

GEM SUSTAINABILITY CERTIFICATION PROGRAM

**Green and Eco-friendly
Movement (GEM)**





Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for GEM & Mr. Dipen Mehta, Member, ASSOCHAM GEM Gujarat Chapter welcoming Shri Saurabh Patel, Hon'ble Minister, Energy and Petrochemicals, Government of Gujarat



Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for GEM & Mr. Dipen Mehta, Member, ASSOCHAM GEM Gujarat Chapter welcoming Shri Saurabh Patel, Hon'ble Minister, Energy and Petrochemicals, Government of Gujarat



Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for GEM welcoming Prof. Ashutosh Sharma, Secretary, Ministry of Science and Technology, Govt. of India



Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for GEM welcoming Dr. K. L. Jain, Honorary Secretary General, RCCI, Jaipur

INTRODUCTION

Sustainable buildings are playing a critical role in the development of many emerging economies. India's sustainable building market is estimated to double by 2022 at 10 billion sqft, valuing around USD 35-50 billion, driven by increasing awareness level, environmental benefits and government support.

India has emerged as one of the leading countries in terms of sustainable building projects and ranks only second after US in terms of number of green projects and built-up area. Sustainability movement was started in India more than a decade back. Still, there are only about 5% of total buildings in India are "Green", and hence there is huge potential for further penetration of sustainable building design. Growing at an exponential rate, the Indian green building market is expected to double and may reach around 10 billion sq ft by 2022.

Sustainable buildings can improve the environment's ecology in numerous ways. It can reduce the energy consumption by 20-30%, water usage by 30-50% and significantly reduce waste generation by recycling and reusing. Sustainable buildings may cost higher by up to 5-8% than the conventional buildings. Still, the long-term benefits such as low operating costs along with potential health benefits for the occupiers make it a viable option.

GEM SUSTAINABILITY CERTIFICATION PROGRAM

ASSOCHAM has launched the "GEM Sustainability (Green) Certification Program" with the objective to promote environment friendly green building design and construction. GEM Sustainability Certification Rating Program is based upon BEE ECBC 2017 and NBC 2016. Through this initiative, ASSOCHAM has started awarding the Sustainability Certification Rating to Housing, Commercial Offices, Hotels, Colleges, Universities, Schools and Factory buildings and related developments. All existing, under construction or upcoming projects can register for this certification rating program.

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 building architectural and elevation design, materials used during construction, HVAC, lighting and plumbing system designs, water and energy consumption of the building.

To achieve a GEM Sustainability Certification Rating, all Essential Principle 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 Residential, Commercial and Industrial buildings and developments. 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.



ASSOCHAM Past Secretary General Sh. D. S. Rawat presenting the ASSOCHAM GEM Sustainability Certification Reference guide to Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology, Earth Sciences and Environment, Forest & Climate Change, Government of India



ASSOCHAM Past Secretary General Shri D. S. Rawat explaining about ASSOCHAM's initiative GEM Sustainability Certification Program to Shri Hardeep Singh Puri, Hon'ble Minister of State (Independent Charge) for Housing and Urban Affairs, Government of India

S. No.	Points Scored	GEM Levels	GEM
1.	All essential requirements and 40 - 49 points	GEM 1	
2.	All essential requirements and 50 - 64 points	GEM 2	
3.	All essential requirements and 65 - 84 points	GEM 3	
4.	All essential requirements and 85 - 104 points	GEM 4	
5.	All essential requirements and 105 points or above	GEM 5	



Launching ASSOCHAM GEM Existing Building Reference Guide (L to R) Dr. Jyotirmay Mathur, Professor-MNIT Jaipur, Ar. Nichal Jain, Co-Chairman Rajasthan Chapter, Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for GEM, Dr. K. L. Jain Honorary Secretary General, Rajasthan Chamber of Commerce and Industry, Ar. Tushar Sogani, Chairman Rajasthan Chapter, Ms. Kshama Jain, Managing Director-KeHeMs Technologies Pvt. Ltd.



ASSOCHAM is doing a great job by launching the GEM Sustainability Certification program and bringing together all the stakeholders on one platform. The Green and Eco-Friendly Movement (GEM) needs to grow and cover the whole country.

