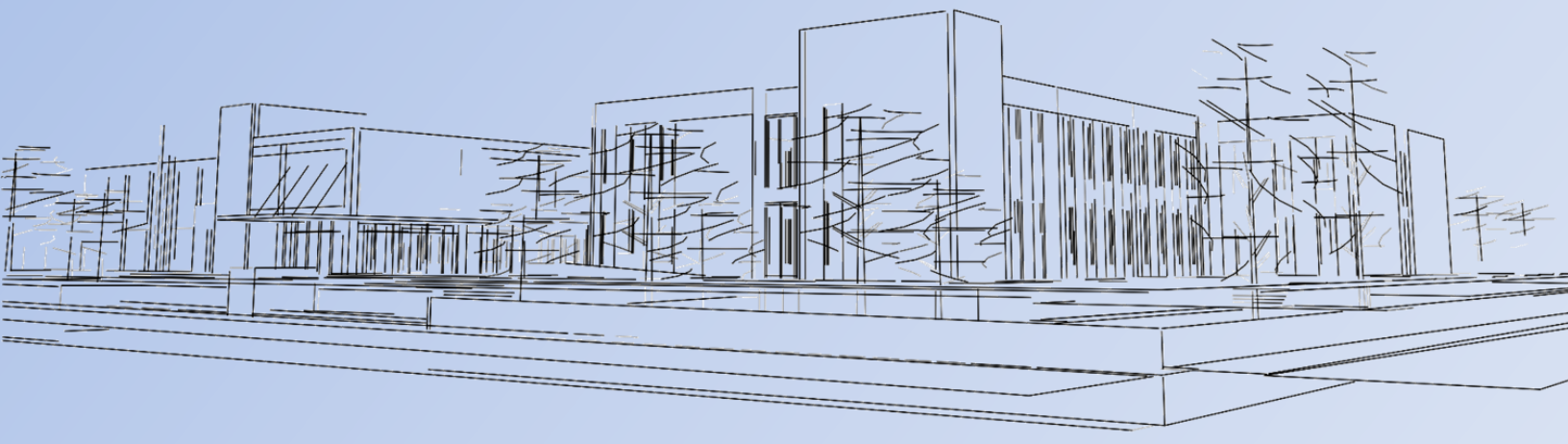
IGBC

Confederation of Indian Industry

Green Campus Rating System

(New & Existing)

Version 1.0



Abridged Reference Guide

May 2026

(Edited with Third Addendum)

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Foreword from the Indian Green Building Council (IGBC)

India is witnessing tremendous growth in infrastructure and construction development. The construction industry in India is one of the largest economic activities and is growing at an average rate of 9.5% as compared to the global average of 5%. As the sector is growing rapidly, preserving the environment poses a host of challenges. To enable the construction industry environmentally sensitive, CII - Sohrabji Godrej Green Business Centre has established the Indian Green Building Council (IGBC). IGBC is a consensus driven not-for- profit Council representing the building industry, consisting of more than 2,000 committed members. The Council encourages, builders, developers, owners, architects and consultants to design & construct green buildings thereby enhancing the economic and environmental performance of buildings.

The Green Building Movement in India has been spearheaded by IGBC since 2001, by creating awareness amongst the stakeholders Thus far, the Council has been instrumental in enabling 11.82 Billion sq.ft. of green buildings in the country. The Council's activities have enabled a market transformation with regard to green building materials and technologies.

IGBC continuously works to provide tools that facilitate the adoption of green building practices in India. The development of IGBC Green Campus rating system is another important step in this direction.

Acknowledgements

Indian Green Building Council (IGBC) of CII profoundly acknowledges all the stakeholders who have directly & indirectly contributed towards the development of IGBC Green Campus Rating (Pilot Version) Abridged Reference Guide.

IGBC would like to specially thank all the committee members who attended the First Technical Committee Meeting held on 4 November 2015 at CII-Sohrabji Godrej Green Business Centre, Hyderabad for their encouragement and outstanding support in development of the IGBC Green Campus Rating. IGBC is grateful to various stakeholders for their invaluable time & inputs in this initiative.

IGBC would like to thank the following stakeholders for their immense contribution in development of the rating:

- AECOM India
- Design Haaus Solutions
- JNTU-Ananthapur
- Stantec Consulting Ltd
- SMG Design Inc.
- JURONG Consultants
- CSR Estates Ltd
- HCL Technologies
- Ascendas India
- ADAPT Technologies
- S&S Green Projects
- NA Architects
- Ankoor Sanghvi Architects
- The Aga Khan Academy Hyderabad
- RSP Design Consultants (India) Pvt Ltd
- Murty & Manyam Architects and Engineers
- IL&FS Academy for Applied Development (IAAD)
- Jones Lang LaSalle (JLL)
- Hindustan Petroleum Corporation Limited (HPCL)
- Godrej & Boyce Mfg.Co. Ltd

I. Introduction

The construction sector for the last two decades has done extremely well in embracing the green concepts. Though initially it started with individual buildings, green is now penetrating into other forms of environment such as Educational campuses. The green concepts and techniques in campuses can help address National issues like water efficiency, energy efficiency, reduction in fossil fuel use in commuting, handling of consumer waste and conserving natural resources. Most importantly, these concepts can enhance occupant health, happiness and well-being.

Against this background, the Indian Green Building Council (IGBC) has launched 'IGBC Green Campus rating system to address the National priorities. This rating programme is a tool which enables the designer to apply green concepts and reduce environmental impacts that are measurable.

II. Benefits of Green Campus

Green Campus can have tremendous benefits, both tangible and intangible. The most tangible benefits are the reduction in water and energy consumption right from day one of occupancy. The energy savings could range from 20-30% and water savings around 30-40%. Intangible benefits of green campus include reduction in urban heat island effect, improved health & well-being of the occupants, enhancing air quality & promoting biodiversity, safety benefits, conservation of scarce national resources and zero waste to landfill.

III. National Priorities Addressed in the Rating System

The IGBC Green Campus rating system addresses the most important National priorities which include water conservation, handling waste, energy efficiency, reduced use of fossil fuels and health & well-being of occupants. The rating system requires the application of National standards and codes like the Bureau of Indian Standards (BIS), Central Ground Water Board guidelines, Central Pollution Control Board guidelines, Energy Conservation Building Code (ECBC), MNRE Guidelines, MoEFCC guidelines, National Building Code (NBC). The overarching objective is to better the National standards so as to create new benchmarks.

- **Water Conservation:**

  Most of the Asian countries are water stressed and in countries like India, the water table has reduced drastically over the last decade. IGBC Green Campus rating system encourages use of water in a self-sustainable manner through reducing, recycling and reusing strategies. By adopting this rating programme, green campus can save potable water to an extent of 30 – 40%.

- **Handling of Waste:**

  Handling of waste in campuses is extremely difficult as most of the waste generated is not segregated at source and has a high probability of going to land-fills. This continues to be a challenge to the municipalities which needs to be addressed. IGBC intends to address this by encouraging buildings to segregate the waste generated in the campus and treat the organic waste on site.

❖ **Energy Efficiency:**

The buildings sector is a large consumer of electrical energy. Through IGBC Green Campus rating system, campuses can reduce energy consumption through energy efficient lighting, air conditioning systems, etc. Also, alternative resources or energy are encouraged. The energy savings that can be realized by adopting this rating programme can be to the tune of 20-30%.

❖ **Reduced Use of Fossil Fuels:**

Fossil fuel is a slowly depleting resource, world over. The use of fossil fuel for transportation has been a major source of pollution. The rating system encourages the use of alternate fuels for transportation.

❖ **Health and Well-being of Occupants:**

Health and well-being of occupants is the most important aspect of IGBC Green Campus rating system. The rating system ensures facilities to enhance health and occupant well-being which are critical in a campus.

IV. IGBC Green Campus rating system

A. Features

IGBC Green Campus rating system is a voluntary and consensus based programme. The rating system has been developed based on materials and technologies that are presently available. The objective of IGBC Green Campus rating system is to facilitate the creation of water efficiency, handling of waste, energy efficiency, and environmentally friendly campuses.

The rating system evaluates certain mandatory requirements & credit points using a prescriptive approach and others on a performance based approach. The rating system has evolved so as to be comprehensive and at the same time user-friendly. The programme is fundamentally designed to address National priorities and quality of life for occupants. Some of the unique aspects addressed in this rating system are as follows:

- Optimisation of water use
- Improving lung space in the campus by emphasizing on green cover
- Encourage more green buildings in the campus
- Effective management of waste generated in campus
- Promotion of bicycles as a mode of transportation
- Encourage facilities for improving health & well-being of occupants

B. Scope

IGBC Green Campus rating system is developed for both New and Existing projects designed for mixed use especially the educational campuses. Buildings within the campus such as new buildings, existing buildings, residential buildings, etc., shall demonstrate compliance following the typology specific IGBC rating programmes. IGBC Green Campus rating system is applicable for the following two types:

- Educational Campuses
- Campuses having mixed use (non-residential and/or residential) developments

The IGBC Green Campus Rating is broadly classified into two types: New Campus & Existing Campus. Based on the scope of work, projects can choose any of the options.

If the campus is developed in a phase wise manner, each phase shall be registered separately for Precertification/Certification. A virtual boundary shall be defined for each phase and project can adopt campus based approach for common facilities.

C. Validity

The rating awarded for the campuses would be valid for a period of 3 years. Thereafter, the campuses are encouraged to apply for re-certification with the prevailing version.

The campuses can also apply for re-certification within 3 years of award of the rating to elevate the certification level if the project has implemented new green measures or enhanced existing green features in the campus.

Any additional development taking place after the award of the final rating, either during or post the validity of the rating (3 years) shall follow appropriate typology of IGBC Rating Systems (IGBC Green New Buildings, IGBC Green Homes etc.) in order to meet the compliance requirements during re-certification.

D. The Future of IGBC Green Campus rating system

Many new green building materials, equipment and technologies are being introduced in the market. With continuous up-gradation and introduction of new green technologies and products, it is important that the rating programme also keeps pace with current standards and technologies.

Therefore, the rating programme will also undergo periodic revisions to incorporate the latest advances and changes. It is important to note that project teams applying for IGBC Green Campus rating system should register their projects with the latest version of the rating system. During the course of implementation, projects have an option to transit to the latest version of the rating system. IGBC will highlight new developments on its website (www.igbc.in).

V. Overview and Process

IGBC Green Campus rating system addresses green features under the following categories:

- Site Planning and Management
- Sustainable Transportation
- Water Conservation
- Energy Efficiency
- Material and Resource Management
- Health & Well-being
- Sustainable Operation & Maintenance
- Innovation in Design

The guidelines detailed under each mandatory requirement & credit enables the design and construction of campuses of all sizes and types (as defined in scope). Different levels of green campus certification are awarded based on the total credits earned. However, every green campus should meet certain mandatory requirements, which are non- negotiable.

The various levels of rating awarded are:

Certification Level	Recognition
Certified	Best Practices
Silver	Outstanding Performance
Gold	National Excellence
Platinum	Global Leadership

A. When to use IGBC Green Campus rating system

IGBC Green Campus rating system is designed primarily for both new and existing campuses. The project team can evaluate all the possible points to apply under the rating system using a suitable checklist (New Campus and Existing Campus). The project can apply for IGBC Green Campus rating system certification, if it can meet all mandatory requirements and achieve the minimum required points.

B. Registration

Project team interested in IGBC Green Campus rating system Certification for their project must first register with IGBC. The projects can be registered on IGBC website (www.igbc.in) under IGBC Green Campus rating system. The website includes information on registration fee for IGBC member companies as well as non-members.

Registration is the initial step which helps establish contact with IGBC and provides access to the required documents, important communications and other necessary information.

IGBC web site will have all important details on IGBC Green Campus rating system registration & certification - process, schedule and fee.

C. Certification

To achieve the IGBC Green Campus certification, the project shall satisfy all the mandatory requirements and the minimum number of credit points. The project team is expected to provide supporting documents at preliminary and final stage of submission for all the mandatory requirements and the credits attempted. The project needs to submit the following:

1. General information of project including
    a. Project brief stating project type, different type of spaces, occupancy, number of buildings, area statement, etc.,
    b. General drawings (in PDF format only):
        i. Master/ Site plan
        ii. Landscape plan

iii. Storm water drain layout
iv. Parking plans
v. Photographs/ Rendered images

2. Narratives and supporting documentation such as drawings, calculations (in excel sheets), declarations/ contract documents, purchase invoices, manufacturer cut-sheets/ letters/ material test reports, etc., for each mandatory requirement/ credit

The required submittals are mentioned in this guide, under each mandatory requirement and credit. The project documentation is submitted in two phases – preliminary submittal and final submittal:

- Preliminary submission involves all mandatory requirements and minimum number of credits. After the preliminary submission, review is done by third party assessors and review comments would be provided within 30 calendar days.
- The next phase involves submission of clarifications to preliminary review queries and final submittal. This review will also be provided within 30 calendar days, after which the rating is awarded.

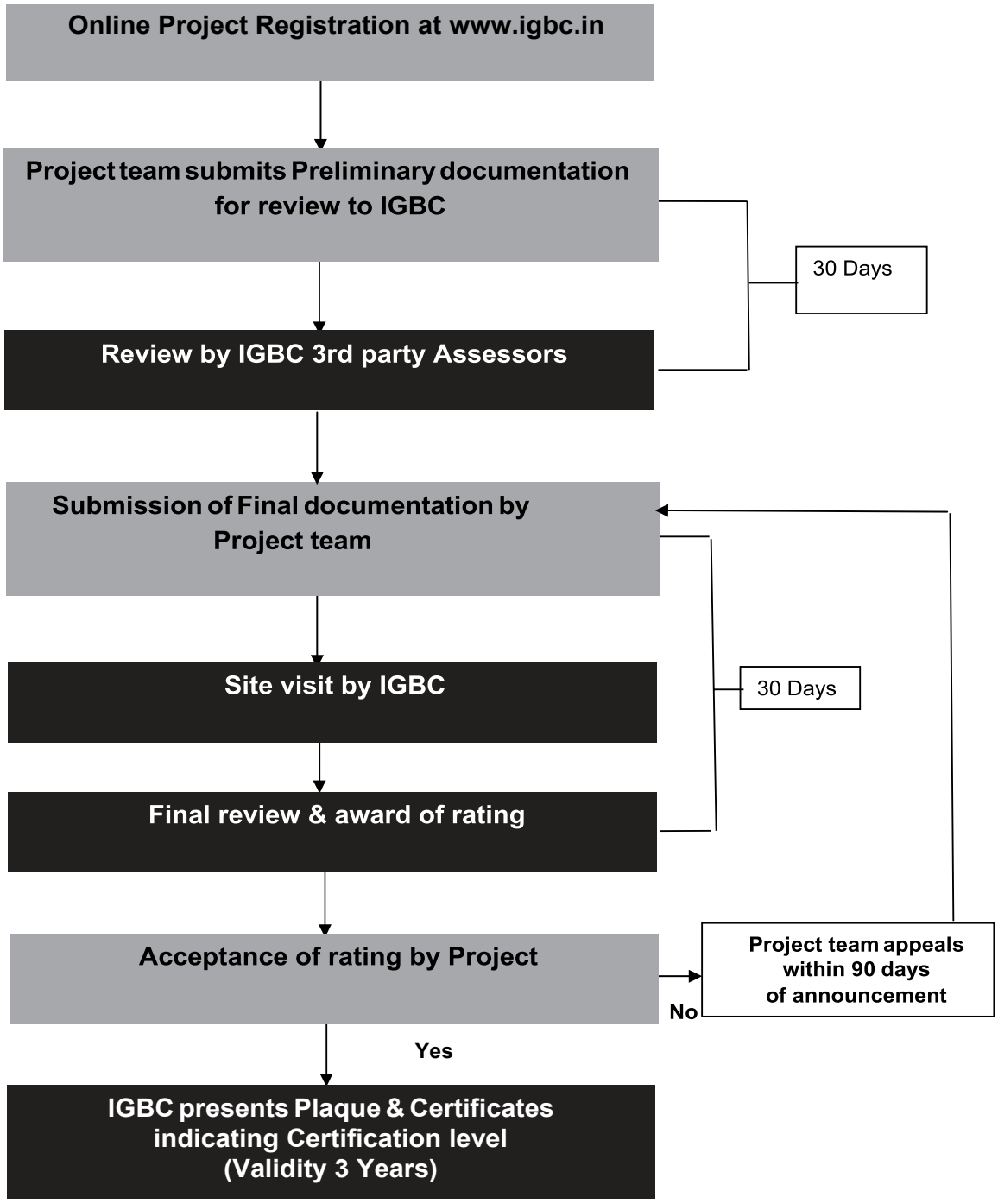
It is important to note that the mandatory requirements and credits earned at the preliminary review are only considered as anticipated. These mandatory requirements and credits are not awarded until the final documents are submitted, along with additional documents showing implementation of design features. If there are changes in any 'credit anticipated' aspects after preliminary review, these changes need to be documented and resubmitted during the final review.

The threshold criteria for certification levels are as under:

Certification Level	**New Campus & Existing Campus**	**Recognition**
Certified	50 – 59	Best Practices
Silver	60 – 69	Outstanding Performance
Gold	70 – 79	National Excellence
Platinum	80 – 100	Global Leadership

IGBC will recognize Green Campuses that achieve one of the rating levels with a formal letter of certification and a mountable plaque.

Certification Process



D. Precertification

Projects by owners/ developers can register for Precertification. This is an option provided for projects aspiring to get pre-certified at the design stage. Precertification also gives the developer a unique advantage to market the project to potential buyers.

The documentation submitted for precertification must detail the project design features which will be implemented. The rating awarded under precertification is based on the project's intention to conform to the requirements of IGBC Green Campus rating system. It is important to note that the precertification rating awarded need not necessarily correspond to the final rating.

Pre-certified projects are required to provide the status of the project to IGBC, in relation to the rating, once every six months until the award of the final rating. Those projects which seek precertification need to submit the following documentation:

1. General information about project, including
   a) Project brief stating project type, different type of spaces, occupancy, number of floors, area statement, etc.,
   b) General drawings (in PDF format only):
      1. Master/ Site plan
      2. Landscape plan
      3. Storm water drain layout
      4. Parking plans
      5. Photographs/ Rendered images
   c) Photographs/ Rendered views
2. Narratives and supporting documentation such as conceptual drawings, estimate / Tentative calculations (in excel sheets), declarations from the owner, etc., for each of the mandatory requirement and credit

IGBC would take 30 calendar days to review the first set of precertification documents. On receiving the clarifications posed in the first review, IGBC would take another 30 calendar days to award the precertification.

A certificate and a letter are provided to projects on precertification.

The Precertification is valid for 3 years from the date of award, after which projects are required to apply for the full certification (or) continue to submit construction progress reports once in six months to get an extension certificate for Precertification rating.

E. Credit Interpretation Ruling (CIR)

In some instances, the design team can face certain challenges in applying or interpreting a mandatory requirement or a credit. It can also happen in cases where the project can opt to achieve the same intent through a different compliance route.

To resolve this, IGBC uses the process of Credit Interpretation Ruling (CIR) to ensure that interpretations are consistent and applicable to other projects as well.

The following are the steps to be followed in case the project team faces a problem:

- Refer the Abridged Reference Guide for description of the credit intent, compliance options and approach & methodologies.
- Review the intent of the mandatory requirement/ credit and self-evaluate whether the project satisfies the intent.
- Review the Credit Interpretation Ruling web page for previous CIRs on the relevant mandatory requirement or credit. All projects registered under IGBC Green Campus rating system will have access to this page.
- If a similar CIR has not been addressed or does not answer the question sufficiently, submit a Credit Interpretation request. Only registered projects are eligible to post CIRs. Two CIRs are answered without levying any fee, and for any CIR beyond the first two CIRs, a fee is levied.

F. Appeal

In rare cases, credits get denied due to misinterpretation of the intent. On receipt of the final review and if the project team feels that sufficient grounds exist to appeal a credit denied in the final review or attempt a new credit, the project has an option to appeal to IGBC for reassessment of denied credits (or can attempt new credits along with denied credits, but shall not be more than 5 Credits in total) within 3 months from the receipt of the final review. If the project wishes to attempt new credits beyond 3 months from the receipt of the final review, the project shall apply for recertification.

