GEM
Sustainability Certification Rating for Green Interiors

REFERENCE GUIDE
1st EDITION

THE ASSOCIATED CHAMBERS OF COMMERCE AND INDUSTRY OF INDIA
GEM
Sustainability Certification Rating for
GREEN INTERIORS

REFERENCE GUIDE
1ST EDITION
2022

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Conventional methods of construction of a building are thoroughly dependent on raw material and natural resources. Most of the approaches use non-renewable footprints. The global impact of these approaches is detrimental to human lives. The call of the hour is upon us to embrace strategies those are sustainable and planet friendly. Sustainable buildings not only reduce harmful impacts but are also healthier and cost effective, in terms of payback period.

Sustainable building design is a practical and climate conscious approach which ensures minimum harm to the environment, while constructing and operating the building. It can function to avail an optimum amount of energy and water, conserve virgin and natural resources, generate less waste and create spaces for healthy and comfortable living, as compared to conventional buildings.

The public authorities should consider promoting the design and construction of such sustainable buildings to create a green zone, providing much healthier environment. India made steadfast progress in last decade in energy and water efficiency. There has been public outcry as well, in support of planet friendly construction and related policies. We have miles to cross before we stop. The aim is to create many eco-friendly cities, villages, suburbs, smart cities, and real estates, which would help the communities and therefore the nation in building it green.

We, at ASSOCHAM are working incessantly to create a sustainable nation in alignment with ‘United Nations Sustainable Development Goals – 2030’. As a leap towards the vision, ASSOCHAM executes ‘GEM Green Building Rating System’ for the buildings. I would like to congratulate the ‘Council for Green and Eco-friendly Movement’ along with its state chapters, executive body and certified professionals, for the wonderful work and wish good luck in the endeavor.
Buildings have tremendous impact on people and the planet. Every component of a building, starting from pre-design to the operation phase, relies on natural resources. The responsibility is upon us to make it sustainable. A sustainable building uses optimised natural resources. It ensures water-efficient and energy-efficient implementations and has a much smaller carbon footprint. It also ensures that the surrounding eco-system is protected. Sustainability is the way to lead life and construct buildings.

ASSOCHAM, the century old organisation, has taken up the sustainability movement to a new high. It initiated its responsibility to care for the mother earth by executing its sustainability certification program called ‘Green and Eco-Friendly Movement (GEM)’, with the support of more than 155 regional Chambers and over 4.5 lac large, medium & small-scale industries and over 65 National Councils.

It is commonly believed that sustainable buildings are costlier than normal buildings. However, it has been effectively proven that the overall costs are much lesser than the conventional buildings. Green Buildings have been proven to have a positive impact on the health of residents as well. Since these buildings provide a balanced and optimal eco-system for residents, they have a positive effect on the productivity and well-being of the occupants.

Since launch, the GEM program has made rapid stride in last three years. I congratulate the entire team for initiating the GEM Movement across sectors and urge the industry to make a step towards building our planet green.

Deepak Sood
Sustainable building design is about building the future, not just a structure. Sustainability is a form of development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Effective sustainable design of a building is a comprehensive approach to select and integrate design, planning, products, and processes that account for consumer satisfaction and environmental conservation.

Studies show that the buildings account for 18% of total CO2 emissions. According to a report from the United Nations Environment Program, if construction keeps growing at the present rate, the emissions will double by 2050. While buildings are a major contributing factor to global emissions, they also hold significant potential to contribute to deductions, if we start focusing on building it green. India is undergoing rapid urbanisation and the urban population is set to rise from 33% of India’s population to 52% by 2030. This will put a lot of strain on our natural resources. It is high time to act.

ASSOCHAM has taken an initiative to care for the mother earth and designed the Sustainable Building Design and Construction Program called ‘Green and Eco-Friendly Movement (GEM)’. Since its inception, it evolved as an indigenous, intent driven green building rating system. The Council for Green and Eco-friendly movement signed MoUs with major organisations and universities, with the sole vision of spreading awareness across the country. Mission 100 stands out as a sustainability drive to prepare young minds in the academical phase. Apart from that, GEM certified projects proudly witnessed the impact of sustainability in design and construction of the building. As a collaborative approach, GEM Certified Professionals (GEM CP) are marching hand in hand with the council.

I am sure that ASSOCHAM being the Apex and Oldest Industrial Chamber of India, will efficiently lead this sustainability movement. I wish all the best to the entire team for the noble cause.

Pankaj Dharkar
Chairman, ASSOCHAM National Council for Green & Eco-Friendly Movement (CGEM)

Message

Pankaj Dharkar
The interior environment of buildings is undergoing a tremendous transformation, with the advent of modern technologies, changing era and more importantly newer economic models.

The complex dynamics of working atmosphere, and hospitality is being simplified towards a holistic manner of research, customization, and collaboration across living spaces as well. With such an engaging opportunity of a healthy world, new challenges are also surfacing up. The world has seen it in the forms of diseases, epidemics, and life-threatening situations.

It is very essential to provide an atmosphere of sustainability (environmental & economic sustainability) inside all the indoor spaces of buildings. Our approach to introduce indigenous and practical sustainability principles is a path towards achieving it.

As an innovative solution of adding sustainability to the very fabric of the building materials, ASSOCHAM GEM Green Interior rating system integrated three major aspects, that are often overlooked:

1. First is, integrating the policies of the management for the operation and maintenance phase of the premises at design stage.


3. Third is, ease of going green, without increasing the burden on the designer and promoters.

It is a noble effort by ASSOCHAM to initiate sustainability protocols, with a thorough idea of sensitizing a movement in the interior spaces and drive the professionals to work in a better, comfortable, efficient, and committed manner.

I wish all the best to the Council for Green and Eco-friendly Movement.

Ar. Ravish Mehra
• **Mr. Abasaheb P. Kale**, Member, GEM Maharashtra Chapter & CEO, Sahyadri Farms Sustainable Grassroots Initiatives Limited

• **Ar. Abin Chaudhuri**, Co-Chairman, GEM West Bengal Chapter & Founder, Abin Design Studio

• **Ms. Aditi Patel**, Secretary, GEM Chhattisgarh Chapter & Director, Adira Innovations

• **Mr. Aditya Prabhu**, Member, GEM Maharashtra Chapter & Group CEO, Secutech Automation India Pvt. Ltd.

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Mr. Virendra Borade, Program Chair, GEM Maharashtra Chapter, Member, ASSOCHAM National Council for Green & Eco-friendly Movement (GEM) and IBMS Expert

Mr. Vishal Kapoor, Senior Member, ASSOCHAM National Council for Green & Eco-friendly Movement (GEM) & Managing Director, Meho – HCP Air Systems Pvt. Ltd.
Care for the Mother Earth

ASSOCHAM has taken a Green Initiative to Care for the Mother Earth and formed a Council for Green and Eco-friendly Movement (CGEM) that executes the ‘GEM Sustainability Certification Program’ with the objective to promote environment friendly green building design and construction.

Through this initiative, ASSOCHAM awards the Sustainability Certification Rating to Housing, Urban Development, Interior Spaces, Residential, Commercial, Hotels, Offices, Schools, Colleges, Universities, Factory buildings and related developments.

