5	Implement at least five (5) good waste & recycling practices.



Assessment Criteria

The Applicant shall adopt different good practices to uplift the school's environmental performance through the following approaches:

Energy Conservation	Water Conservation	Waste & recycling
Energy saving opportunities	Water saving opportunities	Advocate the 4R concepts
Energy management opportunities	Water management opportunities	
Monitoring and maintenance	Monitoring and maintenance	
Use of natural ventilation		

The Applicant shall refer to the Technical Guidebook for a list of recommended good practices.

Submittals

Types	Schedule of Supporting Documents
	1. A short narrative describing the implemented good environmental practices.
	2. Implementation records , including supporting photographs, videos, and/or related documentation, demonstrating the actual implementation in school to be incorporated in the short report.

Attribute



Additional Information

- WWF-Hong Kong, Mainstreaming Sustainability into Local Primary School Curriculum Best Practices Manual. [ONLINE]. Available at: https://www.wwf.org.hk/en/reslib/education/green_cities/
- Education Bureau, Effective Use of Resources in Schools. [ONLINE]. Available at: <https://www.edb.gov.hk/en/sch-admin/admin/about-sch/effective-use-sch-resources/index.html>
- Water Supplies Department, Cherish Water Campus. [ONLINE]. Available at: <https://www.waterconservation.gov.hk/en/at-school/index.html>

2 **Sustainable Leadership and Learning**

03 Staff Awareness

Objective

Enhance awareness among teachers and other staff members on school's environmental and sustainability issues.

Credit point(s) Attainable

1

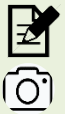

Credit Requirement

Credit Points	Credit Requirement
1	Provide regular training to teachers and other staff members on environmental and sustainability issues.

Assessment Criteria

1. Training records of the teachers and staff members in the past school calendar year shall be provided for assessment.
2. The themes and topics of the training are not regulated but shall be related to environmental and sustainability.
3. There is no requirement on minimum training hours for each teacher and staff members.

Submittals

Types	Schedule of Supporting Documents
	1. Staff member training records for the past school calendar year (counted from the first submission).
	2. Softcopies of the training materials used for each training session.

Attribute



Management

Additional Information

1. Agriculture, Fisheries and Conservation Department, Conserving Our Coral Education Kit. [ONLINE]
Available at:
https://www.afcd.gov.hk/english/conservation/con_mar/con_mar_cor/education.html
2. Environmental Protection Department, Environmental Education & Awareness in Hong Kong. [ONLINE].
Available at:
https://www.epd.gov.hk/epd/english/envir_education/edu_mainconte.html
3. Environmental Protection Department, Energy Saving, Waste Less and Low Carbon Living Style. [ONLINE]
Available at:
https://www.epd.gov.hk/epd/english/how_help/living_style/living.html
4. Electrical and Mechanical Services Department, Educational Resources [ONLINE].
Available at:
https://re.emsd.gov.hk/english/gen/educational/edu_local.html
5. Hong Kong Green Building Council, Hong Kong Green School Guide. [ONLINE].
Available at:

<https://www.hkgbc.org.hk/eng/engagement/guidebooks/green-school-guide/index.jsp>

6. WWF-Hong Kong, Education Resources. [ONLINE].
Available at:
<https://www.wwf.org.hk/en/reslib/education/>
7. Hong Kong Wetland Park, Teaching Resource. [ONLINE]
Available at:
<https://www.wetlandpark.gov.hk/en/download/teaching-resources>.
8. Kadoorie Farm and Botanic Garden, Educational Resources. [ONLINE]
Available at:
<https://www.kfbg.org/en/educational-resources>.
9. Outdoor Wildlife Learning Hong Kong, Publications and Resources. [ONLINE]
Available at:
<https://www.owlhk.org/en/publication-and-resources>.
10. Water Supplies Department, Education on Water Conservation. [ONLINE]
Available at:
<https://www.waterconservation.gov.hk/en/at-school/index.html>.
11. Green Power, Education Resources [ONLINE].
Available at:
<https://www.greenpower.org.hk/html5/eng/publication.shtml>

2 **Sustainable Leadership and Learning**

04 Green Prefect

Objective

Enhance students' environmental awareness, develop green habits and act as role model for peers in school on environmental and sustainability issues.

Credit point(s) Attainable

1

Credit Requirement

Credit Points	Credit Requirement
1	Appoint Green Prefect in each class to enhance student's environmental awareness and build up green habits.




Assessment Criteria

1. Schools shall appoint adequate number of green prefects as follow:

Role	Criteria
Teacher Advisor	At least one (1) per school
Head of Green Prefect	At least one (1) per school
Green Prefect	At least one (1) from each class

2. Implementation records of the past school calendar year shall be provided for assessment.

Submittals

Types	Schedule of Supporting Documents
	1. A summary table listing the appointed green prefects and responsible teacher advisor(s).
	2. Completed Inspection checklists .
	3. Photographic records of the briefing and training to the green prefects and inspection.

Attribute



Management

Additional Information

Environment Bureau, Green Prefect ("GP") Programme. [ONLINE]. Available at: <https://school.ecc.org.hk/en/programmes/gpp.html>

2 **Sustainable Leadership and Learning**

05 School Environmental Education

Objective

Develop students' knowledge, awareness and attitudes on environmental protection.

Credit point(s) Attainable

2

Credit Requirement

Credit Points	Credit Requirement
2	Maximum two (2) credit points for integrating environmental education into curriculum for classes at different levels.



Assessment Criteria

- The content of the teaching materials shall **beyond** the requirements of Education Bureau's ("EDB's") teaching syllabus.
- The extended teaching materials shall cover at least two (2) or four (4) topics as stated below to achieve 1 or 2 credit points, respectively.

Energy conservation	Water conservation	Environmental protection
Waste management	Biodiversity & nature conservation	Sustainable development goals
Climate change	Fair-trade	Other themes proposed by the Applicant

- There is no minimum teaching hour requirement and regulation on the context, format and style of the teaching materials.

Submittals

Types	Schedule of Supporting Documents
	1. A narrative/ teaching plan describing the teaching materials.
	2. Softcopies of the teaching materials .

Attribute



Management

Additional Information

- Agriculture, Fisheries and Conservation Department, Education Events. [ONLINE]
Available at:
https://www.afcd.gov.hk/english/conservation/Con_hkbsap/bsap_biodiversity_events/bsap_biodiversity_events.html.
- Environmental Protection Department, Environmental Education & Awareness in Hong Kong. [ONLINE].
Available at:
https://www.epd.gov.hk/epd/english/envir_education/edu_maincontent.html
- Environmental Campaign Committee, Environmental Education Programme. [ONLINE].
Available at:
<https://school.ecc.org.hk/en/resources/edu-programmes.html>

4. WWF-Hong Kong, Education resources. [ONLINE].
Available at:
<https://www.wwf.org.hk/en/reslib/education/>
5. Green Power, Education resources [ONLINE].
Available at:
<https://www.greenpower.org.hk/html5/eng/publication.shtml>
6. Outdoor Wildlife Learning Hong Kong, Publications and resources. [ONLINE].
Available at:
<https://www.owlhk.org/en/publication-and-resources>
7. Hong Kong Wetland Park, School Programme. [ONLINE]
Available at:
<https://www.wetlandpark.gov.hk/en/education/teacher-frontpage>.
8. Wetland Park, Nature Discovery Project Learning Resource Pack. [ONLINE].
Available at:
<https://www.wetlandpark.gov.hk/en/download/booklets-nature-discovery>
9. Electrical and Mechanical Services Department, Educational resources [ONLINE].
Available at:
https://re.emsd.gov.hk/english/gen/educational/edu_local.html
10. Water Supplies Department, Education on Water Conservation. [ONLINE].
Available at:
<https://www.waterconservation.gov.hk/en/at-school/index.html>
11. Water Supplies Department, Cherish Water Campus. [ONLINE]
Available at:
<https://www.waterconservation.gov.hk/en/at-school/index.html>
12. United Nations, The 17 Sustainable Development Goals (“SDGs”) [ONLINE].
Available at:
<https://sdgs.un.org/goals>

2 **Sustainable Leadership and Learning**

06 Environmental Activities

Objective

Promote environmental and sustainability awareness among students and staff members through engagement and participation in school activities.