The documentation for the mandatory requirements or credits seeking appeal may be resubmitted to IGBC along with necessary fee. IGBC will take 30 calendar days to review such documentation. If an appeal is pursued, please note that a different TPA (Third Party Assessor) will assess the appeal documentation hence, the project team must submit complete documentation instead of clarifications to technical advice. The following documentation should be submitted:

1. General information of project including
    a. Project brief stating project type, different type of spaces, occupancy, number of buildings, area statement, etc.,
    b. General drawings (in PDF format only):
        i. Master/ Site plan
        ii. Landscape plan
        iii. Storm water drain layout
        iv. Parking plans
        v. Photographs/ Rendered views

2. Resubmittal and appeal submittal documentation for only those mandatory requirement/ credits that the project is appealing for. Also, include a narrative for each appealed mandatory requirement/ credit to describe how the documents address the reviewers comments and concerns.

G. Fee

Registration, Certification fee details are available on IGBC website (https://igbc.in/igbc-green-campus.php)

H. Updates and Addenda

As the rating system continues to improve and evolve, updates addenda and errata to the abridged reference guide will be made available through IGBC website. These additions will be incorporated in the next version of the rating system.

Checklist

IGBC Green Campus Rating System		New Campuses	Existing Campuses
Site Planning and Management		**25**	**25**
SPM MR 1	Green Features in the Campus Buildings	Required	Required
SPM MR 2	Soil Erosion Control	Required	Required
SPM Credit 1	Enhanced Green Features in the Campus Buildings	12	12
SPM Credit 2	Basic Amenities	1	1
SPM Credit 3	Ecology and Biodiversity Conservation	2	2
SPM Credit 4	Green Cover	4	4
SPM Credit 5	Heat Island Reduction, Roof & Non-roof	4	4
SPM Credit 6	Outdoor Light Pollution Reduction	1	1
SPM Credit 7	Universal Design	1	1
Sustainable Transportation		**7**	**7**
ST Credit 1	Pedestrian Network	2	2
ST Credit 2	Sustainable Campus Mobility	2	2
ST Credit 3	Access to Sustainable Transportation	3	3
Water Conservation		**18**	**18**
WC MR 1	Rainwater Harvesting	Required	Required
WC Credit 1	Enhanced Rainwater Harvesting	6	6
WC Credit 2	Sustainable Landscape	2	2
WC Credit 3	Management of Irrigation Systems	2	2
WC Credit 4	Wastewater Treatment and Reuse	5	6
WC Credit 5	Optimise Water Use for Construction	1	NA
WC Credit 6	Water Performance Monitoring	2	2

Energy Efficiency		**17**	**18**
EE Credit 1	Eco-friendly refrigerants	1	2
EE Credit 2	Enhanced Energy Efficiency	4	4
EE Credit 3	Green Power	10	10
EE Credit 4	Energy Performance Monitoring	2	2
Material and Resource Management		**12**	**8**
MRM MR 1	Segregation of Waste, Post-occupancy	Required	Required
MRM Credit 1	Sustainable Building Materials	4	NA
MRM Credit 2	Use of Green Products & Equipment	3	3
MRM Credit 3	Handling of Waste Materials, During Construction	1	NA
MRM Credit 4	Dry Waste Management, Post-occupancy	NA	1
MRM Credit 5	Organic Waste Management, Post-occupancy	4	4
Health & Well-being		**8**	**7**
HWB MR 1	Tobacco Smoke Control	Required	Required
HWB Credit 1	Daylighting	2	2
HWB Credit 2	Control Indoor and Outdoor Pollutants	1	1
HWB Credit 3	Low VOC Materials	1	NA
HWB Credit 4	Health & Well-being Facilities	2	2
HWB Credit 5	Basic Facilities for Construction Workforce	1	NA
HWB Credit 6	Occupational Health & Safety	1	1
HWB Credit 7	Occupant Satisfaction Survey	NA	1
Sustainable Operation & Maintenance		**6**	**8**
SOM Credit 1	Green Audit	NA	2
SOM Credit 2	Green Education	2	2
SOM Credit 3	Smart Campus Operations	4	4
Innovation in Design		**7**	**9**
ID Credit 1	Innovation in Design Process	4	4
ID Credit 2	GHG Inventorization and Mitigation Measures	2	2
ID Credit 3	Beyond the Fence Green Initiatives	NA	1
ID Credit 4	Social Well-being & Community Practices	NA	1
ID Credit 5	IGBC Accredited Professional	1	1
-	**Total**	**100**	**100**

The threshold criteria for certification levels are as under:

Certification Level	New Campus & Existing Campus	Recognition
Certified	50 – 59	Best Practices
Silver	60 – 69	Outstanding Performance
Gold	70 – 79	National Excellence
Platinum	80 – 100	Global Leadership

Site Planning and Management

Green Features in the Campus Buildings

SPM Mandatory Requirement 1

Intent:

Design and construct high performance buildings within the campus to minimize negative environmental impacts resulting from development.

Compliance Options:

Design all individual buildings within the campus to meet the applicable mandatory requirements from the appropriate typology of IGBC Rating Systems (IGBC Green New Buildings, IGBC Green Homes, IGBC Green Existing Buildings etc. as applicable) for the below mentioned:

1. **Water Efficient Plumbing Fixtures**
2. **Minimum Energy Performance**
3. **Commissioning Plan for Building Equipment & Systems** *(applicable only for new campus/ as & when retrofitting is done in existing campus)*
4. **Minimum Fresh Air Ventilation**

Note:

- **Retrofitting refers to any alteration in the building load which leads to increase in load by 100 kW*
- *Any new/existing residential building in the campus shall demonstrate compliance as per IGBC Green Homes Rating for the above-mentioned mandatory requirements.*
- *For existing residential buildings, the Minimum Energy Performance criteria shall be demonstrated as per EPI defined in the table below:*

Climatic Zone	EPI (kWh/sqm/yr)
Hot & Dry	67
Composite	60
Warm & Humid	64
Temperate	31

Documentation Required:

Precertification and Certification

Refer the documentation as specified in the appropriate typology IGBC Rating Systems (IGBC Green New Buildings, IGBC Green Homes, IGBC Green Existing Buildings etc) for the below mentioned mandatory requirements:

i. Water Efficient Plumbing Fixtures

ii. Minimum Energy Performance

iii. Commissioning Plan for Building Equipment & Systems

iv. Minimum Fresh Air Ventilation

Soil Erosion Control

SPM Mandatory Requirement 2

Intent:

Control soil erosion and sedimentation, thereby reducing negative impacts to the site and surroundings.

Compliance Options:

Implement the following measures in the campus, as applicable:

- Soil erosion control measures must conform to the best management practices highlighted in the National Building Code (NBC) of India 2005, Part 10, Section 1, Chapter 4 - Protection of Landscape during Construction and Chapter 5 - Soil and Water Conservation
- Fertile topsoil to be stockpiled prior to construction, for future reuse or donation
- Develop appropriate measures to address soil erosion, after occupancy

Note:

- *If the top soil (10-20 cm) in the project is not fertile (or) suitable for preservation, in such a case the project may provide soil test report indicating that the soil is not fertile.*

Documentation Required:

Precertification

i. Narrative describing the Erosion and Sedimentation Control (ESC) measures proposed in the project, during construction and post occupancy

ii. Conceptual site drawings highlighting ESC measures proposed on-site during construction and post occupancy

iii. Photographs showing ESC measures taken at various stages of construction, before construction and during construction, as applicable based on current status of project

Certification

i. Narrative describing the Erosion and Sedimentation Control (ESC) measures implemented, during construction and post occupancy

ii. Site drawings highlighting ESC measures implemented on-site, during construction and post occupancy

iii. Photographs showing ESC measures taken at various stages of construction, before construction, during construction and post occupancy

iv. For existing campus projects, copy of ESC policy/measures to be implemented during future construction/ renovation work in the project which must include pre-construction, during construction and post occupancy measures proposed to control soil erosion and sedimentation.

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Enhanced Green Features in the Campus Buildings

SPM Credit 1 **Points: 1-12**

Intent:

Design and construct high performance buildings within the campus to minimise negative environmental impacts resulting from development.

Compliance Options:

Green Features in the Campus Buildings *(Max. 12 points)*

Design/retrofit all individual buildings in campus to comply with credit requirements under appropriate typology IGBC Rating System. (e.g., IGBC Green New Buildings, IGBC Green Existing Building, IGBC Green Homes)

1. Energy Efficiency **8 Points**

Option 1: EPI Ratio

Demonstrate compliance following typology specific IGBC Rating system. (e.g., IGBC Green New Buildings, IGBC Green Existing Building, IGBC Green Homes) Credit points would be awarded based on (EPI) ratio.

$$\text{EPI Ratio} = \frac{\sum \text{Proposed case/Actual annual energy consumption of individual buildings}}{\sum \text{Base Case /Baseline annual energy consumption of individual buildings}}$$

Points are awarded based on the table below:

EPI Ratio	Points
0.95	1
0.92	2
0.89	3
0.86	4
0.83	5
0.80	6
0.77	7
0.74	8

Note:

- *Projects that use on-site renewable energy sources (such as solar energy, wind power, biomass, etc.,) cannot subtract renewable energy generated from the total annual energy consumption of the proposed case.*
- *For New buildings which are less than one year of operation the proposed case annual energy consumption shall be based on Whole building Simulation of individual buildings.*
- *For existing buildings with more than one year of operation the actual (measured) case annual energy consumption shall be considered.*

- *Baseline energy consumption shall be determined based on the applicable IGBC rating system baseline or benchmark EPI for the respective building typology.*

(OR)

Option 2: Energy Performance Index (EPI): **8 Points**

(Applicable for Existing Campus only)

Credit points would be awarded based on the EPI (Energy Performance Index) of the campus as mentioned in the table below:

Percentage conditioned area	EPI Range	Percentage conditioned area	EPI Range	Percentage conditioned area	EPI Range	Points
Less than 25	61-75	25% - 50%	81-96	50%-75%	101-116	2
	50-60		67-80		86-100	4
	39-49		53-66		71-85	6
	28-38		38-52		56-70	8

Percentage conditioned area	EPI Range	Percentage conditioned area	EPI Range	Points
75%- 95%	116-130	95% and above	132-147	2
	101-115		118-132	4
	87-100		103-117	6
	74-88		88-102	8

Note:

- *All sources of energy consumption including electricity, diesel and renewable energy shall be considered.*

Option 3: Prescriptive Approach

The project shall meet or exceed the following prescriptive measures for all individual buildings in the campus, as applicable: (Maximum 8 points)

❖ **Building Envelope** **3 Points**

For all individual buildings in the campus, the project must ensure that the following building envelope measures meet the prescriptive measures of ECBC 2017 (or) ASHRAE Standard 90.1-2019 (1 point for each measure)

- Glazing Solar Heat Gain Coefficient (SHGC)*
- Overall Wall Assembly U-value
- Overall Roof Assembly U-value

Notes:

- **Low SHGC value can be achieved through chajjas or other sun shading devices or efficient fenestration or a combination of both. For details, refer to ECBC 2017 Section 4.3.3 – Vertical Fenestration, Exception to ECBC 2017.*
- *If Window-to-Wall ratio (WWR) is more than 40%, then the points for glazing would not be applicable.*

❖ **Lighting Power Density:** **3 Points**

For all individual buildings in the campus, the lighting power density in the building interior areas shall be reduced by minimum 20% over ASHRAE Standard 90.1 – 2019 or ECBC 2017 (Section 6, ECBC

Building) base case.

Points are awarded as below:

Reduction in Lighting Power Density	Points
≥ 20 %	1
≥ 30 %	2
≥ 40 %	3

Notes:

- *Compliance for the lighting power density shall be shown either through 'Building Area Method' or 'Space-by-Space Method'/ 'Space Function Method'. 'Building Area Method' shall be considered if the individual buildings in campus are single use/typology buildings (E.g.: hostel block with accommodation, administration building with offices, academic block with classrooms) If 'Building Area Method' is considered, compliance for parking area lighting (if within the building) shall be shown separately. 'Space-by-Space Method' shall be considered when individual buildings in the campus are mixed use/ typology buildings (E.g.: offices, labs & classrooms in the same building)*
- *The LPD should include power consumption of complete fixture, including lamps and ballasts.*

❖ **Lighting Controls:** **1 Point**

For 50% of the lighting load of non-residential buildings in the campus, shall have at least one of the following:

- Daylight sensor
- Occupancy / Motion sensor
- Timers / Dimmer

❖ **Air-conditioning Systems:** **2 Points**

For projects having air-conditioners, the points would be awarded as below:

- **Unitary Air-conditioners:**

BEE Star Rating/ equivalent	No. of Points
4 star rated	1
5 star rated	2

- **Variable Refrigerant Flow:**

Efficiency of VRF systems over ASHRAE Standard 90.1 2019 or ECBC 2017 baseline	No. of Points
≥ 10%	1
≥ 15%	2

➢ **Chillers:**

Efficiency of Chillers over ASHRAE Standard 90.1 2019 or ECBC 2017 baseline	No. of Points
≥ 10%	1
≥ 15%	2

❖ **Fans:** **2 Points**

- Atleast 75% of the fans installed in all individual buildings shall have an efficiency equivalent to BEE 5-star rating (1 point).
- Atleast 50% of the fans installed in the building shall be BLDC Fans (2 points).

❖ **Hot Water Systems:** **1 Point**

Projects having any one/ combination of the following efficient hot water systems for 100% of campus hot water requirement:

- Solar Water Heating Systems
- Heat pump with minimum CoP of 3.2
- BEE 5 star Geysers
- Boilers of at least 95% efficiency

2. Water Efficiency **4 Points**

Option 1: Water Efficient Plumbing Fixtures

Demonstrate that all the individual buildings in campus use/ retro-fit water efficient plumbing fixtures (as applicable) whose flow rates meet the baseline criteria (in aggregate) given in the table below. The total annual water consumption of each building should not exceed the total base case water consumption computed.

The baseline criteria are as below for Commercial buildings (Non-Residential) in the campus:

Fixture Type	Maximum Flow Rate / Consumption	Duration	Estimated Daily Uses per FTE**
Water Closets (Full-flush)	6 LPF	1 flush	1 for male; 1 for female
Water Closets (Half-flush)	3 LPF	1 flush	2 for female
Urinals	4 LPF	1 flush	2 for male
Faucets / Taps*	6 LPM	15 seconds	4
Health Faucet*	6 LPM	15 seconds	1
Showerhead / Hand-held Spray*	10 LPM	8 Minutes	0.1

The baseline criteria are as below for Residential buildings in the campus:

Fixture Type	Maximum Flow Rate/ Consumption	Duration	Estimated Daily Uses per person per day
Water Closets (Full-flush)	6 LPF	1 flush	1
Water Closets (Half-flush)	3 LPF	1 flush	1
Urinals	4 LPF	1 flush	2
Faucets / Taps*	6 LPM	15 seconds	8
Kitchen Sink*	6 LPM	15 seconds	6
Health Faucet*	6 LPM	15 seconds	1
Showerhead / Hand-held Spray*	10 LPM	8 Minutes	1

Source: Uniform Plumbing Code – India

** Reporting pressure for these fixtures shall be at 4 bar.*
*** Full Time Equivalent (FTE) represents a regular building occupant who spends 8 hours per day in the building. Part-time or overtime occupants have FTE values based on their hours per day divided by 8.*

Notes:

- *Water fixtures do not include irrigation systems.*
- *Faucets / Taps installed for hand wash in rest rooms and canteen shall be considered; whereas, faucets / taps installed for dish washing and washing clothes need not be considered.*
- *Rain showers (if any) need to be considered in the calculations under 'Showerhead'.*
- *The baseline flows can be demonstrated at a flowing water pressure of 4 bar. Flowing water pressure of 4 bar does not mean that the water supply in the building is at 4 bar. The building fixtures can operate at lower pressures, however, to show compliance under this credit, the design flow rates are to be submitted at 4 bar.*
- *Default occupancy shall be considered as 50% for male and female.*
- *FTE occupancy shall be considered in calculation, including visitors.*

Demonstrate reduction in water consumption through installation of water efficient plumbing fixtures. Points are awarded as below:

Percentage of Potable Water Savings over Baseline	Points
> 20 %	1
> 25 %	2
> 30 %	3
> 35 %	4

(OR)

Option 2: Water Use Intensity *(Applicable only for Existing Campus)* **1-4 points**

Demonstrate that the project has savings over baseline WUI of 45 liters per FTE per day.

$$\textbf{Water Use Intensity (WUI) (L/FTE/Day)} = \frac{\text{Total annual potable water consumption (L)}}{\text{Total FTE x Number of operational days.}} < \textbf{45 litres /FTE/day}$$

Percentage savings over baseline WUI	Points
> 20 %	1
> 25%	2
> 30 %	3
> 35 %	4

Notes:

- *Full Time Equivalent (FTE) represents a regular building occupant who spends 8 hours per day in the building. Part-time or overtime occupants have FTE values based on their hours per day divided by 8.*
- *For residential / 24-hour occupancy buildings (e.g., hostels, staff housing, service apartments), each occupant shall be considered as 3 FTE, based on normalization to an 8-hour occupancy basis.*
- *For mixed-use campuses, total FTE shall be the sum of FTE from all building types, including residential (converted to equivalent FTE)*

Exemplary Performance:

Energy Efficiency:

The project is eligible for exemplary performance if the EPI ratio of campus is 0.71 or below, or EPI for Existing Campus is as per the table below:

Percentage conditioned area	EPI Range
Less than 25%	< 28
25% - 50%	< 38
50%-75%	< 56
Above 75%	< 74
95% and above	< 88

Water Efficiency:

The project is eligible for exemplary performance if more than 40% of water savings is demonstrated over the baseline consumption for Water Efficient Plumbing Fixtures or Water Use Intensity (Existing Campus)

Documentation Required:

Precertification

Energy Efficiency

Option 1: EPI Ratio

i. Documentation as per the typology specific IGBC Rating system for each individual building in the campus (e.g., IGBC Green New Buildings, , IGBC Green Homes)

ii. Tentative calculation indicating the EPI ratio.

Option 2: Prescriptive Approach
Building Envelope:

i. Narrative stating the climate zone and the list of Energy Conservation Measures (ECMs) implemented in the project.

ii. Window-to-wall ratio (WWR) calculations for each building.

iii. Comparison between the baseline building parameters and the proposed building parameters.

iv. Details of the glazing along with the specifications (SHGC value, U-value and VLT).

v. Construction details and sectional drawings of the wall assembly (including wall insulation material, etc.,), along with the U-value of the overall wall assembly.

vi. Construction details and sectional drawings of the roof assembly (including roof insulation material, etc.,), along with the U-value of the overall roof assembly.

Interior Lighting:

i. Details of the lighting fixtures (make & model) proposed in the project.

ii. LPD calculations, as per ASHRAE Standard 90.1-2019 baselines. The LPD shall include building - interiors, common areas and parking areas.

iii. Conceptual lighting layout of all the buildings in the project.

iv. Manufacturer brochure/ cut-sheet of the lighting fixtures proposed in the project.

Lighting Controls:

i. Details of the proposed lighting systems and controls

ii. Tentative lighting load of all non-residential buildings in the campus.

iii. Tentative calculations indicating the percentage of lighting load of non-residential buildings with lighting controls

iv. Manufacturer brochures of the lighting systems and controls proposed in the project

Air Conditioning:

i. Details of the installed air-conditioning systems indicating the Efficiency/ COP values. Airconditioning equipment shall include Unitary, Packaged and Centralised system

ii. Calculations indicating the percentage improvement of air-conditioning system Efficiency/ COP over base case values as per ECBC 2017 or ASHRAE Standard 90.1-2019 baselines

iii. Conceptual HVAC layout of the air conditioned buildings in the project

iv. Manufacturer brochure/ cut-sheet of the HVAC system proposed in the project

Ceiling Fans:

i. Details of the ceiling fans installed in each building, indicating the BEE star rating or efficiency along with make and model

ii. Details of the BLDC fans proposed to be installed, along with make and model.

iii. Calculations indicating the percentage of BEE star rated/ BLDC ceiling fans out of the total ceiling fans in each building

iv. Manufacturer brochure/ cut-sheet of the ceiling fans proposed in the project

Water Heating System:

i. Details of the proposed water heating systems with make and model

ii. Tentative calculations indicating the total hot water requirement in the project (liters/ day) and capacity of the proposed alternative heating systems (liters/ day)

iii. Conceptual drawings showing the location(s) of proposed alternative heating systems.

iv. Manufacturer brochure/ cut-sheet of the proposed water heating systems.

Water Efficiency:

i. List of plumbing fixtures (flow and flush) proposed in each building in the campus, with respective make & model and flow rates.

ii. Tentative FTE occupancy calculations for the building occupants and visitors.

iii. Manufacturer cut-sheets/ brochures/ letters indicating the flow rates of the plumbing fixtures (flow and flush) at 3 bar flowing water pressure.

iv. Tentative calculation indicating the water savings over baseline for each individual building in the campus

v. Tentative calculation indicating the weighted average water savings over baseline

Certification

Energy Efficiency

Option 1: EPI Ratio

i. Documentation as per the typology specific IGBC Rating system for each individual building in the campus (e.g., IGBC Green New Buildings, IGBC Green Existing Building, IGBC Green Homes)

ii. Detailed calculation indicating the EPI Ratio.