All new or existing, under construction or upcoming projects can register for this certification rating program.

ASSOCHAM is now in the process of opening for various options and suggestions such that we create a new country and do not create western imitated world by calling Green as Red but opt to propagate Green as Green and be part of nature and managing them professionally and looking beyond net-zero human settlements.

GEM Sustainability Certification Rating Program aims to address the sustainability of a given development throughout its lifecycle from design through construction to operation. GEM Sustainability Certification Reference Guide provides design guidance and detailed requirements for rating a project’s potential performance.

GEM Sustainability Certification Rating for Green Interiors has been organized into Twenty-Seven Principles that are fundamental to a more sustainable development. These Principles include –

1. Fire and Life Safety requirements integration in Sustainable Buildings.
3. Save energy – Targeting energy conservation through reduced demand, energy efficiency and renewable sources, as applicable.

4. Qualitative and Quantitative water use – Reducing water demand, encouraging efficient distribution, reuse of treated water and Periodic quality testing.

5. Regional and recycled materials – Considering regional and recycled materials when selecting and specifying materials. Reduce the use of virgin materials.

6. Natural light and fresh air – Improving quality and connectivity of outdoor and indoor spaces

7. Training and capacity building – Inter-disciplinary teamwork and training to deliver sustainable and quality product throughout the life of the project

8. Going the extra mile in building design and construction

GEM Sustainability Certification Rating levels

There are some Essential and Suggested requirements of each Principle. Points are awarded for each Suggested requirement achieved.

There is a 0–135-point scale. Project will achieve **GEM 1 to GEM 5** rating levels as per the requirements fulfilled and scores achieved by the project. This depends upon the project design which includes interior design, materials used during construction, HVAC, lighting and plumbing system designs, water, and energy consumption of the interior space.

To achieve a GEM Sustainability Certification Rating, all Essential Principal requirements must be fulfilled along with a minimum number of Principle points. GEM 5 will be the highest achievable rating level in this program.

This rating program is applicable to interior spaces of buildings dedicated to different types of end uses such as hospitality, commercial space, recreational, entertainment etc. Project team can go for a **Certification of Intent** (Provisional Certification) rating during pre-design, design or construction stages of the project and **Final Certification** rating when the building is complete.

<table>
<thead>
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<th>S. No.</th>
<th>Points Scored</th>
<th>GEM Levels</th>
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<tr>
<td>1</td>
<td>All essential requirements and 40 - 49 points</td>
<td>GEM 1</td>
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<td>2</td>
<td>All essential requirements and 50 - 64 points</td>
<td>GEM 2</td>
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<td>3</td>
<td>All essential requirements and 65 - 84 points</td>
<td>GEM 3</td>
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<td>4</td>
<td>All essential requirements and 85 - 104 points</td>
<td>GEM 4</td>
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<td>5</td>
<td>All essential requirements and 105 points or above</td>
<td>GEM 5</td>
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**Note:** *If the requirements prescribed by local competent authority are more stringent, those will be followed.*
Key benefits of the certification –

1. Review of all design documents such as Architectural, Mechanical, Electrical, Plumbing and Landscape by Sustainability experts for further value addition from green interiors perspective.

2. Energy and water efficient spaces with metering of energy and water consumption to stay aware of the efficiency of systems.

3. Design of interior spaces that will utilize maximum daylight, fresh air and provide healthy environment to the building occupants.

4. Sustainability Certification rating will give additional marketing mileage to the projects over other conventional buildings.
ASSOCHAM Vision

1. Quality and Value Addition
   To add best quality and value to the projects we certify!

2. Timeline
   We value the precious time,
   Expedite the process of Quality Check!

3. Green at Low Cost
   Green should not be the choice of elite only
   Everyone should complement in the mission of Sustainability
   No hidden charges, Green for all at lowest cost!

4. Quick Response
   Resolving the queries is the top priority
   Quick response to the queries from project team and consultants!
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<th>Description</th>
<th>Maximum Points</th>
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<td>1</td>
<td>Principle 1</td>
<td>Legal Approvals - Project Space</td>
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<td>Best Practices for Nature Friendly Features (Biophilia)</td>
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<td>8</td>
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<td>Occupancy Limit - per (space or area or floor level)</td>
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<td>27</td>
<td>Principle 27 Going the Extra Miles</td>
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<tr>
<td><strong>TOTAL POINTS</strong></td>
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<td><strong>135</strong></td>
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Final Certification Rating Process

Online Project Registration at www.green-assocham.com
(Not required, if already done at the time of Pre-certificate rating)

Submission of Project’s Sustainability Report by Project team to CGEM Council for Preliminary review and feedback

Review of the report by GEM Evaluators and feedback to the Project team

Submission of updated report by Project team to Council for Final Certification Rating

Final review by GEM Evaluators, site visit & award of GEM rating
(Project team can go for an appeal within 15 days at this stage, if they wish to)

Award of GEM Final Certification Rating, Certificate and Mementoes
**Principle 1: Legal Approvals – Project Space**

**Essential**

**Aim:** Project must have all necessary statutory approvals from applicable/competent authorities.

**Requirements: (Essential)**

Follow National Building Codes 2016 (Part 4) and requirements prescribed by local competent for the authority and obtain No Objection Certificate from the competent authority for the project space.

**Calculations and Methodology:**

The project area and tenant scope details must be a part of the documentation submitted for compliance.

**Documents to be submitted:**

1. Fit for Occupancy certificate
2. No Objection Certificate from Chief Fire Officer or local competent authority as applicable
3. Legal Ownership documents of the project space if it is owner occupied, or/else contract agreement, rent/lease agreement showing the project limit, and area details, as applicable.
Principle 2: Fire and Life Safety in the Interior Space

**Essential**

**Aim:** Ensure Fire and Life Safety in Sustainable Buildings per National Building Codes 2016 (Part 4) and requirements prescribed by local competent for the authority.

**Requirements:**

Follow National Building Codes 2016 (Part 4) and requirements prescribed by local competent for the authority and obtain Fire No Objection Certificate from the competent authority for the facility.

**Calculations and Methodology:**

Implement strategies and techniques for fire prevention and using appropriate Operation and Maintenance strategies, fire detection and alarm systems.

Ensure flawless operation of firefighting system at the time of any fire incident.

Fire safe design of HVAC system in the interior space.

Fire rating of the materials used in the facility should be as per the requirements prescribed by local competent for the authority.

Prepare the evacuation plan of the occupants in case of any fire incident.

Prepare a training plan for the facility team and occupants of the facility.

Refer FSAI Suraksha Index (FSI), a technical reference guide created by Fire and Security Association of India for details.

**Documents to be submitted:**

1. No Objection Certificate from local competent authority.

2. All approved floor plans, sections, and elevations of the interior space along with fire and life safety provisions, as applicable.

3. Plans highlighting the locations of firefighting equipment and systems.
4. Evacuation plan of the occupants in case of any fire incident.