Credit point(s) Attainable

5

Credit Requirement

Credit Points	Credit Requirement
1	Organise at least 10 hours of environmental activities.
4	Organise four different types of environmental activities.



Assessment Criteria

- For the first part, the Applicant is required to demonstrate at least **10 hours** of environmental activities were organised in the past school calendar year.
- For the second part, the Applicant is required to demonstrate **four different types** of the following activities have been organised in the past school calendar year:

Education talks	In-class training course by teachers	Environmental competitions
Participation in BEAM Plus submission	Green building tours	Training videos
Education digital games	Field trip study	Environmental week
Sharing sessions by students	Other environmental activities proposed by the Applicant	

- The participation rate is not assessed under this credit head.

Submittals

Types	Schedule of Supporting Documents
	1. A summary table summarising the information of the organised school activities in the past school calendar year.
	2. Implementation records of the organised activities.

Attribute



Management

Additional Information

- Environmental Protection Department, Environmental events and activities. [ONLINE]. Available at: https://www.epd.gov.hk/epd/english/news_events/events/events.html
- Leisure and Cultural Services Department, Green Hong Kong Campaign [ONLINE]. Available at: <https://www.lcsd.gov.hk/en/green/index.html>

2 **Sustainable Leadership and Learning**

07 Environmental Corner

Objective

Promote environmental awareness through regularly sharing of latest environmental and sustainability news bulletin and information.

Credit point(s) Attainable

2

Credit Requirement

Credit Points	Credit Requirement
1	Display school's environmental policy, targets, and environmental performance at the Environmental Corner.
1	Share news bulletin or learning materials that covering at least two different environmental topics at the Environmental Corner.

Assessment Criteria


- Schools shall have an Environmental Corner/ Board at prominent area/ electronic platform, with adequate environmental information and learning materials covered.
- For the first part, the following items shall be displayed at the Environmental Corner/ Board:

School's environmental policy and targets	
PLUS	
at least two of the following environmental performance indices:	
Annual electricity consumptions	Annual fresh water consumptions
Energy Utilisation Index ("EUI")	Water Efficient Index ("WEI")
Resource Recycling Index ("RRI")	Carbon footprint

- For the second part, news bulletins or learning materials shall be shared at the Environmental Corner/ Board. The information must cover **at least two** of the following the environmental topics:

Energy conservation	Water conservation	Biodiversity/ Biophilia
Climate change / carbon reduction	Waste and resources	Others proposed by Applicant

Submittals

Types	Schedule of Supporting Documents
	1. Photographs or screen captures (if electronic platform is adopted) demonstrating the required information is posted at the Environmental Corner/ Board.

Attribute



Management

Additional Information

N/A

2 **Sustainable Leadership and Learning**

08 Environmental Communication

Objective

Promote environmental awareness through regularly exchanging of knowledge and feedback purpose.

Credit point(s) Attainable

1

Credit Requirement



Credit Points	Credit Requirement
1	To set up communication channels for students, teachers and staff members to exchange and share knowledge/ feedback on school environmental issues.

Assessment Criteria

The Applicant shall setup at least **two** of the following communication channels for exchanging and sharing knowledge/ feedback on school environmental issues:

Suggestion box	Assembly talk	Recess/ lunch break sharing session
Open day	Sharing on joint-school or outside event	Environmental related programmes organised by Parent-Teacher Association
Other communication channels proposed by the Applicant		

Submittals

Types	Schedule of Supporting Documents
	1. A narrative describing the communication channels adopted.
	2. Implementation records (i.e., photographs and/or promotional materials) of the environmental communication channels.

Attribute



Management



Additional Information

N/A

Efficient Use of Resources	<ul style="list-style-type: none"> 3.1 Eco-Friendly Facilities 3.2 Monitoring and Benchmarking 3.3 Decarbonisation 3.4 Data Disclosure
Introduction	<p>One of the objectives of BEAM Plus Existing Schools is to encourage continual improvements in school’s environmental performance. Efficient use of resources, not only helps to reduce energy and water consumptions, and carbon footprint, but also contributes in promoting circular economy through recycling and upcycling process.</p> <p>The assessment requirements in this performance category embrace the “Plan-Do-Check-Act” concept, from planning of hardware upgrades, soft-side measures, continuous monitoring, benchmarking and data disclosure. Schools are able to better understand the impacts of their operation and activities, set goals, measure performance and identify risks and opportunities to achieve continual improvements in school’s environmental performance.</p>
3.1 Eco-Friendly Facilities	<ul style="list-style-type: none"> 09 Energy Efficient Equipment 10 Energy Efficient Measures 11 On-site Renewable Energy Application 12 Water Efficient Fixtures 13 Water Efficient Measures 14 Recycling Facilities
Background	<p>One of the most effective ways to improve school’s environmental performance is to retrofit energy efficient equipment and establish environmentally friendly facilities. To maximise the improvement, school shall also implement different efficient measures proactively.</p>
3.2 Monitoring and Benchmarking	<ul style="list-style-type: none"> 15 School Environmental Performance
Background	<p>This section requires schools not only to report the environmental performance index, but also to establish saving targets and apply measures to achieve continual improvement in environmental performance on energy, water, carbon footprint, recycling and upcycling.</p>
3.3 Decarbonisation	<ul style="list-style-type: none"> 16 Carbon Audit
Background	<p>By carrying out carbon audit, schools are able to review its greenhouse gas (“GHG”) emission and carbon footprint in daily operation, identify opportunities, establish target and implement measures to reduce their carbon footprints.</p>
3.4 Data Disclosure	<ul style="list-style-type: none"> 17 Environmental Data Disclosure
Background	<p>Disclosing school’s environmental performance to public not only enhances the transparency and performance, but also showcases its environmental leadership and promotes public communication and engagement for exchanging knowledge.</p>

3 **Efficient Use of Resources** 09 Energy Efficient Equipment

Objective Encourage the use of energy efficient equipment to improve school's energy performance.

Credit point(s) Attainable 4

Credit Requirement

Credit Points	Credit Requirement
Air Conditioning Units	
1	Retrofit all window-type and split-type air conditioning ("A/C") units with EMSD Grade 1 Energy Efficiency Label.
1	<u>Path 1:</u> Demonstrate performance improvement is achieved against the Building Energy Code for all Variable Refrigerant Flow ("VRF") systems and chillers (if applicable) and demonstrate all A/C water pumps, and cooling tower fans (if applicable) are Variable Speed Drive ("VSD") driven. <u>Path 2:</u> Chilled water is provided from District Cooling System ("DCS") plant.
School Equipment	
1	Retrofit all listed school equipment with Energy Label.
Efficient Lighting System	
1	At least 30% of the school areas are served by LED lighting.

