Department of Environment & Climate Change, Tamil Nadu

TAMIL NADU CLIMATE CHANGE MISSION

LIFESTYLE FOR CLIMATE

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Acronyms

Acronyms	Terms
ACR	Alternative Compliance Request
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
BMS	Building Management System
BPO	Business Process Outsourcing
BTU	British Thermal Units
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
cu.m.	Cubic Meter
ECBC	Energy Conservation Building Code
EE	Energy Efficiency
EIC	Events Industry Council
EP	Environmental Performance
EPI	Energy Performance Index
GHG	Greenhouse Gases
GWP	Global Warming Potential
HVAC	Heating, Ventilation, And Air Conditioning
IAQ	Indoor Air Quality
IGBC	Indian Green Building Council
kg	Kilogram
KL	Kilolitre
KPI	Key Performance Indicator
kWh	Kilowatt-Hour
LED	Light Emitting Diode
LEED	Leadership In Energy and Environmental Design
LPD	Lighting Power Density
LPF	Litre per Flush
LPM	Litre per Minute
MER	Minimum Eligibility Requirements
MVM	Manjappai Vending Machine
MWh	Megawatt-Hour
MWM	Material & Waste Management

NBC	National Building Code
OHC	Occupant Health & Comfort
OWC	Organic Waste Convertor
PPM	Parts Per Million
RWH	Rainwater Harvesting
SC	Social & Cultural Inclusivity
SDG	Sustainable Development Goals
SLD	Single-Line Diagram
sq.m.	Square Meter
SRI	Solar Reflectance Index
STP	Sewage Treatment Plant
TNCCM	Tamil Nadu Climate Change Misson
TNCDBR	Tamil Nadu Combined Development and Building Rules
TVOC	Total Volatile Organic Compounds
W/sq.m.	Watt Per Square Meter
WE	Water Efficiency
wrt	With Respect To

Table 1 Acronyms

ABOUT “LIFESTYLE” CERTIFICATION

Certification Scheme for Existing Buildings

Introduction

About Lifestyle for Climate Certification

This initiative is an integral part of the Tamil Nadu Climate Change Mission, spearheaded by the Department of Environment & Climate Change. The overarching aim is to fortify the state against the impacts of climate change while championing ecological conservation.

The primary objective of this study is to establish a basis and structure for developing a "Lifestyle for Climate" (LiFE) certification program under the Mission Life certification scheme for Existing Buildings. The rating aims to provide a comprehensive framework that assesses and rewards buildings/institutions that implement sustainable measures. The primary aim is to promote environmental sustainability and responsible practices in the current stock of existing buildings.

This report details the work carried out in this regard.

Objectives

- **Review existing rating mechanisms:** Analyse current systems for sustainability, energy use, waste management, and resource usage in large gathering venues.
- **Identify improvement areas:** Find ways to improve existing buildings based on relevant sustainability standards.
- **Stakeholder involvement:** Engage key stakeholders (government officials, center managers, staff, visitors, and local communities) to understand their perspectives and priorities.
- **Develop a rating system:** Create a system based on the studies and stakeholder discussions.
- **Define certification criteria:** Specify actions centers must take to earn certification, including energy audits, waste reduction goals, water conservation measures, renewable energy adoption, and green landscaping practices.
- **Encourage participation:** Motivate community centers, marriage halls, and other large gathering venues to apply for LiFE certification online.
- **Pilot Study:** Conduct initial assessments of similar projects relevant to the Tamil Nadu climate, culture, and stakeholder/community input.
- **Certification Framework:** Suggest a clear certification framework with different levels or tiers of Government Departments and agencies to evaluate and certify the existing public buildings.
- **Integration with Existing Infrastructure:** Integration with existing government websites is being explored for online applications, evaluation, and certificate issuance.

Methodology

The Certification Scheme development can be broadly categorized into four stages viz:

a) **Review of Literature:** Research and Analysis of existing rating systems with respect to Existing Buildings, and Sustainability assessment measures & criteria (Materials/ Energy/ Waste/ Water/ Climate/ heat Study/ air quality, etc). Develop a framework that allows for an integrated approach to achieving a climate-resilient, smart, safe, and sustainable built environment.

b) **Ground Study:** Initial assessments of similar projects with relevance to TN climate, culture stakeholders, and community inputs will be necessary.

c) Develop the Certification Scheme: Based on inputs from site surveys/ ground study and theory of knowledge available. The various criteria and measures will be developed based on the applicability for the State of Tamil Nadu with a specific focus on the priorities and needs of buildings that allow people of large-scale gatherings. Identify typologies under this category such as shopping complexes/ retail, Convention Centres places of worship, Function halls, etc. Develop a framework that will prioritize occupant well-being and comfort as well.

d) Develop the Implementation process: It is equally important to be able to evaluate and develop an implementation mechanism that is fair and easily accessible to all. To identify the authority that will monitor the submissions of projects, and who will be responsible for evaluation and award of certification. To provide a framework for submission and evaluation which could include online submissions and evaluation or site audits to cross-verify pieces of evidence. The methodology for implementation will be developed based on discussions with the stakeholders involved.

Expected Outcome

The vision is to provide guidelines that are pivotal to high-performance large-scale gathering buildings and make use of digital technologies to ease implementation. The objective is to create an impactful sustainability assessment tool and an effective implementation process.

The Vision

Based on the above study, 'LIFSTYLE' focuses intently on resource efficiency and climate change mitigation, recognizing that too wide a focus leads to disparate results. This rating development intends to democratize the green buildings market, which was previously reserved for higher-end buildings standing in relative isolation. With Tamil Nadu's current focus on rapid decarbonization, a framework for resource-efficient building practices is the need of the hour. 'LIFESTYLE' is creating a new path for green growth by promoting inclusivity of all major commercial building types (except healthcare) proving that sustainability is affordable in a practical and action-oriented way.

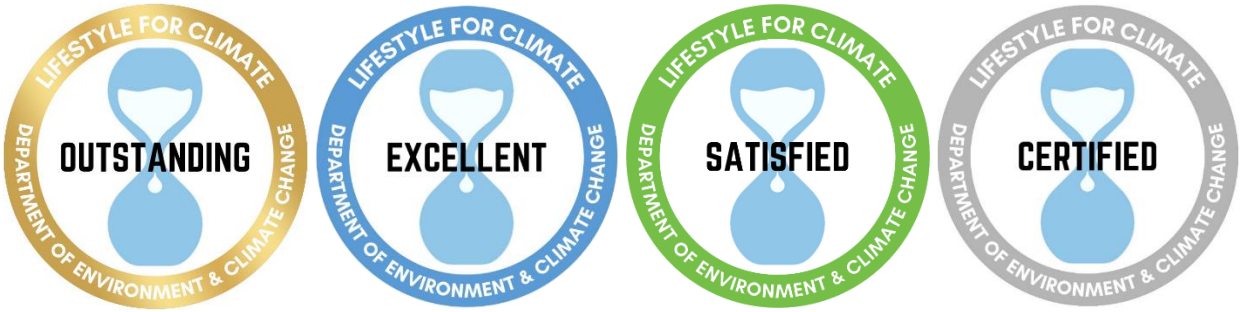
Rather than relying on complex simulation software and processes to demonstrate Tamil Nadu's commitment to decarbonization, 'LIFSTYLE' has an easy-to-use interface that relies on specific documentation. This approach closes the gap between non-existent or weakly enforced green building regulations and expensive international standards. It realizes the potential to lower utility costs while reducing GHG emissions.

Credits Overview

Modules	Credits	Credit Scores
Minimum Eligibility Requirements	MER 1 – Permanent Location on Existing Land	MR
	MER 2 – Reasonable Boundaries	MR
Minimum Eligibility Requirements (mandatory requirements)		MR
Environmental Performance	EP1 - Green Commute & Neighbouring Amenities	2
	EP2 – Sustainable Landscaping	2
	EP3 – Heat Island Reduction: Non-roof hardscape	3
	EP4 – Heat Island Reduction: Roof	3
	EP5 – Light Pollution Reduction	1
	EP6 – Building Function & Management	2
Environmental Performance – Total Credit Score		**13**
Water Efficiency	WE1 – Rainwater Harvesting	7
	WE2 – Indoor Water Efficiency	6
	WE3 – Irrigation Efficiency	4
	WE4 – Waste Water Management	4
	WE5 – Water Monitoring	1
Water Efficiency – Total Credit Score		**22**
Energy Efficiency	EE1 – Clean Energy	10
	EE2 – Energy Performance	12
	EE3 – Eco-friendly Refrigerant & Halons	2
	EE4 – Energy Management	2
Energy Efficiency – Total Credit Score		**26**
Material & Waste Management	MWM1 – Material Management Policy	4
	MWM2 – Waste Collection & Disposal	7
Material & Waste Management – Total Credit Score		**11**
Occupant Health & Comfort	OHC1 – Integrated Pest Management	2
	OHC2 – Indoor Air Quality Management	6
	OHC3 – No Smoking Policy	1
	OHC4 – Visual Ambiance Enhancement	4
Occupant Health & Comfort – Total Credit Score		**13**
Social & Cultural Inclusivity	SC1 – Barrier-free Environment	3
	SC2 – Visitor Management	1
	SC3 – Regional Language	1
Social & Cultural Inclusivity – Total Credit Score		**5**
Consolidated Score for Certification		**90**

Table 2 Credits Overview

Certification Levels



75-90 points | 60-74 points | 45-59 points | 30-44 points

Figure 1 Certification levels

Certification Guidance

Alternative Compliance Request (ACR)

An Alternative Compliance Request (ACR) is a formal mechanism for project teams to seek special approval on the eligibility of a method or measure not currently included in the TNCCM Lifestyle Certification Manual, in order to demonstrate compliance with the TNCCM. This process is applicable in situations where project teams wish to:

1. Use an alternative method to meet the intent of a TNCCM Lifestyle Certification measure.
2. Incorporate innovative strategies not outlined in the TNCCM Lifestyle Certification measures, aimed efficiency in Site, Energy, Water, Materials, IAQ or Social Facilities.

For instance, an ACR may be required if a project team wants to use a tool outside the TNCCM Lifestyle Certification framework assess the savings from a cooling system type not available in EDGE.

The ACR form serves to document the project team's request and receipt of special permission from the TNCCM Lifestyle Certification team to apply a non-standard procedure for claiming measure savings within the certification process. It is important to note that compliance with the measure's intent will still be subject to audit verification.

While the ACR is primarily used for formal documentation and audit purposes, the TNCCM Lifestyle Certification User Guide, available on the Lifestyle Certification website, should be referenced as a starting point for any questions regarding the certification process. Should additional guidance be needed, the TNCCM Lifestyle Certification team can be contacted at tnclimatechangemission@gmail.com.

If a project team has followed the necessary steps and still requires documentation for an unconventional approach to their project, they may request the Alternative Compliance Request form directly from the certifying body.

Note that an ACR is project-specific. When a particular content or method becomes widely applicable, it will be added to the User Guide, eliminating the need for further ACR submissions for that particular approach.