5. Photographs of the installed firefighting equipment and systems, in the project space.

6. Manufacturer catalogue of the firefighting equipment and systems.

7. Fire rating of the materials used in the facility.

8. Training plan for the facility team and occupants of the facility. If it is a part of the building or campus plan, that can be submitted as well for compliance.
Principle 3: Construction Management Best Practices – Project Space

Essential

Aim: Minimize hazardous effects of construction during the interior works by the tenant and follow best management practices during any kind of installation, fixtures, and masonry works.

Requirements:

1. During construction – Prevention of dust control, spill prevention systems and housekeeping to clear all the contaminants/debris during civil and MEP works, in a regular basis.

2. If the project is already built and project team has no control over construction, then the renovation works, such as customized partitioning, installation of any Civil and MEP related materials and equipments will be devoid of dust generation, and entrapment of any hazardous particles inside the project space.

Calculations and Methodology:

The project area and tenant scope details must be a part of the documentation submitted for compliance.

Documents to be submitted:

1. Construction Management Best Practices Plan, for works under the purview of the Project team.

2. photographs of all control measures implemented in the space.

3. Spill prevention and control plans prepared and implemented in the space, along with photographs.
Principle 4: Suitable Ergonomics in design

3 points

**Aim:** Implement Ergonomics in the Design of Workplaces/Retail spaces, from the perspective of Workers/Residents/Employees, both visually and physically.

**Principle requirements:**

1. The workspace and working benches should be designed or procured, keeping the Safety of all the workers in mind *(1 point)*

2. The workspace and working benches (seat/desks etc.) should have of Ease of Use and Comfort, thereby promoting productivity *(1 point)*

3. The workspace and working stations should be designed and arranged to enhance maximum Productivity *(1 point)*

(Note: Equivalent points are applicable for strategies relevant to different types of interior projects, such as Residential, Retail, Commercial, Hospitality)

**Calculations and Methodology:**

1. Refer ISO 6385:2016 for a better understanding and implementation.

2. The entire space, workstation, arrangements of the seats/benches/desks should be organized to enhance productivity amongst the employees/workers.

3. In addition to enhancing productivity through proper ergonomical layout, the comfort and safety is a crucial parameter, as the employees, working interior, spend a lot many hours in front of machines or systems. Hence, the procurement of less accident prone, break proof, flexible seating chairs and desks are important as well.

4. If possible, the keypad for desktops systems can be ergonomical as well, for a better grip and stress reducing for hands.

**Documents to be Submitted:**

1. Furniture Layout
2. Ergonomical Best Practices Plan of the project space

3. A narrative, describing the qualitative description of types of furniture for the employees/workers.

4. Data sheet and Invoices of the ergonomical designed furniture.

5. Photographs, of the space demonstrating all the ergonomical features of the project space.
Principle 5: Uniform Airflow and Daylight Distribution

4 points

Aim: To induce a qualitative uniformity in the airflow and daylight inside the project space.

Requirements:

1. To ensure that the partitions, materials, and air connection between spaces inside the workstation areas freely allows the airflow inside the project space. (Please note, it is related to the interior uniformity and is not dependent on air being provided to the space mechanically or naturally) (2 points)

Exception: areas inside the space, which needs confidentiality, such as conference room.

2. To ensure that the partitions, materials, and transparency of materials allow the daylight to pass through the entire space. (Please note, it is related to the interior uniformity and is not dependent on the quantitative aspect of day light being provided to the space by proper façade and fenestration design) (2 points)

Exception: areas inside the space, which needs controlled lighting, such as locker room.

Calculations and Methodology:

1. The partitions and any other placement of almirahs, file cabinets etc. should not obstruct the air. For example, an aperture glass between workstation partitions.

2. The partitions should not obstruct the daylight that is already present inside the project space. By best practices design, the daylight can be optimized in the façade level, but as far interior is concerned, it is equally important to let the daylight pass through the space by intelligent ideas.

Documents to be submitted:

1. Interior Partition layout and section of the space
2. Photographs of the space
3. Narrative, with explanations, to demonstrate the uniformity of the project space.
**Principle 6: Benefits of the Building/Campus Sustainability**

10 points

**Aim:** To recognize aspects of the building/campus and nearby amenities that would allow the project occupants to be a part of sustainability.

**Principle requirements:**

1. Dedicated parking spaces are reserved for e-vehicles in the designated parking space for the building *(2 points)*
2. The project space is a part of a green rated building (any green building rating system) *(2 points)*
3. Building/Campus waste treatment facility is available for the project space *(2 points)*
4. Fundamental Amenities (Restaurant for occupants, Public Transport, Grocery Store, Pharmacy, Photocopy/Scan/Fax Center) are present for the building or campus *(2 points)*
5. Building/Campus water treatment facility is available for the project space *(2 points)*

**Calculations and Methodology:**

1. Identify the green measures being undertaken by the building or campus in which the project is a part.
2. Identify the facilities, which are available for the project space.
3. Demonstrate that the facilities/amenities are being availed by the project space occupants, by contracts (for example, e-vehicle) or meters (for example, onsite water treatment)

**Documents to be submitted:**

1. Project narrative, explaining which requirements are applicable and available for the project space
2. Documentations (such as photographs, invoices, contracts, radial maps showing amenities) to show compliance for the claimed requirements.
**Principle 7: Best Practices for Nature Friendly Features (Biophilia)**

6 points

**Aim:** To enhance nature friendly behavior by installing elements into the ethos of the space and consciousness of the human beings

**Requirements:**

1. Resonating the spaces with the vibes of nature friendly elements, in all the regularly occupied areas, qualitatively (3 points)

2. 50% of the project interiors space to be accessible to natural elements inside the building, by vision or music, quantitatively. (3 points)

**Calculations and Methodology:**

1. Identify biophilic elements that can be installed inside the project space, befitting the vision of the space.

2. Identify the areas where these elements can be installed (wall hangers, pots, indoor plants, musical theme system etc.) that would cater to at least 50% of the project area.

3. Distribute a survey form for response, to the occupants/employees, for the biophilic awareness of the space.

**Documents to be submitted:**

1. Project Narrative with photographs, demonstrating compliance.

2. Survey Form Template.
Principle 8: Occupancy Limit
(per space or area or floor level)

4 points

**Aim:** To standardize a cap on occupancy limit, that would optimize the sustainability experience in the project space.

**Requirements:**

1. To adhere to the best practices towards the relevant bye laws, local regulations, and National Building Code for the occupancy limit of the project space. (**4 points**)

**Calculations and Methodology:**

1. Identify the practices that optimizes the occupant distribution inside the project space
2. Identify the codes and local regulations, with suggestions for the occupancy limit, inside interiors of the building.

**Documents to be submitted:**

1. Project narrative describing the applicable codes and regulations being applied for the project, along with the best practices in the project space.

4 points

Aim: To reduce the noise and related impacts inside the interior space for enhancement of focus and productivity.