Assessment Criteria a) **Air Conditioning Units**

1. Demonstrate the A/C units retrofitted within the past 3 years fulfil the following requirements:

Types of A/C units/ Associated components	Requirement
Window-type and Split-type A/C	EMSD Grade 1 Energy Efficiency Label
VRF system	The minimum coefficient of performance ("COP") should be 2% better than specified requirement under the latest version of Building Energy Code at the time of retrofitting works.
Chillers	
A/C water pump	VSD driven
Cooling tower fan	
Chilled water provided from DCS	-

2. Alternatively, if no retrofitting works were carried out the in the past 3 school calendar years, credit point can also be achieved if **80%** of the A/C units installed in the school are certified with EMSD **Grade 1** Energy Efficiency Label.
3. For schools equipped with central A/C, one (1) credit point can be achieved either for VRF/ chillers meeting the prescribed requirement **or** chilled water is provided from DCS plant.

b) School Equipment

1. Demonstrate the following listed equipment procured within the past 3 school calendar years are with EMSD Energy Efficiency Label or ENERGY STAR certified:











Photocopiers	Multifunction devices	Printers
LCD monitors	Fax machines	Hot/Cold bottled water dispensers
Refrigerators	Televisions	Computers

2. Alternatively, if no procurement were carried out in the past 3 school calendar years, credit point can also be achieved if **80%** of the above school equipment are certified with EMSD Energy Label or ENERGY STAR.

c) Efficient Lighting System

Demonstrate **at least 30%** of school floor areas are installed with LED lighting fixtures.

Submittals

Types	Schedule of Supporting Documents
a) Air Conditioning Units	
For schools equipped with window-type and split-type units:	
	1. A summary table showing information of all the A/C units.
	2. Photographs of the installed A/C units with energy label.
For schools equipped with central air conditioning equipment:	
	1. A summary table showing information of all the central A/C equipment.
	2. Supporting documents including photographs and equipment catalogue.
b) School Equipment	
	1. A summary table showing information of all the listed school equipment.
	2. Photographs of the installed school equipment with energy efficiency label.
c) Efficient Lighting System	
	1. A lighting summary calculation demonstrating at least 30% of the school floor areas are served by LED lighting.
	2. As-fitted school lighting layout drawings.
	3. Lighting catalogue of the installed fixtures.
	4. Photographs of the installed lighting fixtures.

Attribute



Additional Information

1. CLP Power, Electrical Equipment Upgrade Scheme. [ONLINE]. Available at: <https://www.clp.com.hk/en/environment/funds-services/electrical-equipment-upgrade-scheme.html>

2. Environment Bureau, Green School 2.0 – Energy Smart. [ONLINE].
Available at:
<https://www.enb.gov.hk/en/green-schools-2.html>
3. Electrical and Mechanical Services Department, Mandatory Energy Efficiency Labelling Scheme. [ONLINE].
Available at:
<https://www.emsd.gov.hk/energylabel/en/households/select.html>
4. Electrical and Mechanical Services Department, Voluntary Energy Efficiency Labelling Scheme. [ONLINE].
Available at:
https://www.emsd.gov.hk/en/energy_efficiency/voluntary_energy_efficiency_labelling_scheme/registers/index.html
5. Electrical and Mechanical Services Department, Buildings Energy Efficiency Ordinance (Cap. 610). [ONLINE].
Available at:
https://www.emsd.gov.hk/beeo/en/mibec_beeo_WhatsNews.html
6. HK Electric, Smart Power Card Fund, [ONLINE].
Available at:
<https://www.hkelectric.com/en/smart-power-services/smart-power-care-fund#G>
7. U.S. Environmental Protection Agency, ENERGY STAR, [ONLINE].
Available at:
<https://www.energystar.gov/productfinder/>

3 **Efficient Use of Resources** 10 Energy Efficient Measures

Objective Encourage the implementation of energy efficient measures to improve the energy performance

Credit point(s) Attainable 6

Credit Requirement

Credit Points	Credit Requirement
Energy Audit	
1	Conduct walk-through energy audit for school.
Energy Efficient Measures	
5	Implement at least five (5) energy efficient measures.

Assessment Criteria a) **Energy Audit**

The Applicant shall engage a competent professional to conduct a walk-through energy audit for school within the past 5 school calendar years from the date of first submission.

b) **Energy Efficient Measures**

The Applicant shall implement different energy efficient measures to enhance the school's energy performance through the following approaches:

Use of control sensors	Use of efficient devices	Continuous monitoring
Use of timer control	Replace inefficient lightings	Adequate inspection & maintenance
Automatic lighting control sensors	Use of solar window film	Power metering for monitoring
Zoning controls	Use of light reflectors	Retro-commissioning

The Applicant shall refer to the Technical Guidebook for a list of recommended energy efficient measures.

Submittals

Types	Schedule of Supporting Documents
a) Energy Audit	
	1. A walk-through energy audit report .
b) Energy Efficient Measures	
	1. A report describing the listed energy saving measures adopted in school within the past 3 years.
 	2. Implementation records energy saving measures. (Incorporated in the report).

Attribute



Additional Information

1. CLP Power, Energy Audit. [ONLINE]. Available at: <https://www.clp.com.hk/en/business/low-carbon-solutions/energy-management/energy-audit-service>

2. Electrical and Mechanical Services Department, Retro-Commissioning Resources Centre. [ONLINE].
Available at:
<https://www.rcxrc.emsd.gov.hk/en/>
3. HK Electric, Energy Audit. [ONLINE].
Available at:
<https://www.hkelectric.com/en/smart-power-services/smart-power-energy-audit>
4. Environment Bureau, Green School 2.0 – Energy Smart. [ONLINE].
Available at:
<https://www.enb.gov.hk/en/green-schools-2.html>

Beta 0

3 **Efficient Use of Resources**

11 On-site Renewable Energy Application

Objective

Encourage the wider usage of renewable energy sources in schools and educate the next generation.

Credit point(s) Attainable

2

Credit Requirement

Credit Points	Credit Requirement
On-site Renewable Energy Applications	
1	At least one renewable energy feature is installed.
Education and Learning	
1	Use of the installed renewable energy feature for educational purpose.

Assessment Criteria






a) On-site Renewable Energy Application

1. Demonstrate **at least one** renewable energy feature is installed within the school campus.
2. There is no requirement on quantities and power output of the installed renewable energy feature(s).

b) Education and Learning

1. The Applicant shall make use of the installed renewable energy feature(s) for education purpose.
2. The total teaching hours and the format of teaching are not assessed.

Submittals

Types	Schedule of Supporting Documents
a) On-site Renewable Energy Application	
	1. A narrative summarising the provision of on-site renewable energy feature(s) in school.
	2. Photographs of the installed on-site renewable energy feature(s).
b) Education & Learning	
	1. A narrative summarising how to make use of the installed renewable energy for education purpose.
	2. A copy of teaching materials .
	3. Photographs of teaching (if applicable).

Attribute



Management

Energy

Additional Information

1. Electrical and Mechanical Services Department, Solar Harvest. [ONLINE]
Available at:
<https://re.emsd.gov.hk/english/gen/4S/4S.html>
2. Electrical and Mechanical Services Department, Education Resources on local Renewable Energy. [ONLINE]
Available at:
https://re.emsd.gov.hk/english/gen/educational/edu_local.html

3 **Efficient Use of Resources**

12 Water Efficient Fixtures

Objective

Reduce the consumption of potable water and the volume of sewage discharged from schools through the application of water saving devices with proven performance, reliability and loading on municipal sewage services and treatment facilities.

Credit point(s) Attainable

4

Credit Requirement

Credit Points	Credit Requirement
Water Efficient Devices	
1	At least 30% are certified under Water Efficiency Labelling Scheme (“WELS”) Grade 1 or fitted with flow controllers of WELS Grade 1; or
2	At least 50% are certified under WELS Grade 1
Water Efficient Flushing Devices	
1	At least 30% are certified under WELS Grade 1; or
2	At least 50% are certified under WELS Grade 1

Assessment Criteria

a) **Water Efficient Devices**

Install water efficient devices that are certified under Water Supplies Department’s (“WSD’s”) WELS for the following types of water fixtures:

Basin taps and mixers	Shower heads	Kitchen/ pantry sink taps
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b) **Water Efficient Flushing Devices**

Install water efficient flushing devices that are certified under WSD’s WELS for the following types of water flushing fixtures:

Dual-flush water closets	Urinals
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Submittals

Types	Schedule of Supporting Documents
a) Water Efficient Devices	
	1. A schedule summarising all water devices installed in schools and demonstrating the provision fulfil the requirement
	2. Manufacturer specification or catalogue of the water efficient devices,
	3. Registry of the WELS products extracted from WSD’s website or registration certificate of WELS issued by WSD.
	4. On-site photographs of the installed water efficient devices.
b) Water Efficient Flushing Devices	
	1. A schedule summarising all water flushing devices installed in schools and demonstrating the provision fulfil the requirement
	2. Manufacturer specification or catalogue of the water flushing efficient devices.
	3. Registry of the WELS products extracted from WSD’s website or registration certificate of WELS issued by WSD.
	4. On-site photographs of the installed water efficient flushing devices.