Professor Ashutosh Sharma
Secretary
Ministry of Science and Technology,
Government of India



Less than 5% of buildings in India are Green Certified till date. 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 obviously put a lot of strain on our natural resources. Green and Eco-Friendly Movement (GEM) is a great opportunity to create awareness about sustainable development and ASSOCHAM being the apex chamber can do it in a most efficient way.

Pankaj R. Dharkar
Chairman
National Council for Green & Eco-friendly
Movement (CGEM)



Recent study shows that only 5% of the buildings in India are Green because of lack of expertise and funding. Many non-government agencies are working towards this and providing the Certification. Center and State Governments are also supporting the mission. However, there is lots of scope of improvements and the way of executing the process. ASSOCHAM is recognised as the face of Indian Industries and being the oldest chamber they can fulfill this gap.

Dr. K. L. Jain
Honorary Secretary General
RCCI, Jaipur



Environmental damage is the underlying cause of natural disasters, but these can be averted by following safety protocols. FSAI congratulates ASSOCHAM on the launch of the GEM Sustainability Certification Program. FSAI and ASSOCHAM will work together to raise the awareness about environment and life safety.

Dominic K. P.
National President
Fire & Security Association of India
(FSAI)



We need to bring down the energy consumption of the buildings. We must try to find efficient ways to create a better condition of the occupants and this in turn, will make the people more efficient. ASSOCHAM with its numerous representatives is well placed to reach out to the masses and promote green buildings in India in more effective ways. ISHRAE has joined hands with ASSOCHAM for this pious cause.

C. Subramaniam
Past President
Indian Society for Heating Refrigeration
and Air Conditioning Engineers
(ISHRAE)



India is undergoing through a construction boom, but this must not be at the cost of the environment. By launching the GEM Sustainability Certification Program, ASSOCHAM is creating a platform for all the stakeholders where they can come and join hands in making our earth worth living. We are sure that ASSOCHAM will run the programme in the most efficient way and will regularly observe the trends of building construction industry in the country.

Vishal Kapur
Past President
Indian Society for Heating Refrigeration
and Air Conditioning Engineers (ISHRAE)



IAQA, India Chapter congratulates ASSOCHAM for this noble cause. GEM sustainability Certification Program helps in designing the buildings with good indoor air quality and this in turn will enhance the occupant's comfort and productivity. IAQA, India Chapter has signed MoU with ASSOCHAM to promote the common intents of both the organizations among the masses.

Richie Mittal
Managing Director
Overdrive Engineering Pvt. Ltd.
Director, Indoor Air Quality Association
India Chapter, (IAQA)



60% of India is yet to be constructed and this must be constructed in a Green and Sustainable way. Buildings are made for at least 70-80 years. So, best construction practices must be followed while designing, constructing and operating the buildings. We being the designers must follow the Green Building Norms to design a building. I am sure that ASSOCHAM GEM program will fulfill this demand.

Ar. Tushar Sogani
TSDPL Jaipur
Chairman
ASSOCHAM GEM
Rajasthan Chapter



Green and Eco-friendly building design is the combined efforts of Architects, Sustainability and Design Engineers and Contractors. Buildings should not only be designed and constructed as Sustainable but also be maintained and operated efficiently. This has been covered in the GEM program and I congratulate ASSOCHAM for the same.

Ar. Surinder Bahga
Saakaar Foundation Chandigarh
Chairman
ASSOCHAM GEM
Punjab Chapter



GEM Sustainability Certification propagated by ASSOCHAM has been re-envisioned to adopt our ancient heritage as well as tested systems and humanistic approach where the human settlements are for humans to live. GEM looks upon the physical planning, solar movement, wind usages, water conservation, passive technologies to air cooling and warming creating beyond net-zero habitats are the major strategies of design which shall be a trendsetter in infrastructure for Indian sustainable smart habitats.

Ar. Anand Tatu

CEO, M/s Anand Tatu, Ahmedabad
Chairman, ASSOCHAM GEM
Gujarat Chapter



I am sure that ASSOCHAM with the support of more than 250 regional Chambers and over 4.5 lac large, medium & small scale sectors companies and over 70 National Councils will take up the GEM Sustainability Movement to a new high and contribute in its responsibility to Care for the Mother Earth.