Requirements:

1. Source Reduction – The noise production inside the project space is minimized (2 points)
2. Noise Absorption – Elements to absorb noise inside the project space (2 points)

Calculations and Methodology:

1. Identify all the elements, such as server, equipments, systems, moving partitions, outside noise, mechanical system vibration etc. inside the project space
2. Plan to reduce the scattering of noise into the project space by shrouding equipments, low noise appliances, effective sealing of windows
3. Install noise absorbing elements, wherever possible, such as acoustic ceiling, acoustic wall sheet, acoustic carpet, as and where applicable. The rating of the acoustic material is up to the discretion of the designer.

Documents to be submitted:

1. Best Practices Plan and photographs, identifying sources and adopted measures to reduce noise.
2. Invoices of noise absorbing materials, if any.

6 points

Aim: Project team should install low flow water fixtures to reduce the demand of potable as well as non-potable water.

Requirements:

1. Install efficient water fixtures with flow rates not more than the values listed below: (1 point for each product)
   I. Water Closets should be dual flush type with flush rates 4.6 LPF and 2.6 LPF
   II. Health Faucets = 6.5 LPM at a design pressure of 3 bar
   III. Wash Basin Faucets = 4.5 LPM at a design pressure of 3 bar
   IV. Urinals = 1.5 LPF

2. Install sensor based water fixtures (sink/basin faucets/urinals) with above flow rates in the common area applications. (1 point)

3. Low Water Consuming Interior Garden/Appliances systems (1 point)

Calculations and Methodology:

Install low flow and flush water fixtures in the project to reduce the potable and non-potable water demand. Water flow restrictors/aerators can also be installed in the high flow fixtures to make them appropriate as per the Principle requirements mentioned above.

Documents to be submitted:

1. Trade catalogue or brochure of water fixtures and brochure of aerators installed in the water fixtures, if applicable

2. Purchase bills / Invoice of water fixtures with exact make and codes of the products at the time of final certification

3. Photographs of water fixtures confirming the installation at the time of final certification.

Aim: To ensure the quality of water being used by the occupants/employees

Principle requirements:

1. Drinking and Potable water quality as per the standard local health regulations (2 points)

2. Non-drinking and non-potable water quality as per the standard local health regulations for the end use (2 points)

Calculations and Methodology:

1. Identify all the end uses of water and corresponding required parameters, as per health regulations.

2. Identify a testing agency to conduct the water testing, in regular intervals. It should be conducted every 6 months unless any emergency Govt. protocols (such as water borne disease) mandate to check it within a prescribed time limit.

Documents to be submitted:

1. Contract with a testing agency, mentioning the types of end uses, corresponding parameters and desired values of the parameters.

2. Water Quality Testing as a requirement in the HSE policy, of the organization or company or complex.
Principle 12: Measurement of Energy and Water Consumption – sub metering for project space

6 points

Aim: Project should install meters to measure Energy and Water consumptions of the project on daily/monthly basis.

Requirements:

Provide following energy meters: **(2 points for each meter)**

1. Interior common area lighting
2. Interior common area air-conditioning (reception, club house, gymnasium, games rooms etc.)
3. Main Water Meter (both domestic and flushing water), at the source level

Calculations and Methodology:

Energy meters should be capable of monitoring kWh, kW and Power factor.

Documents to be submitted:

1. Provide following for energy and water meters:
   a. Trade catalogue or brochure
   b. Purchase bills/invoices
2. Project space photographs confirming the installation of energy and water meters
Principle 13: Post-occupancy Waste Management (including O & M Waste)

8 points

**Aim:** Implement a strategy for post-occupancy waste collection, segregation and disposal.

**Requirements:**

Provide separate waste bins for biodegradable and non biodegradable wastes, as below

1. Bio Hazardous Waste (**1 point**)
2. E Waste (**1 point**)
3. Organic Waste (**2 points**)
4. Inorganic Waste (**2 points**)
5. O & M Waste (**2 points**)

**Calculations and Methodology:**

Separate waste bins must be provided for waste items to be collected from the site as applicable.

Separate bins must be provided for lamps, batteries and e-wastes as applicable.

Implement strategies for suitable disposal of the waste. Wastes must not be sent to the landfill.

Total number of occupants can be taken from the project’s Mechanical/Electrical/Plumbing design basis reports (MEP DBRs) or as prescribed by project design team.

**Documents to be submitted:**

1. Floor plans showing the locations of waste bins
2. Project space photographs confirming the installation of waste bins at site
3. Waste Management Plan (including O& M waste, such as maintenance works, facility management debris etc.), with details of disposal procedure.
4. Contract with waste management company, if any, for applicable items.
Principle 14: Best Practices for Infection Control, Pandemic Control, Health Activities Space

6 points

**Aim:** Implement best practices for infection and pandemic control along with provision of health activities.

**Requirements:**

1. Implement Infection Control Strategies in the project space **(2 points)**
2. Implement pandemic control strategies in the project space **(2 points)**
3. Make provision for health activities **(2 points)**

**Calculations and Methodology:**

1. Identify the strategies for infection control, pandemic control, and health activities related to the project type and space
2. Insert it into the health protocols and policies being adapted in the project areas.

**Documents to be submitted:**

2. Project photographs showing the installation of systems if any, along with related provisions for the employees.
3. Survey form template for the employee’s periodic feedback regarding the implementation and strict adherence of the policies.
Principle 15: Best Practices for Dust, Pest, Microbe, Humidity, Mold and Rust Control

10 points

**Aim:** Implement strategies to reduce dust, pest, microbe, humidity, mold and rust in the interior spaces of the project space

**Requirements:**

*Provide provisions for:*

1. Dust Control *(2 points)*
2. Pest Control *(2 points)*
3. Microbe Control *(2 points)*
4. Humidity Control *(2 points)*
5. Mold Control *(2 points)*
6. Rust Control *(2 points)*

**Calculations and Methodology:**

In the current scenario and for future, it’s essential to create an ambient inside the interior of the project space to create certain control strategies and implement it, for a long-term health benefit and hassle-free working of the employees. Identify the related control strategies by periodic awareness, testing, cleaning, housekeeping, and pest control etc. as relevant to the workspace.

**Documents to be submitted:**

1. Project narrative explaining the controls that are being adapted along with the procedures, required set up, awareness programme, policies, and implementation.
2. Frequency of the control strategies
3. Contract of testing/remedy agencies (for example pest control), for applicable criteria.
**Principle 16: Reduced Exposure to VOC and Chemicals**

**Aim:** Limiting VOC content in interior paints, adhesives, sealants coatings and housekeeping chemicals to protect indoor air quality and occupational health.

**Requirements:**

1. Specify and use low-emitting or non-emitting products that will significantly reduce the strength of VOC exposure to indoors.