Technical Definitions

Sl. No.	Term	Technical Definitions
1	Accessible Restroom	A restroom designed to accommodate individuals with disabilities or mobility challenges, ensuring ease of access and usability. Features typically include wider doors, adequate turning space, handrails, and fixtures that are positioned for easy reach.
2	Aerators	Devices installed in faucets, showerheads, or other plumbing fixtures that mix air with water, reducing water flow while maintaining pressure and functionality.
3	Artificial Land Masses	Man-made extensions of land created through the filling of bodies of water, the reclamation of land, or other construction methods. These land masses are typically used for urban development, infrastructure, or other human activities and are designed to remain stable over time.
4	Barrier-free	A design approach that ensures buildings and their surrounding environments are accessible to all individuals, including those with disabilities or mobility challenges.
5	Bicycle Lanes	Designated, safe pathways for bicycles, separated from motor vehicle traffic, to encourage cycling as a sustainable mode of transportation.
6	Braille	A tactile writing system used by individuals who are blind or visually impaired, consisting of raised dots arranged in patterns to represent letters, numbers, and other characters.
7	Building Lifecycle	The entire span of a building's existence, from initial planning and design, through construction, operation, maintenance, and eventual demolition or deconstruction.
8	Building Management System	A centralized control system that monitors and manages a building's mechanical, electrical, and electromechanical services, such as heating, ventilation, air conditioning (HVAC), lighting, security, and energy management.
9	Building Performance	The overall effectiveness of a building in terms of energy efficiency, environmental impact, occupant comfort, and operational efficiency. It encompasses aspects such as energy consumption, indoor air quality, thermal comfort, water usage, and sustainability.
10	Carpet Area	The total floor area within the walls of a building, excluding areas like walls, staircases, elevators, and common spaces. It refers specifically to the usable area where occupants can place furniture and move around.

11	Charging Stations	Designated facilities equipped with equipment to recharge electric vehicles (EVs) or plug-in hybrid vehicles (PHEVs).
12	Chemical run-off	The movement of chemicals, often from agricultural, industrial, or construction activities, that are carried by rainwater or irrigation into water bodies such as rivers, lakes, or groundwater.
13	Circular Economy	An economic model that emphasizes the continual use of resources by minimizing waste, promoting the reuse, repair, refurbishment, and recycling of materials and products.
14	Clean Energy	Energy derived from renewable, low-impact sources such as solar, wind, hydro, and geothermal, which produce little to no greenhouse gas emissions or environmental pollutants.
15	CNG Vehicles	Vehicles that operate on Compressed Natural Gas (CNG) as a cleaner alternative to gasoline or diesel. CNG is a fossil fuel that produces lower emissions of carbon dioxide (CO_2), nitrogen oxides (NOx), and particulate matter, making CNG vehicles a more environmentally friendly transportation option.
16	Composting	The process of recycling organic waste, such as food scraps, garden waste, and agricultural residues, into nutrient-rich compost through natural decomposition.
17	Contiguous Land	A continuous area of land that is adjacent or directly connected to the project site, without any significant gaps or separations.
18	Covered Structures	Built structures that have a roof or canopy providing overhead protection, such as parking garages, walkways, or pergolas. These structures are typically designed to offer shelter from the elements while integrating with the overall building or landscape.
19	Eco-friendly	Refers to products, practices, or systems that have minimal impact on the environment, focusing on sustainability and resource conservation.
20	Ecosystem	A dynamic community of living organisms (plants, animals, microorganisms) interacting with each other and their physical environment (air, water, soil) in a specific area.
21	Energy Efficient Systems	Technologies and solutions designed to reduce energy consumption while maintaining performance and comfort. These systems, such as high-efficiency HVAC units, LED lighting, and smart building controls, optimize energy use by minimizing waste and enhancing operational efficiency.
22	Energy Performance Index	A metric used to assess the energy efficiency of a building, typically expressed as the amount of energy consumed per unit of floor area (e.g., kWh/sq.m./year). The EPI helps compare a building's energy performance against benchmarks or standards, guiding improvements in energy usage and sustainability.

23	Energy Simulation	A computer-based analysis that models a building's energy use to predict its performance under various conditions, such as different weather patterns, occupancy levels, and operational settings.
24	Environmental Footprint	The total impact of a building, product, or activity on the environment, measured by factors such as resource consumption, energy use, waste generation, and emissions.
25	Environmental Impacts	The effects of human activities, including construction, operation, and demolition of buildings, on the natural environment. This includes changes to air, water, soil quality, biodiversity, and the climate, as well as resource depletion and waste generation.
26	Global Warming Potential	A measure of how much heat a greenhouse gas traps in the atmosphere over a specific time period, typically 100 years, compared to carbon dioxide (CO2). GWP is used to evaluate the impact of different gases on global warming.
27	Global Language	A widely spoken and recognized language used for international communication, such as English, which is commonly understood across different regions and cultures.
28	Green Commute	A sustainable transportation approach that encourages the use of environmentally friendly modes of transportation, such as walking, cycling, carpooling, public transit, or electric vehicles.
29	Green Procurement	The practice of purchasing goods and services that have a reduced environmental impact throughout their lifecycle, from production to disposal.
30	Gross Floor Area	The total area of all floors within a building, measured from the exterior walls, including all usable and non-usable spaces such as hallways, stairwells, and mechanical rooms.
31	Groundcover	Low-growing plants or vegetation used to cover the ground surface, typically to prevent soil erosion, reduce water runoff, and improve aesthetic value.
32	Heat Island Effect	The phenomenon where urban or built areas experience higher temperatures than their surrounding rural areas due to human activities and the absorption and retention of heat by buildings, roads, and other surfaces.
33	Hybrid Vehicles	Vehicles that use a combination of an internal combustion engine (ICE) and an electric motor to reduce fuel consumption and lower emissions. The electric motor assists the engine during acceleration and other driving conditions, improving fuel efficiency and reducing carbon emissions.
34	Indigenous Business	A business owned and operated by Indigenous people or communities, often focused on preserving cultural traditions, providing local goods and services, and supporting sustainable practices.

35	Indoor Air Quality	The quality of air inside a building, which is influenced by factors such as ventilation, the presence of pollutants (e.g., volatile organic compounds, dust, mould), and the overall cleanliness of the indoor environment.
36	Landscape on Built Structures	The integration of green spaces, such as gardens, plantings, and green roofs, on top of buildings or other constructed structures.
37	Light Pollution	The excessive or misdirected artificial light that interferes with the natural night environment, often caused by poorly designed outdoor lighting.
38	Lighting Power Density	The amount of electrical power consumed by lighting per unit area, typically measured in watts per square meter (W/sq.m.) or watts per square foot (W/sq.ft.).
39	Local Building Regulations	The set of laws, codes, and standards established by local authorities in Tamil Nadu that govern the planning, design, construction, and maintenance of buildings. These regulations ensure safety, sustainability, and compliance with environmental, structural, and safety standards.
40	Local Language	The native or regional language spoken by the people of a specific area, in this case, Tamil, which is predominantly spoken in Tamil Nadu.
41	Low-embodied Carbon Materials	Building materials that have a relatively low carbon footprint associated with their production, transportation, and installation. These materials require less energy and result in fewer greenhouse gas emissions compared to traditional materials.
42	Low-flow Fixtures	Plumbing fixtures, such as faucets, showerheads, and toilets, designed to use less water compared to standard models, typically through aerators/ pressure regulators, or other water-saving technologies.
43	Manufactured Structures	Pre-constructed buildings or components that are produced in a factory setting and then transported to the site for assembly.
44	Microclimate	A localized climate within a small area that differs from the surrounding environment, influenced by factors such as topography, vegetation, water bodies, and human activities.
45	Modular Structures	Buildings made up of pre-engineered, standardized sections or "modules" that are manufactured off-site and then assembled on-site.
46	Movable Buildings	Structures designed and constructed to be easily relocated or dismantled without significant damage while maintaining functionality and safety standards.
47	Nocturnal Environment	The natural conditions and habitat that exist during nighttime, including the effects of artificial lighting on wildlife, ecosystems, and human health.
48	Non-certifying Spaces	Areas within a building or project that are not included in the scope of green building certification. These spaces may not meet specific criteria for sustainability or environmental performance required by the certification program, such as certain storage areas, mechanical rooms, or unfinished spaces.

49	Non-contiguous Land	Separate parcels of land that are not directly adjacent or connected to the project site. These parcels may be located at a distance from the main site and can be considered in land use planning or environmental assessments if relevant to the project.
50	Non-roof Areas	Outdoor spaces within a building's site that are not covered by a roof, such as uncovered parking lots, pathways, courtyards, and landscaping. In this context, landscaped areas are not included - hardscape areas alone are considered for calculations.
51	O&M Plan	Operation & Maintenance Plan (O&M Plan) is a detailed document outlining the procedures, schedules, and responsibilities for maintaining a building’s systems, equipment, and infrastructure to ensure optimal performance, longevity, and efficiency.
52	Open-grid Pavers	Paving systems designed with gaps or open spaces between individual units, allowing for the infiltration of water into the ground. These pavers are typically made from porous materials and are used in driveways, parking lots, and walkways.
53	Openable Area	The portion of a building's windows or openings that can be physically opened to allow for natural ventilation and airflow.
54	Organic Waste Compost	The process of converting organic materials, such as food scraps, plant trimmings, and yard waste, into nutrient-rich compost through controlled decomposition.
55	Percolation Rate	The rate at which water moves through the soil, typically measured in inches or millimetres per hour. This rate is crucial for assessing soil’s ability to absorb and filter water.
56	Permanent Structures	A permanent structure with a roof, walls, and foundation, designed and constructed to remain in place for an extended period, typically decades or more. It is intended to support various uses, such as human habitation, occupancy, or services, and is not easily moved or dismantled. The building must meet local codes of Tamil Nadu (TNCDBR 2019 or the previous Building codes that has been used during the building construction period), safety standards of India (NBC), and other applicable regulations.
57	Permeable Surfaces	Surfaces that allow water to pass through and infiltrate into the ground, such as porous pavements, grass pavers, or gravel.
58	Pest Management	The practice of controlling and preventing pest infestations in and around a building using integrated approaches that minimize the use of harmful chemicals.
59	Potable Water	Water that is safe for human consumption, free from harmful contaminants and pollutants, and meets health and safety standards set by regulatory authorities.

60	Prefabricated Structures	Buildings or components that are manufactured off-site in sections or modules and then transported to the construction site for assembly.
61	Programmable Spaces	Areas within a building that are designed for flexible use and can be adapted to serve different functions or purposes over time. These spaces allow for modifications to suit changing needs, improving the building's long-term sustainability and efficiency.
62	Project Boundary	The defined physical and operational limits of a building or construction project, including the site area and all associated infrastructure.
63	Ramp	A sloped pathway or structure that provides an accessible means for people, including those with mobility impairments, to move between different levels of a building or site.
64	Reclaimed Materials	Building materials that have been salvaged or repurposed from existing structures, reducing the need for new raw materials and minimizing waste.
65	Reflective Material	A material designed to reflect a significant portion of solar radiation, thereby reducing heat absorption. These materials typically have high reflectance and low emissivity, helping to minimize heat buildup in buildings and surrounding areas.
66	Reforestation	The process of planting trees in a deforested or degraded area to restore ecosystems, increase biodiversity, and sequester carbon dioxide (CO2) from the atmosphere.
67	Regularly Occupied Spaces	Areas within a building that are frequently used or inhabited by occupants, such as offices, classrooms, living rooms, and dining areas.
68	Relative Humidity	The percentage of moisture in the air relative to the maximum amount the air can hold at a given temperature.
69	Renewable Energy Certificate	A certificate that verifies the generation of one megawatt-hour (MWh) of electricity from renewable energy sources such as wind, solar, or hydro. RECs are used to track and promote the use of renewable energy, allowing organizations to claim the environmental benefits of using clean energy.
70	Renovation	The process of improving, updating, or modifying an existing building or structure to enhance its functionality, efficiency, or aesthetics.
71	Resource Audit	A systematic process of evaluating the usage of resources such as energy, water, materials, and waste within a building or facility. The audit identifies areas of inefficiency, waste, and opportunities for improvement.
72	Retrofitting	The process of upgrading or modifying an existing building with newer, more efficient technologies or materials to improve its performance, sustainability, and energy efficiency.
73	Roof Areas	The horizontal or sloped surfaces of a building that are covered with materials such as tiles, metal, or membranes.