Option 2: Energy Performance Index (EPI)

i. Electricity consumption details including utility power, captive generation and renewable energy of preceding 1 year

ii. Electricity bills of the preceding 1 year

iii. EPI calculations of the campus

Option 3: Prescriptive Approach
Building Envelope:

i. Narrative stating the climate zone and the list of Energy Conservation Measures (ECMs) implemented

in the project.

ii. Window-to-wall ratio (WWR) calculations for each building.

iii. Comparison between the baseline building parameters and the proposed building parameters.

iv. Details of the glazing along with the specifications (SHGC value, U-value and VLT).

v. Construction details and sectional drawings of the wall assembly (including wall insulation material, etc.,), along with the U-value of the overall wall assembly.

vi. Construction details and sectional drawings of the roof assembly (including roof insulation material, etc.,), along with the U-value of the overall roof assembly.

vii. Purchase invoice of the materials used in the building envelope

viii. Photographs of wall and roof assembly during construction

Interior Lighting:

i. Details of the lighting fixtures (make & model) installed in the project

ii. LPD calculations, as per ASHRAE Standard 90.1-2019 baselines. The LPD shall include building - interiors, common areas and parking areas

iii. Lighting layout of all the buildings in the project

iv. Manufacturer brochure/ cut-sheet of the lighting fixtures installed in the project

v. Purchase invoice of the lighting fixtures installed in the project

vi. Photographs of the typical lighting fixtures installed in the project

Lighting Controls:

i. Details of the proposed lighting systems and controls.

ii. Lighting load of all non-residential buildings in the campus.

iii. Calculations indicating the percentage of lighting load of non-residential buildings with lighting controls.

iv. Purchase invoice of the lighting controls installed in the project.

v. Photographs of the lighting controls installed in the project.

Air Conditioning:

i. Details of the installed air-conditioning systems indicating the Efficiency/ COP values. Airconditioning equipment shall include Unitary, Packaged and Centralised system

ii. Calculations indicating the percentage improvement of air-conditioning system Efficiency/ COP over base case values as per ASHRAE Standard 90.1-2019 baselines

iii. HVAC layout of the air conditioned buildings in the project

iv. Manufacturer brochure/ cut-sheet of the HVAC system proposed in the project

v. Purchase invoice of the HVAC system installed in the project

vi. Photographs of the HVAC system and nameplate indicating the COP values.

Ceiling Fans:

i. Details of the ceiling fans installed in each building, indicating the BEE star rating or efficiency along with make and model

ii. Details of the fans with DC motors, along with make and model.

iii. Calculations indicating the percentage of BEE star rated/ DC motor ceiling fans out of the total ceiling fans in each building

iv. Manufacturer brochure/ cut-sheet of the ceiling fans proposed in the project

v. Purchase invoice of the ceiling fans installed in the project

vi. Photographs of the typical ceiling fans installed in the project

Water Heating System:

i. Details of the proposed water heating systems with make and model

ii. Calculations indicating the total hot water requirement in the project (liters/ day) and capacity of the proposed alternative heating systems (liters/ day)

iii. Drawings showing the location(s) of proposed alternative heating systems.

iv. Manufacturer brochure/ cut-sheet of the proposed water heating systems.

v. Purchas invoice of the water heating system installed in the project

vi. Photographs of the water heating system installed in the project.

Water Efficiency

Option 1: Water Efficient Plumbing Fixtures

i. List of plumbing fixtures (flow and flush) installed in each building in the campus, with respective make & model and flow rates.

ii. FTE occupancy calculations for the building occupants and visitors.

iii. Manufacturer cut-sheets/ brochures/ letters indicating the flow rates of the plumbing fixtures (flow and flush) at 3 bar flowing water pressure.

iv. Tentative calculation indicating the water savings over baseline for each individual building in the campus

v. Tentative calculation indicating the weighted average water savings over baseline

vi. Purchase invoice of plumbing fixtures (flow and flush) with make & model.

vii. Photographs of plumbing fixtures installed in every building in the campus.

Option 2: Water Use Intensity

i. Narrative describing the annual water consumption of the campus, including the sources of water used within the facility.

ii. Water consumption data of at least 12 months.

iii. FTE Calculations.

iv. WUI Calculations also indicating the percentage savings over the Water Use Intensity (WUI) baseline of 45 litres/FTE/day

Basic Amenities

SPM Credit 2 **Points: 1**

Intent:

Provide access to basic amenities, so as to encourage walking and thereby improve quality of life.

Compliance Options:

Provide atleast seven basic amenities within the campus, with pedestrian access.

Notes:

- *Basic amenities within a walking distance of 800 meters from the campus entrance(s) can also be considered to show compliance.*
- *The basic amenities shall be functional at the time of project completion.*
- *All amenities are to be considered only once.*
- *The amenities shall be accessible to campus occupants and visitors.*

List of Basic Amenities:

- Accommodation facilities (Guest house, Hotel, Service apartment)
- ATM / Bank
- Automobile refuelling station
- Cafeteria/ Restaurant
- Educational facilities (Crèche, Primary School, & Secondary School)
- Hospital
- Laundry / Dry cleaners
- Leisure & Entertainment facilities (Auditorium, Amphitheatre, Theatre, etc.,)
- Park / Garden
- Post office / Courier service
- Retail Stores (Grocery store, Supermarket, etc.,)
- Saloon
- Pharmacy
- Stationery Store/ Xerox/ Print Store
- Vehicle Repair shop/ Service center
- Utility Bill Payment Center (Electricity/ Water)

Exemplary Performance:

This credit is not eligible for exemplary performance

Documentation Required:

Precertification

i. Site vicinity map (with scale) highlighting the location of existing/ proposed basic amenities within campus or 800m walking distance from the campus entrance(s). Also, show pedestrian access from the campus entrance(s) to the basic amenities, if basic amenities are outside the campus
ii. Photographs of the basic amenities. (Optional)

Certification

i. Site vicinity map (with scale) highlighting the location of existing basic amenities within campus or 800m walking distance from the campus entrance(s). Also, show pedestrian access from the campus entrance(s) to the basic amenities, if basic amenities are outside the campus
ii. Photographs of the basic amenities

Ecology & Biodiversity Conservation

SPM Credit 3 **Points: 1**

Intent:

Encourage retaining the site features to minimize site damage and associated negative environmental impacts.

Compliance Options:

Option 1: Site Preservation *(Applicable only for New Campuses)*
Demonstrate that the campus has retained/preserved existing site features such as vegetation, rocks, topography and/or water bodies as below:

Percentage of Existing Site Area Preserved/ Retained	Points
20	1
30	2

Option 2: Biodiversity Index *(Applicable only for Existing Campuses)*

Conduct a biodiversity assessment within the campus boundary and calculate the Biodiversity Index using the Shannon-Wiener Diversity Index (H′).
The Shannon-Wiener Index is used to quantify the species diversity and abundance of vegetation present within the campus.

$$H' = -\sum(pi - \ln(pi))$$

Where
H'= Shannon Weiner Diversity Index

pi = Proportion of individuals of the species

ln(pi) = Natural logarithm (base e)

pi= Number of individuals of species(i) / Total number of individuals of all species.

The biodiversity survey shall include all trees, shrubs, and major plant species within landscaped and natural areas of the campus. Points are awarded as below:

H' Value	Interpretation	Points
1.0-2.0	Moderate Biodiversity	1
2.0 – 2.5	High Biodiversity	2
> 2.5	Very High Biodiversity	Exemplary Performance

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if more than 40% of the site area is provided with green cover/ vegetation or if Shannon-Wiener Diversity Index (H′) >2.5

Documentation Required:

Precertification

i. Narrative describing the strategies proposed to retain the existing landscape, existing natural rocks, preserve or transplant existing trees, site contour, and existing water bodies and channels, as applicable

ii. Conceptual site survey plan/ sectional drawings showing the retention/ preservation measures for each of the site features, before and after development, as applicable:

- Existing landscape, without any disturbance whatsoever
- Existing natural rocks
- Preserve existing trees
- Site contour
- Existing water bodies and channels

iii. Tentative calculations indicating the site features retained/ preserved, before and after development, in percentage

Certification

Option 1 Site Preservation

i. Narrative describing the strategies implemented to retain the existing landscape, existing natural rocks, preserve or transplant existing trees, site contour, and existing water bodies and channels, as applicable

ii. Site survey plan/ Sectional drawings showing the retention/ preservation measures for each of the following site features, before and after development, as applicable:

- Existing landscape, without any disturbance whatsoever
- Existing natural rocks
- Preserve existing trees
- Site contour
- Existing water bodies and channels

iii. Calculations indicating the site features retained/ preserved, before and after development, in percentage

iv. Photographs showing the site features retained/ preserved, before and after development.

Option 2 Biodiversity Index

i. Narrative describing the natural biodiversity in the project indicating native flora and fauna species along with measures to conserve them.

ii. Documentation of Flora- List of flora with scientific nomenclature and note any rare/threatened species.

iii. Photographs of varied flora in the resort facility.

iv. Documentation of Fauna- List of animal, bird, reptile, amphibian, and insect species observed on or around the site along with migratory birds.

v. Photographs of varied fauna in the campus.

vi. Map of the campus facility indicating the zones with rich biodiversity or specific habitat value.

vii. Map of the campus facility highlighting the conservation measures implemented across different zones.

viii. Photographs of the various conservation measures implemented in the campus facility.

Green Cover

SPM Credit 4 **Points: 1-4**

Intent:

Minimise disturbances or restore green cover/ vegetation in the site, so as to promote habitat and biodiversity.

Compliance Options:

Option 1: Green Cover or Vegetation

Demonstrate that the campus has retained or restored green cover or vegetation, for atleast 25% of the site area.

Points are awarded as below:

Percentage of Site Area with Green Cover / Vegetation	Points
> 25%	1
> 35%	2

Notes:

- *Grass medians, grass pavers, jogging track, open-air theatre, parking areas, driveways, walkways, playground, swimming pool, etc., are considered as site disturbance.*
- *Vegetation on the ground shall only be considered; vegetation over built structures such as roofs, basement, podiums, etc., shall not be considered.*
- *Only native / adaptive vegetation shall be considered for this credit calculation.*
- *Potted plants shall not be considered as vegetation.*
- *Artificial vegetation shall not be considered for this credit calculation.*

(AND/ OR)

Option 2: Plantation of Tree Saplings:

The green cover shall have minimum 25 trees per acreage or plant tree saplings that can mature into fully grown-up trees with large canopy in the next 5 to 8 years.

Points are awarded as below:

Minimum number of Tree Saplings per Acre (Including Existing and Transplanted Trees)	Points
25	1
35	2

Notes:

- *Tree saplings shall be in place at the time of occupancy.*
- *Only native / adaptive tree saplings shall be considered for this credit calculation.*
- *Saplings planted in pots shall not be considered for credit calculations.*
- *Development footprint includes building footprint and other hardscape areas such as parking, footpaths, walkways, roads, grass medians, grass pavers, etc.,*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if more than 45% of the site area is provided with green cover/ vegetation (or) if more than 45 tree saplings per acre are existing or planted.

Documentation Required:

Precertification

Option-1: Green Cover or Vegetation:

i. Conceptual site drawing highlighting the area with green cover or vegetation

ii. Tentative calculations indicating the total area with green cover or vegetation on the ground to the total site area, in percentage

Option-2: Plantation of Tree Saplings:

i. Narrative describing the strategies proposed to plant new saplings and retention of existing trees, within the project site

ii. Conceptual landscape drawing highlighting the tree saplings and existing trees

iii. Tentative calculations indicating the total site area (in acres), tree saplings and existing trees

Certification

Option-1: Green Cover or Vegetation:

i. Site drawing highlighting the area with green cover or vegetation

ii. Calculations indicating the total area with green cover or vegetation on the ground to the total site area, in percentage

iii. Photographs showing the site area with green cover or vegetation

Option-2: Plantation of Tree Saplings:

i. Narrative describing the strategies implemented to plant new saplings and retention of existing trees, within the project site

ii. Landscape drawing highlighting the tree saplings and existing trees

iii. Calculations indicating the total site area (in acres), tree saplings and existing trees

iv. Photographs showing the tree saplings and existing trees

Heat Island Reduction, Roof & Non-roof

SPM Credit 5 **Points: 1-4**

Intent:

Minimise heat island effect so as to reduce negative impact on micro-climate.

Compliance Options:

- **Non-roof Impervious Areas** **1-3 Points**

  Implement green measures to minimize Urban Heat Island effect by covering at least 60% of non-roof impervious areas

  Points are awarded as below:

Percentage of shaded/ covered non-roof area	Points (*New Campus*)	Points *(Existing Campus)*
> 60 %	1	1
> 80 %	2	2

  Area factor calculation for Non-roof impervious areas to minimize the effect of Urban Heat Island

Mitigation Measure	Coefficient
Tree Cover	1.2
Grass Paver/Open Grid	0.9
Hardscape materials with SRI of atleast 29 (and not higher than 64).	0.8

Mitigated Non-Roof Area =∑ Area covered by Mitigation Measure X Coefficient for Mitigation Measure

Notes:

- *Non-roof impervious areas include, but not limited to, footpaths, pathways, roads, driveways, bicycle lanes uncovered surface parking, and other impervious areas.*
- *Exposed non-roof area need not include utility areas such as areas covered with DG sets, transformer, STP etc.,*
- *1.2, 0.9 and 0.8 are coefficients to calculate mitigated non-roof area.*
- *Trees / Saplings shall be in place at the time of certification.*
- *Artificial vegetation shall not be considered.*
- *SRI values of reflectance materials shall be as per ASTM Standards.*
- *All areas, including podium, covered surface parking and utility blocks, which are exposed to the sky (at and above ground level) shall be considered for the credit calculation under roof area*

(AND/ OR)

- **Roof Areas** **1-3 Points**

  Implement green measures to minimize Urban Heat Island effect by covering atleast 80% of the exposed roof area. Points are awarded as below:

Percentage of roof area covered with High Reflective Material	Points (*New Campus*)	Points *(Existing Campus)*
> 80 %	1	1
100 %	2	2

Area factor calculation for Exposed roof to minimize the effect of Urban Heat Island

Mitigation Measure	Coefficient
High SRI Coating	0.8
High SRI Tile	1
Vegetation	1.2

Solar Reflective Index (SRI) values for different roof types

Roof Type	Slope	Minimum SRI Value	Maximum SRI Value
Low-sloped roof	< 2:12	78	-
Steep-sloped roof	> 2:12	29	64
Podium/ Basement roof	-	29	64

Mitigated Roof Area =∑ Area covered by Mitigation Measure X Coefficient for Mitigation Measure

Notes:

- *All roof areas, including podium, covered surface parking, utility blocks and areas covered with elevated solar photovoltaic/ Bifacial PVs (1.8 m above ground), which are exposed to the sky (at and above ground level) shall be considered for this credit calculation.*
- *Projects with solar PV and solar water heaters mounted in contact with the roof can include the area covered with Solar PV as a strategy to mitigate heat island effect*
- *Exposed roof area does not include equipment platforms, areas with Solar Photovoltaic (SPV) & Solar Water Heaters (SWH), skylights, etc.*
- *0.8, 1 and 1.2 are coefficients to calculate mitigatedroof area.*
- *Exposed parking area covered with either metal roof or permanent concrete structure would be considered under roof area calculation, else parking area would be considered under Non-roof area calculation.*
- *SRI (Solar Reflective Index) value of high reflectance materials should be as per ASTM Standards.*
- *Lift / staircase headroom shall be considered as exposed roof area.*
- *Artificial vegetation shall not be considered.*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process If more than 100% of exposed non-roof and roof areas are meeting the compliance requirements.

Documentation Required:

Precertification

Non-roof Impervious Areas

i. Narrative describing the proposed strategies to reduce heat island effect from non-roof areas

ii. Conceptual site drawing highlighting the non-roof impervious (hardscape) areas and the areas covered with shade from tree cover within 5 years, (and/ or) open grid pavers, including grass pavers (and/ or) hardscape materials with SRI of atleast 29 (and not higher than 64)

iii. Tentative calculations indicating the effective non-roof area covered with shade from tree cover, (and/ or) open grid pavers, including grass pavers (and/ or) hardscape materials with SRI of atleast 29 (and not higher than 64) to the total exposed non-roof impervious area, in percentage

iv. Tentative list of the existing trees/ plant species which can mature into fully grown trees for shading, within the next 5 years

Roof Areas

i. Narrative describing the proposed strategies to reduce heat island effect from roof areas

ii. Conceptual Roof drawing highlighting the area to be covered with high reflective roof materials/ vegetation

iii. Tentative calculations indicating the total effective roof area covered with high reflective roof materials/vegetation to the total exposed roof area (excluding service & utility areas), in percentage

iv. Manufacturer datasheets of the proposed high reflective roof materials indicating the Solar Reflective Index (SRI) value.

Certification

Non-roof Impervious Areas

i. Narrative describing the strategies to reduce heat island effect from non-roof areas

ii. Site drawing highlighting the non-roof impervious (hardscape) areas and the areas covered with shade from tree cover within 5 years, (and/ or) open grid pavers, including grass pavers (and/ or) hardscape materials with SRI of atleast 29 (and not higher than 64)

iii. Calculations indicating the effective non-roof area covered with shade from tree cover, (and/ or) open grid pavers, including grass pavers (and/ or) hardscape materials with SRI of atleast 29 (and not higher than 64) to the total exposed non-roof impervious area, in percentage

iv. List of the existing trees/ plant species which can mature into fully grown up trees for shading, within the next 5 to 8 years

v. Purchase invoice/ Payment receipt of the reflective materials, if sourced

vi. Manufacturer letters/ brochures indicating the Solar Reflective Index (SRI) of the reflective materials

vii. Photographs showing the measures implemented to reduce heat island effect from non- roof areas

Roof Areas

i. Narrative describing the proposed strategies to reduce heat island effect from roof areas

ii. Roof drawing highlighting the area covered with high reflective roof materials/ vegetation

iii. Calculations indicating the total effective roof area covered with high reflective roof materials/vegetation to the total exposed roof area (excluding service & utility areas), in percentage

iv. Purchase invoice/ Payment receipt of the reflective materials, if sourced

v. Manufacturer letters/ brochures indicating the Solar Reflective Index (SRI) of the reflective materials

vi. Photographs showing the measures implemented to reduce heat island effect from roof areas

Outdoor Light Pollution Reduction

SPM Credit 6 **Points: 1**

Intent

Reduce light pollution to increase night sky access and enhance the nocturnal environment.

Compliance Options:

- **Avoid Nocturnal Light Pollution:**

Design exterior lighting such that all site and building-mounted luminaires produce no upward lighting.

(AND)

- **Lighting Power Density:**

The lighting power density should be reduced by 30% for exterior areas vis-à-vis the ASHRAE Standard 90.1-2019 baselines, Section 9.4.2 - Exterior Building Lighting Power.

Notes:

- *Classify the project under one of the lighting zones, as defined in ASHRAE Standard 90.1-2019, and follow all the requirements of the respective zone. Justification shall be provided for the selected lighting zone.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

i. Narrative describing the design strategies proposed for outdoor light pollution reduction and exterior LPD

ii. Tentative calculations indicating the upward lighting for each typical lighting fixture. The calculations shall include the lighting fixture type, quantity, total lumens, upward lumens and upward lighting percentage

iii. Tentative LPD calculations, along with the list of the exterior lighting fixtures (with make & model) proposed in the project

iv. Conceptual site drawing highlighting the exterior lighting fixtures proposed in the project

Certification

i. Narrative describing the strategies implemented for outdoor light pollution reduction and exterior LPD

ii. Calculations indicating upward lighting for each typical lighting fixture. The calculations shall include the lighting fixture type, quantity, total lumens, upward lumens and upward lighting percentage

iii. LPD calculations, along with the list of the exterior lighting fixtures (with make & model) proposed in the project

iv. Site drawing highlighting the exterior lighting fixtures

v. Day and night time photographs showing the typical exterior lighting fixtures

vi. Manufacturer cutsheet of the exterior lighting fixtures. (Optional for existing campuses)

Universal Design

SPM Credit 7 **Points: 1**

Intent:

Ensure that the campus design caters to differently abled and senior citizens.

Compliance Options:

Design the campus to provide the following measures for differently abled and senior citizens in accordance with the guidelines of the National Building Code (NBC) of India 2016.