Attribute



Additional Information

1. Water Supplies Department, Water Efficiency Labelling Scheme (WELS). [ONLINE]
Available at:
<https://www.wsd.gov.hk/en/plumbing-engineering/water-efficiency-labelling-scheme/index.html>

Beta 0

3 **Efficient Use of Resources** 13 Water Efficient Measures

Objective Encourage the implementation of water efficient measures to reduce potable water consumption.

Credit point(s) Attainable 5






Credit Points	Credit Requirement
5	Implement at least five (5) water efficient measures.

Assessment Criteria The Applicant shall implement different water efficient measures to enhance the school water consumption performance through the following approaches:

Recycling of water	Use of monitoring devices	Continuous monitoring
Rainwater recycling	Water sub-metering system	Maintain water use inventory
Greywater recycling	Water leakage detector	Water audit
Air conditioning condensate water recycling		

The Applicant shall refer to the Technical Guidebook for a list of recommended water efficient measures.

Submittals

Types	Schedule of Supporting Documents
	1. A report describing the listed water efficient measures adopted in school within the past 3 years.
   	2. Implementation records of the water efficient measures. (Incorporated in the report)

Attribute



Additional Information

1. Water Supplies Department, School Water Audit [ONLINE]
Available at:
<https://www.waterconservation.gov.hk/en/at-school/cherish-water-primary-school/teaching-resources/suggested-activities/school-water-audit/index.html>

3 **Efficient Use of Resources**

14 Recycling Facilities

Objective

Encourage integrated waste management for operational reduction at source, effective sorting and collection within the schools and recycling/reuse of waste.

Credit point(s) Attainable

3

Credit Requirement

Credit Points	Credit Requirement
Basic Recycling Facilities	
1	Provide on-site recycling facilities for paper, plastic and metal at prominent locations within school campus.
Enhanced Recycling Facilities	
2	Provide on-site recycling facilities for two additional recyclable streams.

Assessment Criteria

a) Basic Recycling Facilities





On-site basic recycling facilities for paper, plastic and metal shall be provided at prominent locations, such as canteen, tuck shop, playground/ covered playground and classrooms etc.

b) Enhanced Recycling Facilities

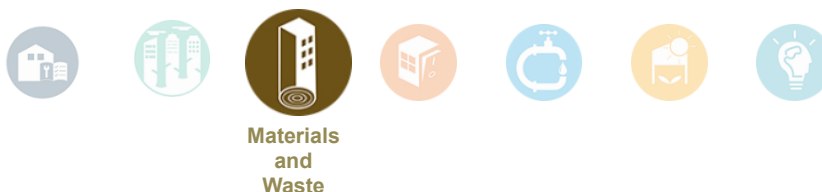
One (1) credit point for providing each of the following on-site recycling facilities. Maximum two (2) credit points can be achieved:

Glass bottles	Clothes	Fluorescent lamp
Rechargeable battery	Beverage carton recyclable	Food waste
Organic landscape waste	Other recyclables proposed by Applicant	

Submittals

Types	Schedule of Supporting Documents
a) Basic Recycling Facilities	
	1. Annotated Location plan to indicate the provision of the basic recycling facilities.
	2. On-site photographs of the recycling facilities.
b) Enhanced Recycling Facilities	
	1. Location plan to indicate the provision of the enhanced recycling facilities.
	2. On-site photographs of the enhanced recycling facilities.

Attribute



Additional Information

1. Environmental Campaign Committee, Waste Separation and Recycling Scheme. [ONLINE]. Available at: <https://school.ecc.org.hk/en/programmes/wsars.html>
2. Environment Bureau, Glass Container Recycling Service. [ONLINE].

Available at:

https://www.enb.gov.hk/sites/default/files/green_school/pdf/Recycling_Glass_Containers_at_school.pdf

3. Environment Bureau, Waste Blueprint for Hong Kong 2035. [ONLINE]
Available at:
https://www.epd.gov.hk/epd/english/resources_pub/policy_documents/index.html
4. Environment Bureau, Green School 2.0 – Food Wise. [ONLINE].
Available at:
<https://www.enb.gov.hk/en/green-schools-2.html>
5. Food Wise Hong Kong. [ONLINE].
Available at:
<https://www.foodwisehk.gov.hk/en/index.php>
6. Environmental Protection Department, Waste Reduction Information for School. [ONLINE].
Available at:
<https://www.wastereduction.gov.hk/en/schools-corner.html>
7. Friends of the Earth, Waste • No Way - Recycling Programme. [ONLINE] Available at:
<https://www.foe.org.hk/en/Project%20Activity/project>
8. The Conservancy Association, Waste Reduction and Recycling. [ONLINE]
Available at:
https://www.cahk.org.hk/works_type.php

3 **Efficient Use of Resources** 15 School Environmental Performance

Objective Encourage schools to measure, record, monitor and analyse the environmental performance, and to promote self-improvement.

Credit point(s) Attainable 9

Credit Requirement

Credit Points	Credit Requirement
Performance Index	
3	Calculate and report the annual environmental performance indices for school.
Self-improvement	
6	Demonstrate improvement on annual energy use, water use and waste reduction/ recyclable enhancement.

Assessment Criteria

a) Performance Index

The Applicant shall calculate and report the following annual environmental performance for assessment. One (1) credit point for reporting each of the below listed items. Maximum three (3) credit points can be achieved.

Energy Utilisation Index ("EUI")	Water Efficient Index ("WEI")	Resource Recycling Index ("RRI")
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b) Self-improvement

The number of credit point(s) to be achieved shall be determined by referencing the reduction percentage using the electricity bill, water bill or waste & recycling records. (Baseline year can be any years in the past three (3) school calendar years):




No. of Credit Points	1	2
Annual energy use reduction	≥3%	≥5%

No. of Credit Points	1	2
Annual freshwater use reduction	≥1%	≥3%

No. of Credit Points	1	2
Annual waste reduction or Annual RRI enhancement	≥2%	≥5%
	≥2%	≥5%

The Applicant shall refer to the Technical Guidebook for the further explanations and calculation examples for reference.

Submittals

Types	Schedule of Supporting Documents
a) Performance Index	
Energy Utilisation Index (EUI):	
	1. Spreadsheet calculation of the annual EUI.
	2. Electricity bills of the past school calendar year.
Water Efficient Index (WEI):	
	1. Spreadsheet calculation of the annual WEI.

	2. Water bills of the past school calendar year.
Resource Recycling Index (RRI):	
	1. Spreadsheet calculation of the annual RRI.
	2. Waste disposal and recycling records of the past school calendar year.
b) Self-improvement	
Annual energy use reduction:	
	1. Spreadsheet showing the calculation of percentage of energy reduction.
	2. Electricity bills of the past school calendar year and the adopted baseline year.
Annual freshwater usage reduction:	
	1. Spreadsheet showing the calculation of percentage of freshwater reduction.
	2. Water bills of the past school calendar year and the adopted baseline year.
Annual waste reduction/ Annual RRI enhancement:	
	1. Spreadsheet showing the calculation of percentage of waste reduction/ RRI enhancement.
	2. Waste/ recycle records of the past school calendar year and the adopted baseline year.