74	Roof Vegetation	The practice of planting vegetation, such as grasses, shrubs, or other plants, on building roofs, commonly referred to as a green roof.
75	Run-off Volume	The amount of water that flows over the surface of a site or building, typically after rainfall or snowmelt, that cannot be absorbed into the ground due to impervious surfaces like concrete or asphalt.
76	Sewage Treatment Plant	A facility designed to treat and purify wastewater from households, businesses, and other sources before it is safely discharged into the environment or reused.
77	Shuttle Services	Organized transportation options provided by a building or development to transport occupants or visitors between key locations, such as transit stations, parking areas, or nearby amenities.
78	Soil Degradation	The decline in soil quality and productivity due to factors such as erosion, contamination, overuse of chemicals, deforestation, and poor land management practices.
79	Solar Reflective Index	A measure of a material's ability to reflect solar heat, combining its reflectance and emittance properties. The higher the SRI value, the more heat the material reflects and the less heat it absorbs.
80	Supplemental Irrigation	The practice of providing additional water to crops or vegetation during periods of insufficient rainfall, to ensure optimal growth and productivity.
81	Thermal Comfort	The condition in which a building's indoor temperature, humidity, and air movement are within a range that promotes occupant well-being and satisfaction.
82	Vegetative Canopy	The layer of tree branches, leaves, and vegetation that provides cover over a specific area, typically in urban or landscaped environments.
83	Waste Tracking	The process of monitoring, recording, and managing the types and quantities of waste generated during a building's construction, operation, or renovation.
84	Water Balance Chart	A visual representation that tracks the input, use, and output of water within a building or site. It includes sources of water (e.g., potable, rainwater), consumption points (e.g., toilets, irrigation), and wastewater discharge (e.g., sewage, runoff).
85	Wayfinding System	A set of design elements, such as signs, maps, symbols, and visual cues, that help people navigate and orient themselves within a building or site.

Table 3 Technical Definitions

Certification Process

The certification process begins with setting up an account on the TNCCM's exclusive website for Lifestyle Certification. Once registered, the project team/lead complete an online application form, providing relevant details about the projects for certification. Following the application, project team/lead proceed with secure online payment. After payment is confirmed, necessary supporting

documents as mentioned in the Lifestyle Certification Manual/ Guide, such as plans, sections, calculations, purchase orders, and other required materials, are submitted.

The application enters a Review Assessment phase, which typically takes 25-30 working days. During this period, the application and the submitted documents are thoroughly evaluated by TNCCM team for completeness and compliance with certification standards. If additional documentation or clarification is needed, the project team/lead is contacted to submit further materials.

After receiving the additional documents, the Final Review takes place, which also requires 25-30 working days. Once all assessments and reviews are completed successfully, the project is awarded the certification. This structured process ensures that all project applications are carefully evaluated, maintaining the integrity and value of the certification.

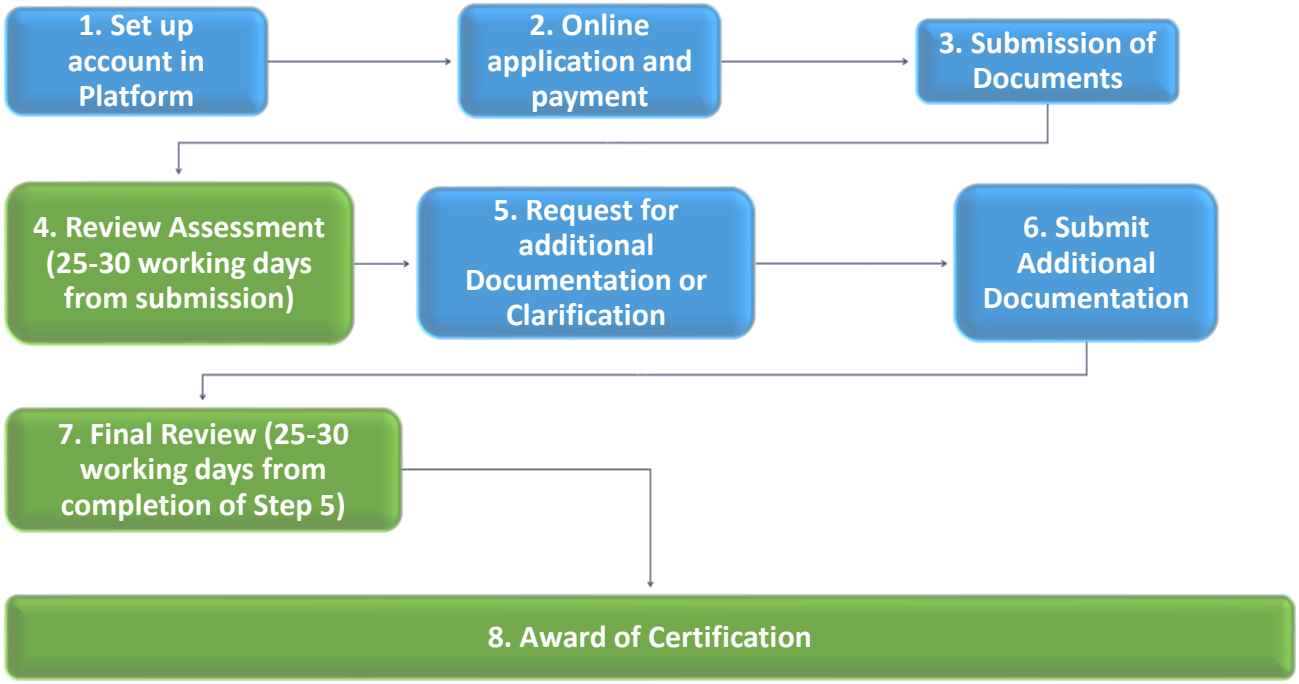


Figure 2 Certification Process

MINIMUM ELIGIBILITY REQUIREMENTS

MER1 – Permanent Location on Existing Land

Purpose

The rating system is designed to evaluate buildings in the context of their surroundings. Therefore, LIFESTYLE projects must be evaluated as permanent structures. Locating projects on existing land is important to avoid artificial land masses that have the potential to displace and disrupt ecosystems.

Requirement

All projects must be constructed and operated on a permanent location on existing land. No project that is designed to move at any point in its lifetime may pursue certification. This requirement applies to all land within the project.

1. **Permanent Location**

- Movable buildings are not eligible. This includes boats and mobile homes.
- Prefabricated or modular structures and building elements may be certified once permanently installed as part of the project.

2. **Existing Land**

- Buildings located on previously constructed docks, piers, jetties, infill, and other manufactured structures in or above water are permissible, provided that the artificial land was not constructed by the owner of the project for the express purpose of constructing the project.

Documents Required for Evaluation

	MER1
1	Local body approved master plan showing the project location, boundaries, land-use classification, building footprint, dimensions, access points, parking & circulation, utilities & services, topography & grading, setbacks & zoning compliance, surrounding infrastructure, signature & approval, etc.

Table 4 Documents Required for Evaluation MER 1

MER2 – Reasonable Boundaries

Purpose

The rating system is designed to evaluate buildings and all environmental impacts associated with those projects. Defining a reasonable boundary ensures that the project is accurately evaluated.

Requirement

The project boundary must include all contiguous land that is associated with the project and supports its typical operations. This includes land altered as a result of construction and features used primarily by the project's occupants, such as hardscape (parking and sidewalks), septic or stormwater treatment equipment, and landscaping. The boundary may not unreasonably exclude portions of the building, space, or site to give the project an advantage in complying with credit requirements. The project must accurately communicate the scope of the certifying project in all promotional and descriptive materials and distinguish it from any non-certifying space.

1. **Site Requirements**

- Non-contiguous parcels of land may be included within the project boundary if the parcels directly support or are associated with normal building operations of the project and are accessible to the project's occupants.
- Facilities (such as parking lots, bicycle storage, shower/changing facilities, and/or on-site renewable energy) that are outside of the project boundary may be included if they directly serve the project and are not double-counted for other projects. The project team must also have permission to use these facilities.
- The project boundary may include other buildings.
- If another building or structure within the project boundary is ineligible for certification, it may be either included or not included in the certification of the project.
- Sites with a master plan for multiple buildings and/or phased development must designate a project boundary for each project.

2. **Building Requirements**

- The project must include a minimum of 100 square meters of gross floor area.
- The project should include the entire building and complete scope of work.
- Buildings or structures primarily dedicated to parking are not eligible for certification. Parking that serves an eligible project should be included in the certification.
- Buildings that are physically connected by programmable space are considered one building for purposes unless they are physically distinct and have distinct identities as separate buildings or if they are a newly constructed addition.

Documents Required for Evaluation

	MER2
1	Local body approved master plan showing the project location, boundaries, land-use classification, building footprint, dimensions, access points, parking & circulation, utilities & services, topography & grading, setbacks & zoning compliance, surrounding infrastructure, signature & approval, etc.
2	Local body approved set of floor plans, dimensions, room labels, structural details, circulation areas, entrance/exit points, service areas, fire safety & emergency exit, signature & approval, etc.
3	Local body approved building sections & elevations

Table 5 Documents Required for Evaluation MER2

ENVIRONMENTAL PERFORMANCE

Environmental Performance – Overview

The Environmental Performance Module, with 13 achievable points, is designed to integrate a comprehensive approach to sustainability within the site environment. This module encompasses various initiatives, including green commuting options, sustainable landscaping practices, and strategies for reducing heat islands and light pollution. Through a focus on public transportation amenities & other general amenities in walkable distances, this module aims to foster a culture of environmental stewardship, enhance the ecological integrity of the campus, and create a more sustainable and harmonious living and learning environment for all community members.

EP1 - Green Commute & Neighboring Amenities

Purpose

The approach aims to significantly reduce the carbon footprint of the project site while increasing awareness and adoption of sustainable transport options. By prioritizing green commuting initiatives, the approach aspires to enhance the overall quality of life on the site, contributing to reduced traffic congestion and pollution. This holistic strategy fosters a healthier environment and encourages a cultural shift towards more sustainable practices within the community.

Requirement

To achieve the credit points, the project should have adopted any two of the sustainable transport options, like shuttle services, CNG vehicles, electric vehicles, bicycles, etc., supporting the campus with green commute facilities.

Achievable Score – 2 points

- Minimum two strategies = 1 point
- Additional number of strategies = 1 point

Strategies

1. **Strategy 1: Eco-friendly Public Transit**
   Implementation of an efficient shuttle service to connect key locations on and off campus with electric or hybrid vehicles to reduce carbon emissions, connecting the nearest railway station and bus stops to key on-campus and off-campus. This should cater to a minimum of 25% of the occupants.

2. **Strategy 2: Electric Vehicles**
   Installation of charging stations to support the use of electric vehicles by a minimum of 3% of carparking space and 5% of bike parking
   Notes:
   - The project must comply with the latest local building regulations and bye-laws for Electric Vehicle Charging Infrastructure (EVCI) or adhere to the Charging Infrastructure for Electric Vehicles (EV) - Revised Consolidated Guidelines and Standards issued by the Ministry of Power, Government of India.
   - Designate and reserve specific spaces exclusively for plug-in electric vehicles (EVs). These Electric Vehicle Charging Infrastructure (EVCI) parking spaces must be allocated

separately and in addition to the preferred parking spaces designated for green vehicles.

3. **Strategy 3: Bicycles**
   Create dedicated Bicycle parking to encourage cycling for a minimum of 3% of the occupants. Ensure the project is designed or situated so that a Building entrance is within a 250-meter walking distance from a bicycle parking

4. **Strategy 4: General Amenities**
   Ensure that the project site is located within a 1-kilometer radius from at least four key amenities, including but not limited to an ATM, pharmacy, clinic, park, and post office.

5. **Strategy 5: Transport Amenities**
   Ensure that the project entrance is within a 1-kilometer walking distance to any of the key public transportation hubs, such as a bus stop, bus stand, railway station, metro station, or MRTS.