Ar. Vijay Garg

Programme and Education Chair
National Council for GEM
Past President
Council of Architecture



With 'Green and Eco-Friendly Movement (GEM)' ASSOCHAM is now in the process of opening for various options and suggestions such that we create a new India and our new agenda 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. I am sure that ASSOCHAM being the Apex and Oldest Industrial Chamber of India can do it in a most efficient way. Wish all the best to the entire team for the noble cause.

Prof. Charanjit Singh Shah

Founder Principal, Creative Group
Senior Advisor, National Council for GEM

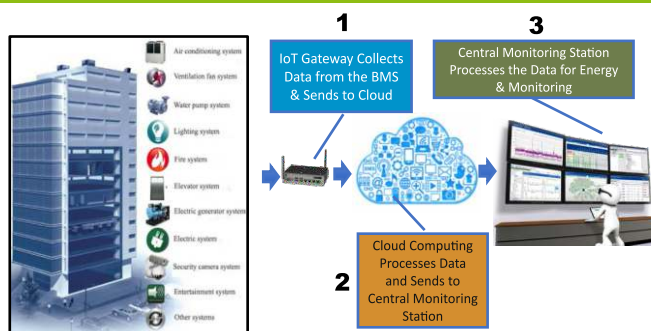
GEM Sustainability Monitoring Platform

GEM Sustainability Monitoring Platform Costs

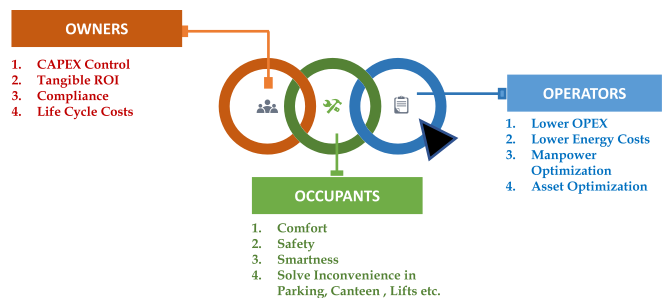
If the Data is Already Available from the Existing BMS, all you need to do is install an IoT Gateway to Collect and Transfer the Data to the ASSOCHAM GEM Cloud. In the Event the Data is not Available, we could recommend partners who can Install these Sensors like Energy Meter, Water Meter, IAQ Sensor etc.

1. 24x7 Access to a Customized Dashboard made for you with Secured Login and Password
2. 24x7 Access to Historical Data and Analytical information of your Facility
3. E-mail Alerts in case of Data Threshold being Breached in Real Time
4. Data Analytics on the Past Historical Data with Real Time Advisory through the GEM Sustainability Partner Network for Energy Efficiency.