2. Architectural paints and coatings must not exceed the following limits. *(1 point)*

<table>
<thead>
<tr>
<th>Paints and Coatings</th>
<th>VOC limit gm/lit less water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat (Mat) paints</td>
<td>50</td>
</tr>
<tr>
<td>Non-flat (Glossy) paints</td>
<td>150</td>
</tr>
<tr>
<td>Varnish</td>
<td>350</td>
</tr>
</tbody>
</table>

3. Adhesives and sealants must not exceed the following limits. *(1 point)*

<table>
<thead>
<tr>
<th>Adhesives</th>
<th>VOC limit gm/lit less water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood flooring</td>
<td>100</td>
</tr>
<tr>
<td>Carpet</td>
<td>50</td>
</tr>
<tr>
<td>Glazing</td>
<td>100</td>
</tr>
<tr>
<td>Wood</td>
<td>30</td>
</tr>
<tr>
<td>HVAC duct insulation</td>
<td>850</td>
</tr>
<tr>
<td>Tile</td>
<td>65</td>
</tr>
</tbody>
</table>

4. Anti-corrosive and anti rust paints must not exceed the following limits. *(1 point)*

<table>
<thead>
<tr>
<th>Material Description</th>
<th>VOC limit gm/lit less water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-corrosive/Anti-rust paints</td>
<td>250</td>
</tr>
</tbody>
</table>
5. Use of Environmentally Friendly Housekeeping chemicals. (1 point)

**Calculations and Methodology:**

Paints, coatings and adhesives are significant contributors to indoor air pollution. Many of these products contain volatile organic compounds (VOCs) that can have health effects. Exposure to VOCs can cause acute reactions, such as eye, nose, and throat irritation to chronic health problems such as asthma, chronic obstructive pulmonary disease, and cancer. Higher concentrations of VOCs are typically found indoors because of reduced air ventilation and various other sources of VOCs.

This Principle limits VOC for on-site wet-applied products to avoid environmental damage and protect the people who apply these products or are exposed to them during installation. This Principle covers architectural paints, coatings and adhesives that are applied on-site to indoor surfaces and finishes.

Increase ventilation when using products that emit VOCs, meet or exceed any label precautions and do not store opened containers of unused paints and similar materials to reduce exposure to VOCs.

The chemicals used for housekeeping play a significant role in the exposure of long term harmful effects. It’s always suggested to play environmentally friendly chemicals for cleaning, washing and mopping up of the floor, tiles, kitchen, toilets and areas covered inside the project space.

**Documents to be submitted:**

1. Area of application of each low-emitting and non-emitting product used
2. Trade catalogue/brochure/test certificate/Material Safety Data Sheets of each such product used
3. Copy of purchase bills/invoices of each such product used
4. Area of application of chemicals for housekeeping purpose
5. List of green chemicals being used in the project with MSDS/catalogues.
6. Copy of purchase bills/invoices of housekeeping chemicals
**Principle 17: No Use of Halogenated Hydrocarbons**

1 point

**Aim:** Reduction in the emission of Halogenated Hydrocarbons (CFC, HCFC and Halons) to reduce the depletion of Ozone layer.

**Requirements:**

1. Use Chlorofluorocarbon (CFC) free HVAC and refrigeration systems in the project *(essential)*

2. Fire extinguishers and suppression systems installed in the project must be free from halons *(essential)*

3. Use Hydro chlorofluorocarbon (HCFC) free HVAC and refrigeration systems in the project *(1 point)*

**Calculations and Methodology:**

Emissions of halogenated hydrocarbons substances such as CFCs, HCFCs and halons lead to ozone layer depletion. Such substances are found in refrigerants also. All these ozone depleting substances remain stable in the lower atmospheric region, but as they reach the stratosphere, they get exposed to the ultra violet rays. This leads to their breakdown and releasing of free chlorine atoms which reacts with the ozone gas, thus leading to the depletion of the ozone layer.

For owner occupied spaces – Project owner shall follow above Principle requirements.

**For tenant occupied space:**

a. If HVAC, Refrigeration, Fire extinguishers and suppression systems are installed by project owner - Project owner shall follow above Principle requirements.

b. If HVAC, Refrigeration, Fire extinguishers and suppression systems are not installed by project owner – Provide copies of tenant agreements confirming that the systems proposed to be installed in the tenant spaces must comply with the above Principle requirements.
For residential projects:

a. If HVAC, Refrigeration, Fire extinguishers and suppression systems are installed by project owner - Project owner shall follow above Principle requirements.

b. If HVAC, Refrigeration, Fire extinguishers and suppression systems are not installed by project owner – Provide copies of tenant guidelines confirming that the systems proposed to be installed in the tenant spaces must comply with the above Principle requirements.

Documents to be submitted:

1. Trade catalogue or brochure of Fire extinguishers and suppression systems, HVAC and refrigeration systems

2. Purchase bills/invoices of Fire extinguishers and suppression systems, HVAC and refrigeration systems

3. Site photographs confirming the installation of CFCs, HCFCs and halons free Fire extinguishers and suppression systems, HVAC and refrigeration systems

4. Copies of tenant guidelines/agreements
**Principle 18: Sustainable Development of Construction Engineering - Project Space**

12 points

**Aim:** Utilization of alternatives of basic materials being used in construction industry to conserve the precious natural resources and prevent valuable recyclable materials going to landfills as waste.

**Requirements:**

1. Use façade glass, door and window glass with recycled content of more than 15% (2 points)

2. Use interior partition and ready-made paneling, consisting of recycled content (2 points)

3. Use false ceiling, gypsum boards and alternative products that consists of recycled content (3 points)

4. Use of recyclable paints and coatings or such products containing recycled content. (1 point)

5. Use plastering material during the alteration or maintenance works, (in the project scope directly or indirectly) that contains recycled content (1 point)

6. Use flooring tiles and other materials, that contains recycled content (3 points)

**Calculations and Methodology:**

Recycling is very important for sustainable development of construction industry as it reduces the demand for virgin materials and diverts valuable wastes going to landfills.

Concrete, bricks, cement, glass and tiles constitute a major portion of building construction materials bill of quantity (civil BOQ). Hence, attempt to use those materials with recycled contents as far as possible, avoid use of virgin materials and prevent useful materials going to landfills.
All calculations for this Principle will be done on the basis of quantities (either weight, volume, counts etc. as applicable) of the materials used in the project, not on the costs.

**Documents to be submitted:**

1. Building construction materials BOQ with total quantities of above materials (glass, panels, tiles etc.)
2. Owner declaration confirming the total quantities of above materials (glass, panels, tiles etc.)
3. Trade catalogue/brochure/manufacturer letter confirming the recycled content percentage in the product as applicable.
4. Copy of purchase bills/invoices of respective building construction materials
Principle 19: Local Sourcing of Construction Materials

6 points

Aim: Utilize locally available building construction materials manufacturers/suppliers for buying materials to reduce environmental pollution and transportation cost.

Requirements:

1. Use locally sourced (excavated and/or manufactured) sand, stones, aggregates, bricks, paver blocks and concrete as applicable. Source distance from project site should not be more than 250 km. (2 points)

2. Use locally sourced (excavated and/or manufactured) cement, glass, wood products and tiles as applicable. Source distance from project site should not be more than 550 km. (2 points)

3. Use locally sourced (excavated and/or manufactured) metallic components (all types) as applicable. Source distance from project site should not be more than 850 km. (2 points)

Note: Distance mentioned above is not the radial distance. It can be pedestrian, rail or road distance.

Calculations and Methodology:

Local sourcing is finding the closet available manufacturers and suppliers of building construction materials as applicable and using them. It is recommended to source as much of the construction materials as possible from the local region to reduce the environmental pollution and transportation cost.