Other innovative methodologies can be adopted that can support the given intent with appropriate documentation to ensure proof of implementing the strategy.

Documents Required for Evaluation

	EP1 – Strategy 1
1	Shuttle service agreement between the building management team & the service vendor (highlighting the no. of vehicles, accommodation, shuttle service timings, route, frequency, etc.)
2	Site plan showing pick-up point for shuttle service & route map of shuttle service
3	Calculations showing compliance with shuttle service provided wrt. the occupancy data
4	Photographs of shuttle service, shuttle service pick-up point, shuttle service vehicle.
	EP1 – Strategy 2
1	Site plan showing EV charging points (all EVCPs) near the parking area
2	Calculations showing compliance for EV charging points provided wrt the vehicle count data
3	Photographs of all EV charging points near the parking area
	EP1 – Strategy 3
1	Site plan showing bicycle/ bike lanes/ bicycle entry with circulation map & bicycle storage point.
2	Bicycle service agreement (highlighting the no. of bicycle, timing, usage limitations, maintenance, etc.)
3	Photographs showing bicycle/ bike lanes/ bicycle entry & bicycle storage point.
	EP1 – Strategy 4

1	Satellite map showing the amenities with walking distance (for minimum 4 general amenities).
2	Photographs showing the mentioned general amenities
	EP1 – Strategy 5
1	Satellite map showing the amenities with walking distance (for minimum 1 amenity).
2	Photographs showing the mentioned transport amenities.

Table 6 Documents Required for Evaluation EP1

EP2 – Sustainable Landscaping

Purpose

The approach aims to implement sustainable landscaping practices in the project that prioritize environmental health and biodiversity. This also promotes the minimization of chemical runoff and soil degradation, as well as the plantation of adaptive and native species that require less water and maintenance. By embracing these practices, the project shall aim to enhance the ecological resilience of the site landscape, promote local wildlife, and contribute to a greener, more sustainable environment.

Requirement

To achieve the credit points, the project should have a minimum of 10% of the site area landscaped, including the landscape on the built structure, and should have adopted sustainable landscaping practices, like the usage of organic fertilizers, and planting adaptive/ native species.

Achievable Score – 2 points

- Minimum two strategies = 1 point
- Additional number of strategies = 1 point

Strategies

1. **Strategy 1: Organic Fertilizers**
   Using 95% of organic fertilizers to enhance soil health without harming the ecosystem.

2. **Strategy 2: Combination of Species**
   Planting a combination of native species, adaptive species & drought-resistant species that are well-adapted to the local climate and soil conditions, reducing the need for irrigation and maintenance – a minimum of 25% of the total landscaped area.
   Notes:
   - Landscape areas located overbuilt structures, such as basements, podiums, or roofs, may be included in landscape area calculations.
   - Drought-tolerant species are plants that do not require supplemental irrigation. Temporary irrigation is typically provided for a period of one to two years.

3. **Strategy 3: Utilitarian Plant Species**
   Planting a combination of vegetable bearing, and/or fruit bearing and/or medicinal plant species that are native to the climate and soil conditions, that can support the user's

consumption – a minimum of 10% of the total Plants/trees including existing site plants/trees.
Labelling showing the tree name to create public attention
Note: This is based on the green school scheme fund utilization. (School, n.d.)

4. **Strategy 4: Green Cover**
   Maintain a minimum of one tree for every 100 square meters of site area, including the preservation of existing mature trees.

Documents Required for Evaluation

	EP2 – Strategy 1
1	Purchase orders of Organic Fertilizers showing the quantity & make of the product
2	Declaration Letter from the facility management team highlighting the usage of organic fertilizers for landscaping.
3	Photographs of Organic Fertilizers
	EP2 – Strategy 2
1	Detailed Landscape Plan showing the layout of plants & trees with the schedule of list of plant species with dimensions & area statements
2	Calculations showing compliance with the percentage of plant species provided.
3	Photographs showing the landscape of the mentioned plant species
	EP2 – Strategy 3
1	Detailed Landscape Plan showing the layout of plants & trees with the schedule of list of plant species with dimensions & area statements
2	Calculations showing compliance with the percentage of plant species provided.
3	Photographs showing the landscape of the mentioned plant species
	EP2 – Strategy 4
1	Detailed Landscape Plan/ Site Plan showing the layout of preserved trees & newly planted trees for in the site area – with 100 square meter grid highlighting the presence of trees.
2	Photographs of preserved trees
3	Photographs of newly planted/ grown matured tree.

Table 7 Documents Required for Evaluation EP2

EP3 – Heat Island Reduction: Non-roof hardscape

Purpose

The approach aims to create a cooler, more comfortable environment that enhances the quality of life for the site community. By integrating green spaces, reflective materials, and permeable surfaces, the approach aims to mitigate excessive heat buildup, improve air quality, and promote sustainability. This approach not only reduces energy consumption associated with cooling but also fosters a healthier ecosystem and encourages outdoor activities by enhancing the microclimate.

Requirement

To achieve the credit points, the project should have implemented strategies to reduce the heat island effect in the non-roof hardscape areas including pavements, sidewalks, footpaths, parking lots, driveways, plazas, central courts, etc.

Achievable Score – 3 points

- Strategy 1 = 1 point
- Strategy 2 = 1 point
- Strategy 3 = 2 or 3 points
  With a maximum achievable point as 3

Strategies

1. **Strategy 1: Shading Non-roof Area**
   A minimum of 30% of non-roof hardscape areas shall be shaded with vegetative canopies/ shade-cover structures or a combination of both.

2. **Strategy 2: Paving Non-roof Area**
   A minimum of 40% of non-roof hardscape areas shall be paved with open-grid pavers or recommended SRI pavers (minimum of SRI value 28 and maximum of SRI value 64) or a combination of both.

3. **Strategy 3: Combination of Shading & Paving**
   A minimum of 50% of non-roof hardscape areas shall be provided with a combination of shading & paving to attempt 2 or 3 points.

Percentage of Area to be provided with a combination of shading & paving	Achievable Points
> 50%	2
> 75%	3

Table 8 Heat Island Reduction – Non-roof hardscape

Note:

Non-roof impervious areas refer to hardscaped surfaces such as sidewalks, pathways, roads, driveways, and uncovered parking lots. This excludes utility spaces accommodating equipment like DG sets, transformers, STPs, and similar installations.

Documents Required for Evaluation

	EP3 – Strategy 1
1	Site plan showing the paved areas shaded with trees
2	Detailed Landscape Plan showing the layout of plants & trees with the schedule of list of plant species with dimensions
3	Calculations showing compliance with the percentage of area with tree shading.
4	Photographs showing the tree shaded pavement
	EP3 – Strategy 2
1	Site plan showing the paved areas with high SRI material
2	Declaration Letter from the vendor/ manufacturer highlighting the paver SRI value in accordance with the requirement
3	Calculations showing compliance with the percentage of area with high SRI hardscape paving provided.
4	Photographs showing high SRI pavers
	EP3 – Strategy 3
1	Site plan showing the paved areas shaded with trees and paved areas with high SRI material
2	Detailed Landscape Plan showing the layout of plants & trees with the schedule of list of plant species with dimensions
3	Declaration Letter from the vendor/ manufacturer highlighting the paver SRI value in accordance with the requirement
4	Calculations showing compliance with the percentage of area with tree shading and the percentage of area with high SRI hardscape paving provided.
5	Photographs showing the tree shaded pavement arear & high SRI pavers

Table 9 Documents Required for Evaluation EP3

EP4 – Heat Island Reduction: Roof

Purpose

The approach aims to create a cooler, more comfortable environment that enhances the quality of life for the site community. By integrating green spaces and reflective materials, the approach aims to mitigate excessive heat buildup and promote sustainability. This approach not only reduces energy consumption associated with cooling but also enhances the microclimate.

Requirement

To achieve the credit points, the project should have implemented strategies to reduce the heat island effect in roof areas, including building roofs and other covered structures.

Achievable Score – 3 points

- Strategy 1 = 1 point
- Strategy 2 = 1 point
- Strategy 3 = 2 or 3 points
  With a maximum achievable point as 3.

Strategies

1. **Strategy 1: SRI cover**
   A minimum of 40% of roof areas shall be painted with high SRI paints. Material with high solar reflectance index (SRI) include white / light colored broken China mosaic tiles or white cement tiles or other high reflective materials / coatings are also considered.

2. **Strategy 2: Vegetation & Solar Panels**
   A minimum of 30% of roof areas shall be covered with vegetation and/or solar panels, including covered parking.

3. **Strategy 3: Combination of Covers**
   A minimum of 50% of roof areas should be covered with a combination of vegetation and high SRI paints to attempt 2 or 3 credit points.

Percentage of Area to be provided with a combination of vegetation and/or SRI paint and/or solar panels	Achievable Points
> 50%	2

> 95%	3

Table 10 Heat Island Reduction: Roof

Notes:

All roof areas exposed to the sky, including podiums, covered surface parking, and utility blocks, shall be considered for calculation, excluding equipment spaces, areas with onsite solar systems, solar water heaters, skylights, water bodies, driveways, pathways, play areas, and similar features.

Documents Required for Evaluation

	EP4 – Strategy 1
1	Master plan showing the exposed roof areas with high SRI cover
2	Test certificate of high reflective material indicating its SRI value as per ASTM standards
3	Calculations showing compliance with percentage of roof area covered with the SRI material
4	Photographs of roof areas covered with high SRI
	EP4 – Strategy 2
1	Master plan showing the exposed roof areas with vegetation and/or solar panels
2	Calculations showing compliance with the percentage of roof area covered with vegetative roof and/or solar panels.
3	Photographs of roof areas covered with vegetation and/or solar panels
	EP4 – Strategy 3
1	Master plan showing the exposed roof areas with high SRI and/or vegetation and/or solar panels
2	Test certificate of high reflective material indicating its SRI value as per ASTM standards
3	Calculations showing compliance with the percentage of roof area covered with high SRI material and/or vegetative cover and/or solar panels
4	Photographs of roof areas covered with high SRI and/or vegetation and/or solar panels

Table 11 Documents Required for Evaluation EP4

EP5 – Light Pollution Reduction

Purpose

The approach aims in reducing light pollution from exterior and façade lighting to improve access to the night sky and enhance the nocturnal environment. By minimizing unnecessary artificial light, we can protect natural ecosystems, support wildlife that depends on dark conditions, and restore our ability to observe celestial bodies. This approach not only fosters a more serene and inviting nighttime atmosphere but also promotes energy efficiency and community well-being.

Requirement

To achieve the credit points, the project should have implemented strategies to reduce the excess bright light in the façade & outdoor environment of the site. The project should also have no upward lighting in the outdoors or façade.

Achievable Score – 1 point

- Strategy 1 & 2 = 1 point

Strategies

1. **Strategy 1: No upward lighting**
   No external lighting should be directed upward.

and

2. **Strategy 2: Reduced LPD**
   Lighting power densities for exterior areas (such as parking lots, landscapes, roads, and walkways) should not exceed 80%, while building facades should be limited to 50%, as specified in the ECBC.
   Notes:
   The total initial designed fixture lumens must account for the combined lumens of all fixtures installed on-site.

Documents Required for Evaluation

	EP5 – Strategy 1
1	Site plans showing external lighting fixture layout with fixture details including numbers, type, etc.
2	Purchase orders of external lighting fixtures showing the quantity, make & model

3	Data sheets of external lighting fixtures showing the specifications, make & model
4	Photographs of all external light fixtures showing no upward lighting & reduced LPD
	EP5 – Strategy 2
1	Light Power Densities calculations of exterior lighting fixtures for exterior areas and building façades

Table 12 Documents Required for Evaluation EP5

EP6 – Building Function and Management

Purpose

The approach aims to ensure the ongoing performance of building systems to maximize benefits throughout their operational lifespan. This also promotes efficiency, reliability, and cost-effectiveness, enhancing overall facility performance over time.