GEM Command Center



Benefits of being a GEM Monitored Facility -



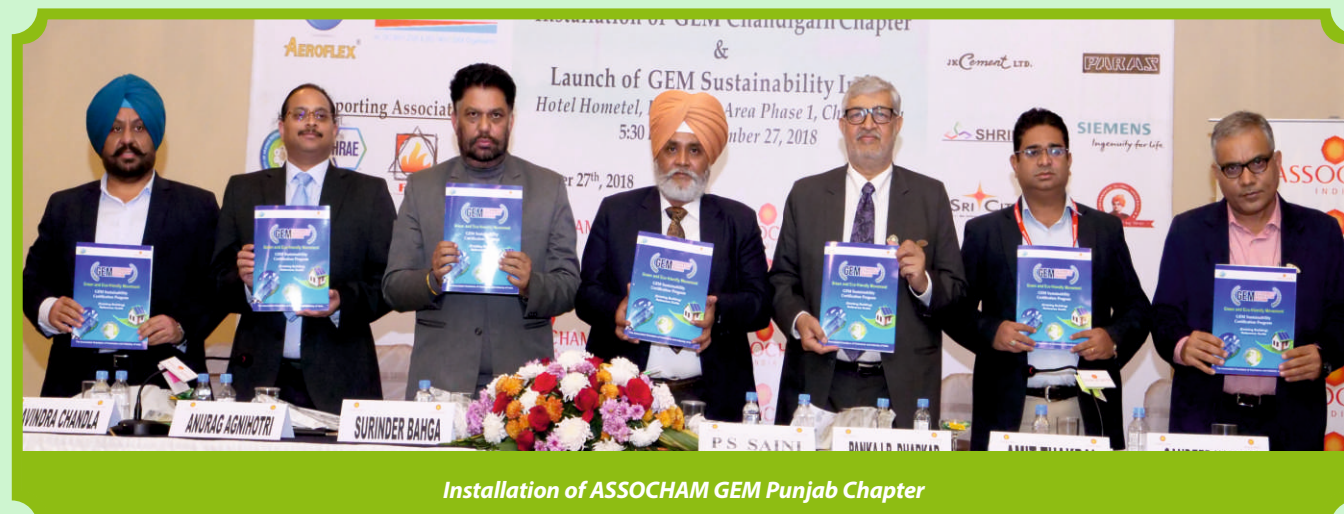
Hilton Hotel, Ahmedabad



Mr. Pankaj Dharkar, Chairman, ASSOCHAM GEM National Council, Ar. Anand Tatu, Chairman, ASSOCHAM GEM Gujarat Chapter, and Mr. Pradip Sheth, Member, ASSOCHAM GEM Gujarat Chapter presenting the plaque to Mr. Mitul Shah & his team for delivering First GEM Certified Sustainable Building (Interior) to Inner Engineering, Ahmedabad

GEM Sustainability Certification Rating Program – Points List

S.No.	Principles	Description	Maximum
1.	Principle-1	Government Approved Plans	E
2.	Principle-2	Fire and Life Safety in Sustainable Buildings	E
3.	Principle-3	Construction Management Best Practices	E
4.	Principle-4	Parking for Building Occupants	E
5.	Principle-5	Propagating Passive Design Strategies	5
6.	Principle-6	Landscape Best Practices	4
7.	Principle-7	Preserve and Plant Trees Onsite	2
8.	Principle-8	High Albedo Materials - Roof and Non-roof	6
9.	Principle-9	Rainwater Harvesting – Recharge and/ or Reuse	4
10.	Principle-10	Install Low Flow Water Fixtures	7
11.	Principle-11	On-site Treatment of Grey & Black Water & Reuse for Flushing	6
12.	Principle-12	Irrigation Best Practices	3
13.	Principle-13	Measurement of Energy and Water Consumption	6
14.	Principle-14	Post-occupancy Waste Management	4
15.	Principle-15	Onsite Conversion of Organic Waste	4
16.	Principle-16	Amenities for fundamental needs and daily commute	6
17.	Principle-17	Best Practices for Universal Building Design	5
18.	Principle-18	Reduced Exposure to VOC	3
19.	Principle-19	No Use of Halogenated Hydrocarbons	2
20.	Principle-20	Sustainable Development of Construction Engineering	12
21.	Principle-21	Local Sourcing of Construction Materials	6
22.	Principle-22	Judicious use of hard wood and soft wood	4
23.	Principle-23	Energy Management Best Practices	12
24.	Principle-24	Efficient Electric Equipment and Systems	5
25.	Principle-25	Use of Imperishable Energy Resources	8
26.	Principle-26	Optimal Use of Natural Light	6
27.	Principle-27	Healthy Indoor Air Quality	6
28.	Principle-28	Training and Capacity Building of Project Team	2
29.	Principle-29	Activities for Corporate Social Responsibility	2
30.	Principle-30	Going the Extra Miles	5
Total			135