Attribute



Additional Information

N/A


3 **Efficient Use of Resources** 16 Carbon Audit

Objective Manage carbon footprint of schools through measuring and recording the greenhouse gas (“GHG”) emissions of schools, and to explore opportunities to reduce GHG emissions.

Credit point(s) Attainable 1

Credit Points	Credit Requirement
1	Conduct carbon audit to account for and report on annual GHG emissions and removals.

- Assessment Criteria**
1. The Applicant shall engage a competent professional to conduct carbon audit to account for and report on annual GHG emissions and removals for the school.
 2. The Applicant shall provide a carbon audit or GHG emissions audit report for assessment.

Types	Schedule of Supporting Documents
	1. A carbon audit or GHG emission audit report endorsed by the competent professional.

Attribute



- Additional Information**
1. Environmental Protection Department, Guide to Low Carbon Schools, Practical Guide on Carbon Audit and Management. [ONLINE]. Available at: https://www.carbon-footprint.hk/common/PDF/EPD_CA_Guidebook_Schools_Eng.pdf
 2. Environmental Protection Department, Carbon Reporting Website. [ONLINE]. Available at: <https://www.carbon-footprint.hk/en/resourses/resources.html>
 3. Qualified Service Providers for Carbon Reduction Certificate Scheme (for Type I). [ONLINE]. <https://www.hkgoc.gov.hk/en-hk/carbon-reduction-certificate.html>

3 **Efficient Use of Resources** 17 Environmental Data Disclosure



Objective Encourage schools to disclose the environmental performance to the public.

Credit point(s) Attainable 1

Credit Points	Credit Requirement
1	Commit to disclosing environmental data/ performance to the public.

Assessment Criteria The Applicant shall disclose at least any **three** of the following performance indices/ data to public via school webpage or other means, such as school newsletter and/or mobile applications:

Past two school calendar years records of annual energy consumption	Past two school calendar years records of annual water consumption	Energy Utilisation Index (EUI)
Water Efficient Index ("WEI")	Waste disposal record/ Resource Recycling Index ("RRI")	GHG emission and removal values

Types	Schedule of Supporting Documents
 	1. Screen capture or School annual report to demonstrate the claimed performance indices/ data are disclosed to the public.

Attribute



Management

Additional Information 1. Environmental Protection Department, GHG Emissions Data. [ONLINE]. Available at: <https://www.carbon-footprint.hk/en/index.html>

4	Sustainable Campus Environment	<p>4.1 Biodiversity 4.2 Low-carbon Transport 4.3 Amenities 4.4 Climate Resilience</p>
	Introduction	<p>The assessment criteria in this performance category focus on the location of school and school campus environment, from microclimate and biodiversity enhancement to integration with neighbourhood community and extreme weather response.</p>
4.1	Biodiversity	<p>18 Greening Schools 19 School Agriculture</p>
	Background	<p>It is important to adequately consider microclimate and biodiversity in the densely packed city like Hong Kong. Schools are encouraged to implement different green strategies, not only to preserve biodiversity and expand urban greenery, but also help in mitigating the adverse impact from urban heat island effect.</p>
4.2	Low-carbon Transport	<p>20 Low Carbon Transport</p>
	Background	<p>Promoting the use of public/ low carbon transports across the community is one of the most effective ways to reduce roadside pollution and the carbon footprint.</p>
4.3	Amenities	<p>21 Neighbourhood Amenities 22 Shared Use of Facilities</p>
	Background	<p>Schools are encouraged to be integrated within, and assets to the immediate neighbourhood and the community.</p> <p>Sharing of existing amenity spaces brings environmental, economic and social benefits to local community, reducing the need for new facilities and avoiding financial costs and promoting community engagement.</p>
4.4	Climate Resilience and Adaptability	<p>23 Extreme Weather Response Measures</p>
	Background	<p>Climate change brings various challenges to Hong Kong, particularly the increased occurrence of extreme weather, from heavy rainstorms, tropical cyclones to heat wave in the hot summer. Schools shall therefore adopt proactive measures to reduce the potential risk to be generated from the extreme weather impacting on the school and to safeguard the occupants from any adverse impacts thereafter.</p>

4 **Sustainable Campus Environment** 18 Greening Schools

Objective Encourage schools to expand urban greenery and promote biodiversity.

Credit point(s) Attainable 5






Credit Requirement

Credit Points	Credit Requirement
5	Implement at least five (5) different greening strategies in the school campus.

Assessment Criteria The Applicant shall implement different greening strategies to expand urban greenery and promote biodiversity, including:

School Greening Strategies:	
1	School greening, such as, greenery, vertical green wall and/ or planters, that covers at least 10% of the school site areas (covers at least 20% for 2 credit points).
2	Provide pot planting in classroom, corridor, etc.
3	Provision of green roof.
4	Have a 5-metre tall tree in place within school campus.
5	Have native plant species/ Butterfly or bee friendly plants in school greening.
6	Provision of Plant ID Sheet.
7	No petrochemical fertiliser or pesticide shall be used for the maintenance of the landscape areas.
8	Other strategies proposed by the Applicant.

Submittals

Types	Schedule of Supporting Documents
	1. A report describing the listed greening strategies adopted in school.
   	2. Implementation records of the greening strategies. (<i>Incorporated in the report</i>)

Attribute



Sustainable Site

Additional Information

1. Leisure and Cultural Services Department, Greening School Programme. [ONLINE]. Available at: <https://www.lcsd.gov.hk/en/green/education.html>
2. Leisure and Cultural Services Department, Nectar Plant for Butterflies [ONLINE]. Available at: <https://www.lcsd.gov.hk/en/green/education.html>

4 **Sustainable Campus Environment** 19 School Agriculture

Objective

Promote environmental and sustainability awareness, as well as introducing the values of farming, animal welfare and responsibility through agricultural activities.

Credit point(s) Attainable

1

Credit Requirement

Credit Points	Credit Requirement
1	Provide at least one type of agricultural facility in school and utilise the facility for agricultural education.

Assessment Criteria




1. The Applicant shall demonstrate at least **one** of following listed provisions is available in school:

Organic farm	Eco-Garden	Eco-Pond
Aquaponics facility	Hydroponic farming	

2. There is no specific requirement on the quantities and the provision of such green area.

3. The Applicant shall also demonstrate the use of agricultural facility(ies) for education purpose. It could be a formal class training or extracurricular activities.

Submittals

Types	Schedule of Supporting Documents
	1. A narrative describing the agricultural facility(ies) adopted.
	2. On-site photographs of the agricultural facility(ies).
	3. A copy of teaching materials/ photographs of the extracurricular activities.

Attribute



Sustainable Site

Additional Information

1. Agriculture, Fisheries and Conservation Department, Organic Farming in Hong Kong. [ONLINE]
Available at:
https://www.afcd.gov.hk/english/agriculture/agr_orgfarm/agr_orgfarm.html.
2. Education Bureau, Green Roofs. [ONLINE]
Available at:
https://www.edb.gov.hk/en/sch-admin/admin/about-sch/green_roofs/index.html.
3. Education University of Hong Kong, Eco-garden. [ONLINE]
Available at:
https://www.eduhk.hk/ses/upload/Resource/Ecogarden/SES_EcoGarden_Leaflet_online.pdf.
4. Kadoorie Farm and Botanic Garden, Sustainable Living & Agriculture. [ONLINE]
Available at:
<https://www.kfbg.org/en/report-and-publications/sustainable-living-agriculture>.

5. Sustainable Ecological Ethical Development Foundation, Green School. [ONLINE]
Available at: <http://www.seed.org.hk/en/green-education>.

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4 **Sustainable Campus Environment** 20 Low Carbon Transport






Objective Reduce roadside pollution by promoting the use of public/ low carbon transports across the community.

