



Systems for Sustainability

While green building rating systems like LEED, IGBC, GRIHA, GEM and EDGE have similar goals of energy-efficiency and conserving natural resources, they differ in their approaches to certification and documentation. CWDB delves into the details.

As the world becomes increasingly conscious of the environmental impact of construction and real estate, green building rating systems have emerged as a popular way to measure and promote sustainability in the industry. In India, several such rating systems are prevalent, including LEED, IGBC, GRIHA and GEM.

“While all rating systems have a fundamentally similar ideology of saving critical natural resources of water, air, materials and energy, what differentiates them is the way they approach the project and the documentation sought towards certification,” says Nilesh Gandhi, Principal Architect, Metadesign.

According to Sriram Mahadevan, Managing Director,

Joyville Shapoorji Housing, and COO, Shapoorji Pallonji Real Estate (SPRE), “LEED, IGBC and GRIHA or GEM are major green building rating systems

used as indicators to qualify and quantify sustainability in building design and performance. These rating systems help minimise the negative impact of the construction process, from the design to the operational and maintenance stages.

They also give the projects additional

marketing mileage over other conventional buildings.”

And Rohit Gera, Managing Director, Gera Developments, explains, “The aim of all the four rating systems prevalent in India currently is to facilitate the development of sustainable projects in the construction industry and

meet our UNSDG 2030 goals.”

Selection of a rating system

Elaborating upon the selection of rating system on a project-to-project basis, Mahadevan says, “The selection of a particular rating system for a project can depend on various factors, including the project's location, type, size and intended use. It can also be influenced by the preferences and expectations of consumers and stakeholders, as well as local and national regulations and policies. For instance, if a project is located in a region that mandates a specific rating system for compliance, that system would be the obvious choice. In the case of our Vanaha project in Pune, we have considered GRIHA as the rating system, which is part of the Integrated Town Policy (ITP) under the Pune Metropolitan Regional Development Authority (PMRDA), which mandates the



Nilesh Gandhi,
Principal Architect,
Metadesign

Green Ratings Defined

Name	What is it?	Established	Country of Origin	Noteworthy Certified Projects
LEED	It's mission is to transform how buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy, and prosperous habitat that improves the quality of life. They are critical to addressing the climate crisis, meeting ESG goals, enhancing resilience, and supporting more equitable communities.	1998	USA - under US Green Building Council (1993)	Centre for Sustainable Chemistry University of Nottingham (Platinum), UK; University of Hawaii UH Student Services (Gold); UC Davis Menetti Shrem Museum of Art (Platinum), California; Pathways School (Platinum), Noida; Suzlon One Earth (Platinum), Pune.
IGBC	Vision is to enable a sustainable built environment for all and facilitate India to be one of the global leaders in the sustainable built environment by 2025. The council offers a wide array of services which include developing new green building rating programmes, certification services and green building training programme. The council also organises Green Building Congress, its annual flagship event on green buildings.	2001	India - under Confederation of Indian Industry (CII)	TATA Power, Mumbai; Raheja Vista's Building No 39 under K Raheja Corp, Mumbai.
GRIHA - TERI	TERI's mission is to usher transitions to a cleaner and sustainable future through the conservation and efficient use of energy and other resources, and innovative ways of minimising and reusing waste. Their goals are to enhance access to clean energy for all and enabling the planning and governance of environmentally sustainable cities.	1981	India	Mahindra-TERI Centre of Excellence for Sustainable Habitats, Gurugram; Academic Complex, IIT Madras; TERI Retreat Centre, Delhi.
GEM Ratings	ASSOCHAM launched a Green and Eco-friendly Movement (GEM) to create a deeper awareness of the importance of a sustainable lifestyle. The program includes sustainability, energy and water efficiency, fire and life safety, indoor air quality, daylight, fresh air and human comfort and is based upon BEE ECBC 2017 and NBC 2016.	2017	India - under ASSOCHAM	Green Building Consortium, Khorda; Marwadi University, Rajkot; Habibganj Railway Station, Bhopal.
EDGE	EDGE (Excellence in Design for Greater Efficiencies) is a free software, a green building standard, and an international green building certification system. EDGE helps decide the best green options and estimate the incremental costs of green building. It focuses on energy, water, and embodied energy in materials for a quantitative approach. It is an innovation of IFC (International Finance Corporation), a member of the World Bank Group.	2014	USA - under GBCI (Green Business Certification Inc.)	Somerset Greenways, Chennai; Guizhou Tower, China; Rainbow Children's Hospital, Bengaluru; Office of the Tamil Nadu Infrastructure Fund, Chennai.