Installation of ASSOCHAM GEM Punjab Chapter

GEM SUSTAINABILITY CERTIFICATION PROGRAM & AWARDS 2018



Abbott BKC
Mumbai



ALP Nishikawa Co. Pvt. Ltd.
Ahmedabad



Ela Green School
Tamil Nadu



Hindustan Institute of Technology
& Science Chennai



ITC Green Centre Manesar
Gurgaon, Haryana



J K Institute of Technology - New ITI Building
Nimbahera, Rajasthan



Siemens Limited Kharghar Office
Navi Mumbai



Sri City, AP Chittoor
Andhra Pradesh



Vivekananda Global University
Jaipur



Bhartiya Skill Development
University - Jaipur



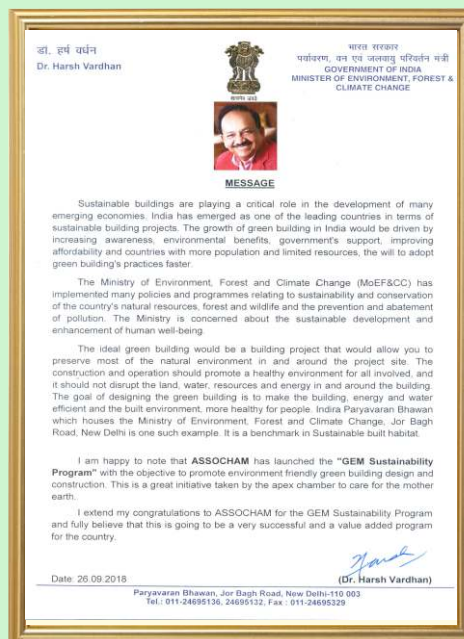
Paras Cinema Building
New Delhi



Shrine Homes, Affordable Housing
Mukhyamantri Jan Aavas Yojna, Jaipur



The Broadway Complex Srinagar
Jammu & Kashmir



Launching ASSOCHAM GEM Sustainability Certification Program, (L to R) Mr. Uday Kumar Varma, ASSOCHAM Secretary General, Prof. Ashutosh Sharma, Secretary, Ministry of Science and Technology, Mr. Pankaj R. Dharkar, Chairman ASSOCHAM National Council for Green and Eco - friendly Movement, Mr. Jayant Joshi, President Trustee, Rajendra and Ursula Joshi Charitable Trust, Mr. Mukesh Mehta, Business Development Manager, Mehta Tubes Ltd.

MoU SIGNING



ASSOCHAM GEM National Council has signed an MoU with Smart Habitat Foundation, Dubai (From L to R) Mr. Suresh Menon, secretary, Mr. Pankaj R Dharkar, National Chairman, ASSOCHAM GEM Council, Prof. Charanjit Singh Shah, Chairman, Smart Habitat Foundation, Mr. Neeraj Arora, Sr. Director, ASSOCHAM



ASSOCHAM GEM has signed the MoU with ASHRAE Western India Chapter Shri Pankaj R Dharkar, National Chairman, ASSOCHAM GEM Council and Shri Vijay Panchal, President, ASHRAE Western India Chapter Exchange the MoU



MoU signing between ASSOCHAM and IAQA, (L to R) Mr. Richie Mittal, Director, IAQA India Chapter, Mr. Uday Kumar Varma, Mr. Pankaj R. Dharkar, Mr. Neeraj Arora, Sr. Director, ASSOCHAM



MoU signing between ASSOCHAM and ASHRAE India Chapter (L to R) Mr. Dinesh Gupta, Chair of Student Activity, ASHRAE India Chapter, Mr. Priyank Garg, Immediate Past President, ASHRAE India Chapter, Mr. Uday Kumar Varma, Secretary General ASSOCHAM, Mr. Pankaj R. Dharkar, Chairman ASSOCHAM National Council for GEM



MoU signing between ASSOCHAM and FSAI at Hotel Le Meridien, New Delhi (From R to L) Mr. Neeraj Arora, Sr. Director, ASSOCHAM, Mr. Babulal Jain, ASSOCHAM, Mr. Pankaj R. Dharkar, International President, FSAI, Mr. Neeraj Sehgal, FSAI (Back), Mr. D S. Rawat, Past Secretary General, ASSOCHAM, Mr. Rajnish Aggarwal, FSAI, Mr. Richie Mittal, Director, IAQA India Chapter and Mr. Amit Kr. Sharma, Jr. Director, ASSOCHAM



MoU signing between ASSOCHAM and ISHRAE at Hotel The Park, New Delhi (From L to R) Mr. D. S. Rawat, Past Secretary General, ASSOCHAM, Mr. Vishal Kapur, National President, ISHRAE and Mr. Ashwani Mehra, Executive Secretary, ISHRAE



Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for Green and Eco-friendly Movement (CGEM) presenting the memento to Mr. Dominic K. P, National President, Fire & Security Association of India



Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for Green & Eco-friendly Movement (CGEM) presenting the memento to Mr. C. Subramaniam, National President, ISHRAE



Mr. Pankaj R. Dharkar, Chairman, ASSOCHAM National Council for Green & Eco-friendly Movement (CGEM) presenting the memento to Mr. Richie Mial, Director, Indoor Air Quality Association, India Chapter, IAQA

MoUs with



ASSOCHAM GEM in NEWS

For more details, visit us on
www.green-assochem.com / www.assochem.org
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