- Easy access to the main entrance of the buildings
- Appropriately designed preferred car park spaces having an easy access to the building's main entrance or closer to the lift lobby

  (*Provide atleast one car park space for the first 100 car park spaces and one additional for every 250 car park spaces thereafter or as defined by local byelaw*)
- Non slippery ramps, with handrails on atleast one side (as applicable)
- Uniformity in floor level for hindrance-free movement in exterior common areas
- Restrooms (toilets) in campus/ building common areas designed for differently abled people

  (*Atleast one restroom shall be provided for differently abled in all buildings within the campus. Utility buildings need not be considered*)
- Main walkways / pathways with adequate width in exterior common areas
- Visual warning & Way finding signages in exterior common areas
- Elevators must be provided in multistorey buildings within the campus.

  (*Atleast one elevator shall be provided for differently abled in all multistorey buildings within the campus. Utility buildings need not be considered*)

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

i. Narrative describing the measures proposed in the campus for differently abled people and senior citizens

ii. Tentative calculations indicating the total number of preferred car park spaces (for differently abled people and senior citizens) to the total number of car park spaces

iii. Tentative calculations indicating the total number of rest rooms (toilets) provided in the common areas (for differently abled people and senior citizens) of each building in the campus

iv. Conceptual drawings highlighting the measures proposed for differently abled people and senior citizens

Certification

i. Narrative describing the measures implemented in the campus for differently abled people and senior citizens

ii. Calculations indicating the total number of preferred car park spaces (for differently abled people and senior citizens) to the total number of car park spaces

iii. Calculations indicating the total number of rest rooms (toilets) provided in the common areas (for differently abled people and senior citizens) of each building in the campus

iv. Drawings highlighting the measures implemented for differently abled people and senior citizens.

v. Photographs showing all the measures implemented

vi. Manufacturer brochures for the measures implemented, as applicable. (Optional for existing campuses)

SUSTAINABLE TRANSPORTATION

Pedestrian Network

ST Credit 1 **Points: 1-2**

Intent:

Encourage safe and comfortable walking experience by providing well designed interconnected pedestrian network.

Compliance Options:

Design pedestrian network within the campus between main buildings and basic amenities, with proper shading and adequate illumination levels.

- ❖ Provide shade for pedestrian network areas through tree cover or structured cover, for comfortable pedestrian access. *(1 point)*
- ❖ Provide adequate illumination (Lux levels) for pedestrian network within the campus, as per National Building Code of India, Part 8 - Building Services, Section – 1 Lighting and Ventilation, Table - 4 Recommended Values of Illuminance. The code recommends lux levels in the range 30 to 100. *(1 point)*

Notes:

- *Pedestrian network here refers to footpaths and pathways.*
- *Trees/ Saplings shall be in place at the time of occupancy for shading.*
- *Shade from newly planted saplings shall be within 5 to 8 years of planting.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

i. Conceptual site plan showing pedestrian network areas with tree cover or structured cover, within the campus, between main buildings and basic amenities

ii. Declaration letter confirming that the pedestrian network within the campus will be designed with adequate illumination as per NBC.

Certification

i. Site plan showing pedestrian network areas with tree cover or structured cover, within the campus, between main buildings and basic amenities

ii. Table showing illumination levels for pedestrian network within the campus as per NBC of India

iii. Photographs showing pedestrian network areas with tree cover or structured cover and external light fixtures installed along the pedestrian network

Sustainable Campus Mobility

ST Credit 2 **Points: 2**

Intent:

Reduce automobile dependency for short distance commuting to minimise fuel consumption & vehicular emissions, thereby promoting physical activity and health.

Compliance Options:

Option 1: Bicycle Network **2 Points**

- Provide dedicated Bicycle network- connecting all main buildings with adequate illumination between 30 to 100 lux level (1 point)
- Provide dedicated bicycle parking at all main buildings/ basic amenities, within a walking distance of 100 meters (1 point)

(OR)

Option 2: Eco Friendly Shuttle **2 Points**

- Provide electric shuttles catering to at least 5% of campus occupants, connecting main buildings within campus.

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

Bicycle Network:

i. Conceptual site plan showing the dedicated bicycle lane network within the campus between main buildings & basic amenities

ii. Declaration letter confirming that the bicycle network within the campus will be designed with adequate illumination as per NBC of India.

iii. Conceptual site plan showing the designated bicycle parking areas at all main buildings/ basic amenities, within a walking distance of 100 meters

Eco Friendly Shuttle:

i. Declaration letter confirming that the Eco friendly shuttle shall be provided within the campus will be provided.

ii. Tentative calculations indicating the number of campus occupants in percentage catered through eco friendly shuttle.

iii. Tentative details of shuttle services - type (fuel used) and number of vehicles, frequency (peak and non-peak hours), seating capacity, route details (boarding & destination points), etc.,

iv. Site plan showing the alighting point of shuttle services

Certification

Bicycle Lane Network:

i. Site plan showing dedicated bicycle lane network within the campus between main buildings & basic amenities

ii. Table showing illumination levels for bicycle lane network within the campus as per NBC of India.

iii. Site plan showing the designated bicycle parking areas at all main buildings/ basic amenities, within a walking distance of 100 meters

iv. Photographs of permanent signages provided for designated bicycle parking along with racks provided for bicycle parking

Eco Friendly Shuttle:

i. Calculations indicating the number of campus occupants catered through eco friendly shuttle in the premises.

ii. Photographs of eco friendly shittle service being used in the campus premises.

iii. Details of shuttle services - type (fuel used) and number of vehicles, frequency (peak and non-peak hours), seating capacity, route details (boarding & destination points), etc.,

iv. Site plan showing the alighting point of shuttle services

Access to Sustainable Transportation

ST Credit 3 **Points: 1-3**

Intent:

Encourage use of public transport, so as to reduce negative impacts caused from automobile use.

Compliance Options:

❖ **Option 1: Public Transport** **1 Point**

Provide access to a public transportation facility (bus-stop/ intra-city railway station), within 800 meters walking distance from the campus entrance(s).

(OR)

❖ **Option 2: Shuttle Service** **1 Point**

Electric/ CNG-powered Vehicles

Operate or have a contract in place for electric/ CNG-powered vehicles as shuttle services catering atleast 20% of the campus occupants to nearby public transport facilities.

Additionally, the project shall install electric charging facilities within the projects' parking area to cater to the electric vehicles (or) the project shall have atleast one CNG filling station within 5 km distance from the projects' campus entrance.

(AND/OR)

❖ **Option 3-Electric Vehicle Charging Infrastructure** **2 Points**

Provide Electric Vehicle Charging Infrastructure (EVCI)* for electric vehicles within the site as indicated below (including visitor's parking):

% of EVCI out of Total Four/Two wheeler Parking Capacity	Credit Points
3%	1
5%	2

Notes:

- **The project must follow the latest local building regulations/byelaws for EVCI recommendations or provide EVCI as per the Charging Infrastructure of Electric Vehicle (EV)-Revised consolidates guidelines and standards, Ministry of Power, GOI.*
- *Electric Vehicle Charging Infrastructure/ Electric Vehicle Supply Equipment- Electric Vehicle Charging Infrastructure (EVCI) comprises the charger, socket, supporting power, communication, and safety systems.*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 – Innovation in Design Process if it complies with Option 3: Electric Vehicle Charging Infrastructure, with 7% of the total four-wheeler and two-wheeler parking capacity provided with EVCI meeting the compliance requirements.

Documentation Required:

Precertification

Option 1: Public Transport

i. Site vicinity map (with scale) highlighting the location of intra-city railway station (or) a bus-stop, within 800 meters from the campus entrance(s). Also, show pedestrian access from the entrance(s) to the public transport facility

ii. Photographs showing the intra-city railway station (or) a bus-stop. (Optional)

Option 2: Shuttle Services

i. Draft copy of contract agreement that will be signed between the project owner and the shuttle service provider. (as applicable)

ii. Tentative details of shuttle services - type (fuel used) and number of vehicles, frequency (peak and non-peak hours), seating capacity, route details (boarding & destination points), etc.,

iii. Tentative calculations indicating the number of campus occupants catered through electric vehicles/ CNG-powered vehicles/ fossil fuel based vehicles in the project to the total number of building occupants, in percentage

iv. Tentative calculations indicating the total number of electric vehicles and the number of parking spaces with electric charging facilities in the project, in percentage. (as applicable)

v. Site vicinity map (with scale) highlighting the location of CNG filling station, within 5 km from the campus entrance(s). (as applicable)

vi. Site plan showing the alighting point of shuttle services

Option 3: Electric Vehicle Charging Infrastructure

i. Conceptual parking layouts highlighting the location of parking spaces with electric charging facilities, for electric vehicles.

ii. Tentative calculations indicating the percentage of parking capacity proposed to be provided with electric charging points to demonstrate credit compliance

iii. Manufacturer cut sheet of the proposed electric charging facility

Certification

Option 1: Public Transport

i. Site vicinity map (with scale) highlighting the location of intra-city railway station (or) a bus-stop, within 800 meters from the campus entrance(s). Also, show pedestrian access from the entrance(s) to the public transport facility

ii. Photographs showing the intra-city railway station (or) a bus-stop

Option 2: Shuttle Services

i. Copy of contract agreement that will be signed between the project owner and the shuttle service provider. (as applicable)

ii. Details of shuttle services - type (fuel used) and number of vehicles, frequency (peak and non-peak hours), seating capacity, route details (boarding & destination points), etc.,

iii. Calculations indicating the number of campus occupants catered through electric vehicles/ CNG-powered vehicles/ fossil fuel based vehicles in the project to the total number of building occupants, in percentage

iv. Calculations indicating the total number of electric vehicles and the number of parking spaces with electric charging facilities in the project, in percentage. (as applicable)

v. Site vicinity map (with scale) highlighting the location of CNG filling station, within 5 km from the campus entrance(s). (as applicable)

vi. Site plan showing the alighting point of shuttle services

Option 3: Electric Vehicle Charging Infrastructure

i. Parking layouts highlighting the location of parking spaces with electric charging facilities, for electric vehicles.

ii. Calculations indicating the percentage of parking capacity provided with electric charging points to demonstrate credit compliance.

iii. Manufacturer cut sheet of the installed electric charging facility

iv. Purchase invoice of the electric charging facility installed in the project, indicating the type and number of charging points provided.

v. Photographs showing electric charging facilities with signages, provided in the project.

WATER CONSERVATION

Rainwater Harvesting

WC Mandatory Requirement 1

Intent:

Enhance ground water table and reduce municipal water demand through effective rainwater management.

Compliance Options:

❖ **Option 1: Rainwater Harvesting**

Design rainwater harvesting system to capture/ percolate atleast 'one-day rainfall*' runoff volume from roof and non-roof areas in the campus.

* *One-day rainfall can be derived from 'percentage of average peak month rainfall' given in Table below.*

To arrive at average peak month rainfall, consider an average of atleast last 5 years peak month rainfall (of the respective year).

Criteria to arrive at 'One-day Rainfall'

S No	Average Peak Month Rainfall (in mm)	One-day Rainfall (% of Average Peak Month Rainfall)
1	Upto 250	9%
2	251 – 350	7.5%
3	351 – 500	6%
4	501 – 700	4.5%
5	701 & above	3%

(OR)

❖ **Option 2: High Groundwater Table**

In areas where the Central / State Ground Water Board does not recommend artificial rain water recharge (or) if the groundwater table is less than 8 meters, the project is required to provide justification for not implementing rainwater harvesting system.

Notes:

- *For rainfall information, refer Indian Meteorological Department data at http://www.imd.gov.in*
- *Runoff volume = Surface area x Runoff Coefficient x Rainfall.*
- *For run-off coefficients for typical surface types, refer Table - Run-off coefficients for Typical Surface Types.*
- *Consider Rainwater Harvesting Guidelines from National Building Code (NBC) of India, Part 11 - Approach to Sustainability, Section 7.2 - Rainwater Harvesting - Surface runoff.*
- *In areas where the water percolation is limited, collection tanks / water bodies may be provided to meet the above requirement.*
- *Filtering of suspended solids shall be ensured by providing suitable filtering media before letting the water into the collection tanks, water bodies and municipal storm water drains.*

Run-off coefficients for Typical Surface Types

S No	Surface Type	Run-off Coefficient
1	Cemented / Tiled Roof	0.95
2	Roof Garden (<100 mm thickness)	0.5
3	Roof Garden (100 –200 mm thickness)	0.3
4	Roof Garden (201 – 500 mm thickness)	0.2
5	Roof Garden (> 500 mm thickness)	0.1
6	Turf, Flat (0 - 1% slope)	0.25
7	Turf, Average (1 - 3% slope)	0.35
8	Turf, Hilly (3 - 10% slope)	0.4
9	Turf, Steep (> 10% slope)	0.45
10	Vegetation, Flat (0 - 1% slope)	0.1
11	Vegetation, Average (1 - 3% slope)	0.2
12	Vegetation, Hilly (1 - 3% slope)	0.25
13	Vegetation, Steep (> 10% slope)	0.3
14	Concrete Pavement	0.95
15	Gravel Pavement	0.75
16	Open-grid Concrete Pavement	0.75
17	Open-grid Grass Pavement	0.5
18	Water Bodies (lined) Ex: Swimming Pools	0.95
19	Water Bodies (un-lined) Ex: Water Pond	0

Documentation Required:

Precertification

Option 1: Rainwater Harvesting

i. Narrative describing the strategies proposed to capture/ harvest rain water from roof & non-roof areas

ii. Tentative calculations indicating the run-off volume captured/ harvested from roof and non-roof and the volume of rainwater harvesting pits/tanks.

iii. Conceptual external storm water drain layout highlighting the location of rain water harvesting - ponds, pits, storage tanks, etc., as applicable, including cross-sectional drawings

iv. Hydrogeological test report (approved by third-party) indicating the percolation capacity of the soil/ Project specific borewell test report indicating the percolation rate

Option 2: High Groundwater Table

i. Hydrology report (approved by third-party) indicating the level of water table, at different locations within the project site

Certification

Option 1: Rainwater Harvesting

i. Narrative describing the strategies implemented to capture/ harvest rain water from roof & non-roof areas

ii. Calculations indicating the run-off volume captured/ harvested from roof and non-roof and the volume of rainwater harvesting pits/tanks.

iii. External storm water drain layout highlighting the location of rain water harvesting - ponds, pits, storage tanks, etc., as applicable, including cross-sectional drawings of rain water harvesting systems

iv. Hydrogeological test report (approved by third-party) indicating the percolation capacity of the soil/ Project specific borewell test report indicating the percolation rate

v. Photographs of rain water harvesting systems, taken during and after construction

Option 2: High Groundwater Table

i. Hydrology report (approved by third-party) indicating the level of water table, at different locations within the project site

Enhanced Rainwater Harvesting

WC Credit 1 **Points: 2-6**

Intent:

Enhance ground water table and reduce municipal water demand through effective rainwater management.

Compliance Options:

❖ **Option 1: Rainwater Harvesting** **6 Points**

Design rainwater harvesting system to capture/ percolate atleast 'one-day rainfall*' runoff volume from roof and non-roof areas.

**One-day rainfall can be derived from 'percentage of average peak month rainfall' given in Table below.*

To arrive at average peak month rainfall, consider an average of atleast last 5 years peak month rainfall (of the respective year).

Points are awarded as below:

Criteria to arrive at 'One-day Rainfall' for Option 1 & 2

S No	Average Peak Month Rainfall (mm)	One-day Rainfall (% of Average Peak Month Rainfall)		
		2 points	4 points	6 points
1	Upto 250	12%	15%	18%
2	251 – 350	10%	12.5%	15%
3	351 – 500	8%	10%	12%
4	501 – 700	6%	7.5%	9%
5	701 & above	4%	5%	6%

❖ **Option 2: High Groundwater Table** **6 Points**

Design rainwater harvesting system to capture/ percolate atleast 'one-day rainfall*' runoff volume from roof areas.

**One-day rainfall can be derived from 'percentage of average peak month rainfall' given in Table above.*

To arrive at average peak month rainfall, consider an average of atleast last 5 years peak month rainfall (of the respective year).

***Notes*:**

- *For rainfall information, refer Indian Meteorological Department data at http://www.imd.gov.in WC Mandatory Requirement 1 - Rainwater Harvesting*
- *Runoff volume = Surface area x Runoff Coefficient x Rainfall.*
  For run-off coefficients for typical surface types, refer Table on Run-off coefficients for Typical

Surface Types.

- *Consider Rainwater Harvesting Guidelines (as and when available) from the National Building Code (NBC) of India, Part 11 - Approach to Sustainability, Section 7.2 - Rainwater Harvesting- Surface Runoff.*
- *In areas where the water percolation is limited, collection tanks may be provided to meet the above requirement.*
- *Filtering of suspended solids shall be ensured by providing suitable filtering media before letting the water into the collection tanks, water bodies and municipal storm water drains.*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if rainwater runoff from Roof & Non roof areas under Option 1 and from Roof areas under Option 2 is harvested, as listed below:

Criteria to arrive at 'One-day Rainfall' for Exemplary Performance

Average Peak Month Rainfall (mm)	One-day Rainfall (% of Average Peak Month Rainfall)
Upto 250	21%
251 – 350	17.5%
351 – 500	14%
501 – 700	10.5%
700 & above	7%

Documentation Required:

Precertification

Option 1: Rainwater Harvesting

i. Narrative describing the strategies proposed to capture/ harvest rain water from roof & non-roof areas

ii. Tentative calculations indicating the run-off volume captured/ harvested from roof and non-roof and the volume of rainwater harvesting pits/tanks.

iii. Conceptual external storm water drain layout highlighting the location of rain water harvesting - ponds, pits, storage tanks, etc., as applicable, including cross-sectional drawings

iv. Hydrogeological test report (approved by third-party) indicating the percolation capacity of the soil / Project specific borewell test report indicating the percolation rate

Option 2: High Groundwater Table

i. Hydrology report (approved by third-party) indicating the level of water table, at different locations within the project site

ii. Narrative describing the strategies proposed to capture/ harvest rain water from roof areas

iii. Tentative calculations indicating the run-off volume captured/ harvested from roof and the volume of rainwater harvesting pits/tanks.

iv. Conceptual external storm water drain layout highlighting the location of rain water harvesting - ponds, pits, storage tanks, etc., as applicable, including cross-sectional drawings

Certification

Option 1: Rainwater Harvesting

i. Narrative describing the strategies implemented to capture/ harvest rain water from roof & non-roof areas

ii. Calculations indicating the run-off volume captured/ harvested from roof and non-roof and the volume of rainwater harvesting pits/tanks.

iii. External storm water drain layout highlighting the location of rain water harvesting - ponds, pits, storage tanks, etc., as applicable, including cross-sectional drawings of rain water harvesting systems

iv. Hydrogeological test report (approved by third-party) indicating the percolation capacity of the soil / Project specific borewell test report indicating the percolation rate

v. Photographs of rain water harvesting systems, taken during and after construction

Option 2: High Groundwater Table

i. Hydrology report (approved by third-party) indicating the level of water table, at different locations within the project site

ii. Narrative describing the strategies implemented to capture/ harvest rain water from roof areas

iii. Calculations indicating the run-off volume captured/ harvested from roof and the volume of rainwater harvesting pits/tanks.

iv. External storm water drain layout highlighting the location of rain water harvesting - ponds, pits, storage tanks, etc., as applicable, including cross-sectional drawings of rain water harvesting systems

v. Photographs of rain water harvesting systems, taken during and after construction

Sustainable Landscape

WC Credit 2 **Points: 1-2**

Intent:

Design landscape to ensure minimum water consumption.

Compliance Option:

Limit use of turf in the campus to conserve water and / or ensure that landscaped area is planted with drought tolerant / native / adaptive species (excluding turf species).

Points are awarded as below:

Type of Landscape	Percentage of Total Landscaped area	Points
Turf Area	≤ 20%	1
Drought Tolerant/ Native / Adaptive Species Area	≥ 60%	1

***Notes*:**

- *The landscape hererefers to soft landscaping, which includes only pervious vegetation.*
- *Drought tolerant species are those species that do not require supplemental irrigation. Generally accepted time frame for temporary irrigation is 1 to 2 years.*
- *Football ground/ play areas designed with turf areas must be considered under this credit calculations.*
- *Vegetation on the ground and vegetation over built structures such as roofs, basement, podiums, etc., shall be considered.*
- *Potted plants shall not be considered as vegetation.*
- *Areas planted with turf should not exceed a slope of 25 percent (i.e. 4 to 1 slope).*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if more than 80% of the landscaped area is planted with drought tolerant / native / adaptive species.