Credit point(s) Attainable 2

Credit Points	Credit Requirement
Accessibility to Public Transport	
1	Demonstrate the availability of public transportation facilities are within a walking distance of 500m from the school main entrance.
Bicycle Parking	
1	Provide bicycle parking spaces within school campus.

- Assessment Criteria**
- a) Accessibility to Public Transport**
1. The Applicant shall summarise the availability of public transportation facilities that are within a safe pedestrian walking distance of 500m from the school main entrance.
 2. The scheduled operating frequency between 07:00 to 19:00 hours of the public transport shall be 10 minutes or less.
- b) Bicycle Parking**
1. The bicycle parking area shall be provided within the school campus with clear signages.
 2. There is no requirement on the size and quantity of the bicycle parking spaces.

Submittals

Types	Schedule of Supporting Documents
a) Accessibility to Public Transport	
	1. A narrative summarising the availability of public transport.
	2. A public transport survey map showing the information of public transport.
	3. On-site photographs of the public transport stations/ stops.
b) Bicycle Parking	
	1. A school layout drawing showing the designated bicycle parking area.
	2. On-site photographs of the bicycle parking areas.



Additional Information

1. HKSAR, HKeMobility. [ONLINE]. Available at: <https://www.hkemobility.gov.hk/en/public-transport/>

2. HKSAR, GEOINFO Map. [ONLINE].
Available at:
<https://www.map.gov.hk/gm/>
3. Department for Transport, Low Carbon Transport: A Greener Future - A Carbon Reduction Strategy for Transport. [ONLINE]
Available at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228897/7682.pdf
4. Transport Department, Public Transport. [ONLINE]
Available at:
https://www.td.gov.hk/en/transport_in_hong_kong/public_transport/index.html.

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4 **Sustainable Campus Environment** 21 Neighbourhood Amenities

Objective Encourage schools to integrate within and being an asset to the immediate neighbourhood.

Credit point(s) Attainable 1




Credit Requirement

Credit Points	Credit Requirement
1	Demonstrate adequate amenities for school users are located within a safe pedestrian walking distance of 500m from the school entrance(s).

Assessment Criteria The Applicant shall summarise the availability of **at least five** different types of the neighbourhood amenities are within a safe pedestrian walking distance of 500m from the school entrance(s).

Restaurant/ cafe/ food & beverage outlet	Convenience/ grocery store	Supermarket/ wet market
Retail shops	Bank or Automated Teller Machine	Pharmacy (with registered license and for retail purpose)
Public arts venue	Places of worship	Medical/ health facility (including dental clinic)
Public library	Post office / postal facility	Community hall
Public recreational facilities	Open spaces	

Submittals

Types	Schedule of Supporting Documents
	1. A narrative summarising the availability of the neighbourhood amenities.
	2. A neighbourhood amenities survey map showing the information of amenities.
	3. On-site photographs of the neighbourhood amenities.

Attribute



Additional Information

1. HKSAR, GEOINFO Map - Amenities. [ONLINE]
Available at:
<https://www.map.gov.hk/gm/map/>

4 **Sustainable Campus Environment** 22 Shared-Use of Facilities




Objective Integrate the schools with the community by sharing its facilities for others' use.

Credit point(s) Attainable 1

Credit Points	Credit Requirement
1	Establish joint use of school facilities with local school partners/ under the same school organisation group or for public use.

Assessment The Applicant shall formulate a shared-use policy/ joint agreement so that the one of the facilities as illustrated in below table can be used by the public:

Auditorium	School halls	Classrooms
School playground	Canteen	Religious premises
Others proposed by Applicant		

Types	Schedule of Supporting Documents
	1. A summary table listing the shared-use facilities.
	2. Floor plan highlighting the shared-use facilities.
	3. Shared use policy/ joint agreement describing terms and conditions and communications to the authorises, organisations or public.

Attribute



Additional Information N/A

4 **Efficient Use of Resources** 23 Extreme Weather Response Measures

Objective Encourage schools to adopt proactive measures to reduce the risk of the potential impact from extreme weather.





Credit point(s) Attainable 5

Credit Points	Credit Requirement
5	Implement at least five (5) different types of proactive measures in response to extreme weather.

Assessment The Applicant shall implement different types of proactive measures to reduce potential risk to be generated from extreme weather impacting on the school through the following approaches:

Top management involvement	Provision of weather provision facilities	Pre & post typhoon preparations
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The Applicant shall refer to the *Technical Guidebook for a list of recommended extreme weather response measures.*

Types	Schedule of Supporting Documents
	1. A report describing the listed measures in response to extreme weather adopted in school.
  	2. Implementation records of the adopted measures. (<i>Incorporated in the report</i>).

Attribute



Additional Information

- Hong Kong Observatory, Weather Information for Schools. [ONLINE]
Available at:
<https://www.hko.gov.hk/en/school/school.htm>.
- U.S. Department of Education, Preparing for Floods at K-12 Schools and School Districts. [ONLINE]
Available at:
https://rems.ed.gov/docs/K12FloodFactSheet_508C.pdf.
- U.S. National Weather Service, A Guide to Developing a Severe Weather Emergency Plan for Schools. [ONLINE]
Available at:
<https://www.weather.gov/media/aly/School%20Weather%20Safety%20Plan.pdf>.

5	Health, Comfort & Happiness	<p>5.1 Indoor Environmental Quality</p> <p>5.2 Healthy Living</p> <p>5.3 Pandemic Response</p>
	Introduction	<p>This performance category considers a broader perspective of sustainable school. The assessment criteria not only focus on the indoor environmental quality of the school, but also emphasise on the health and wellbeing of school occupants, from healthy lifestyles, mindfulness, to comfort and happiness.</p>
5.1	Indoor Environmental Quality	<p>24 Indoor Air Quality</p> <p>25 Openable Windows for Fresh Air</p> <p>26 Lighting Quality</p> <p>27 Background Noise</p>
	Background	<p>Indoor environmental conditions have a significant impact on the quality of life. Schools should provide safe, healthy, convenient and efficient indoor spaces to school occupants, in terms of good indoor air quality, adequate fresh air, optimum lighting quality and acceptable acoustics environment.</p>
5.2	Healthy Living	<p>28 Drinking Water Quality</p> <p>29 Healthy Lifestyles</p>
	Background	<p>Unhealthy lifestyles pose a greater risk to human health, especially for the students. Schools therefore should promote healthy lifestyles, from healthy diet, physical activities to mindfulness, to safeguard the student and staff's physical and mental health.</p>
5.3	Pandemic Response	<p>30 Pandemic Response Measures</p>
	Background	<p>In response to the pandemic, schools should take necessary steps to prioritise the health and safety of their students, staff, visitors and stakeholders. Developing pandemic response measures enable school to have planned and adequate resources in response to diverse emergency situations.</p>

5 **Health, Comfort & Happiness** 24 Indoor Air Quality

Objective Promote school occupants' comfort, well-being, and productivity by providing instant and continuous monitoring on indoor air quality.

Credit point(s) Attainable 1

Credit Points	Credit Requirement
1	Install real-time Indoor Air Quality ("IAQ") sensors to monitor IAQ levels at indoor spaces.

Assessment The Applicant shall install real-time IAQ sensors to fulfil the following requirements:





IAQ parameters to be monitored:

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Required spaces:

Spaces	Requirement
General office	All
Staff room	All
Classroom	At least 50%

Submittals

Types	Schedule of Supporting Documents
	1. A narrative showing the information of the installed IAQ sensors.
	2. A layout plan showing the locations of the installed IAQ sensors.
	3. Catalogues of the installed IAQ sensors.
	4. Photographs of the installed IAQ sensors.