Main benefit of local sourcing of materials is the reduced environmental impact due to shorter distance travelled by the materials.

Local sourcing is most effective with simple materials such as sand, stones, aggregates, bricks, cement, wood products, paver blocks and concrete as there are often several suppliers/manufacturers within a regional area. However with more complicated
materials, this strategy may not work as there may be very few suppliers/manufacturers of such materials.

All calculations will be done on the quantities and not on the costs.

**Documents to be submitted:**

1. Building construction materials BOQ with total quantities of above materials
2. Owner declaration confirming the total quantities of above materials
3. Manufacturer letter confirming the local sourcing of above materials
4. Copy of purchase bills/invoices of respective building construction materials
Principle 20: Green Furniture, Wood and Wood Chemicals

10 points

Aim: Do not use hardwood and softwood in the project in order to save trees and our mother earth.

Requirements:

1. Use rapidly renewable materials in the project that constitute at least 10% of total cost of wood or wood products used in the project. The rapidly renewable materials include but not limited to linseed, straw, cotton, wheat, natural rubber, bamboo and cork. (3 points)

2. Engineered wood products should be free from urea formaldehyde resin (2 points)

3. Do not use hardwood and softwood in the project in door frames, doors and furniture applications. (3 points)

4. Use engineered wood products such as Medium density fiberboard (MDF), Low density fiberboard (LDF), plantation wood and Plywood for making door frames, doors and furniture as applicable (2 points)

Calculations and Methodology:

Particleboard, low density fiberboard (LDF) and chipboard are manufactured from wood chips; sawmill shavings or sawdust and a resin or binder.

Medium density fiberboard (MDF) is made by breaking down hardwood and softwood residuals into wood fibers, combing it with resin or binder. Panels are formed by applying high temperature and pressure.

Use rapidly renewable materials instead of the products made from fossil-fuel derivatives. Rapidly renewable materials include linseed, straw, cotton, wheat, natural rubber, bamboo and cork. The products from rapidly renewable materials can be linoleum, straw bales, cotton batt insulation, wheat board panels, bamboo cabinetry and cork flooring etc.
Documents to be submitted:

1. Building civil construction materials bill of quantity (BOQ) to ensure that the hardwood and softwood are not used anywhere in the project.

2. Products catalogue or brochure of engineered wood products used in the project

3. Copy of purchase bills/invoices of engineered wood products used in the project

10 points

Aim: Implement energy management best practices in the project to achieve energy savings.

Requirements:

1. Essential (5 points)

   a. Section 6.3
      i. Lighting power density (LPD) (W/m2) (3 points)
         a. Interior common area: 5.5
         b. Residential units interior spaces: 6
      ii. HVAC equipment (3 points)
         a. All unitary and split AC systems – BEE 5 star rated
         b. All other HVAC equipment types – refer ECBC 2017
      iii. Efficient Equipment and Appliances (2 points)
         a. BEE 3 star rated or more/Equivalent

2. Imperishable Energy Resource, consumed by the project space (2 points)

Calculations and Methodology:

1. Identify all the types of Lighting, HVAC equipments, systems, appliances and energy source into the project space

2. List down the LPD of lighting, and efficiency or ratings of equipments

3. List down the appliances with ratings, if applicable.
Documents to be submitted:

1. Lighting and HVAC schedule, if available. Or else list of designed/already installed lighting densities and equipment efficiencies

2. Lighting power density calculations

3. HVAC floor plans with HVAC equipment details (as applicable)

4. Trade catalogue/brochure of lighting fixtures, HVAC equipment, equipments and appliances, renewable energy systems installed in the project

5. Copy of purchase bills/invoices of lighting fixtures, HVAC equipment, equipments and appliances, renewable energy systems installed in the project
Principle 22: Optimal Use of Natural Light

6 points

**Aim:** Optimal utilization of natural light to reduce the reliance on artificial lighting and saving lighting energy.

**Requirements:**

Ensure that the project meets ECBC 2017 Daylighting requirements as per Chapter 4 Building Envelope, Section 4.2.3 Daylighting. There are two approaches that can be followed to meet the Principle compliance:

1. **Simulation approach:**
   - I. Ensure through computer simulation that at least 40% area of any occupied space comply with the daylighting requirements listed in ECBC 2017, Chapter 4, Section 4.2.3.1 (**essential**)
   - II. Ensure through computer simulation that at least 60% area of any occupied space comply with the daylighting requirements listed in ECBC 2017, Chapter 4, Section 4.2.3.1 (**2 points**)
   - III. Ensure through computer simulation that at least 80% area of any occupied space comply with the daylighting requirements listed in ECBC 2017, Chapter 4, Section 4.2.3.1 (**4 points**)

OR

2. **Manual approach:**
   - I. Ensure that at least 40% area of any occupied space comply with the daylighting requirements listed in ECBC 2017, Chapter 4, Section 4.2.3.2 (**essential**)
   - II. Ensure that at least 60% area of any occupied space comply with the daylighting requirements listed in ECBC 2017, Chapter 4, Section 4.2.3.2 (**2 points**)
   - III. Ensure that at least 80% area of any occupied space comply with the daylighting requirements listed in ECBC 2017, Chapter 4, Section 4.2.3.2 (**4 points**)
AND

3. Daylight/occupancy sensors on lighting

Office spaces, common areas such as corridors, reception, canteen, etc as applicable and integrate it with the artificial lighting. (2 points)

**Calculations and Methodology:**

For the purpose of daylight design, only sky illumination shall be considered as contributing to illumination of the building interiors. Direct solar illuminance shall not be considered. Openings shall be provided with overhangs, shades, balcony, louvre system or other shading devices to reduce direct sunlight entering the room as far as possible.

Overhangs, shades, balcony, louvre system, etc, reduce the effective height of opening. Wide and low height openings are easier to shade against sunlight entry. Direct sunlight increases the inside illuminance.

Window design should be done very carefully as good window design can be the significant way of saving lighting energy by reducing the dependency on artificial lighting. Window orientation, occupancy patterns, task and position of windows with respect to surrounding buildings and other obstruction should be considered.

Space environment should be designed to avoid glare and it should be possible to adjust both natural and artificial light. Glare results from excessive contrast of illumination or from an excess of illumination in the field of view. Glare can be reduced by overhangs, shades, balcony or louvre system. Internal screening can also be provided by louvres or blinds.

Suitably designed interior layout and/or re-orientation of glazing to avoid entry of direct solar radiation can be done to eliminate glare.

Glare can be reduced or eliminated by installation of windows in more than one wall to increase the background lux levels. Lower the sill height of windows to allow increased illumination to enter in the space which increases the adaptation level.