Documentation Required:

Precertification

i. Conceptual landscape plan(s) highlighting landscaped area covered with turf, drought tolerant species, native, adaptive & other plant species on the ground

ii. Tentative calculations indicating the total landscape area (on the ground) to the total site area, in percentage

iii. List of turf, drought tolerant, native and adaptive species proposed in the project

Turf:

i. Tentative calculations indicating the area covered with turf (on the ground) to the total landscape area, in percentage

Drought Tolerant Species:

i. Tentative calculations indicating the area covered with drought tolerant species/ native/ adaptive species (on the ground) to the total landscape area, in percentage

Certification

i. Landscape plan(s) highlighting the area covered with turf, drought tolerant species & other plant species, on the ground

ii. Calculations indicating the total landscape area (on the ground) to the total site area, in percentage

iii. List of turf, drought tolerant, native and adaptive species used in the project

iv. Photographs showing the landscaped areas

Turf:

i. Calculations indicating the area covered with turf (on the ground) to the total landscape area, in percentage

Drought Tolerant Species:

i. Calculations indicating the area covered with drought tolerant species/ native/ adaptive species (on the ground) to the total landscape area, in percentage

Management of Irrigation System

WC Credit 3 **Points: 1-2**

Intent:

Reduce water demand for irrigation through efficient water management systems and techniques.

Compliance Options:

Provide or install highly efficient irrigation systems and techniques incorporating the features mentioned below: *(1 point for every three measures; maximum 2 points)*

- Central shut-off valve
- Soil moisture sensors integrated with irrigation system
- Turf and each type of bedding area must be segregated into independent zones based on watering needs
- Atleast 50% of landscape planting beds must have a drip irrigation system to reduce evaporation
- Atleast 75% of lawn area must have sprinkler irrigation system to reduce water loses
- Time based controller for the valves such that evaporation loss is minimised and plant health is ensured
- Pressure regulating device(s) to maintain optimal pressure to prevent water loss
- Any other innovative methods for watering

***Note*:**

- *This credit is applicable only for those projects which have atleast 10% of the site area landscaped.*
- *Vegetation on the ground and vegetation over built structures such as roofs, basement, podiums, etc., shall be considered.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

i. Narrative describing the water efficient irrigation systems and techniques proposed in the project

ii. Conceptual landscape plan highlighting the irrigation systems, including soil moisture sensors (Optional)

iii. Manufacturer cut-sheets of the proposed water efficient irrigation systems and techniques. (Optional)

Certification

i. Narrative describing the water efficient irrigation systems and techniques installed in the project

ii. Landscape plan highlighting the irrigation systems, including soil moisture sensors

iii. Manufacturer cut-sheets/ brochures of the installed water efficient irrigation systems and techniques.

iv. Photographs showing the installed irrigation systems and techniques

v. Purchase invoice of the water efficient irrigation systems and techniques installed in the project

Waste Water Treatment and Reuse

WC Credit 4 **Points: 1-5 (*New Campus*)**
Points: 1-6 (*Existing Campus*)

Intent:

Treat waste water generated on-site, so as to avoid polluting the receiving streams by safe disposal. Use treated waste water, thereby reducing dependence on potable water.

Compliance Options:

❖ **Waste Water Treatment:** **2 Points**

Have an on-site treatment system to handle 100% of waste water generated in the campus, to the quality standards suitable for reuse, as prescribed by Central (or) State Pollution Control Board, as applicable.

(AND/OR)

❖ **Waste Water Reuse:** **1-4 Points**

Use treated waste water for atleast 50% of the total water required for flushing, landscaping and centralised Air-conditioning cooling tower make-up *water (if the project uses centralised water-cooled chillers)*

Points are awarded as below:

Application (in aggregate)	Percentage of Total Water Catered trough Treated Waste Water	Points (*New Campus*)	Points (*Existing Campus*)
Flushing, Landscaping and Centralised Air-conditioning cooling tower make-up	≥ 50% ≥ 75% 100%	1 2 3	2 3 4

***Notes*:**

- *Waste water here refers to grey, black and industrial water.*
- *The credit point(s) can be claimed only if the waste water is treated in-situ and reused in-situ.*
- *In case the local authorities insist the project to divert waste water to a centralised / common waste water treatment plant outside the campus, then the project can show compliance with 'Case-2' given above, by reusing treated wastewater from the centralised / common / any other waste water treatment plant.*
- *Treated waste water sourced from other sites / local authorities through permanent piped connections or other means can also be considered to show compliance for 'waste water reuse'.*
- *Water from sources such as bore wells, natural wells, municipal water systems is considered as potable water.*
- *Captured rain water can also be considered to show compliance for reuse.*
- *The water requirement and average number of watering days for landscaping shall be considered as 6 liters per sq.m. per day (i.e. 6 liters/ sq.m./ day) for a minimum of 300 days.*
- *Vegetation on the ground and vegetation over built structures such as roofs, basement, podiums, etc., shall only be considered for landscape water requirement calculations*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

Waste Water Treatment

i. Narrative describing the on-site waste water treatment system proposed in the project

ii. Tentative daily and annual water balance of the project

iii. Site plan highlighting the location of on-site waste water treatment system, proposed in the project

Waste Water Reuse

i. Tentative calculations indicating the water requirement for flushing, landscaping and centralised air-conditioning cooling tower make-up water

ii. Tentative daily and annual water balance of the project

Note: The water balance shall include calculations (approximate) showing water demand for landscaping, flushing and air-conditioning cooling tower make-up water (if the project uses water-cooled chillers), and quantity of waste water reused for such applications

Certification

Waste Water Treatment

i. Narrative describing the installed on-site waste water treatment system, along with the capacity & efficiency of treatment plant

ii. Daily and annual water balance of the project

iii. Site plan highlighting the location of installed on-site waste water treatment system

iv. Photographs showing the on-site waste water treatment system installed

Waste Water Reuse

i. Calculations indicating the water requirement for flushing, landscaping and centralized air- conditioning cooling tower make-up water (including evaporative losses, blow down losses and drift losses)

ii. Daily and annual water balance of the project

Note: The water balance shall include calculations (approximate) showing the water demand for landscaping, flushing and air-conditioning cooling tower make-up water (if the project uses water-cooled chillers), and quantity of waste water reused for such applications

Optimize Water Use for Construction

WC Credit 5 **Points: 1**

(*Not applicable for Existing Campuses*)

Intent:

Enhance water use efficiency, thereby minimising the use of potable water for construction activities.

Compliance Options:

Demonstrate that the project has reduced atleast 10% of the potable water required for campus infrastructural construction activities (concrete mixing, plastering works and curing), as compared to national and international practices, with the use of:

- Treated waste water
- Admixtures & curing compounds
- Any other innovative measures

Ensure that the quality of construction is not compromised by reducing potable water requirement or by reusing treated waste water.

(AND)

The treated waste water shall meet the quality standards suitable for reuse during construction, as prescribed by:

- Bureau of Indian Standards (BIS) – Plain and Reinforced Concrete (Code of Practice) IS 456 : 2000, Section 2 - Materials, Workmanship, Inspection and Testing, 5.4 - Water, 'Table 1 - Permissible Limit for Solids'
  (Or)
- Central (or) State Pollution Control Board

Notes:

- *Treated waste water from other sites/ local authorities through piped connections or other means can also be considered to show compliance.*
- *The baseline water requirement for construction activities shall be defined by the project team with supporting calculations.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

i. Narrative describing the strategies proposed to reduce potable water consumption for campus infrastructural construction activities (concrete mixing, plastering works and curing)

ii. Tentative calculations indicating the reduction in potable water requirement for campus infrastructural construction activities by the use of treated waste water and admixtures & curing compounds to the total potable water requirement, in percentage.

iii. If treated waste water is proposed for use, specify the source and quality standards/ test results. Also, provide a single line diagram showing the source of treated waste water to the project location

iv. If admixtures & curing compounds are proposed for use, provide manufacturer brochures/ cut-sheets

Certification

i. Narrative describing the strategies implemented to reduce potable water consumption for campus infrastructural construction activities (concrete mixing, plastering works and curing)

ii. Calculations indicating the reduction in potable water requirement for campus infrastructural construction activities by the use of treated waste water and admixtures & curing compounds to the total potable water requirement, in percentage

iii. If treated waste water is used, specify the source and quality standards/ test results. Also, provide a single line diagram showing the source of treated wastewater to the project location (or) gate passes for sourcing treated waste water

iv. If admixtures & curing compounds are used, provide test reports, purchase invoices and manufacturer brochures/ cut-sheets, as applicable

Water Performance Monitoring

WC Credit 6 **Points: 1-2**

Intent:

Encourage sub-metering to improve water performance and thereby save potable water.

Compliance Options:

Demonstrate sub-metering for atleast three of the following water use applications, as applicable: *(1 point for every three measures; maximum 2 points)*

- Total potable water quantity (Municipal/Borewell/ tankers etc.) on daily/ monthly basis
- Total potable water usage through water fixtures (kitchen, handwash etc.)
- Total Treated wastewater
- Total water usage for irrigation (potable and non-potable)
- Total water usage for flushing
- Total water usage for CT make-up water
- Process water consumption
- Total rainwater reused for process or non-process application.
- Any other major consumers of water consumption, as applicable

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

i. Narrative describing the list of water meters and details of real time water monitoring system proposed in the project

ii. Schematic diagram showing the location of water meters, proposed in the project

Certification

i. Narrative describing the water meters, installed in the project

ii. Schematic diagram showing the location of water meters, installed in the project

iii. Water performance data for various water usage

ENERGY EFFICIENCY

Eco-friendly Refrigerants

EE Credit 1 **Points: 1 (*New Campus*)**
Points: 2 (*Existing Campus*)

Intent:

To encourage use of refrigerant/substances which are eco-friendly and have significantly lower global warming impact.

Compliance Options:

Demonstrate that refrigerants used in the buildings Heating, Ventilation & Air-conditioning (HVAC) equipment are eco-friendly and have Global Warming Potential (GWP) value lesser than 2100. Install fire suppression systems that do not contain any halon.

Refrigerants/ Substances/ Fire Suppression Systems with GWP	Point (*New Campus*)	Points (*Existing Campus*)
≤ 2100	1	2

Note:

- *If an existing campus has any ODP based refrigerants, submit a letter of commitment to phase out such refrigerant based equipment within 3 years.*

Documentation Required:

Precertification:

i. Demonstrate that the buildings in campus have refrigerants with GWP less than 2100. Provide a comprehensive list of HVAC&R equipment proposed to be installed in the project along with the details of refrigerant charged (submit cut-sheet).

ii. Documentation to show the type of refrigerants proposed in the HVAC systems and to show the type of gases proposed in the fire suppression systems.

Certification:

i. Demonstrate that the buildings in campus have refrigerants with GWP less than 2100. Provide a comprehensive list of HVAC&R equipment installed in the project along with the details of refrigerant charged (submit cut-sheet).

ii. Submit photographs of nameplates indicating the type of refrigerants installed in the HVAC systems.

Enhanced Energy Efficiency

EE Credit 2 **Points: 1 –4**

Intent:

Enhance energy efficiency, thereby reducing the environmental impacts resulting from energy use.

Compliance Options:

For all infrastructural equipment/ systems within the campus, achieve energy efficiency for the following systems: *(maximum 4 points)*

- **Lighting Systems:**

  - **Exterior Lighting:** **1-2 Points**

    Option 1: Lighting Power Density

    Reduce lighting power density by atleast 40% for exterior areas over ASHRAE Standard 90.1-2019, Section 9.4.2 - Exterior Building Lighting Power baseline.

Reduction in Lighting Power Density for Exterior Areas	Points
≥ 40%	1
≥ 50%	2

(OR)

Option 2: Lighting Load reduction

Demonstrate reduction in exterior lighting load of the campus by retrofitting with energy efficient lighting fixtures.

Reduction in Lighting Load for Exterior Areas	Points
≥ 10%	1
≥ 20%	2

(AND/OR)

  - **Lighting Controls:** **1 Point**

    Demonstrate that 80% of all non-emergency exterior & common area lighting such as landscaping, surface and covered parking, pathways, bicycle lanes, street lighting have Daylight sensor/ Timer-based controls. *(1 point)*

(AND/OR)

- **Motors:** **1-2 Points**

  Motors shall have minimum efficiencies as listed below (Maximum of 2 points can be achieved by meeting any one of the below criteria):

Motor Efficiency	Percentage of total connected load of Motors in the campus	Points
IE 3	50%	1
IE 3	100%	2
IE 4	50%	2

Note:

- *All electrical motors used in pumps and fans for any application in the campus shall be considered*
- *In case of combination of IE 3 & IE 4 motors installed in the campus, weighted average load calculation shall be followed to achieve credit points.*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if Lighting Power Density (LPD) is reduced by atleast 60% for exterior areas over ASHRAE Standard 90.1-2019 baseline or if total exterior lighting load of the campus is reduced by 30% through retrofitting.

Documentation Required:

Precertification

Lighting Systems

i. Narrative describing the lighting fixtures proposed in the exterior areas of the campus
ii. Tentative LPD calculations, along with the type of the exterior lighting fixtures proposed in the project
iii. Conceptual site drawing highlighting the exterior lighting fixtures proposed in the project
iv. Declaration letter signed by the project owner/ lighting consultant indicating the proposed LPD

Lighting Controls

i. Details of the proposed lighting systems and controls

Motors

i. Details of the proposed motors indicating the efficiency
ii. Manufacturer cutsheet of the proposed motors indicating its efficiency
iii. Tentative calculations indicating the percentage of total connected load of motors meeting the credit compliance

Certification

Lighting Systems

Option 1: Lighting Power Density

i. Narrative describing the lighting fixtures installed in the exterior areas of the campus

ii. LPD calculations, along with the type of the exterior lighting fixtures (make & model) installed in the project

iii. Site drawing highlighting the exterior lighting fixtures installed in the project

iv. Photographs showing the typical exterior lighting fixtures

v. Manufacturer brochures indicating the wattage of exterior lighting fixtures

Option 2: Lighting Load Reduction

i. Narrative describing the exiting lighting fixtures installed in the exterior areas of the campus and strategy to retrofit the existing lighting fixtures.

ii. Lighting load calculations along with the list of the exterior lighting fixtures (make & model) installed in the project.

iii. Calculations demonstrating the percentage reduction in lighting load achieved through retrofitting.

iv. Site drawing highlighting the exterior lighting fixtures installed in the project

v. Photographs showing the retrofitted lighting fixtures

vi. Manufacturer brochures indicating the wattage of exterior lighting fixtures

vii. Purchase invoice of the retrofitted lighting fixtures

Lighting Controls

i. Details of the lighting controls installed.

ii. Photographs showing the lighting controls installed.

iii. Purchase invoice of the controls installed.

Motors

i. Details of the motors indicating the efficiency, along with make and model

ii. Name plate photographs of motors indicating the efficiency

iii. Calculations indicating the percentage of total connected load of motors meeting the credit compliance

iv. Manufacturer cutsheet of the motors installed indicating its efficiency

v. Purchase invoice of the motors installed in the campus

Green Power

EE Credit 3 **Points: 1 - 10**

Intent:

Encourage the use of on-site renewable technologies, to minimise environmental impacts associated with the use of fossil fuel energy.

Compliance Options:

❖ **Option -1: On-site Renewable Energy** **5 Points**

Install on-site renewable energy system to off-set fossil-fuel based energy consumption. Credit points are awarded based on the percentage of total annual energy consumption met by onsite Renewable Energy (RE) system generation.

Points are awarded as below:

Percentage of total annual energy consumption met by On-Site RE generation (Owner Occupied Campus)	Percentage of total annual energy consumption met by On-Site RE generation (Tenant Occupied Campus)	Points
> 5%	> 2%	1
> 10%	> 4%	2
> 15%	> 6%	4
> 20%	> 8%	5

(AND/ OR)

❖ **Option -2: Renewable Energy (Combined)** **10 points**

Demonstrate that on-site RE generation and (or) wheeling off-site renewable energy replace energy use by at least 20% of total annual energy consumption of the project.

Points are awarded as below:

Percentage RE of total annual energy consumption (Owner Occupied Campus)	Percentage RE of total annual energy consumption (Tenant Occupied Campus)	Credit Points
10 %	5 %	1
20 %	10 %	2
30 %	15 %	3
40 %	20 %	4
50 %	25 %	5

60%	30 %	6
70 %	35 %	7
80 %	40 %	8
90 %	45 %	9
95 %	50 %	10

Notes:

- *On-site energy supply system installation such as fuel cell will be considered as green source of power.*
- *Solar hot water systems cannot be considered as power generation source and cannot be subtracted from the total energy consumed.*
- *Energy through biomass would be considered as green power, project team shall submit calculation to show equivalent energy generation (use).*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if 25% of annual energy consumption(Owner Occupied) and 10% of annual energy consumption (Tenant Occupied) met by on-site RE installed, under Option-1 or 100% of grid energy is Combined (Owner Occupied) and 55% of grid energy is Combined (Tenant Occupied)

Documentation Required:

Precertification

Option 1: On-Site Renewable Energy

i. Narrative describing the on-site renewable energy systems proposed in the project
ii. Conceptual drawing showing the location of the renewable energy systems
iii. Feasibility study report with technical details of the renewable energy systems
iv. Tentative calculations indicating the percentage of annual energy consumption met by proposed onsite renewable energy generation

Option 2: Renewable Energy (Combined)

i. Narrative describing the on-site renewable energy systems / off-site renewable energy systems proposed in the project
ii. Conceptual drawing showing the location of the renewable energy systems
iii. Power Purchase Agreement signed between the project owner/ developer and the green power developer (Or) Extract copy from Organization policy/ annual report, signed by the top management, highlighting the organization's policy on off-site renewable energy
iv. Tentative calculations indicating the total annual energy generation from the on-site & off-site renewable energy systems (kWh) to the total annual energy consumption (kWh) of the campus
v. Feasibility study report with technical details of the on-site & off-site renewable energy systems

Certification

Option 1: On-Site Renewable Energy

i. Narrative describing the installed renewable energy systems, along with the technical details

ii. Drawing showing the location of installed renewable energy systems

iii. Calculations indicating the percentage of annual energy consumption met by onsite renewable energy generation

iv. Purchase invoice of the on-site renewable energy system installed

v. Photographs showing the renewable energy systems

Option 2: Renewable Energy (Combined)

i. Narrative describing the on-site renewable energy systems / off-site renewable energy systems proposed in the project

ii. Drawing showing the location of the renewable energy systems

iii. Power Purchase Agreement signed between the project owner/ developer and the green power developer

iv. Calculations indicating the total annual energy generation from the on-site & off-site renewable energy systems (kWh) to the total annual energy consumption (kWh) of the campus

v. Purchase invoice of the on-site renewable energy system installed

Energy Performance Monitoring

EE Credit 4 **Points: 1-2**

Intent:

Encourage sub-metering to improve energy performance, and thereby save energy.

Compliance Options:

Demonstrate sub-metering for atleast three of the following energy use applications, as applicable:
(1 point for every three measures; maximum 2 points)

- Total energy consumption
- Air-conditioning energy usage
- Internal lighting energy consumption
- External lighting energy consumption
- BTU meter for chilled water consumption
- Energy meter for process/ non-process energy consumption
- Pumping system (municipal water/ grey water/ landscaping water)
- Any individual energy end use that constitute at least 10% of total energy use

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:
Precertification

i. Narrative describing the energy meters proposed in the project
ii. Single line drawing showing the proposed energy meters

Certification

i. Narrative describing the energy meters installed in the project.
ii. Single line drawing showing the energy meters.
iii. Photographs of energy meters installed in the project

MATERIAL AND RESOURCE MANAGEMENT

Segregation of Waste, Post-occupancy

MRM Mandatory Requirement 1

Intent:
Facilitate segregation of waste at source to encourage reuse or recycling of materials, thereby avoiding waste being sent to landfills.

Compliance Options:

- **Dry and Wet Waste**

  Provide separate bins to collect dry waste (paper, plastic, metals, glass, etc.,) and wet waste (Food), at all the exterior common areas of the campus, as applicable. Divert the collected waste to a centralised facility, which is easily accessible for hauling.

  (AND)

- **Hazardous Waste**

  In addition to dry and wet waste bins, provide separate bins for safe disposal of the following hazardous waste, at the centralised facility:

  - Batteries
  - 'e' waste
  - Lamps
  - Medical waste, if any

  (AND)

- **Responsible Handling**

  Demonstrate contract with recyclers for responsible handling of waste generated in the facility.