Attribute



Additional Information

- American Federation of Teachers, Indoor Air Quality. [ONLINE]
Available at:
<https://www.aft.org/health-safety-all/indoor-air-quality>.
- United States Environmental Protection Agency, Creating Healthy Indoor Air Quality in Schools. [ONLINE].
Available at:
<https://www.epa.gov/iaq-schools>
- Washington State Department of Health, School Indoor Air Quality Best Management Practices Manual. [ONLINE]
Available at: <https://www.doh.wa.gov/Portals/1/Documents/Pubs/333-044.pdf>.
- World Green Building Council, Indoor Air Quality in Schools. [ONLINE].
Available at:
<https://www.worldgbc.org/sites/default/files/Better%20Places%20for%20People%20-%20Schools%20Briefing%20Notes%20-IAQ.pdf>

5 **Health, Comfort & Happiness** 25 Openable Windows for Fresh Air

Objective Increase the supply of fresh air at indoor space through natural ventilation.

Credit point(s) Attainable 1

Credit Points	Credit Requirement
1	The size of openable window area of the indoor spaces shall be of a minimum of 4% of the net occupiable floor area.

Assessment Ensure all the following space types are equipped with openable window area of a minimum of 4% of the net occupiable floor area:

General offices/ Staff rooms	Classrooms	Special teaching rooms
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Types	Schedule of Supporting Documents
	1. A report with summary table showing the window schedule with information of sizing and locations.
	2. Elevation drawings showing the size and location of the openable windows.
	3. Layout plan showing the size of the indoor spaces.
	4. Calculation showing the size of openable window area fulfil the requirement.
	5. Photographs of the openable window at the specified indoor spaces.

Attribute



Additional Information 1. American Society of Heating Refrigeration and Air Conditioning Engineers – ANSI/ASHRAE Standard 62.1-2019 Ventilation for Acceptable Indoor Air Quality

5 **Health, Comfort & Happiness** 26 Lighting Quality

Objective Ensure adequate lighting levels at workplace to prevent under/ over illuminated indoor spaces.

Credit point(s) Attainable 2

Credit Requirement

Credit Points	Credit Requirement
Lighting Performance	
1	Maintain the average illuminance level at indoor spaces at a prescribed level.
Provision of Task Lighting	
1	Provision of task lighting at staff rooms and general offices.

Assessment

a) Lighting Performance

The Applicant shall provide Lux measurement results to demonstrate the average illuminance levels meet the following requirements:

Spaces	Illuminance Level
General office	300 Lux (for mainly screen based work)
Staff room	500 Lux (for mainly paper based work)
Classroom	500 Lux
Special teaching room	

b) Provision of Task Lighting

Provide task lights for teachers and staff for **at least 80%** of the workstations in staff rooms and general offices.

Submittals

Types	Schedule of Supporting Documents
a) Lighting Performance	
	1. A Lux measurement report showing the measurement results.
b) Provision of Task Lighting	
	1. Annotated layout plan showing the at least 80% of the workstations in General Office and Staff rooms are equipped with task lights .
	2. On-site photographs showing the provision of the task lights at staff rooms and general offices

Attribute



Additional Information

1. The Chartered Institution of Building Services Engineers (“CIBSE”) – The SLL Code for Lighting 2012.
2. Electrical and Mechanical Services Department, Task Lighting Design. [ONLINE]
Available at:
https://www.emsd.gov.hk/filemanager/en/content_764/Task_Lighting_Design.pdf.

5 **Health, Comfort & Happiness** 27 Background Noise


Objective Maintain optimum background noise level at indoor spaces such that nuisance from both interior (MVAC) and exterior (traffic) noise sources will not impact occupants’ health and well-being.

Credit point(s) Attainable 1

Credit Points	Credit Requirement
1	Maintain the background noise level at indoor spaces at a prescribed level.

Assessment The Applicant shall provide noise measurement over a period of five minutes to demonstrate the average background noise levels that meet the following requirements:

Spaces	Maximum Background Noise Levels
General office	45 dB(A)
Staff room	
Classroom	40 dB(A)
Special teaching room	

Types	Schedule of Supporting Documents
	1. A background noise measurement report showing the measurement results.

Attribute



Additional Information 1. International Electrotechnical Commission. IEC 61672-1:2013 Electroacoustic – Sound level meters.



5 **Health, Comfort & Happiness** 28 Drinking Water Quality

Objective Ensure the provision of drinking water complies with health-based thresholds.

Credit point(s) Attainable 1

Credit Points	Credit Requirement
1	The water quality at all drinking water points within school meets thresholds as stipulated by Water Supplies Department.

Assessment Engage accredited laboratory to test the water quality at all drink water points regularly, i.e., once a year, to ensure the drinking water meets thresholds as stipulated by Water Supplies Department (“WSD”).

Types	Schedule of Supporting Documents
	1. A layout plan showing all the drinking water points.
	2. Water sampling test results issued by an accredited laboratory.

Attribute



Additional Information

1. Education Bureau, Reducing Lead Exposure. [ONLINE]
Available at:
<https://www.edb.gov.hk/en/sch-admin/admin/about-sch/reducing-lead-exposure/index.html>.
2. Department of Health, Health Advice to Schools and Kindergartens for Reducing Lead Exposure. [ONLINE]
Available at:
https://www.chp.gov.hk/files/pdf/health_advice_on_lead_in_water_in_school_settings_e.pdf.
3. Hong Kong Laboratory Accreditation Scheme (“HOKLAS”), Accredited Conformity Assessment Bodies. [ONLINE].
Available at:
https://www.itc.gov.hk/en/quality/hkas/conformity_assessment_bodies/hoklas.html
4. Water Supplies Department, Action Plan for Enhancing Drinking Water Safety in Hong Kong. [ONLINE]
Available at:
<https://www.wsd.gov.hk/en/core-businesses/water-quality/action-plan-for-enhancing-of-drinking-water-safety/index.html>.
5. Water Supplies Department, Quality Water Supply Scheme for Buildings – Fresh Water (Management System). [ONLINE].
Available at:
<https://www.wsd.gov.hk/en/water-safety/fresh-water-management-system-/index.html>

5 **Health, Comfort & Happiness** 29 Healthy Lifestyles

Objective Promote and encourage healthy lifestyles among school occupants.

Credit point(s) Attainable 6

Credit Requirement

Credit Points	Credit Requirement
Promotion of Healthy Eating	
1	Encourage healthy eating styles through advertising and messaging.
Healthy Lifestyle Ideas	
5	Implement at least five (5) healthy lifestyles ideas.

Assessment

a) Promotion of Healthy Eating

Promote healthy lifestyles within the school campus (i.e., at all dining areas) by posters/ or other means to convey tips/ messages on healthy lifestyles.

b) Healthy Lifestyle Ideas

The Applicant shall implement different strategies to promote healthy lifestyles through the following approaches:

Promote healthy eating	Promote physical exercise	Promote mindful exercise
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The Applicant shall refer to the *Technical Guidebook* for a list of recommended healthy lifestyle ideas.

Submittals

Types	Schedule of Supporting Documents
a) Promotion of Healthy Eating	
	1. A copy of the promotional materials .
	2. On-site photographs showing the distribution of promotional materials.
b) Healthy Lifestyle Ideas	
	1. A narrative on the description of the implemented healthy lifestyle ideas.
	2. Implementation records of the healthy lifestyle ideas.

Attribute



**Additional
Information**

1. Department of Health, Student Health Service. [ONLINE].
Available at:
<https://www.studenthealth.gov.hk/eindex.html>
2. Department of Health, EatSmart@school.hk. [ONLINE]
Available at:
<https://school.eatsmart.gov.hk/en/index.aspx>.
3. Education Bureau, Healthy School. [ONLINE].
Available at:
<https://www.edb.gov.hk/en/curriculum-development/curriculum-area/life-wide-learning/healthy-school/index.html>
4. Education Bureau, Physical Education - References & Resources. [ONLINE]
Available at:
https://www.edb.gov.hk/en/curriculum-development/kla/pe/references_resource/index.html.
5. Green Monday, School Programme. [ONLINE].
Available at:
<https://greenmonday.org/en/school-programme/>

5 **Health, Comfort & Happiness** 30 Pandemic Response Measures

Objective Enable schools to have a detailed planning to allow adequate resources in response to any pandemic situations.