Requirement

To achieve the credit points, the project should have implemented the building management strategies and implemented approaches to monitor the efficient functioning of the building with a regular maintenance of the same.

Achievable Score – 2 points

- Strategy 1 = 1 point
- Strategy 2 = 1 point

Strategies

1. **Strategy 1: O&M Plan**
   Establishing an operation and maintenance plan for the electrical, water & other building systems to ensure optimal performance and longevity, including:
   - Building management systems
   - HVAC & lighting systems
   - Elevators and escalators
   - Onsite clean energy systems
   - Power backup systems
   - Wastewater treatment systems
   - Rainwater harvesting structures

2. **Strategy 2: Resource Audit**
   Performing energy and water audits every three years to identify opportunities for improvement and enhance sustainability practices.

Documents Required for Evaluation

	EP6 – Strategy 1
1	An Annual Maintenance Contract (AMC) for all building systems and equipment.
2	A narrative detailing the preventive and corrective actions taken over the past year (for in-house maintenance).
	EP6 – Strategy 2
1	Energy & water audit reports highlighting the operational plan & regular maintenance of the respective resources

Table 13 Documents Required for Evaluation EP6

WATER EFFICIENCY

Water Efficiency – Overview

This module on Water Efficiency, with 22 achievable points, focuses on strategies for rainwater harvesting, indoor water conservation, outdoor landscape management, and wastewater treatment and reuse. By implementing systems for rainwater storage and recharge, employing water-efficient plumbing fixtures, reducing turf areas, and utilizing efficient irrigation techniques, we can significantly minimize water consumption. Additionally, the monitoring of water sources, including bore wells and municipal supplies, ensures optimal usage and management. Together, these practices not only conserve a vital resource but also enhance the overall sustainability and resilience of buildings.

WE1 – Rainwater Harvesting

Purpose

The approach aims to enhance sustainability by either recharging the local aquifer or capturing rainwater to reduce potable water consumption. By collecting rainwater from rooftops and other surfaces, these systems can facilitate the infiltration of water into the ground, thereby replenishing the local aquifer and supporting groundwater sustainability. Additionally, harvested rainwater can be utilized for non-potable applications such as irrigation, toilet flushing, and cooling systems, significantly decreasing the reliance on treated potable water. This approach not only contributes to effective stormwater management and flood reduction but also promotes responsible water use, aligning with the goals of green building practices and fostering environmental stewardship within the community.

Requirement

To achieve the credit points, the project should have implemented strategies and measure to monitor & ensure efficient rainwater management in the site & the building.

Achievable Score – 7 points

- Strategy 1 = 1 or 3 points
  And/or
- Strategy 2 = 1 to 4 points
  With a maximum achievable point as 7.

Strategies

1. **Strategy 1: Rainwater Recharge**
   Establish a rainwater recharge pit on-site and implement a maintenance plan to ensure its effective functioning, particularly prior to the monsoon season.

Percentage of Rainwater harvested onsite from roof & non - roof areas	Achievable Points
> 25%	1
> 50%	2
> 75%	3

Table 14 Rainwater Harvesting – recharge pit

And/or

2. **Strategy 2: Rainwater Storage**
   Implement rainwater storage spaces to capture at least 10% of run-off volumes from roof and non-roof areas. The harvesting system has to cater to a minimum of 1 day of normal rainfall occurring in the last 5 years.

Percentage of Rainwater stored from roof & non - roof areas	Achievable Points
> 10%	1
> 15%	2
> 20%	3
> 25%	4

Table 15 Rainwater Harvesting – storage

Documents Required for Evaluation

	WE1 – Strategy 1
1	Site Plan showing the location of rain water recharge pits
2	Details of rain water recharge structures including the number and volumes
3	Calculations showing compliance with the rainwater recharge percentage.
4	Water logs of the inlet of the RWH system to measure the volume of water entering the pit
5	Photographs of rain water recharge pit, flow meter installed at the inlet of the RWH system to measure the volume of water entering the pit.
	WE1 – Strategy 2
1	Site Plan showing the location of rain water storage tanks
2	Details of rain water harvesting structures including the number and their harvesting volumes
3	Calculations showing compliance with the rainwater storage percentage.
4	Water logs of the inlet of the RWH system to measure the volume of water entering the pit
5	Photographs of rain water storage tanks, flow meter installed at the inlet of the RWH system to measure the volume of water entering the pit.

Table 16 Documents Required for Evaluation WE1

NOTE:

- The percolation rate may be considered as 0.6 if the soil test report is not available.
- If it is not possible to identify the capacity of the RWH pit, fill the pit incrementally using a known volume of water (e.g., using a tanker or measured containers) to determine its capacity empirically.
- A flow meter may be installed at the inlet of the RWH system to measure the volume of water entering the pit.

WE2 – Indoor Water Efficiency

Purpose

The intent of this approach is to minimize water consumption within the building by adopting low-flow fixtures for internal use, including lavatories, handwashing stations, and other water-consuming applications. By incorporating these efficient fixtures, the building will significantly reduce overall water usage while maintaining functionality and user comfort. This strategy not only supports sustainable building practices but also contributes to resource conservation and environmental stewardship, aligning with the goals of green building initiatives.

Requirement

To achieve the credit points, the project should have installed low-flow fixtures or aerators or followed any other efficient water management strategies wrt the plumbing fixtures to ensure indoor water management in the building.

Achievable Score – 6 points

- Strategy 1 = 1 to 6 points
  (or)
- Strategy 2 = 1 to 2 points
  With a maximum achievable point as 6.

Strategies

1. **Strategy 1: Low-flow Fixtures**
   Adopting low-flow fixtures to minimize fresh water utilization.

Percentage of water savings from baseline	Achievable Points
> 10%	1
> 20%	2
> 30%	4
> 40%	6

Table 17 Indoor Water Efficiency – Low flow fixtures

Sl. No.	Plumbing Fittings/ Fixture Type	Maximum Flow Rate/ Consumption
1	Water Closets (Full-flush)	6 LPF

2	Water Closets (Half-flush)	4 LPF
3	Urinals	3.8 LPF
4	Lavatory, Faucets (private)	8 LPM
5	Lavatory, Metered Faucets (public)	1 Litre per use
6	Sink, Faucet	8 LPM
7	Bidet/ Hand held Spray	8 LPM
9	Shower Head	10 LPM

Table 18 Baseline values for water fixtures, Source: (NATIONAL BUILDING CODE OF INDIA 2016)

2. **Strategy 2: Installation of Aerators**

   Installing aerators to minimize fresh water utilization.

Percentage of existing water fixtures with aerators	Achievable Points
> 75%	1
100%	2

Table 19 Indoor Water Efficiency – aerators

Documents Required for Evaluation

	WE2 – Strategy 1
1	Overall annual water balance chart indicating the fresh water usage, non-potable water usage, etc.
2	Water calculations showing compliance with the percentage of water savings
3	Declaration letter from the facility manager indicating the flow rates and flush rates of all fixture types installed onsite.
4	Purchase orders of low-flow fixtures showing the number of fixtures, make & model
5	Photographs of low-flow fixtures
	WE2 – Strategy 2
1	Calculations showing compliance with the percentage of fixtures with aerators installed
2	Declaration from the facility manager indicating the installation of aerators in the building & site
3	Purchase orders of aerators - showing the numbers, make & model
4	Photographs of fixtures with aerators
5	Timestamped video measuring the flow of water from the aerator-installed fixtures

Table 20 Documents Required for Evaluation WE2

NOTES:

- A minimum of 1 of all fixtures must be measured during the assessment. For instance, if **each floor** has 10 faucets, at least 1 faucet on **each floor** should be measured.
- This requirement applies to all fixture types, including but not limited to:
  Faucets (of all kinds)
  Showerheads
  Health faucets
- The container used for measurement must have unambiguous markings to indicate the quantity.

WE3 – Irrigation Efficiency

Purpose

The intent of this approach is to reduce water consumption by implementing efficient landscaping and irrigation practices. By reducing turf areas, which require significant water for upkeep, and replacing them with native or drought-tolerant ground cover plants, the strategy promotes sustainable land management suited to local climate conditions. Native groundcover plants require less water, fertilizer, and pesticides, conserving resources and enhancing biodiversity. Advanced irrigation systems—such as drip irrigation, smart controllers, and moisture sensors—ensure water is used efficiently, applying it only when and where needed. This integrated method reduces water waste, lowers maintenance costs, and supports environmental sustainability and ecosystem health.

Requirement

To achieve the credit points, the project should have implemented the below-mentioned strategies including reducing the turf area in the landscape and/or installing efficient irrigation systems to ensure efficient outdoor water utilization on the site.

Note: The project should have a minimum of 10% of the site area landscaped to attempt this credit.

Achievable Score – 4 points

- Strategy 1 = 1 or 2 points
- Strategy 2 = 1 or 2 points

Strategies

1. **Strategy 1: Minimization of Turf Area**
   Reduced turf area or planting alternative groundcover to avoid excess water consumption for irrigation.

Percentage of turf area of total landscape area	Achievable Points
10%-20%	1
<10%	2

Table 21 Landscaping & Irrigation Efficiency

2. **Strategy 2: Efficient Irrigation System**
   Implement a minimum of one of the mentioned irrigation systems to achieve 1 credit point. Additional 1 or more measures to achieve full 2 points

- **Central Shut-Off Valve:** For quick and easy system that shutdowns in case of maintenance or emergencies, preventing unnecessary water waste.
- **Soil Moisture Sensors:** To provide real-time data, ensuring water is only applied when the soil requires it, reducing overwatering and water waste.
- **Drip Irrigation for 75% Planting Beds** For reducing evaporation and runoff compared to traditional sprinklers.

Documents Required for Evaluation

	WE3 – Strategy 1
1	Detailed Landscape Plan showing the turf area/ turf-alternative species
2	Alternative ground cover details & planting plan (replacement for turf grass)
3	Calculations showing the extent of turf area percentage in the total landscape area
4	Photographs of turf area/ alternative groundcover
	WE3 – Strategy 2
1	Detailed Landscape Plan showing the irrigation layout of plants & trees with area statements
2	Declaration letter from the facility team to highlight the efficient irrigation practices.
3	Photographs of on-site efficient irrigation systems.

Table 22 Documents Required for Evaluation WE3

WE4 – Waste Water Management

Purpose

This approach intends to optimize wastewater treatment and management to prevent pollution of water bodies and reduce reliance on freshwater resources. By implementing effective treatment processes, wastewater can be safely reclaimed and repurposed, minimizing its environmental impact and conserving precious freshwater supplies. This approach focuses on reducing contamination of local ecosystems and ensuring water quality, while also promoting the sustainable reuse of treated water for non-potable applications such as irrigation, industrial processes, or landscaping. Ultimately, it aims to reduce the demand for natural water sources, contributing to long-term water conservation and ecosystem protection.

Requirement

To achieve the credit points, the project should have implemented the waste water treatment systems (either on-site or off-site) & should reuse the treated waste water (treated on-site or purchased off-site).

Achievable Score – 4 points

- Strategy 1 = 1 point
- Strategy 2 = 1 to 3 points

Strategy & Documentation

1. **Strategy 1: Waste Water Treatment**
   Treat 100% of generated wastewater on-site or off-site to ensure pollution-free water bodies.

2. **Strategy 2: Treated Water Reuse**
   Utilize the treated water in the site as non-potable water for landscaping, flushing, and cooling tower make-up.