  Note:
  - *The project shall follow the Hazardous Waste Management Guidelines as prescribed by the Ministry of Environment & Forest (MoEF), Government of India.*

Documentation Required:

Precertification

i. Narrative describing the strategies proposed to:
   - Segregate and divert dry waste (paper, plastic, metals, glass, etc.,) and wet waste from the common areas of the campus, to the easily accessible common facility
   - Divert dry & wet waste and other waste such as batteries, e-waste, lamps, and medical waste (if any), from the common areas of the campus

ii. Conceptual site plan showing the location of waste bins at common areas of the buildings, as applicable

iii. Conceptual site plan showing the location of the centralized facility for segregation of waste

iv. Identify list of potential recycler/vendors for responsible handling of waste generated in the campus

Certification

i. Narrative describing the strategies proposed to:

- Segregate and divert dry waste (paper, plastic, metals, glass, etc.,) and wet waste from the common areas of the campus, to the easily accessible common facility
- Divert dry & wet waste and other waste such as batteries, e-waste, lamps, and medical waste (if any), from the common areas of the campus

ii. Site plan showing the location of waste bins at common areas of the buildings, as applicable

iii. Site plan showing the location of the centralized facility for segregation of waste

iv. Contract agreement with recyclers for responsible handling of waste generated in the campus

Sustainable Building Materials

MRM Credit 1 **Points: 4**

(Not Applicable for Existing Campuses)

Intent:

Encourage the use of building materials available locally, thereby, minimising the associated environmental impacts.

Compliance Options:

❖ **Local Materials** **1 Point**

Ensure atleast 30% of the total building materials (by cost) used in the campus are manufactured locally within a distance of 400 km.

Notes:

- *Local Materials are those which are manufactured within a distance of 400 km. Assembly of building materials shall not be considered.*
- *Extraction and processing of raw materials need not be considered as part of this credit calculation.*

(AND/OR)

❖ **Materials with Recycled Content** **1 Point**

Use materials with recycled content in the building (as per owner / developer's scope) such that the total recycled content constitutes at least 20% of the total cost of building materials used in the campus.

Notes:

- *Recycled Content is the content in a material or product derived from recycled materials versus virgin materials. Recycled content can be materials from recycling programs (post-consumer) or waste materials from the production process or an industrial/agricultural source (pre-consumer or post-industrial).*

(OR)

❖ **Whole Building Life Cycle Analysis** **4 Points**

Perform whole building Life Cycle Analysis (LCA) to estimate carbon emissions as per ISO standard 14040, and report the following for the overall built-up area of the project:

- Embodied carbon in kg CO2e per square meter
- Operational carbon in kg CO2e per year considering a minimum building lifespan of 50 years.

(AND)

❖ **Design Optimisation**

Analyse the Embodied Carbon emissions of the proposed design and identify the major contributors – stagewise, building elements, materials etc. Optimise the design to reduce the Embodied carbon emissions of the project as defined in table below.

Percentage Reduction in Embodied Carbon in kg CO_2e per sq.m	Points
5%	2
10%	4

Notes:

- *Embodied carbon is the result of supply chain (transport), extraction, processing, and manufacturing of building materials, prior to construction and during construction or renovation activities.*
- *Operational carbon is from the use of energy, materials and generation of waste during building operations and renovations.*
- *The LCA shall be carried out using a standard recognised software tool.*
- *The project team shall use Life Cycle Analysis (LCA) tools to calculate the embodied carbon of each material considering embodied carbon of the respective materials and embodied carbon resulting from transportation from the manufacturing plant to the project site.*
- *The proposed case embodied carbon (in kg of CO2e per square meter) shall be calculated considering all the proposed civil materials as per the Bill of Quantities (BOQ). The embodied carbon of respective materials can be sourced from Environmental Protection Declarations (EPDs) or Eco-labelling programmes such as GreenPro or equivalent.*
- *The illustrative list of civil materials for core and shell structure shall include cement, steel, concrete, glass, aluminium, Blocks / bricks, RMC, sand, tiles, stones/ marble.*
- *Carbon owing to material transportation from manufacturing plant to project site shall also be considered while calculating the embodied carbon for the respective material.*

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if atleast 40% of the total building materials used in the campus are sourced locally or if 30% of the total cost of building materials used in the campus has recycled content or if embodied carbon of the project is reduced by 15%.

Documentation Required:

Precertification

Materials with Recycled Content:

i. Narrative describing the strategies proposed to source materials with recycled content. Along with a tentative list of materials specifying recycled content, with the manufacturer's name.

ii. Tentative calculations indicating the materials with recycled content (in terms of cost) to the total materials cost of the project, in percentage.

iii. Manufacturer letters/ cut-sheets/ brochures indicating the recycled content in the materials. (Optional)

Local Materials:

i. Narrative describing the strategies proposed to source local materials. The narrative shall also include a tentative list of local materials with manufacturer's name, specifying approximate distance from the project site to the place of manufacturing unit.

ii. Tentative calculations indicating the local materials sourced (in terms of cost) to the total materials cost of the project, in percentage.

Whole Building Life Cycle Analysis:

i. Drawings of the proposed design

ii. Bill of Quantities of proposed design (architecture and civil).

iii. Detailed input materials report and detailed LCA output report of proposed design.

iv. Supporting documentation indicating the embodied carbon of the materials used in the proposed design (e.g. EPD).

v. Transport details (like distance, mode of transport and fuel type) with supporting documents.

vi. Manufacturer brochure/ Technical datasheets of proposed materials (indicating recycled content etc).

Design Optimisation:

i. Narrative describing the analysis of proposed design and strategies for design optimization/ reduction in embodied carbon.

ii. Revised drawings of the optimised design.

iii. Revised Bill of Quantities of optimised design (architecture and civil).

iv. Supporting documentation indicating the embodied carbon of the materials used in the optimised design (e.g. EPD).

v. Transport details (like distance, mode of transport and fuel type) with supporting documents.

vi. Manufacturer brochure/ Technical datasheets of proposed materials in optimised design (indicating recycled content etc).

Certification

Materials with Recycled Content:

i. Narrative describing the strategies implemented to source materials with recycled content. The narrative should also include the list of materials specifying recycled content, with manufacturer name.

ii. Calculations indicating the materials with recycled content (in terms of cost) to the total materials cost of the project, in percentage.

iii. Project specific Manufacturer letters/ cut-sheets/ brochures indicating the recycled content in the materials sourced.

Local Materials:

i. Narrative describing the strategies implemented to source local materials. The narrative should also include the list of local materials with manufacturer's name, specifying approximate distance from the project site to the place of manufacturing unit.

ii. Calculations indicating the local materials sourced (in terms of cost) to the total materials cost of the project, in percentage.

iii. Manufacturer letters indicating the distance from the project site to the place of manufacturing unit.

Whole Building Life Cycle Analysis:

i. Drawings of the proposed design
ii. Bill of Quantities of proposed design (architecture and civil).
iii. Detailed input materials report and detailed LCA output report of proposed design.
iv. Supporting documentation indicating the embodied carbon of the materials used in the proposed design (e.g. EPD).
v. Transport details (like distance, mode of transport and fuel type) with supporting documents.
vi. Manufacturer brochure/ Technical datasheets of proposed materials (indicating recycled content etc).

Design Optimisation:

i. Narrative describing the analysis of proposed design and strategies for design optimization/ reduction in embodied carbon.
ii. Revised drawings of the optimised design.
iii. Revised Bill of Quantities of optimised design (architecture and civil).
iv. Supporting documentation indicating the embodied carbon of the materials used in the optimised design (e.g. EPD).
v. Transport details (like distance, mode of transport and fuel type) with supporting documents.
vi. Manufacturer brochure/ Technical datasheets of proposed materials in optimised design (indicating recycled content etc).
vii. Purchase invoice of civil and architectural materials used in the campus.
viii. Photographs of the civil and architectural materials used in the campus.

Use of Green Products & Equipment

MRM Credit 2 **Points: 3**

Intent:

Use eco-labelled green building materials, products, and equipment, so as to reduce dependence on materials that have associated negative environmental impacts.

Compliance Options:

New Campus:

Ensure that the project uses passive or active green building materials, products, and equipment that are eco-labelled/ certified by:

- Green Product Certification Programme (GreenPro)
- Other Eco-labelling programs

Points are awarded as below:

Number of Eco-labelled/ Certified Green Products used	Points
Civil Materials (atleast 2 nos)	1
Electrical / Mechanical Systems and Equipment (atleast 2 nos)	1
Other Categories (atleast 2 nos) (e.g.: Plumbing fixtures, housekeeping chemicals, furniture etc)	1

Existing Campus:

Ensure that the project uses green products in operation such as *(1 point for each measure):*

- Organic pesticides for landscaping purposes in campus (E.g.: neem oil, neem cake, neem seed powder, etc.)
- Eco-friendly housekeeping chemicals (GreenPro or GS-37 Certified) for all cleaning purposes.
- 100% recycled & chlorine-free papers.
- Biodegradable Garbage liners
- Plastic free campus- Eliminate use of plastic bottles, single use plastic for carry bags, cutleries etc.,

Notes:

- *Procurement of GreenPro materials shall be assessed based on the quantity of materials procured.*
- *Passive Products & Materials include glazing, insulation, paints & coatings, adhesives & sealants, flyash blocks, cement, concrete, composite wood, certified new wood, housekeeping chemicals, false ceiling materials, flooring materials, furniture, gypsum based products, high reflective materials & coatings, etc., The list of GreenPro certified products can be accessed at* https://ciigreenpro.com/
- *Active Products include Electrical systems (Lighting Systems & Controls, Pumps & Motors, etc.,), Mechanical systems (unitary air conditioners, etc.,), Plumbing Fixtures (faucets, showers, etc.,)*
- *The materials, products and equipment (e.g. high reflective materials, water fixtures, lighting fixtures, carpets, etc.,) certified by CII under Green Product Certification Programme (GreenPro) or any third party agency will be accepted to show credit compliance*
- *The product/material/equipment certificate must be valid at the time of project certification.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

New Campus

Precertification

i. Narrative describing the strategies to source passive or active green building materials, products, and equipment, that are certified by IGBC under Green Product Certification Programme or by a third party agency approved by IGBC.

   Note: The narrative shall also include the list of passive or active green building materials, products, and equipment, with certification details.

ii. Test certificates/ reports of the proposed passive or active green building materials, products, and equipment.

Certification

i. Narrative describing the strategies to source passive or active green building materials, products, and equipment, that are certified by IGBC under Green Product Certification Programme or by a third party agency approved by IGBC.

   Note: The narrative should also include the list of passive or active green building materials, products, and equipment, with certification details.

ii. Purchase Invoices and Test certificates/ reports of the passive or active green building materials, products, and equipment.

Existing Campus

Certification

Organic Pesticides

i. List of fertilisers and pesticides used in the campus.
ii. Manufacturer brochure indicating that used pesticides are organic.
iii. Purchase invoice of the organic pesticides procured in the last 12 months in the campus.
iv. Photographs of the organic pesticides used in the campus.

Green Housekeeping Chemicals

i. List of housekeeping products used in the campus.
ii. Manufacturer brochure/certificate of the green housekeeping chemicals used.
iii. Purchase invoice of the green housekeeping chemicals procured in the last 12 months in the campus.
iv. Photographs of the green housekeeping chemicals used in the campus.

Recycled Paper

i. List of applications where paper is used in campus along with details of the type of paper used.
ii. Manufacturer brochure of the 100% recycled and chlorine free paper used in the campus.

iii. Purchase invoice of the recycled paper procured in the last 12 months in the campus.

iv. Photographs of the recycled paper used in the campus.

Handling of Waste Material, During Construction

MRM Credit 3 **Points: 1**

(Not Applicable for Existing Campuses)

Intent:

Facilitate segregation of construction and demolition waste at source, to encourage reuse or recycling of materials thereby avoiding waste being sent to landfills.

Compliance Options:

Demonstrate that atleast 75% of waste generated during construction and demolition is diverted from landfills, for reuse or recycling. Use consistent metrics, either weight or volume, to show compliance.

***Notes*:**

- *Construction and demolition waste here refers to civil materials waste generated in the campus*
- *Excavated earth & stones should not be considered under this credit, as these are natural resources.*
- *Temporary materials such as materials used for formwork, scaffolding, etc., shall not be considered for this credit calculation.*

Exemplary Performance:

The credit is not eligible for exemplary performance.

Documentation Required:

Precertification

i. Narrative describing the strategies proposed to handle construction waste. The narrative shall also include the following:
   - *List of construction waste materials likely to be generated and diverted for reuse, recycle & land-fill*
   - *Proposed applications of construction waste materials diverted for reuse, within or outside the project*

ii. Site plan highlighting the proposed construction waste management yard

iii. Tentative calculations indicating the quantity of construction waste generated to the total quantity of construction waste reused, recycled and sent to landfill, in percentage

Certification

i. Narrative describing the strategies implemented to handle construction waste. The narrative shall also include the following:
   - *List of construction waste materials generated and diverted for reuse, recycle & land-fill*
   - *Applications of construction waste materials diverted for reuse, within or outside the project*

iv. Site plan highlighting the construction waste management yard

v. Calculations indicating the quantity of construction waste generated to the total quantity of construction waste reused, recycled and sent to landfill, in percentage

vi. Project specific Letters from scrap dealers/ contractors stating the type and quantity of construction waste received/ reused from the project site, for recycling/ reuse

vii. Photographs taken at various stages of the project showing the construction waste management yard

viii. Photographs showing the waste reused on site.

Dry Waste Management, Post-occupancy

MRM Credit 4 **Points: 1**

(Not applicable for New Campuses)

Intent:

Facilitate recycling/reuse of waste generated during operation through responsible handling, so as to reduce waste going to landfill and related environmental impacts.

Compliance Options:

Demonstrate that 75% of dry waste generated in campus such as plastic, paper, metal, glass etc. are responsibly handled and diverted from landfills either by reusing or recycled with respective recyclers.

Exemplary Performance:

The credit is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if 95% of the dry waste generated in campus is diverted from landfill.

Documentation Required:

Certification

i. Narrative describing the strategies proposed to recycle/reuse dry waste generated on campus such as plastic, paper, metal, glass etc

ii. Calculations indicating the percentage of dry waste generated in the campus on monthly basis that is diverted from landfills

iii. Contract agreement copy with the respective recyclers for responsible handling of the dry waste such as plastic, paper, metal, glass etc

iv. Project specific Letters from recyclers/ facility team stating the type and quantity of dry waste received/ reused from the project site, for recycling/ reuse.

Organic Waste Management, Post-occupancy

MRM Credit 5 **Points: 1-4**

Intent:

Ensure effective waste management, so as to avoid organic waste being sent to landfills and to improve sanitation & health.

Compliance Options:

Install an on-site waste treatment system for handling organic (food and garden) waste generated in the campus and utilize the biogas/manure generated within the campus.

Points are awarded as below:

Organic Waste Treatment	Percentage of Organic Waste Treated	Points
Aerobic Digestion (Eg: Vermicomposting, Organic Waste Convertor etc) / Anaerobic Digestion - Waste to Energy (Eg:Biogas Plant)	≥25%	1
	≥50%	2
	≥75%	3
	100%	4

***Notes*:**

- *For calculation, food waste can be considered as 0.1 kg per person or as prescribed by the local byelaw, for all campus occupants.*
- *For residential campuses, food waste shall be considered as 0.2 kg per person or as prescribed by the local byelaw (whichever is more stringent)*
- *Only maintained landscape areas shall be considered to calculate the total garden waste generated in the campus*
- *Landscape waste can be considered as 0.2 kg per sq.m per day (i.e. 0.2 kg/ sq.m/ day).*
- *Aerobic digestion has only manure as byproduct, anaerobic digestion has both biogas and manure as byproducts.*
- *The equipment efficiency of the aerobic digester must be <0.06kW/kg*
- *kW/kg shall be calculated as the ratio of total connected electrical load of the organic waste treatment system to its rated processing capacity (kg/day)*
- *The total connected load shall include all components such as shredding, mixing, aeration, heating, and auxiliary equipment associated with the system.*
- *If the project is having an organic waste convertor in an enclosed room, then design such area with exhaust system, self-closing door, deck-to-deck partition/ hard ceiling.*

Exemplary Performance:

This credit is not eligible for exemplary performance

Documentation Required:

Precertification

Aerobic Digestion

i. Narrative describing the strategies proposed to handle food waste and garden waste generated in the campus (including buildings), and the on-site organic waste treatment system

ii. Conceptual site plan highlighting the location of on-site organic waste treatment system in the project

iii. Tentative calculations indicating the quantity of organic waste (Food and Garden) treated in the project (including buildings) to the quantity of organic waste generated, in percentage

iv. Manufacturer brochure/ cut-sheet of the organic waste treatment system proposed in the project

Anaerobic Digestion

i. Narrative describing the waste to energy treatment system and details of how the biogas produced is utilized

ii. Conceptual site plan highlighting the location of waste to energy treatment system proposed in the project

iii. Tentative calculations indicating the quantity of organic waste (Food and Garden) converted to energy to the total quantity of organic waste generated, in percentage

iv. Manufacturer brochure/ cut-sheet of the organic waste treatment system proposed in the project

Certification

Aerobic Digestion

i. Narrative describing the strategies to handle Food waste and Garden waste generated in the campus, and the on-site organic waste treatment system

ii. Site plan highlighting the location of on-site organic waste treatment system installed in the project

iii. Calculations indicating the quantity of organic waste (Food and Garden) treated in the project to the quantity of organic waste generated, in percentage

iv. Log book indicating the landscape waste generated in the campus in the last 12 months (only for existing campus)

v. Manufacturer brochure/ cut-sheet of the installed organic waste treatment system.

vi. Purchase invoice/ payment receipts of the installed organic waste treatment system.

vii. Photographs showing the installed organic waste treatment system

Anaerobic Digestion

i. Narrative describing the waste to energy system and details of how the biogas produced is utilized

ii. Site plan highlighting the location of waste to energy treatment system proposed in the project

iii. Calculations indicating the quantity of organic waste (Food and Garden) converted to energy to the total quantity of organic waste generated, in percentage

iv. Logs indicating the quantity of biogas produced from the plant

v. Manufacturer brochure/ cut-sheet of the organic waste treatment system proposed in the project
vi. Purchase invoice/ payment receipts of the installed waste to energy.
vii. Photographs showing the installed waste to energy system

HEALTH & WELL-BEING

Tobacco Smoke Control

HWB Mandatory Requirement 1

Intent:

Minimise exposure of non-smokers to the adverse health impacts arising due to passive smoking.

Compliance Options:

- **Option 1 : No Smoking**
  Demonstrate that smoking is prohibited in the campus.

  (OR)

- **Option 2 : Outdoor Smoking Areas**
  In case the campus has outdoor smoking areas, such areas shall be located at a minimum of 7.6 meters away from all outdoor air intakes (such as entrance doors, window openings etc.,).

  Note:
  • *The compliance for Option 2: Outdoor Smoking Areas shall be in accordance with the regulations of Ministry of Health & Family Welfare, Government of India.*

Documentation Required:

Precertification

Option 1: No Smoking

i. Copy of organisation's policy on 'no smoking' (or) Declaration letter from the project owner/ developer stating that 'smoking' will be prohibited in the campus

ii. Narrative describing the strategies proposed (e.g. signages, posters, brochures, campus guidelines, etc.,) to communicate 'no smoking policy' to all the campus occupants and visitors

Option 2: Outdoor Smoking Areas

i. Copy of organisation's policy highlighting that smoking is allowed in designated outdoor smoking areas only

ii. Narrative describing the strategies proposed (eg. signages, posters, brochures, campus guidelines, etc.,) to communicate 'outdoor smoking areas' to all the campus occupants and visitors

Certification

Option 1: No Smoking

i. Copy of organisation's policy on 'no smoking' (or) Declaration letter from the project owner/ developer stating that 'smoking' will be prohibited in the campus

ii. Narrative describing the strategies (e.g. signages, posters, brochures, campus guidelines, etc.,) to communicate 'no smoking policy' to all the campus occupants/ tenants and visitors

iii. Photographs showing 'no smoking' signages installed in the campus

Option 2: Outdoor Smoking Areas

i. Copy of organisation's policy highlighting that smoking is allowed in designated outdoor smoking areas only□

ii. Narrative describing the strategies (eg. signages, posters, brochures, campus guidelines, etc.,) to communicate 'outdoor smoking areas' to all the campus occupants and visitors

iii. Photographs of the designated outdoor smoking areas showing the signages

Daylighting

HWB Credit 1 **Points: 2**

Intent:

Demonstrate compliance for all individual buildings in campus excluding residential quarters, choose any one of the following options or a combination:

- Option 1 - Simulation Approach
- Option 2 - Measurement Approach

- **Option 1: Simulation Approach**

  Demonstrate through computer simulation that 50% of the regularly occupied spaces in each individual building achieves minimum daylight illuminance levels as per SP 41- Functional Requirements in Buildings, Part 4: Lighting, Table 1 in a clear sky condition on 21st September at 12 noon, at working plane. Areas with 2,200 Lux or more daylight illumination levels should not be considered.