Credit point(s) Attainable 5

Credit Requirement



Credit Points	Credit Requirement
5	Implement at least five (5) different pandemic response measures.

Assessment The Applicant shall implement different pandemic preventative measures to ensure the school is well equipped in response to pandemic crisis through the following approaches:

1	Top management planning
2	Adequate recourses are in place
3	Implement preventive measures
4	Provide education and training

The Applicant shall refer to the Technical Guidebook for a list of recommended pandemic response measures.

Submittals

Types	Schedule of Supporting Documents
	1. A short report on the description of the implemented pandemic response measures.
	2. Implementation records of the pandemic response measures.

Attribute



Management



Health and Wellbeing



Additional Information

- Centre for Health, Health Advice to School for the Prevention of COVID-19. [ONLINE]. Available at: <https://www.chp.gov.hk/en/features/102742.html>
- World Health Organization, Considerations for school-related public health measures in the context of COVID-19. [ONLINE]. Available at: <https://www.who.int/publications/i/item/considerations-for-school-related-public-health-measures-in-the-context-of-covid-19>
- U.S. Centres for Disease Control and Prevention, Schools, Child Care, and Colleges. [ONLINE] Available at: <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/index.html>.

6 **Enhancements and Innovations** Enhancements and Innovations

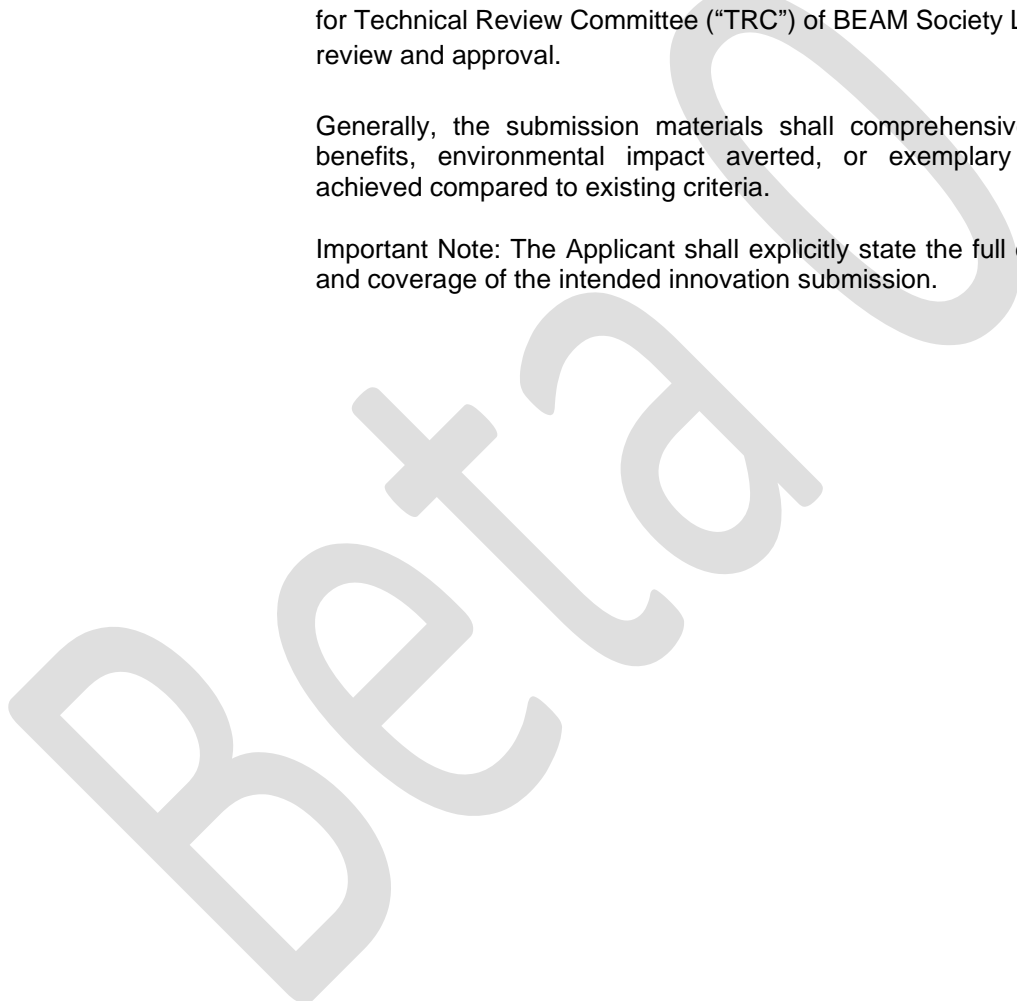
Introduction To promote continual improvement by encouraging schools to adopt innovative ideas, techniques or practices that address sustainability in a novel way.

Background This section allows the Applicant to submit for consideration for the award of Bonus credit points on any innovative techniques or performance enhancements which the Applicant deems to provide environmental benefits additional to those already covered in this Manual.

The Applicant shall be solely responsible to submit quantitative evidence for Technical Review Committee (“TRC”) of BEAM Society Limited (“BSL”) review and approval.

Generally, the submission materials shall comprehensively detail the benefits, environmental impact averted, or exemplary performance achieved compared to existing criteria.

Important Note: The Applicant shall explicitly state the full extent, scope, and coverage of the intended innovation submission.



6 Enhancements and Innovations Enhancements and Innovations




Objective To promote continual improvement by encouraging schools to adopt innovative ideas, techniques or practices that address sustainability in a novel way.

Credit point(s) Attainable 10 Bonus

Credit Points	Credit Requirement
10 Bonus	Provide/ implement different innovative green features and green ideas in school.

Assessment

- Maximum ten (10) Bonus credit points for implementing innovative green features and green ideas.
- A non-exhaustive list of examples is provided in the Technical Guidebook for reference.

Types	Schedule of Supporting Documents
	1. A narrative describing the implemented innovative green features or ideas.
 	2. Implementation records , including supporting photographs, videos, and/or related documentation, demonstrating the actual implementation in school.



Additional Information N/A

7 Appendix

Glossary

Baseline

A line serving as the basis for comparison in performance-based approach.

External Shading

External shading is a device incorporated in the building facade to limit the internal heat gain resulting from solar radiation.

MVAC

Mechanical ventilation and air-conditioning installations.

Normally Occupied Spaces

Normally occupied spaces are enclosed spaces where people normally stay more than 1 hour there. Examples include activity room, auditorium, classroom, conference room, exhibition hall, indoor sport hall, library and office.

Not Normally Occupied Spaces

Not normally occupied areas are enclosed spaces where people normally stay less than 1 hour there. Examples include corridor, entrance and lift lobby and locker room, etc.

Potable Water

Water that is safe enough to be consumed by human beings or used with low risk of immediate or long-term harm. Although the quality of water supplied to buildings in Hong Kong is strictly controlled, the quality of water drawn from consumers' taps may sometimes be affected by the condition of the inside plumbing system such as discolouration from rusty pipes. Consumers are responsible for proper maintenance of internal plumbing system and are required to engage a licensed plumber if the water quality is found to be affected due to the defects in the plumbing system.

Variable refrigerant flow

Variable refrigerant volume flow in a unitary air-conditioner where the cooling supply to the conditioned space is adjusted by modulating the flow of refrigerant.

Variable speed drive

A motor drive that controls the motor speed over a continuous range. This usually refers to the motor drive for HVAC's fans or pumps.