Percentage of reused treated wastewater	Achievable Points
> 30%	1
> 60%	2
> 90%	3

Table 23 Waste Water Management

Documents Required for Evaluation

	WE4 – Strategy 1
1	Detailed water balance chart with quantity of wastewater generated on-site.
2	agreement between the building management team & off-site STP unit (applicable for off-site treatment)
3	Details of the wastewater treatment systems (applicable for on-site treatment)
4	Site plan showing the STP location (applicable for on-site treatment)
5	Photographs of STP & water meter installed (if applicable for on-site treatment)
	WE4 – Strategy 2
1	Detailed water balance chart showing the percentage of treated wastewater reused on-site
2	Treated waste water purchase agreement highlighting the quantity of water purchased
3	Site plan/ floor plan & schematic water supply layout showing the storage of treated waste water that is to be reused
4	Water logs – STP inlet, outlet, and reuse applications (if STP installed)

Table 24 Documents Required for Evaluation WE4

WE5 – Water Monitoring

Purpose

The intent of this approach is to promote efficient water management by accurately tracking water consumption. Installing water meters allows for real-time monitoring of water use, identifying inefficiencies, leaks, or areas of excessive consumption. This data-driven approach helps optimize water usage, reduce waste, and support conservation efforts, contributing to long-term sustainability and more informed decision-making regarding water management practices.

Requirement

To achieve the credit points, the project should have implemented water monitoring practices that supports the tracking of water usage in the building/ site.

Achievable Score – 1 point

- Strategy 1 = 1 point

Strategies

1. **Strategy 1: Water Metering**
   Install a minimum of two water meters in the following areas to regularly monitor the water usage in the building:
   - Municipal water supply
   - Bore water consumption
   - Treated wastewater consumption
   - Water consumption for landscape requirements
   - Water consumption for flushing
   - Water consumption for air-conditioning cooling tower makeup
   - Any other major source of water consumption

Documents Required for Evaluation

	WE5 – Strategy 1
1	Water supply schematic for the entire facility showing the water meter installed
2	Log sheets if water is purchased from external sources
3	Water meters purchase order showing the make, model & quantity
4	Photographs of water meters installed

Table 25 Documents Required for Evaluation WE5

ENERGY EFFICIENCY

Energy Efficiency – Overview

The Energy Efficiency Module, offering 26 achievable score points, provides a holistic framework for optimizing energy use across various systems. It includes the adoption of energy-efficient fixtures and technologies, the integration of clean energy production methods (such as solar and wind power), and the implementation of real-time energy monitoring for performance tracking. Additionally, the module promotes the use of eco-friendly refrigerants and halon alternatives, reducing environmental impact. These combined initiatives help organizations lower energy consumption, minimize carbon footprints, and improve sustainability, driving both cost savings and environmental stewardship.

EE1 – Clean Energy

Purpose

The intent of this approach is to promote the adoption of clean energy sources, reducing reliance on fossil fuels and lowering greenhouse gas emissions. By utilizing clean energy, projects can decrease their environmental footprint, promote sustainability, and contribute to the global shift towards carbon-neutral energy. This credit supports energy independence, enhances resilience, and demonstrates a commitment to long-term environmental stewardship.

Requirement

To achieve the credit points, the project should utilize clean energy from an on-site source or off-site source or a combination of both or a Renewable energy certificate.

Achievable Score – 10 points

- Strategy 1 = 1 to 4 points
- Strategy 2 = 1 to 4 points
- Strategy 3 = 8 points
- Strategy 4 = 2 points
  With a maximum achievable point as 10.

Strategies

1. **Strategy 1: On-site clean energy generation**
   Utilize on-site generated clean energy for a minimum of 2.5% of the total annual energy consumption of the building.

Percentage of on-site clean energy usage	Achievable Points
>2.5%	1
>5.0%	2
>7.5%	3
>10.0%	4

Table 26 Clean Energy - onsite

2. **Strategy 2: Off-site clean energy generation**
   Utilize off-site generated clean energy for a minimum of 12.5% of the total annual energy consumption of the building.

Percentage of off-site clean energy usage	Achievable Points
>12.5%	1
>25.0%	2
>37.5%	3
>50.0%	4

Table 27 Clean Energy – offsite

3. **Strategy 3: Combination of on-site & off-site clean energy sources**
   Utilize on-site & off-site generated clean energy to meet 100% of the total annual energy consumption of the building, to achieve 8 points.

4. **Strategy 4: REC**
   Provide evidence that the project has acquired Renewable Energy Certificates (RECs) corresponding to at least 25% of the building's total annual energy usage.

Percentage of Renewable Energy Points Certificates (RECs) Purchased	No. of Points
>=25%	1
>=50%	2

Table 28 Clean Energy REC

Documents Required for Evaluation

	EE1 – Strategy 1
1	Plan showing the location of the clean energy systems on site
2	Calculations showing the percentage of on-site clean energy utilized over the conventional energy consumption
3	On-site clean energy system design data & purchase agreement
4	Declaration letter from the facility management highlighting the consumption of on-site clean energy percentage for the building operations
	EE1 – Strategy 2
1	Calculations showing the percentage of off-site clean energy utilized over the conventional energy consumption
2	Declaration letter from the facility management highlighting the consumption of off-site clean energy percentage for the building operations
3	Off-site clean energy purchase agreement
	EE1 – Strategy 3
1	Plan showing the location of the on-site clean energy systems on site

2	Calculations showing the percentage of on-site & off-site clean energy utilized over the conventional energy consumption
3	On-site clean energy system design data & purchase order
4	Off-site clean energy purchase agreement
5	Declaration letter from the facility management highlighting the consumption of on-site & off-site clean energy percentage for the building operations
	EE1 – Strategy 4
1	Renewable Energy Certificate showing renewable energy source, energy generation details, plant information, etc.

Table 29 Documents Required for Evaluation EE1

EE2 – Energy Performance

Purpose

The intent of this approach is to encourage the reduction of energy consumption through the use of energy-efficient fixtures and systems. By incorporating technologies such as LED lighting, high-efficiency HVAC systems, and advanced insulation materials, this credit encourages projects to minimize energy waste, lower utility costs, and reduce their environmental footprint. Adopting energy-efficient practices not only supports sustainability but also contributes to long-term operational savings, benefiting both the environment and building occupants.

Requirement

To achieve the credit points, the project should utilize energy-efficient systems including HVAC, lighting & pumping systems, as they consume maximum energy.

Achievable Score – 12 points

- Strategy 1 = 1 to 12 points

Strategies

- **Strategy 1: Energy Performance Index for Warm & humid Climate:**
  Using various measures including but not limited to adopting energy efficient lighting fixtures, optimal HVAC system, high-efficient appliances with improved building insulation, and smart energy management systems, renewable/clean energy generation, etc. demonstrate that the annual energy consumption in the building is within the EPI (Energy Performance Index) limits as mentioned in the table below:

Standard EPI for Office Buildings		
EPI range for buildings having more than 50% of the occupied area as airconditioned (kWh/sq.m./year)	**EPI range for buildings having less than 50% of the occupied area as air-conditioned (kWh/sq.m./year)**	**No. of Points**
178 - 182	97 - 101	2
173 - 177	92 - 96	4
168 - 172	87 - 91	6
163 - 167	82 - 86	8

158 - 162	77 - 81	10
157 and below	76 and below	12

Table 30 EPI Office Buildings SOURCE: BEE

Note:

EPI values are applicable exclusively to office buildings that operate during the daytime for 260 to 300 days annually. For office buildings that function in two shifts, compliance can be demonstrated through a simulation approach.

Standard EPI for Shopping Centres	
EPI range	**No. of Points**
424 - 428	2
419 - 423	4
414 - 418	6
409 - 413	8
404 - 408	10
403 and below	12

Table 31 EPI Shopping Centres SOURCE: BEE

Standard EPI for Hotels		
EPI range (up to 3 stars)	**EPI range (above 3 stars)**	**No. of Points**
211 – 215	329 – 333	2
206 – 210	324 – 328	4
201 – 205	319 – 323	6
196 – 200	314 – 318	8
191 – 195	309 – 313	10
190 and below	308 and below	12

Table 32 EPI Hotels SOURCE: BEE

Standard EPI for Institutes	
EPI range	**No. of Points**
146 – 150	2
141 – 145	4
136 – 140	6
131 – 135	8
126 – 130	10
125 and below	12

Table 33 EPI Institutes SOURCE: BEE

Standard EPI for BPOs	
EPI range	**No. of Points**
448 - 452	2
443 - 447	4

438 - 442	6
433 - 437	8
428 - 432	10
427 and below	12

Table 34 EPI BPOs SOURCE: BEE

Documents Required for Evaluation

	EE2 – Strategy 1
1	Electricity consumption details including utility power, captive generation and renewable energy of preceding 1 year
2	EPI calculations highlighting building energy consumption details, baseline criteria, climate data, etc.
3	Load equipment asset list including HVAC, lighting, pumps, etc. highlighting the make & model, capacity.

Table 35 Documents Required for Evaluation EE2

EE3 – Eco-friendly Refrigerant & Halons

Purpose

The intent of this approach is to reduce the environmental impact of harmful chemicals traditionally used in these systems. By adopting refrigerants with low global warming potential (GWP) and halon alternatives that are less damaging to the ozone layer, this credit helps mitigate climate change and support sustainable building operations. The goal is to enhance environmental responsibility while ensuring efficient, safe performance of HVAC and fire suppression systems.

Requirement

To achieve the credit points, the project should use eco-friendly refrigerants in the HVAC system & eco-friendly halons in the fire-fighting system.

Achievable Score – 2 points

- Strategy 1 = 1 point
- Strategy 2 = 1 point

Strategies

1. **Strategy 1: Eco-friendly refrigerant**
   Utilize eco-friendly, CFC-free & HCFC-free refrigerant in the HVAC system to reduce GWP. A few refrigerants including:
   - HFC-32 (Difluoromethane),
   - HFC-1234yf (2,3,3,3-Tetrafluoropropene),
   - R-290 (Propane),
   - R-744 (Carbon Dioxide, CO2),
   - HFO-1234ze (Trans-1,3,3,3-Tetrafluoropropene),
   - R-134a (1,1,1,2-Tetrafluoroethane),
   - R-407C (Blend of HFC-32,
   - HFC-125, and HFC-134a),
   - R-410A (Blend of HFC-32 and HFC-125), etc.

2. **Strategy 2: Eco-friendly halon**
   Utilize eco-friendly halons in the fire-fighting system to reduce GWP.

Documents Required for Evaluation

	EE3 – Strategy 1
1	Documentation/ calculation to show the type of refrigerant used in the HVAC systems
2	Eco-friendly refrigerant calculation showing lower GWP
	EE3 – Strategy 2
1	Documentation/ calculation to show the type of gases used in the fire suppression systems

Table 36 Documents Required for Evaluation EE3

EE4 – Energy Management

Purpose

The intent of this approach is to encourage the implementation of building energy management systems (BMS) and energy metering to optimize energy use and improve operational efficiency. By integrating real-time energy monitoring, BMS helps track consumption patterns, identify inefficiencies, and enable data-driven decisions to reduce wastage of energy. Energy metering provides accurate usage data, supporting targeted energy-saving measures, lowering operational costs, and minimizing environmental impact. This approach fosters long-term sustainability and resource conservation within building operations.

Requirement

To achieve the credit points, the project should implement either of the given strategies or a combination of both to monitor & manage energy utilization.