  Points are awarded as below:

Percentage of Regularly Occupied Areas with Daylighting	Points
≥ 50%	1
≥ 75%	2

(OR)

- **Option 2: Measurement Approach**

  Demonstrate through daylight illuminance measurement that at least 50% of the regularly occupied spaces in each individual building achieves daylight illuminance levels as per SP 41- Functional Requirements in Buildings, Part 4: Lighting, Table 1. Areas with 2,200 Lux or more daylight illumination levels should not be considered. Measurements shall be taken after installation of furniture, equipment & systems at work plane height at 9 am, 12 pm, and 3 pm, on a 10-foot square grid. To show compliance, consider the average of the measurements taken at 9 am, 12 pm and 3 pm. The daylight measurement shall be taken using a lux meter.

  Points are awarded as below:

Percentage of Regularly Occupied Areas with Daylighting	Points
≥ 50%	1
≥ 75%	2

Notes:

- *Regularly occupied areas are those where people sit or stand as they work, irrespective of the number of days occupied in a year. Regularly occupied areas shall include only enclosed spaces.*
- *Regularly occupied areas include workstations, cabins, meeting rooms, etc.; whereas, areas with audio-visual facilities such as conference rooms, etc., can be excluded from this credit calculation, with justification and supporting documents.*
- *Non-regularly occupied areas include toilets, storerooms, etc.,*
- *Non enclosed spaces shall be considered as non-regularly occupied spaces.*
- *Regularly occupied areas which are used for multi-purposes, such as cafeteria-cum-meeting room, can be considered as separate spaces based on the function. The room boundary need not be a physical boundary.*
- *Projects with multiple buildings must independently meet the daylighting criteria for each building.*

Space Type	Recommended Illumination (lux)
Offices	
Entrance halls and reception areas	150
Conference rooms, executive offices	300
General offices	300
Schools and colleges	
Assembly halls	150
Class and lecture rooms	300
Art rooms	400
Laboratories	300
Libraries	300
Offices	300
Staff rooms, common rooms	150
Hospitals	
Reception and waiting rooms	150
Wards	110
Casualty and outpatient departments	150
Hotels	
Entrance halls	150
Reception and accounts	300
Dining rooms	100
Lounges	150
Bedrooms	100
Homes	
Kitchens	200
Bedrooms	100
Reading (casual)	150

Reference: SP 41: Functional Requirements in Buildings

Exemplary Performance:

The project is eligible for exemplary performance under ID Credit 1 - Innovation in Design Process, if 95% of the regularly occupied area are meeting daylighting requirements as defined in the credit.

Documentation Required:

Precertification

Option 1: Simulation Approach

i. Draft daylight simulation report with sky conditions (such as date & month; time; ambient Lux levels) and wall, floor & roof reflectance properties, for all the regularly occupied spaces in each individual building. During simulation, consider shading devices and 'shadow effect' of adjacent buildings.

ii. Site/ master plan showing all the buildings.

iii. Conceptual floor/ roof plans with window and skylight schedule.

iv. Manufacturer brochure/ cut-sheet/ letter of the glass proposed in the project showing the Visual Light Transmittance (VLT)

Certification

Option 1: Simulation Approach

i. Daylight simulation report with sky conditions (such as date & month; time; ambient Lux levels) and wall, floor & roof reflectance properties, for all the regularly occupied spaces in each individual building. During simulation, consider shading devices and 'shadow effect' of adjacent buildings.

ii. Site/ master plan showing all the buildings.

iii. Floor/ roof plans with window and skylight schedule.

iv. Manufacturer brochure/ cut-sheet/ letter of the glass installed showing the Visual Light Transmittance (VLT).

v. Purchase invoice of the glass used in the project.

vi. Photographs showing the building elevations (all sides) and interiors spaces at different floors.

Option 2: Measurement Approach

i. Daylight analysis report indicating daylight illuminance levels measured at work plane height, for all the regularly occupied spaces in each individual building.

ii. Site/ master plan showing all the buildings.

iii. Floor/ roof plans with window and skylight schedule.

iv. Manufacturer brochure/ cut-sheet/ letter of the glass installed showing the Visual Light Transmittance (VLT).

v. Photographs showing the building elevations (all sides) and interiors spaces at different floors.

Control Indoor and Outdoor Pollutants

HWB Credit 2 **Points: 1**

Intent:

Minimise the exposure of building occupants and maintenance team to hazardous indoor and outdoor pollutants, which adversely affect indoor air quality and occupant health.

Compliance Options:

Demonstrate that each individual building in the campus complies with at least two of the following criteria, as applicable:

❖ **Entryway Mats**

Install entryway systems of minimum 2 meters (6 feet) in length, at all the building main entrances.

❖ **Printer Rooms, Chemical Storage Rooms, Janitor Rooms**

Isolate areas exposed to hazardous gases or chemicals (such as printer / copier rooms, chemical storage rooms, janitor rooms) from regularly occupied areas, as per owner / developer's scope. Also, design such areas with exhaust system*, self-closing door, deck-to-deck partition / hard ceiling.

❖ **Air Filtering Media**

For mechanically ventilated buildings, install air filtering media after building flush-out, with at least MERV 13 (Minimum Efficiency Reporting Value) or EU 7 or equivalent, to treat fresh air.

❖ **Germicidal or UV Lamps**

For mechanically ventilated buildings, install germicidal/ UV lamps in Air-Handling-Unit (AHU).

Notes:

- *Printers / Copier machines: Floor-mounted printers/ copier machines shall be considered to show compliance; whereas, tabletop printers/ copier machines need not be considered.*
- *The Printer / Chemical storage / Janitor rooms shall be maintained at a negative pressure of 5 Pascals (0.00005 bar).*

Exemplary Performance:

This credit is not eligible for exemplary performance

Documentation Required:

Precertification

i. Narrative describing the strategies implemented to minimise indoor and outdoor pollutants.

Entryway Systems

i. Conceptual floor plans highlighting the location of entryway systems at the building main entrance(s).

Printer Rooms, Chemical Storage Room, Janitor Rooms

i. Conceptual floor plans highlighting the location of printer/copier rooms, chemical storage room, janitor rooms, as applicable.

ii. Tentative details of exhaust system such as negative pressure maintained/ air changes/ exhaust rate.

Air Filtering Media

i. Declaration from the project owner/ developer/ HVAC consultant stating that MERV 13 or EU 7 filters or higher gradation shall be installed in all AHUs.

ii. Conceptual floor plans highlighting the location of AHU rooms.

iii. Technical cut-sheets of the MERV 13 or EU 7 filters or higher gradation. (Optional)

Germicidal/ UV Lamps

i. Declaration from the project owner/ developer/ HVAC consultant stating that germicidal/ UV lamps shall be installed at all AHUs.

ii. Conceptual floor plans highlighting the location of AHU rooms.

iii. Technical cut-sheets of the germicidal/ UV lamps.

Certification

i. Narrative describing the strategies implemented to minimise indoor and outdoor pollutants.

Entryway Systems

i. Floor plans highlighting the location of entryway systems at the building main entrance(s).

ii. Photographs of entryway systems at the building main entrance(s).

Printer Rooms, Chemical Storage Room, Janitor Rooms

i. Floor plans highlighting the location of printer/copier rooms, chemical storage room, janitor rooms, as applicable.

ii. Details of exhaust system such as negative pressure maintained/ air changes/ exhaust rate.

iii. Photographs showing exhaust system, self-closing door, deck-to-deck partition/ hard ceiling.

Air Filtering Media

i. Purchase invoice and Technical cut-sheets of the MERV 13 or EU 7 filters or higher gradation.

ii. Floor plans highlighting the location of AHU rooms.

iii. Photographs showing MERV 13/ EU 7 filters or higher gradation.

Germicidal/ UV Lamps

i. Purchase invoice and Technical cut-sheets of the germicidal/ UV lamps.

ii. Floor plans highlighting the location of AHU rooms.

iii. Cross-sectional drawings highlighting the location of Germicidal/ UV lamp in the AHU's/ TFA's.

iv. Photographs showing germicidal/ UV lamps.

Low VOC Materials

HWB Credit 3 **Points: 1**

(Not applicable for Existing Campuses)

Intent:

Encourage use of materials with low VOC emissions, to reduce adverse health impacts on building occupants.

Compliance Options:

Demonstrate that the project complies with the following categories:

❖ **Paints & Coatings** **1 Point**

Use paints and coatings (including primers) with low or no VOC content (as specified in Table given below) for 95% of interior wall and ceiling surface area.

Type of Paints & Coatings	VOC Limit (g/L less water)
Non-flat (Glossy)	150
Flat (Mat)	50
Metallic/ Anti-corrosive/ Anti-rust	250
Clear Wood Finish: Varnish	350
Clear Wood Finish: Lacquer	550
Floor Coatings	100

(OR)

❖ **Adhesives & Sealants** **1 Point**

For adhesives used within the interiors, ensure that the VOC content does not exceed the limits as specified in Table given below.

Type of Adhesives	VOC Limit (g/L less water)
Glazing adhesives	100
Ceramic tile adhesives	65
Drywall and panel adhesives	50
Wood substrata adhesives	30
Wood flooring adhesives	100
HVAC duct insulation	350
Indoor Carpet adhesives	50
Multipurpose construction adhesives	70

Notes:

- *Volatile organic compounds (VOCs) are carbon compounds that participate in atmospheric photochemical reactions (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonates, and ammonium carbonate). The compounds vaporise at normal room temperatures.*
- *If the project has used small quantities of non-complying paints & coatings and / or adhesives, a VOC budget can be calculated to demonstrate that the weighted average VOC of all products (based on litres of each applied) is below the allowed limit, by each type.*
- *Paints & coatings and Adhesives & sealants that are certified by CII under Green Product Certification Programme (GreenPro) or by a third-party agency approved by IGBC can be used by the project to show compliance.*

Exemplary Performance:

This credit is not eligible for exemplary performance

Documentation Required:

Precertification

Paints & Coatings:

i. Declaration letter from the project owner/ developer stating that the project will use low or no VOC content paints & coatings.

ii. List of proposed low or no VOC content paints & coatings (with make & model) proposed in the building interiors, along with the VOC content (in g/L, less water).

iii. Manufacturer cut-sheets/ brochures/ Materials Safety Data Sheet (MSDS) indicating the VOC content (in g/l, less water) of the paints & coatings proposed to be sourced.

Adhesives:

i. Declaration letter from the project owner/ developer stating that the project will use low or no VOC content adhesives.

ii. List of the proposed low or no VOC content adhesives (with make & model) proposed in the building interiors, along with the VOC content (in g/L, less water).

iii. Manufacturer cut-sheets/ brochures/ Materials Safety Data Sheet (MSDS) indicating the VOC content (in g/L, less water) of the adhesives proposed to be sourced.

Certification

Paints & Coatings:

i. List of low or no VOC content paints & coatings (make & model) used in the building interiors, along with the VOC content (in g/L, less water).

ii. Test certificate (or) Manufacturer cut-sheets/ brochures/ Materials Safety Data Sheet (MSDS), indicating the VOC content (in g/L, less water) of the paints & coatings sourced.

iii. Purchase invoice of the paints and coatings used in the project

Adhesives:

i. List of low or no VOC content adhesives (make & model) used in the building interiors, along with the VOC content (in g/L, less water).

ii. Test certificate (or) Manufacturer cut-sheets/ brochures/ Materials Safety Data Sheet (MSDS), indicating the VOC content (in g/L, less water) of the adhesives sourced.

iii. Purchase invoice of the adhesives and sealants used in the project

Health & Well-being Facilities

HWB Credit 4 **Points: 1-2**

Intent:

Provide health & well-being facilities, so as to enhance physical, emotional and spiritual well-being of campus occupants.

Compliance Options:

❖ **Health & Well-being Facilities** **1 Point**

Demonstrate that the campus has health & well-being facilities to cater to atleast 10% of campus occupants, through the day.

Health & well-being facilities include, but not limited to, aerobics, gymnasium, swimming pool, yoga, meditation, indoor games, outdoor games, playground, etc.,

(AND/ OR)

❖ **Healthcare, Emergency & Security Facilities** **1 Point**

Additionally provide healthcare, emergency & security facilities within the campus such as first-aid/ clinic, pharmacy, emergency alarm, surveillance system etc., in the campus.

Exemplary Performance:

This credit is not eligible for exemplary performance

Documentation Required:

Precertification

Health & Well-being Facilities

i. List of health & well-being facilities (such as aerobics, gymnasium, swimming pool, yoga, meditation, indoor games, outdoor games, playground) proposed in the campus, with the location details
ii. Conceptual site/ floor plans highlighting the location of occupant health & well-being facilities
iii. Tentative calculations indicating the number of building occupants catered through occupant health & well-being facilities to the total number of building occupants, in percentage

Healthcare, Emergency & Security Facilities

i. List of healthcare, emergency & security facilities (such as first-aid/ clinic, pharmacy, emergency alarm, surveillance system) proposed in the campus, with the location details
ii. Conceptual site/ floor plans highlighting the location of occupant healthcare, emergency & security facilities

Certification

Health & Well-being Facilities

i. List of health & well-being facilities (such as aerobics, gymnasium, swimming pool, yoga, meditation, indoor games, outdoor games, playground) provided in the campus, with the location details

ii. Site/ floor plans highlighting the location of occupant health & well-being facilities

iii. Calculations indicating the number of building occupants catered through occupant health & well-being facilities to the total number of building occupants, in percentage

iv. Photographs showing the occupant health & well-being facilities

Healthcare, Emergency & Security Facilities

i. List of healthcare, emergency & security facilities (such as first-aid/ clinic, pharmacy, emergency alarm, surveillance system) provided in the campus, with the location details

ii. Site/ floor plans highlighting the location of occupant healthcare, emergency & security facilities

iii. Photographs showing the occupant healthcare, emergency & security facilities

.

Basic Facilities for Construction Workforce

HWB Credit 5 **Point: 1**

(Not applicable for Existing Campuses)

Intent:

Promote welfare of the construction workforce by providing safe and healthy work conditions.

Compliance Options:

Provide basic facilities for construction workforce, to exceed the guidelines of 'The Building and other Construction Workers Act, 1996 & Rules, 1998'.

- ❖ Adequate housing to meet or exceed local / labour byelaw requirement
- ❖ Sanitary facilities:

Provide atleast 3 toilet seats & 3 urinals for the first 100 workers and one additional toilet seat & urinal for every 100 workers thereafter (or) as defined by local / labour byelaw

(*The sanitary measures should be provided separately for men and women*)

- ❖ First-aid and emergency facilities
- ❖ Adequate drinking water facilities
- ❖ Personal protective equipment (by owner / contractor)
- ❖ Dust suppression measures
- ❖ Adequate illumination levels in construction work areas
- ❖ Site emergency alarm
- ❖ Day care/ crèche facility for workers' children

(*Only if, more than 50 female workers are employed full time*)

Note:

- *The project can consider 'Constructional Practices and Safety Guidelines' from National Building Code (NBC) of India 2005, Part 7 - Constructional Practices and Safety.*

Exemplary Performance:

This credit is not eligible for exemplary performance

Documentation Required:

Precertification

i. Narrative describing the basic facilities proposed in the project for construction workforce

ii. Tentative calculations indicating the total number of construction workers and the total number of toilet seats & urinals proposed in the project, for men and women

iii. Conceptual drawings highlighting the basic facilities proposed in the project for construction workforce

iv. Extract of the construction contract agreement highlighting the facilities proposed (or) Declaration letter

signed by the project owner/ contractor listing the facilities proposed in the project

Certification

i. Narrative describing the basic facilities provided in the project for construction workforce

ii. Calculations indicating the total number of construction workers and the total number of toilet seats & urinals provided in the project, for men and women

iii. Drawings highlighting the basic facilities provided for construction workforce

iv. Extract of the construction contract agreement highlighting the facilities provided

v. Photographs showing the measures implemented

.

Occupational Health & Safety

HWB Credit 6 **Points: 1**

Intent:
Promote occupational health and safety through structured systems and continuous indoor air quality monitoring.

Compliance Options:

- **Option 1: OHS Management System** **1 point**

  Implement a comprehensive Occupational Health & Safety (OHS) Management System that is certified by an accredited third-party, demonstrating a structured approach towards identifying, managing, and continuously improving workplace health and safety performance.

(OR)

- **Option 2: IAQ Monitoring System** **1 point**

  Demonstrate compliance by having an IAQ monitoring system to continuously track PM2.5, PM10, TVOC, and CO_2 in densely occupied spaces and demonstrate that the maximum concentration levels of contaminants are as per the table below:

Parameter	Threshold Value
CO_2	530 ppm
PM 2.5	< 25 µg/m³
PM 10	< 100 µg/m³
TVOC	< 800 µg/m³

Documentation Required:

Precertification

Option 1: OHS Management System

i. OHS policy approved by the management.
ii. Declaration confirming to implement OHS Management system and get third party certification.

Option 2: IAQ Monitoring System

i. Narrative describing the proposed IAQ monitoring system.
ii. Schematic layout highlighting tentative sensor locations in densely occupied spaces.
iii. Manufacturer cutsheet of air quality monitoring systems proposed in the project.
iv. Declaration confirming commitment to install, continuously monitor, and periodically calibrate IAQ sensors.

Certification

Option 1: OHS Management System

i. Narrative describing the OHS Management System and the details pertaining to the same.

ii. OHS policy approved by the management.

iii. Valid OHS certificate issued by an accredited third-party.

Option 2: IAQ Monitoring System

i. Narrative describing the details of the IAQ monitoring system Layout plan highlighting sensor installation locations in densely occupied areas.

ii. Air quality monitoring report highlighting air quality: PM 2.5, PM 10, CO2 etc.

iii. Manufacturer cutsheet of air quality monitoring systems used in the project.

iv. Photographs of the display boards for creating awareness amongst occupants about the air quality.

v. Purchase invoice and photographs of the locations and air quality monitoring systems used in the project.

Occupant Satisfaction Survey

HWB Credit 7 **Points: 1**

(Applicable only for Existing Campus)

Intent:

To evaluate and enhance occupant satisfaction through periodic feedback on key comfort parameters, improving occupant well-being.

Compliance Options:

Conduct an annual occupant satisfaction survey addressing Thermal Comfort, Acoustic Comfort, Cleanliness and Hygiene, Pedestrian Comfort, and Green Spaces & Landscape Quality, and demonstrate a minimum of 80% overall satisfaction is achieved for the identified parameters.

Sample Survey Questions:

1. Please rate your satisfaction with temperature conditions during your working hours

Unsatisfactory	1	2	3	4	5	Satisfactory

1. Please rate your satisfaction with overall noise during your working hours

Unsatisfactory	1	2	3	4	5	Satisfactory

2. Please rate your satisfaction with the cleanliness and hygiene aspects in the campus

Unsatisfactory	1	2	3	4	5	Satisfactory

3. Please rate your satisfaction with the pedestrian access in the campus

Unsatisfactory	1	2	3	4	5	Satisfactory

4. Please rate your satisfaction with the provided Green Spaces and Landscape quality in the campus

Unsatisfactory	1	2	3	4	5	Satisfactory

Documentation Required:

Certification

i. Narrative describing the methodology for conducting the survey and assessing occupant satisfaction levels.

ii. Copy of the occupant comfort survey questionnaire Thermal Comfort, Acoustic Comfort, Cleanliness and Hygiene, Pedestrian Comfort, and Green Spaces & Landscape Quality parameters.

iii. Survey responses or summary of results indicating the percentage of occupant satisfaction for each parameter.

SUSTAINABLE OPERATIONS & MAINTENANCE

Green Audit

SOM Credit 1 **Points: 1-2**

(Not Applicable for New Campuses)

Intent:

Ensure sustained performance of the building systems, so as to achieve benefits during the lifetime of the building systems & facility

Compliance Options:

❖ **Energy Audit** **1 Point**

- Demonstrate that the project owner has carried out a detailed Energy Audit by a Certified Energy Auditor outlining the detailed analysis of energy conservation in the campus, including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis.