Diffusing glazing should be used properly within the normal field of view as it can cause direct incident solar beam to be scattered diffusely. It can cause uncomfortable high brightness.
Documents to be submitted:

1. All architectural floor plans, elevations, sections
2. Window door schedules with opening details
3. Daylight simulation output report and/or manual calculation to confirm the above requirements
4. Trade catalogue/brochure of glazing installed at space
5. Copy of purchase bills/invoices of glazing installed at space
6. Project space photographs of building elevations, external windows and doors
Principle 23: Healthy Indoor Air Quality – Fresh Air

6 points

**Aim:** Ensure minimum delivery and quality of outdoor fresh air supplied into the indoor spaces for ventilation.

**Requirements:**

Mechanical Ventilation System and Residential projects where centralized chilled water system is installed:

1. Ensure that all occupied spaces in the building comply with the minimum requirements set out in ASHRAE 62.1:2010 using the ventilation rate procedure. If a local code is applicable and is more stringent, the same will be applicable. (2 points)

2. Install permanent carbon dioxide (CO$_2$) monitoring and alarm systems to ensure the adequate supply of outside fresh air at all times. CO$_2$ sensor can be installed at the return air duct/path. CO$_2$ level should not exceed 900 ppm. (3 points)

3. Install UV system to treat supply air to the regularly occupied spaces. (1 point)

Natural Ventilation and when Mechanical Ventilation is not operational during occupied time:

1. The openable area of operable wall openings must be at least 8% of the net occupiable floor area. For kitchen, this can be 4%. (essential)

**Calculations and Methodology:**

Ventilation rate procedure is described in ASHRAE 62.1:2010.

For owner occupied spaces – Project owner shall follow above Principle requirements.

For tenant occupied space –

a. If HVAC systems are installed by project owner - Project owner shall follow above Principle requirements.
b. If HVAC systems are not installed by project owner – Provide copies of tenant agreements confirming that the systems proposed to be installed in the tenant spaces must comply with the above Principle requirements.

**Documents to be submitted:**

1. Calculations of fresh air ventilation rates based on the ventilation rate procedure for all mechanically ventilated occupied spaces.

2. Calculations of fresh air ventilation as per natural ventilation system described above.

3. HVAC and fresh air system third party commissioning verification results demonstrating compliance with minimum fresh air ventilation rate requirements. The third party must not be directly or indirectly associated with the HVAC and fresh air system design.

4. Trade Catalogues/MSDS of the UV system

5. Floor Plan and Section showing the location of the UV system.
Principle 24: Training and Capacity Building of Project Team

Aim: Encourage the project team and facility management team to create awareness about green rating program, energy and water efficiency measures implemented in the project on a continuous basis.

Requirements:

Design and implement a detailed training and capacity building program to encourage and aware the project team and facility management team regarding the green rating program, energy and water efficiency strategies implemented in the project on a continuous basis.

Training and capacity building program must be designed and conducted for following three phases of the project:

1. Construction phase (if in project scope)
2. Interior Design phase
3. Post-occupancy phase

Calculations and Methodology:

Training and capacity building program must be conducted for the developers, contractor, architect, interior designer, mechanical, electrical, plumbing, landscape and BMS design teams, post-occupancy facility management teams involved in the project as applicable.

Documents to be submitted:

1. Detailed training and capacity building program along with training materials for all four phases of the project
2. Duly signed attendance sheet of all participants along with the name, contact number, email ID, roles and responsibilities and designation
3. Photographs of the training sessions conducted
Principle 25: Use of Indigenous Material, Talent and Craftsmanship

3 points

**Aim:** Encourage the project team and facility management team to create awareness about using indigenous material, talents and craftsmanship inside the project space

**Requirements:**

1. Use of indigenous material in the interior decoration *(1 point)*
2. Local talents encouragement through use of textiles, handicraft, weaving and similar items *(1 point)*
3. Encouragement of craftsmanship and artists by integrating it in the decoration *(1 point)*

**Calculations and Methodology:**

It is essential to make the space, a part of the local surroundings and being sensitive to the artists, craftsmanship and indigenous material, for a contribution to the holistic sustainability inside the interior of the place.

**Documents to be submitted:**

1. Project Narrative, and photographs, after installation of the decorative materials, demonstrating compliance for requirement(s).
**Principle 26: Synchronization with UNSDG-30**

1 point

Aim: Encourage the organization to take social, cultural and environmental responsibilities for positive environmental change and social welfare of the community.

**Requirements:**

Perform one or more of the following activities as per the applicability and suitability to the organization or individual spaces, as much as possible:

1. Eradicating hunger, poverty and malnutrition, promoting preventive health care and sanitation and making available safe drinking water to the community

2. Promoting education, including special education and employment enhancing vocation skills especially among children, women, elderly and differently abled and livelihood enhancement projects

3. Promoting gender equality, empowering women, setting up homes and hostels for women and orphans; setting up old age homes, daycare centers and such other facilities for senior citizens and measures for reducing inequalities faced by socially and economically backward

4. Ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agro forestry, conservation of natural resources and maintaining quality of soil, air and water

5. Protection of national heritage, art and culture including restoration of buildings and sites of historical importance and works of art; setting up public libraries; promotion and development of traditional art and handicrafts

6. Measures for the benefit of armed forces veterans, war widows and their dependents

7. Training to promote rural sports, nationally recognized sports, Paralympics sports and Olympic sports

8. Contributions or funds provided to technology incubators located within academic institutions which are approved by the Central Government
9. Rural development projects

10. Slum area development

11. PM National Relief Fund/National Defence Fund/Chief Minister Relief Fund

**Calculations and Methodology:**

Corporate social responsibility can involve incurring short-term costs that do not provide an immediate financial benefit to the company, but instead promote positive social and environmental change.

Contribute to the Prime Minister’s National Relief Fund or any other fund set up by the Central / State Government for socio-economic development and relief and welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities, and women.

For individual interior spaces, any kind of contribution towards environment or social clauses as mentioned above, is one step ahead in terms awareness and hence, it can be considered as an act of individual CSR.

**Documents to be submitted:**

1. Supporting evidential proof of implementation of above measures
Principle 27: Going the Extra Miles

3 points

Aim: Encouragement for showing spectacular performance towards Eco-friendly and Sustainable development in the project and going the extra miles.

Requirements:
1. Going the Extra Miles (GEM) points 1 to 3 – (3 points)
2. A GEM Certified Professional (GEM CP) should be involved in the process. (1 point)
   OR
   Involve two or more GEM Certified Professionals in the sustainability certification process of the project (2 points)

Calculations and Methodology:
Recommended strategies (including but not limited to) for Going the Extra Miles (GEM) points –
1. Green wall/vertical garden/hydroponic gardens
2. Implement strategies in the project space to save paper (post occupancy)
3. Project team can participate in any of the Government’s National Programs or Missions such as Build Toilets in Rural or needy areas, Adopt and maintain a street or village or colony for cleanliness
4. Install major energy and water meters on BMS for monitoring and necessary corrective actions
5. Install CFC free HVAC insulation materials in the project

Documents to be submitted:
1. Supporting evidential proof of implementation of Going the Extra Miles (GEM) strategies in the project
2. Copy of GEM CP certificate of the concerned person(s) involved in the green certification process
# GEM Rating – Illustrative Score Card for all Rating Levels