Achievable Score – 2 points

- Strategy 1 = 1 point
- Strategy 2 = 1 point

Strategies

1. **Strategy 1: Building Management System**
   Use a building management system to monitor and control at least two of the following systems, as applicable:
   - Air-conditioning management system
   - Lighting management system
   - Renewable energy management system
   - Elevator management system
   - Fresh air monitoring system
   - CO2 control and monitoring system

2. **Strategy 2: Energy Metering**
   Use energy meters to monitor at least three of the following systems, as applicable:
   - Interior & Common area lighting
   - Exterior area lighting
   - Municipal water pumping

- Groundwater pumping
- Treated wastewater pumping
- Renewable energy generation
- Power backup systems (Generators sets, Gas turbines, etc.,)
- Elevators, Escalators, Travelators, etc.,
- BTU meter for chilled water consumption (Applicable for tenant-occupied buildings only)
- Any other energy consuming equipment and systems

Documents Required for Evaluation

	EE4 – Strategy 1
1	BMS Plan highlighting system components, integration with systems, data collection & monitoring, maintenance & support, etc.
2	Screenshots of BMS system including the dashboard, energy monitoring screen, HVAC, lighting, security, access, control interface, etc.
3	Declaration letter from the facility management highlighting the installation of BMS
	EE4 – Strategy 2
1	Electrical Schematic Diagram showing the energy meter installed
2	Purchase orders of energy meters showing the make, model & numbers
3	Declaration letter from the facility management highlighting the installation of energy meters
4	Photographs of energy meters installed

Table 37 Documents Required for Evaluation EE4

MATERIAL & WASTE MANAGEMENT

Material & Waste Management – Overview

The Material & Waste Management Module, with 11 achievable score points, focuses on reducing environmental impact through effective waste handling and sustainable practices. It includes strategies for efficient waste collection, disposal, and recycling. The module also emphasizes the importance of a green procurement by promoting the use of sustainable materials and working with eco-conscious suppliers. These initiatives help minimize waste, reduce carbon emissions, and foster a circular economy, contributing to both environmental sustainability and operational efficiency.

MWM1 – Material Management Policy

Purpose

The intent of this approach is to integrate material management policies by implementing a green procurement policy for building operations and maintenance, ensuring the purchase of energy-efficient, water-saving, and low-impact materials and services. Simultaneously, during retrofitting and renovation, sustainable material sourcing is prioritized, focusing on recycled, locally sourced, and low-carbon materials. This also encourages the Tamil Nadu government scheme "Meendum Manjappai" to reduce plastic bags. This dual approach reduces environmental impact, supports circular economy principles, and enhances long-term sustainability in both ongoing operations and building upgrades.

Requirement

To achieve the credit points, the project should have green procurement policies & MVM installed.

Achievable Score – 4 points

- Strategy 1 = 1 point
- Strategy 2 = 1 to 3 points
  With a maximum achievable point as 4.

Strategies

1. **Strategy 1: Green Procurement Policy**

    - Implement Green Procurement policy for building operational & maintenance requirements.

    Renovation & Retrofitting:

    - Implement Green Procurement policy for choosing recycled or reclaimed materials/ low embodied carbon materials/ locally sourced materials.
    - Implement Green Procurement policy for choosing materials that are certified for sustainability, such as those with FSC (Forest Stewardship Council) certification for wood products or Cradle to Cradle certification for materials with closed-loop cycles.

2. **Strategy 2: Reducing Plastic Wastes**
   Install a minimum of one Manjappai Vending Machines (MVM) in all shopping buildings. (Meendum Majappai, n.d.)**.** Other buildings, with more than 500 user's footfall per day, should install a minimum of one MVM in the site.

Manjappai Vending Machines	
No. of MVMs	**No. of Points**
1	1
2	2
>3	3

Table 38 MVM Installation

Documents Required for Evaluation

	MWM1 – Strategy 1
1	Green Procurement Policy note stating the site level policy
2	Declaration letter highlighting the campus level Green Procurement Policy
	MWM2 – Strategy 2
1	Plan showing the location of Manjappai vending machines on site
2	Purchase orders & maintenance data
3	Photographs of Manjappai vending machine installed

Table 39 Documents Required for Evaluation MWM1

MWM2 – Waste Collection & Disposal

Purpose

The intent of this approach is to promote sustainable waste management practices through segregation at the source, efficient collection, and responsible disposal. By separating waste into categories like recyclables, organic, and non-recyclable materials, this approach minimizes contamination and enhances recycling rates. Proper collection and disposal reduce landfill waste, promote resource recovery, and minimize environmental impact. This credit encourages a circular economy model, contributing to waste reduction, conservation, and overall sustainability in building operations.

Requirement

To achieve the credit points, the project should segregate the generated wastes, and collect & dispose responsibly thereby encourage the community to manage the generated wastes efficiently.

Achievable Score – 7 points

- Strategy 1 = 1 point
- Strategy 2 = 1 point
- Strategy 3 = 1 point
- Strategy 4 = 1 point
- Strategy 5 = 2 points
- Strategy 6 = 1 point

Strategies

1. **Strategy 1: Waste Segregation**
   Segregate & collect wastes by source separation bins to ensure waste segregation at the source.

2. **Strategy 2: Organic Waste Composting**
   Dispose of a minimum of 75% of generated organic waste to OWC.

3. **Strategy 3: Non-organic Waste Disposal**
   Dispose of 100% of recyclable & non-recyclable wastes generated to authorized trash vendors.

4. **Strategy 4: Reduce Paper Usage**
   Adopt paper usage reduction policy at site level with required awareness note to the visitors.

5. **Strategy 5: Community Engagement**

   Promote waste segregation in the community by establishing public waste collection yards along with the building's waste collection yard, dedicated to collecting plastic and other dry wastes separately. This initiative can be encouraged by offering incentives/ recognition/ promotional selfie points to individuals who actively participate in waste collection and disposal.

   Note: This is based on the TNPCB initiative in waste fishnet collection centre. (Waste Fishnet Collection Centre, n.d.)

6. **Strategy 6: Waste Monitoring**

   Implement a waste tracking system to monitor the amount of waste generated and diverted from landfills. Regular audits can identify opportunities for further waste reduction and inform building occupants of their contributions to sustainability goals.

Documents Required for Evaluation

	MWM2 – Strategy 1
1	Floor plan showing the colour-coded bin locations
2	Site plan showing colour-coded bins & the waste collection yard
3	Photographs of colour-coded bins in all floors & at site level
	MWM2 – Strategy 2
1	Site plan showing OWC plant location
2	Calculations showing waste generation & percentage of organic waste sent to OWC plant
3	Declaration letter from the facility management highlighting the capacity of OWC plant & the percentage of organic waste sent to OWC plant
	MWM2 – Strategy 3
1	Site plan showing the waste collection yard
2	Calculations showing total waste generation and method of waste disposal
3	Agreement between the facility management team & waste vendor.
4	Photographs of disposal of non-organic wastes
	MWM2 – Strategy 4
1	Paper usage reduction policy at site level
2	Declaration letter from the facility management for paper usage reduction policy at site level
3	Public awareness measures for paper usage reduction policy at site level
	MWM2 – Strategy 5
1	Site plan showing the public accessible waste collection yard
2	Declaration letter from the facility management for public waste collection & disposal activity

3	Photographs of public awareness measures for waste collection & disposal activity
4	Details on incentive, recognitions, promotional selfie point, etc. With active participants list
	MWM2 – Strategy 6
1	Annual waste audit report highlighting the waste generation quantity & responsible disposal methods followed by the facility management team of the building
2	Declaration letter from the facility management on waste management practices

Table 40 Documents Required for Evaluation MWM 2

OCCUPANT HEALTH & COMFORT

Occupant Health & Comfort – Overview

The Occupant Health & Comfort module focuses on enhancing the well-being and productivity of building occupants by promoting a healthy indoor environment. It offers 13 achievable points through strategies such as Integrated Pest Management (IPM) to minimize health risks from pests, and optimizing fresh air movement to ensure proper ventilation and air quality. The module also emphasizes natural daylighting & indoor and outdoor connectivity for mental and physical well-being, air quality monitoring to track and improve indoor air conditions, and a strict no smoking policy to eliminate tobacco-related hazards, ensuring a safer and more comfortable living or working space.

OHC1 – Integrated Pest Management

Purpose

The intent of the Integrated Pest Management (IPM) approach is to reduce the use of chemical pesticides and minimize health risks to occupants. By utilizing a combination of preventive measures, monitoring, and eco-friendly pest control methods, IPM promotes a safer, healthier indoor environment. This approach focuses on sustainable pest management that effectively addresses infestations while protecting both occupant health and the surrounding ecosystem.

Requirement

To achieve the credit points, the project should implement the following strategies for reducing pests in the built environment & the site.

Achievable Score – 2 points

- Strategy 1 = 1 point
- Strategy 2 = 1 point

Strategies

1. **Strategy 1: Prevention and Building Maintenance**
   Ensure the following steps are adopted for prevention from pests,
   - Close gaps, cracks, and holes around windows, doors, walls, and pipes.
   - Store trash in tightly sealed containers and removed regularly.
   - Maintain healthy landscaping with proper drainage and trimming.
   - Ensure good airflow and dehumidification.

2. **Strategy 2: Professional Pest Control**
   - Collaborate with Professional Pest Control Services.
   - Schedule routine visits from pest control services to monitor and assess.

Documents Required for Evaluation

	OHC1 – Strategy 1
1	Declaration letter from the facility management on prevention and building maintenance
2	Photographs of prevention and building maintenance
	OHC1 – Strategy 2
1	Agreement between building facility team and professional pest control services

2	Declaration letter from the facility management on professional pest control services
3	Professional pest control schedule and plan showing the regular maintenance timetable
4	Photograph of professional pest control

Table 41 Documents Required for Evaluation OHC1

OHC2 – Indoor Air Quality Management

Purpose

The purpose of the Indoor Air Quality Management module is to enhance occupant health and comfort by ensuring clean, fresh air and optimal thermal conditions. Strategies include providing effective fresh air ventilation in both air-conditioned and non-air-conditioned spaces, implementing air quality monitoring systems to track and maintain air purity, and ensuring thermal comfort through temperature and humidity control. These measures collectively promote a healthy indoor environment, improving productivity and well-being for building occupants.

Requirement

To achieve the credit points, the project should maintain the indoor air quality with its optimal quality with the following strategies to ensure the occupants' comfort level.

Achievable Score – 6 points

- Strategy 1 = 2 points
- Strategy 2 = 1 or 2 points
- Strategy 3 = 1 point
- Strategy 4 = 1 point

Strategies

1. **Strategy 1: Fresh Air Ventilation – air-conditioned spaces**
   Achieve minimum required fresh air ventilation standards as prescribed below.
   For mechanically ventilated spaces, measure the total quantity of outdoor air delivered and verify the results are within 10 percent of the rates outlined in the current facilities requirements and operations and maintenance plan. Measurements shall quantify the amount of outdoor air for each air handling unit serving the project. Measurements taken within five years prior to project submission are acceptable. The rates must meet the following minimum requirements for each air handling unit:
   In IP units:
   Minimum outdoor air rate in cfm = 0.06 cfm/sq.ft. x gross building area (in sq.ft.) + people outdoor
   air rate from Table 1 (cfm/person) x building occupancy
   In SI units:
   Minimum outdoor air rate in L/s = 0.3 L/s*m2 x gross building area (in m2) + people
   outdoor air rate from Table 1 (L/s per person) x building occupancy.

Occupancy Category	People Outdoor Air rate	
	Cfm per person	L/s per person
Auditorium seating area Libraries Office space Places of religious worship	5	2.5
Mall common areas Museums	7.5	3.8
Classrooms Daycare General manufacturing	10	5
Sports club/aerobics	20	10
*For additional occupancy categories, see Table 6.2.2.1 of ASHRAE 62.1-2016		

Table 42 People outdoor air rate

2. **Strategy 2: Fresh Air Ventilation – non-air-conditioned spaces**
   Demonstrate a minimum of 4% of the openable area for the total carpet area of regularly occupied spaces.

Percentage of the openable area to the carpet area	Achievable Points
>4%	1
>6%	2

Table 43 Fresh Air Ventilation – non-air-conditioned spaces

3. **Strategy 3: Thermal Comfort**
   Maintain the temperature of 26 ± 2°C and relative humidity between 30-70% in the building for a minimum of 80% of the time.
   Conduct a satisfaction survey every six months, ensuring that 80% of occupants are satisfied with the temperature conditions maintained in the building.