❖ **Water Audit** **1 Point**

- Demonstrate that the project owner has carried out a detailed Water Audit by a Certified Water Auditor outlining the detailed analysis of water conservation in the campus, including submission of technical report containing recommendations for improving water efficiency with cost benefit analysis.
- Report specific observations and an action plan initiated after the audit to reduce energy consumption

Note:

- *Any Educational institutions that have carried out Green Audit (Energy/Water Audit/Environment Audit) as part of their NAAC accreditation can demonstrate credit compliance through audit certification/reports.*

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Energy Audit:

i. Energy audit report clearly indicating opportunities/ measures for energy conservation in the campus.
ii. Action plan initiated after the audit to reduce energy consumption
iii. Documentary proof to validate the implemented energy efficiency measures for campus.

Water Audit:

i. Water audit report clearly indicating opportunities/ measures for water conservation in the campus.
ii. Action plan initiated after the audit to reduce water consumption
iii. Documentary proof to validate the implemented water efficiency measures for campus.

Green Education

SOM Credit 2 **Points: 2**

Intent:

Promote green education by involving campus occupants, local communities & NGOs, to increase awareness levels and encourage implementation of eco-friendly practices.

Compliance Options:

Sensitise occupants about sustainability education through capacity building/training, outreach activities and constitute green education committees/eco clubs involving volunteers from diversified fields to set /achieve sustainability goals.

❖ **Option 1: Green Awareness** **(1 point)**

- Organise atleast three awareness sessions or programmes on environment sustainability.
  Eg: Plantation drives, Clean up drives, Sustainability marathons etc.,
- Provide signage highlighting green measures implemented in the campus to protect environment.

(AND/OR)

❖ **Option 2: Green Campus Guidelines** **(1 point)**

- Develop Green campus guidelines providing information that helps campus occupants to implement and utilize the green features.
- Develop Green campus operation & maintenance and renovation guidelines providing information that helps facilities team to implement the green features during operation and renovation process.

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

Option 1: Green Awareness

i. Narrative describing the Proposed outreach/ educational programmes that will be organized to increase public awareness on environment sustainability and green features of the campus.

Option 2: Green Campus Guidelines

i. Draft/ Final copy of the green campus guidelines providing information which helps the campus occupants to implement and utilise the green features, post occupancy

ii. Draft/ Final copy of green campus renovation guidelines providing information which helps the facilities team to implement the green features, during campus renovation process

Certification

Option 1: Green Awareness

i. Narrative describing the outreach/ educational programmes that will be organized to increase public awareness on environment sustainability and green features of the campus.

ii. Photographs of the signage installed in the campus, highlighting green measures implemented in the campus to protect environment.

Option 2: Green Campus Guidelines

i. Narrative describing the green campus guidelines with the green features implemented in the campus

ii. Copy of the green campus guidelines providing information which helps the campus occupants to implement and utilise the green features, post occupancy

iii. Copy of green campus renovation guidelines providing information which helps the facilities team to implement the green features, during campus renovation process.

iv. Photographs indicating the sustainable strategies implemented during the renovation.

Smart Campus Operations

SOM Credit 3 **Points: 4**

Intent:

To enable centralized monitoring and control of key campus systems, improving operational efficiency and enhancing sustainability performance.

Compliance Options:

❖ **Option 1: Centralized Operations & Control** **(2 points)**

Campus-wide monitoring and control of following systems (1 point for two systems):

- Air-conditioning management system
- Lighting management system
- Renewable energy management system
- Elevator management system
- Fresh air monitoring system
- CO2 control and monitoring system
- Domestic water pumping management system
- Wastewater treatment monitoring and control system

(AND/OR)

❖ **Option 2: Performance Monitoring**

Energy Dashboard: **(1 point)**

Demonstrate online energy monitoring system through dashboard to visualize daily/ monthly performance. Recorded data shall also be analyzed (shall be submitted to IGBC for feedback) for further improvements.

(AND/OR)

Water Dashboard: **(1 point)**

Demonstrate online water monitoring system to track continuous water performance on daily or monthly basis (project shall share water performance data with IGBC for feedback) for further improvements.

Exemplary Performance:

This credit is not eligible for exemplary performance.

Documentation Required:

Precertification

Option 1: Centralized Operations & Control

i. Narrative describing the centralized operations and control systems proposed in the project, to control and monitor equipment and systems.

ii. Declaration letter from the project owner/ developer stating the various systems that the project will monitor and control through Central System.

Option 2: Performance Monitoring:

Energy Dashboard

iii. Narrative describing the energy monitoring dashboard proposed in the project.

iv. Declaration letter from the project owner/ developer confirming the provision of energy dashboard for monitoring along with commitment to share the annual total building energy consumption data to IGBC.

Water Dashboard

i. Manufacturer cut-sheets/ specifications of the real time water monitoring system proposed in the project

v. Declaration letter confirming the provision of water dashboard for monitoring along with commitment to share the annual total building energy consumption data to IGBC.

Certification

Option 1: Centralized Operations & Control

i. Narrative describing the centralized operations and control systems installed in the project, to control and monitor equipment and systems.

ii. I/O summary of the centralized operations control systems installed.

iii. Photographs showing the systems being monitored through the centralized operations control systems.

iv. Purchase invoice of the installed Control system

Option 2: Performance Monitoring:

Energy Dashboard

i. Narrative describing the energy dashboard installed in the project.

ii. Energy use data for twelve consecutive months (one full year) for the various end uses sub metered in the campus (not applicable for new campus)

iii. Manufacturer cut-sheets/ brochures of the installed energy dashboard.

iv. Photographs of the energy dashboard.

Water Dashboard

i. Narrative describing the water dashboard installed in the project.

ii. Water use data for twelve consecutive months (one full year) for the various end uses sub metered in the campus (not applicable for new campus)

iii. Manufacturer cut-sheets/ brochures of the installed water dashboard.

iv. Photographs of the installed water dashboard

INNOVATION IN DESIGN

Innovation in Design Process

ID Credit 1 **Points: 1-4**

Intent:

Provide projects an opportunity to be awarded points for innovative performance in green campus categories not specifically addressed by the IGBC Green Campus rating system and / or exemplary performance above the requirements set by the IGBC Green Campus rating system.

Compliance Options:

- **ID Credit 1.1: Innovation in Design Process**
  - **Option 1: Innovation**

    Identify the intent of innovation credit, requirement for compliance, approach used to meet the required measures, and documentation to demonstrate compliance.

    ***Notes*:**

    The project shall also meet the following criteria for achieving an Innovation point:
    - *Quantitative performance improvements (comparing a baseline and design case).*
    - *Strategy must be significantly better than standard sustainable design & construction practices.*
    - *Measures must be voluntary. Measures that are mandated by the local byelaws and not addressed in the rating system are not eligible for Innovation.*

    (OR)
  - **Option 2: Exemplary Performance**

    The project is eligible for exemplary performance, if the design and/ or construction measures greatly exceed the credit requirements of the IGBC Green Campus rating system.

    ***Notes*:**
    - As a general rule, points for exemplary performance are awarded for doubling the credit requirements and / or achieving the next incremental percentage threshold.
    - Eligibility criteria for various credits in the IGBC Green Campus rating system are defined in respective credits and Exhibit - A.

- **ID Credit 1.2: Innovation in Design Process**

  Same as credit 1.1
- **ID Credit 1.3: Innovation in Design Process**

  Same as credit 1.1
- **ID Credit 1.4: Innovation in Design Process**

  Same as credit 1.1

Exhibit A - List of Base Credits eligible for Exemplary Performance

<table>
<tr><td colspan="2">Site Planning and Management</td></tr>
<tr><td>SPM Credit 1</td><td>Enhanced Green Features in the Campus Building
Energy Efficiency:
EPI ratio < 0.71(or)
EPI for Existing Campus, as per the table below:<table><tr><th>Percentage conditioned area</th><th>EPI Range</th></tr><tr><td>Less than 25%</td><td>< 28</td></tr><tr><td>25% - 50%</td><td>< 38</td></tr><tr><td>50%-75%</td><td>< 56</td></tr><tr><td>Above 75%</td><td>< 74</td></tr><tr><td>95% and above</td><td>< 88</td></tr></table>
Water Efficiency / Water Use Intensity
> 40% of savings over baseline</td></tr>
<tr><td>SPM Credit 3</td><td>Ecology & Biodiversity Conservation
≥ 40% of the site area is preserved
Shannon-Wiener Diversity Index (H′) >2.5</td></tr>
<tr><td>SPM Credit 4</td><td>Green Cover
≥ 45% of the site area is with green cover/ vegetation
45 trees per acre</td></tr>
<tr><td>SPM Credit 5</td><td>Heat Island Reduction, Roof & Non-roof
≥ 100% Non-Roof and Roof Area with mitigation measures</td></tr>
<tr><td colspan="2">Sustainable Transportation</td></tr>
<tr><td>ST Credit 3</td><td>Access to Sustainable Transportation
7% of the total four-wheeler and two-wheeler parking capacity provided with EVCI.</td></tr>
<tr><td colspan="2">Water Conservation</td></tr>
<tr><td>WC Credit 1</td><td>Enhanced Rainwater Harvesting
as defined in credit</td></tr>
<tr><td>WC Credit 2</td><td>Sustainable Landscape
≥ 80% Drought tolerant species</td></tr>
<tr><td colspan="2">Energy Efficiency</td></tr>
<tr><td>EE Credit 2</td><td>Enhanced Energy Efficiency
≥ 60% reduction in LPD
Total exterior lighting load of the campus is reduced by 30% through retrofitting</td></tr>
<tr><td>EE Credit 3</td><td>Green Power
On Site Renewable Energy</td></tr>
</table>

	➢ Owner Occupied: >25% of annual energy consumption met by onsite ➢ Tenant Occupied: >10% of annual energy consumption met by RE Renewable Energy Use (Combined) ➢ Owner Occupied: 100% of grid energy is combined ➢ Tenant Occupied: >55% of grid energy is combined
Material and Resource Management	
MRM Credit 1	Sustainable Building Materials ➢ ≥ 40% of building materials are sourced locally ➢ ≥ 30% of recycled content in the building materials procured ➢ ≥15% reduction in embodied carbon of the campus
MRM Credit 4	Dry Waste Management, Post-occupancy ➢ 95% of the dry waste generated in campus is diverted from landfill
Health & Well-Being	
HWB Credit 1	Daylighting ➢ 95% of regularly occupied area meet the daylighting requirement as defined in the credit.

Documentation Required:

Precertification

Innovation:

i. Narrative describing intent, requirements, potential strategies and technologies proposed to achieve the innovation credit. Strategies adopted must be significantly better than standard sustainable design practices

ii. Table indicating tentative quantitative performance improvements, comparing baseline and design case

iii. Other supporting documents such as drawings, illustrations, cut-sheets, test reports, etc., as applicable

Exemplary Performance:

i. Narrative describing the strategies proposed to achieve exemplary performance in the respective base credit

Note:

- *Provide supporting documents in the respective base credit folder*

Certification

Innovation:

i. Narrative describing intent, requirements, strategies and technologies implemented to achieve the innovation credit. Strategies adopted must be significantly better than standard sustainable design practices

ii. Table indicating quantitative performance improvements, comparing baseline and design case

iii. Other supporting documents such as drawings, illustrations, cut-sheets, test reports, etc., as applicable

Exemplary Performance:

i. Narrative describing the strategies implemented to achieve exemplary performance in the respective base credit

Note:

- *Provide supporting documents in the respective base credit folder*

GHG Inventorization and Mitigation Measures

ID Credit 2 **Points: 2**

Intent:

To conduct Greenhouse Gas (GHG) inventorization studies to quantify GHG intensity and deploy strategies or measures to offset carbon emissions.

Compliance Options:

New Campus:

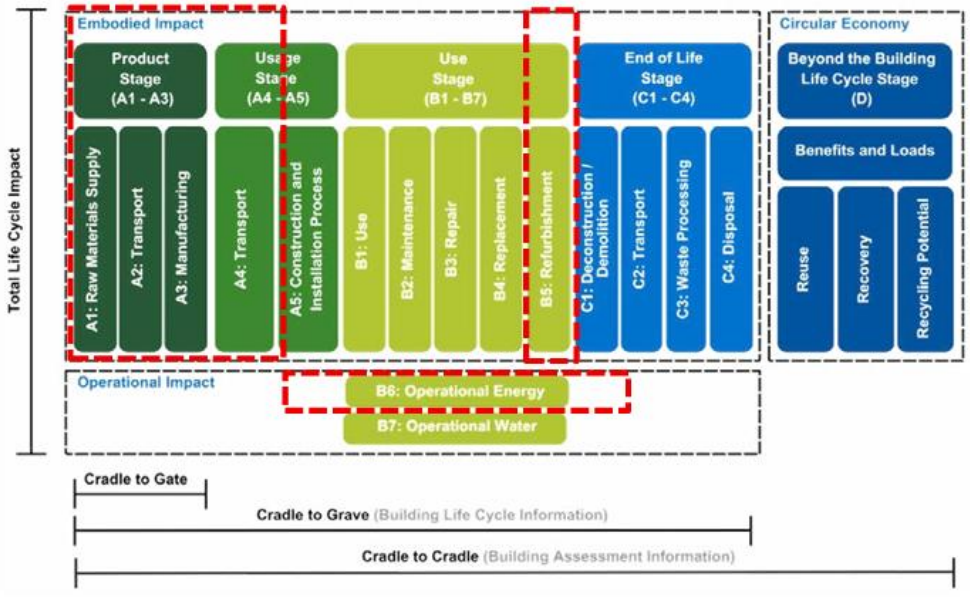
Decarbonization at Project Level- LCA & roadmap to Net Zero **2 Points**

Perform whole building Life Cycle Analysis (LCA) to estimate carbon emissions as per ISO standard 14040, and report the following for the overall built-up area of the project:

- Embodied carbon in kg CO2e per square meter of Built up area (kg CO2e/m2 BUA)
- Operational carbon in kg CO2e per year considering a minimum building lifespan 50 years.

Notes:

- *LCA Study Period: 50 years*
- *Life Cycle Stages to be included:*
  - *Module A1–A3: Product stage (raw material supply, transport, manufacturing),*
  - *Module A4: Construction process stage (transport to site*
  - *Module B4: Replacement*
  - *Module B6: Operational Energy*
- *Operational carbon (Module B6) shall include electricity and fuel consumption (such as petrol, diesel, CNG, LPG etc.) in building operations and its associated environment within the project boundary.*
- *The embodied carbon of respective materials can be sourced from Environmental Protection Declarations (EPDs) or Eco-labelling programmes such as GreenPro or equivalent. Where this is not available, the LCA should use third-party (independently) verified, or peer-reviewed carbon factors to ISO 14067, integrated into software databases.*



Methodology for Roadmap:

1. Goal and Scope
   - Define what the decarbonization plan intends to achieve and its boundaries.
   - Set climate goals (e.g., Net Zero by 2040)
2. Decarbonization Strategy & Action Plan Based on the LCA, develop targeted carbon reduction interventions. The strategies can include:
   - Renewable energy integration
   - Low-carbon materials for renovation/ operation or circular economy approaches Operational efficiency, green transport, etc.

(AND/OR)

Existing Campus:

Decarbonization at Organizational Level **2 Points**

Account GHG emissions pertaining to Direct (Scope-1) and Indirect (Scope-2 & Scope- 3*) emissions in consistence with ISO 14064-1: 2018

- Provide a detailed report indicating the baseline carbon emissions and the strategies taken to reduce the carbon footprint from Scope-1, Scope-2 & Scope-3* emissions year-on-year.
- Provide a detailed action plan with strategies to reduce the carbon footprint from Scope-1, Scope-2 & Scope-3 emissions year-on-year to achieve the target.

Notes:

- *The mitigation measures shall include, but not limited to operational improvement, resource efficiency, mode of transport, switch to cleaner fuel, on-site renewable energy, fleet optimization, technology upgradation, carbon offsets etc as applicable.*
- **Scope 3 emissions is optional.*

Documentation Required:

Precertification

i. Decarbonization at Project Level- LCA & roadmap to Net Zero
ii. Narrative describing the approach adopted for Whole Building Life Cycle Analysis (LCA) and key assumptions considered.
iii. LCA methodology report in accordance with ISO 14040, defining study scope, boundaries, and life cycle stages (Modules A1–A3, A4, B4, B6).
iv. Bill of Quantities (BOQ) indicating all major building materials used in the project.
v. Summary table showing embodied and operational carbon emissions (kg CO_2e/m² BUA). v. Details of software tool used for LCA with reference to data sources.
vi. Decarbonisation roadmap outlining targets, key strategies, and intended interventions (renewable energy, efficiency, materials, etc.).

Certification

New Campus

Decarbonization at Project Level- LCA & roadmap to Net Zero:

i. Final LCA report demonstrating embodied and operational carbon emissions in accordance with ISO 14040 standards.

ii. Supporting BOQ and material data used for LCA inputs.

iii. Calculation sheet showing total GHG emissions (kg CO_2e/m^2) and annual operational GHG (kg CO_2e/year).

iv. Details of software tool used for LCA with reference to data sources

v. Copy of decarbonisation roadmap highlighting targeted reduction measures, timelines, and implementation plan.

Existing Campus

Decarbonisation at Organisational Level

i. GHG Accounting report verified by third-party with the following information - boundary assumptions, type of control, type of GHGs, GHG emission statement (including Scope 1, 2 & 3).

ii. Summary of year-on-year emission reduction (absolute and intensity metrics) along with details of strategies taken to reduce the carbon footprint.

iii. Decarbonization roadmap with clear strategies, action plan, and monitoring framework.

Beyond the Fence Green Initiatives

ID Credit 3 **Points: 1**

(Applicable for Existing Campus only)

Intent:

To encourage projects to undertake green initiatives outside the campus, benefiting the local community and environment.

Compliance Options:

Demonstrate the implementation of atleast two green measures beyond the campus boundary such as:

- Green Plantation drives/biodiversity parks
- Development of pedestrian pathways/ improve public spaces
- Potable water supply for local community
- Restoration of water bodies
- Rainwater Harvesting Systems for local areas
- Installation of public composting units / biogas plants
- Preservation of local floral and faunal species

Eg. Restoring of water bodies for aquatic species, Protection of mangroves, adaptable habitat for endangered species etc,

Documentation Required:

Certification

i. Narrative describing the beyond the fence green initiatives implemented by the project team.

ii. Photographs of the beyond the fence green initiatives implemented by the project team in the last 3 years.

Social Well-being and Community Practices

ID Credit 4 **Points: 1**

(Applicable for Existing Campus only)

Intent:

To promote social well-being and community engagement within the campus through structured initiatives that contribute to the health, inclusivity, and welfare of occupants and the surrounding community.

Compliance Options:

Organize at least two social wellbeing programs in the campus such as:

- Blood donation camps
- Heath check up camps
- Mental health awareness sessions / counselling camps
- Food/clothes donation drives
- Support orphanages / old age homes
- Educational support and engagement programs for economically weaker sections (EWS)
- Animal rescue / adoption drives
- Feeding programs for stray animals etc

Documentation Required:

Certification

i. Narrative describing the Social wellbeing and Community practices being implemented by the campus.

ii. Photographs of Social wellbeing and Community practices implemented by the campus in the last 3 years.

IGBC Accredited Professional

ID Credit 5 **Point: 1**

Intent:

Support and encourage involvement of IGBC Accredited Professional in green campus projects, so as to integrate appropriate design measures and streamline the certification process.

Compliance Options:

Atleast one participant of the project team shall be IGBC Accredited Professional.

Documentation Required:

Precertification and Certification

i. IGBC Accredited Professional certificate of atleast 1 participant involved in the project.

For more details, please contact :

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About CII
(Confederation of Indian Industry)

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society through working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry.

Founded in 1895 and celebrated 125 years in 2020, India's premier business association has more than 9,000 members, from the private as well as public sectors, and an indirect membership of over 365,000 enterprises from around 294 national and regional sectoral industry bodies.

With 70 offices, including 12 Centres of Excellence in India, and 8 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK and USA, as well as institutional partnerships with 300 counterpart organizations in 100 countries, CII serves as a reference point for Indian Industry and the international business community.

About IGBC
(Indian Green Building Council)

The Indian Green Building Council (IGBC), part of the Confederation of Indian Industry (CII) was formed in the year 2001. The vision of the council is, "To enable a sustainable built environment for all and facilitate India to be one of the global leaders in the sustainable built environment by 2025".

The council offers a wide array of services which include developing new green building rating programmes, certification services and green building training programmes. The council also organises Green Building Congress, its annual flagship event on green buildings.

The council is committee-based, member-driven and consensus-focused. All the stakeholders of construction industry comprising of architects, developers, product manufacturers, corporate, Government, academia and nodal agencies participate in the council activities through local chapters. The council also closely works with several State Governments, Central Government, World Green Building Council, bilateral multi-lateral agencies in promoting green building concepts in the country.

Confederation of Indian Industry
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