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Principles</th>
<th>Description</th>
<th>Maximum Points</th>
<th>GEM 3</th>
<th>GEM 4</th>
<th>GEM 5</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Principle 1</td>
<td>Legal Approvals - Project Space</td>
<td>E</td>
<td>Essential</td>
<td>Essential</td>
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<td>2</td>
<td>Principle 2</td>
<td>Fire and Life Safety in the Interior Space</td>
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<td>Principle 3</td>
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<td>4</td>
<td>Principle 4</td>
<td>Suitable Ergonomics in design</td>
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<td>5</td>
<td>Principle 5</td>
<td>Uniform Airflow and Daylight Distribution</td>
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<td>6</td>
<td>Principle 6</td>
<td>Benefits of the Building/Campus Sustainability</td>
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<td>7</td>
<td>Principle 7</td>
<td>Best Practices for Nature Friendly Features (Biophilia)</td>
<td>6</td>
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<td>8</td>
<td>Principle 8</td>
<td>Occupancy Limit - per (space or area or floor level)</td>
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<td>Principle 9</td>
<td>Best Practices for Interior and Exterior Noise Reduction</td>
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<td>Principle 10</td>
<td>Best practices for water conservation (potable and non-potable)</td>
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<td>11</td>
<td>Principle 11</td>
<td>Best practices for water quality testing (potable &amp; non-potable)</td>
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<td>Principle 12</td>
<td>Measurement of Energy and Water Consumption - sub metering for project space</td>
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<td>Principle 13</td>
<td>Post-occupancy Waste Management (including O &amp; M)</td>
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<td>14</td>
<td>Principle 14</td>
<td>Best Practices for infection control/ pandemic control/health activities space</td>
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<td>Principle</td>
<td>Description</td>
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<td>Principle 15 Best practices for dust, pest, microbe, humidity, mold and rust control</td>
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<td>Principle 16 Reduced Exposure to VOC and Wood Chemicals</td>
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<td>Principle 18 Sustainable Development of Construction Engineering - Project Space</td>
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<td>Principle 19 Local Sourcing of Construction Materials</td>
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<td>20</td>
<td>Principle 20 Green furniture, wood and chemicals</td>
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<td>Principle 21 Energy Management Best Practices</td>
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<td>10</td>
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<td>Principle 22 Optimal Use of Natural Light</td>
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<td>Principle 23 Healthy Indoor Air Quality - Fresh air</td>
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<td>Principle 24 Training and Capacity Building of Project Team</td>
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<td>Principle 25 Use of indigenous material, talent and craftsmanship</td>
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<td>Principle 26 Synchronisation with UNSDG 30</td>
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<td><strong>TOTAL POINTS</strong></td>
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<td>135</td>
<td>82</td>
<td>91</td>
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</table>
1. **Albedo** = Albedo is a measure of how much radiation that hits a surface is reflected without being absorbed.

2. **Black water** = Waste water and sewage from toilets

3. **CFC** = Chlorofluorocarbons

4. **CPCB** = Central Pollution Control Board

5. **ECBC** = Energy Conservation Building Code

6. Erosion of soil is a process by which soil is loosened, worn away and transferred by wind or water.

7. **Grey water** = Waste water from baths, wash basins, kitchen sinks and other kitchen appliances and washing machines

8. **HCFC** = Hydrochlorofluorocarbons

9. **HVAC** = Heating Ventilation and Air Conditioning

10. **LPF** = Liters per Flush; **LPM** = Liters per Minute

11. **NBC** = National Building Code of India

12. **SLD** = Single Line Diagram

13. **SPCB** = State Pollution Control Board

14. **VOC** = Volatile Organic Compound
ABOUT ASSOCHAM
THE KNOWLEDGE ARCHITECT OF CORPORATE INDIA

EVOLUTION OF VALUE CREATOR

ASSOCHAM initiated its endeavour of value creation for Indian industry in 1920. Having in its fold more than 400 Chambers and Trade Associations, and serving more than 4,50,000 members from all over India. It has witnessed upswings as well as upheavals of Indian Economy, and contributed significantly by playing a catalytic role in shaping up the Trade, Commerce and Industrial environment of the country.

Today, ASSOCHAM has emerged as the fountainhead of Knowledge for Indian industry, which is all set to redefine the dynamics of growth and development in the technology driven cyber age of ‘Knowledge Based Economy’.

ASSOCHAM is seen as a forceful, proactive, forward looking institution equipping itself to meet the aspirations of corporate India in the new world of business. ASSOCHAM is working towards creating a conducive environment of India business to compete globally.

ASSOCHAM derives its strength from its Promoter Chambers and other Industry/Regional Chambers/Associations spread all over the country.

VISION

Empower Indian enterprise by inculcating knowledge that will be the catalyst of growth in the barrierless technology driven global market and help them upscale, align and emerge as formidable player in respective business segments.

MISSION

As a representative organ of Corporate India, ASSOCHAM articulates the genuine, legitimate needs and interests of its members. Its mission is to impact the policy and legislative environment so as to foster balanced economic, industrial and social development. We believe education, IT, BT, Health, Corporate Social responsibility and environment to be the critical success factors.

MEMBERS – OUR STRENGTH

ASSOCHAM represents the interests of more than 4,50,000 direct and indirect members across the country. Through its heterogeneous membership, ASSOCHAM combines the entrepreneurial spirit and business acumen of owners with management skills and expertise of professionals to set itself apart as a Chamber with a difference.
Currently, ASSOCHAM has more than 100 National Councils covering the entire gamut of economic activities in India. It has been especially acknowledged as a significant voice of Indian industry in the field of Aerospace and Defence, Auto and Auto Ancillaries, Corporate Social Responsibility, Environment & Safety, HR & Labour Affairs, Corporate Governance, Information Technology, Luxury and Lifestyle, Biotechnology, Telecom, Banking & Finance, Company Law, Corporate Finance, Economic and International Affairs, Mergers & Acquisitions, Tourism, Civil Aviation, Infrastructure, Energy & Power, Education, Legal Reforms, Real Estate and Rural Development, Competency Building & Skill Development to mention a few.

**INSIGHT INTO ‘NEW BUSINESS MODELS’**

ASSOCHAM has been a significant contributory factor in the emergence of new-age Indian Corporates, characterized by a new mindset and global ambition for dominating the international business. The Chamber has addressed itself to the key areas like India as Investment Destination, Achieving International Competitiveness, Promoting International Trade, Corporate Strategies for Enhancing Stakeholders Value, Government Policies in sustaining India’s Development, Infrastructure Development for enhancing India’s Competitiveness, Building Indian MNCs, Role of Financial Sector the Catalyst for India’s Transformation.

ASSOCHAM derives its strengths from the following Promoter Chambers: Bombay Chamber of Commerce & Industry, Mumbai; Cochin Chambers of Commerce & Industry, Cochin; Indian Merchant’s Chamber, Mumbai; The Madras Chamber of Commerce and Industry, Chennai; PHD Chamber of Commerce and Industry, New Delhi.

Together, we can make a significant difference to the burden that our nation carries and bring in a bright, new tomorrow for our nation.

*Deepak Sood*
Secretary General, ASSOCHAM
sg@assocham.com

**THE ASSOCIATED CHAMBERS OF COMMERCE AND INDUSTRY OF INDIA**

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