4. **Strategy 4: IAQ Monitoring – air-conditioned spaces**
   Maintain a differential CO2 level in all regularly occupied areas with CO2 sensors positioned at breathing zone levels with monitoring systems.

CO2 level in ppm	Achievable Points
700	1
550	2

Table 44 CO2 Level in Buildings

Documents Required for Evaluation

	OHC2 – Strategy 1
1	HVAC Plan showing fresh air intake
2	Calculations showing fresh air ventilation level
3	Photographs of fresh air ventilation system
	OHC2 – Strategy 2
1	Floor Plan showing window and door schedule
2	Calculation for window & door openable area percentage wrt the carpet area
3	Photographs of openable windows and doors
	OHC2 – Strategy 3
1	Indoor temperature monitoring report highlighting the temperature maintained in the building wrt human comfort level
2	Occupancy survey data wrt the indoor thermal comfort
3	declaration letter from the facility management on thermal comfort maintenance within the building
	OHC2 – Strategy 4
1	Schematic drawing of CO2 control system installed in the building
2	Datasheet showing the details of set point of CO2 system, make & model
3	Photographs of CO2 monitors installed

Table 45 Documents Required for Evaluation OHC2

OHC3 – No Smoking Policy

Purpose

The purpose of the No Smoking Policy module is to ensure a healthy indoor environment by eliminating tobacco smoke exposure. By enforcing a strict no-smoking policy within the building, the credit aims to protect occupants from the harmful effects of second-hand smoke, enhancing overall air quality and well-being.

Requirement

To achieve the credit points, the project should have No Smoking policy.

Achievable Score – 1 point

- Strategy 1 = 1 point

Strategies

1. **Strategy 1: No Smoking Policy**
   Show that smoking is not allowed within the building or inside the premises as per the regulations established by the Government of India.

Documents Required for Evaluation

	OHC3 – Strategy 1
1	Plan showing no smoking signages onsite and within the buildings
2	No smoking policy note - site level
3	Declaration letter from the facility management on no smoking policy
4	Photographs of no smoking signages

Table 46 Documents Required for Evaluation OHC3

OHC4 – Visual Ambiance Enhancement

Purpose

The purpose of the Visual Ambiance Enhancement module is to improve occupant well-being and productivity by optimizing natural light and visual connections with the outdoors. Strategies include maximizing daylighting through strategic placement of windows and light-transmitting materials, and ensuring adequate indoor and outdoor connectivity to provide views of natural landscapes or the sky. These measures create a more pleasant, stimulating environment, reducing reliance on artificial lighting, enhancing mood, and promoting overall occupant comfort and satisfaction.

Requirement

To achieve the credit points, the project should enhance the spatial quality with optimal daylighting & outdoor visual connectivity in the building.

Achievable Score – 4 points

- Strategy 1 = 1 or 2 points
- Strategy 2 = 1 or 2 points
  With maximum achievable point as 4.

Strategies

1. **Strategy 1: Daylighting**
   Ensure the building has a minimum of 50% of the regularly occupied areas are lit with natural lighting with illumination levels of minimum 110 Lux and a maximum of 2,200 Lux, at horizontal working plane.

Percentage of regularly occupied areas with daylighting	Achievable Points
>50%	1
>75%	2

Table 47 Daylighting

2. **Strategy 2: Visual Connectivity**
   - Ensure that at least 50% of all regularly occupied spaces provide a direct line of sight to vision glazing between 0.9 meters (3 feet) and 2.1 meters (7 feet) above the finished floor.

- The occupants must have unobstructed views up to 5-meter meters (15 feet or visual access to sky, flora, or fauna).

Percentage of regularly occupied areas with visual outdoor connectivity	Achievable Points
>50%	1
>75%	2

Table 48 Visual Connectivity

Documents Required for Evaluation

	OHC4 – Strategy 1
1	Floor Plan showing window and door schedule
2	Daylight simulation report
3	Photographs of daylight areas in the building
	OHC4 – Strategy 2
1	Floor Plan showing window and door schedule
2	Calculation showing the outdoor visual connectivity in regularly occupied spaces of the building
3	Photographs of outdoor visual connectivity

Table 49 Documents Required for EvaluationOHC4

SOCIAL & CULTURAL INCLUSIVITY

Social & Cultural Inclusivity - Overview

This module promotes creating an inclusive environment by implementing strategies such as a barrier-free design for accessibility, ensuring equal access for all individuals, including those with disabilities. Visitor management practices enhance user experience. Additionally, incorporating regional languages in signage and communication fosters cultural sensitivity and inclusivity. These strategies contribute to building a socially responsible, accessible, and community-oriented green building.

SC1 – Barrier-free Environment

Purpose

The purpose of the Barrier-Free Environment credit for an existing building is to ensure physical accessibility for all individuals, including those with disabilities. This includes providing features such as ramps, wide doorways, and accessible restrooms. Additionally, it promotes audio and visual assistance through technologies like hearing loops, visual signage, and braille, ensuring that all occupants, regardless of their abilities, can navigate, access services, and participate in activities comfortably and safely.

Requirement

To achieve the credit points, the project should implement both the following strategies.

Achievable Score – 3 points

- Strategy 1 = 2 points
- Strategy 2 = 1 point

Strategies

1. **Strategy 1: Physical Accessibility**
   Ensure the provision as per NBC or CPWD standards of uninterrupted physical accessibility in the building and the site or retrofit/ install all the below-mentioned features,
   - Ramps at minimum one entry points, ensuring smooth, level access for wheelchair users.
   - Ensure the doors & hallways are meeting the accessibility standards of NBC or retrofit doors and hallways to meet accessibility standards (if existing doors/ hallways are not meeting the standards).
   - Upgrade restrooms to include wider stalls, grab bars, and accessible sinks.
   - Install or retrofit elevators and platform lifts for multi-story buildings, with accessible controls and maintenance.
   - Provide accessible parking spaces close to building entrances, with clear paths to the building and drop-off areas for easy access.
   - Dedicated car parking with floor signage as per NBC standard and number of carparking - 1:100 cars with reference

2. **Strategy 2: Visual & Audio Assistance – 1 point**
   - Implement high-contrast, braille signage and tactile floor indicators in common areas.

- Install or retrofit elevators and other common areas with audio assistance features.

Documents Required for Evaluation

	SC1 – Strategy 1
1	Site/Floor plan showing barrier free environment highlighting ramps, doors, hallways, disabled restrooms, elevators, accessible parking spaces, etc. as per NBC standards
2	Photographs showing the physical accessibility facilities
	SC1 – Strategy 2
1	Plan showing visual/ braille signages, tactile flooring, etc. in common areas
2	Photographs showing visual assistance and audio assistance

Table 50 Documents Required for Evaluation SC1

SC2 – Visitor Management

Purpose

The purpose of the Visitor Management credit is to ensure seamless visitor access and flow within the building while maintaining an inclusive, welcoming environment. This includes clear signage, efficient entry points, and accessible pathways for all visitors, including those with disabilities. Additionally, the credit emphasizes the importance of collecting visitor feedback to continuously improve the experience, ensuring that all individuals feel respected, informed, and satisfied with their visit to the building.

Requirement

To achieve the credit points, the project should implement the following strategies.

Achievable Score – 1 point

- Adapt one of the strategies for 1 point.

Strategies

1. **Strategy 1: Visitor Access & Flow**
    - Provide tactile, visual, and digital wayfinding systems that guide visitors easily through the building.
    - Create clear, accessible routes for visitors with disabilities, providing ramps, wide doorways, and seating spaces that allow easy access and navigation.

2. **Strategy 2: Visitor Tracking & Feedback**
   Establish a system for tracking and analysing visitor footfall data, along with a mechanism to gather feedback on their experiences within the site/building.

Documents Required for Evaluation

	SC2 – Strategy 1
1	Site/Floor plan showing visitor circulation and way finding signages
2	Photographs of way finding signages
	SC2 – Strategy 2
1	Visitor feedback data
2	Declaration letter from the facility management on visitor feedback action

Table 51 Documents Required for Evaluation SC2

SC3 – Regional Language

Purpose

This credit encourages the use of regional languages on signage and name boards within a building or development. The purpose is to promote inclusivity, cultural respect, and better communication with local communities. By incorporating local languages, buildings ensure accessibility for a diverse population, enhancing user experience, and fostering a connection with the surrounding environment, while supporting local traditions and language preservation.

Requirement

To achieve the credit points, the project should implement the following strategies.

Achievable Score – 1 point

- Strategy 1 = 1 point

Strategy & Documentation

1. **Strategy 1: Regional Language in Signages & Name Boards**
   Ensure all the signages & main name boards have indications in a minimum of two languages including the local/ regional language and a global language.
   Note: This credit requirement is based on the Tamil Nadu CM's assertion on the need for Tamil to be prominently visible in public spaces. (Tamil, n.d.)

Documents Required for Evaluation

	SC3 – Strategy 1
1	Declaration letter from the facility management on regional language in signages and nameboards
2	Photographs on Regional language in signages and nameboards onsite

Table 52 Documents Required for Evaluation SC3

References

1000 Kurunkadugal Thittam. (n.d.). Retrieved from https://www.tamilmurasu.com.sg/tamilnadu/story20220809-93905.html

Assembly Rooms UK. (n.d.). Retrieved from https://www.assemblyroomsedinburgh.co.uk/

Biosphere Tourism. (n.d.). Retrieved from https://www.biospheretourism.com/en

Bureau of Energy Efficiency. (n.d.). Retrieved from https://beeindia.gov.in/en/energy-conservation-building-code-ecbc

Commerzone . (n.d.). Retrieved from https://www.mindspaceindia.com/porur/

Destination Stewardship Center. (n.d.). Retrieved from https://destinationcenter.org/

EDGE. (n.d.). Retrieved from https://edgebuildings.com/

EIC. (n.d.). Retrieved from https://eventscouncil.org/

Green Destinations. (n.d.). Retrieved from https://www.greendestinations.org/

Green Globe. (n.d.). Retrieved from https://www.greenglobe.com/

Green key. (n.d.). Retrieved from https://www.greenkey.global/

Green Tourism. (n.d.). Retrieved from https://www.green-tourism.com/

Indian Green building Council. (n.d.). Retrieved from https://igbc.in/

Leadership in Energy and Environmental Design. (n.d.). Retrieved from https://www.usgbc.org/leed

Meendum Majappai. (n.d.). Retrieved from https://tnpcb.gov.in/meendummanjappai/

(n.d.). *NATIONAL BUILDING CODE OF INDIA 2016.*

Paris je t'aime . (n.d.). Retrieved from https://parisjetaime.com/eng/

School. (n.d.). Retrieved from chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://cms.tn.gov.in/cms_migrated/document/GO/env_e%CB%8D188_ms_2024.pdf

Tamil, t. l. (n.d.). Retrieved from https://news.abplive.com/states/tamil-nadu/tamil-nadu-cm-stalin-tells-traders-use-tamil-for-shop-signboards-1705245

The Leela Palace Chennai. (n.d.). Retrieved from https://www.theleela.com/sustainability

Waste Fishnet Collection Centre. (n.d.). Retrieved from https://timesofindia.indiatimes.com/city/chennai/tamil-nadu-pollution-control-board-tackles-ghost-nets-issue-in-chennai-fishing-hub/articleshow/112255196.cms

Department of Environment & Climate Change

TAMIL NADU CLIMATE CHANGE MISSION

LIFESTYLE FOR CLIMATE

Ela Green Buildings & Infrastructure Consultants Pvt. Ltd.
Design Certification Training

Tamil Nadu Climate Change Mission