GRIHA rating system requirement. The project has been pre-certified by GRIHA."

He explains, "Alternatively, the choice of rating system can also be based on the developer's commitment to sustainability or the investors' requirements and desire to achieve a certain level of environmental performance for their project. In this case, they may select

a rating system that aligns with their values and goals. For example, at our Joyville Howrah project, our investor IFC suggested that we obtain the IFC innovation EDGE certification."

Gera adds, "Each of the rating systems have set their benchmarks based on NBC 2016 and ECBC as their guidelines. The green rating for a project would be identified

depending on the parameters that are important for the occupants. While all ratings have a minimum criterion of 20-30 per cent for energy saving and a minimum of 20 per cent on water saving, it is equally important to understand what is considered by the rating system as a more impactful sustainability feature. For example, while LEED certification in its rating

system considers site selection and site development as more impactful parameters, the GEM certification gives more importance to energy savings while the different IGBC ratings look at impact at a category level and hence the parameters differ by category." Commenting on the selection of ratings for Gera's projects, he says, "The documentation involved and the time taken for the rating body to revert on the application (provide a precertification and eventually the certification) are other important factors that determine our preference, especially if sustainability is part of our pitch to a prospective buyer. At Gera, we select a rating system after a thorough understanding of the project's needs, acceptability and preferences among consumers in a particular market."

Although selection of ratings is aimed at enhancing the value of the

project in question, the same is not the case with all the rating systems. As **Jitendra Kulkarni, Principal Architect, Evolution Design Studio**, shares, "The GHAR rating developed by CPWD is specific to its own projects and does not require registration with any external agency, as it is evaluated and managed internally. However, unlike ratings for commercial buildings, GHAR rating may not have direct



Rohit Gera,
Managing Director,
Gera Developments

financial implications or market value. Its primary purpose is to ensure that government buildings are designed and constructed with sustainability and energy-efficiency in mind."

Examples of green building rating features

Green building features are essential for a property to earn a high rating in the LEED, GRIHA, IGBC or GEM rating systems. According to Mahadevan, such features include sustainable site planning, efficient construction

management, energy-efficiency approaches, efficient water management, solid waste management approaches, use of environment-friendly building materials and analysing life cycle costs. Implementing these features can improve a building's environmental performance, reduce operating costs, increase property values and contribute to a more sustainable future.

According to Gera, additional features that can help create a sustainable project include optimising rainwater use, minimising solar heat gain, using locally manufactured products, generating renewable energy, and ensuring the right window-to-wall ratio in habitable spaces. Moreover, each rating system has different levels of rating, ranging from a simple certification that meets the base criteria to an optimised criteria that results in a higher rating. Depending on the extent to which sustainable features are incorporated, the ratings are enhanced.

Assessment of sustainability and environmental impact

When it comes to assessing a building's sustainability and environmental impact, these rating systems each have their own methods and focus. Mahadevan explains that LEED evaluates a building's design, construction and operational aspects, while GRIHA assesses a building's sustainability throughout its lifecycle. IGBC, on the other hand, focuses on a building's environmental impact, including energy and water-efficiency, materials used and impact on the surrounding environment. GEM evaluates not only buildings but also transportation systems and urban infrastructure. Despite their differences, all rating systems aim to



Photo courtesy: Gera Developments

Gera's Planet of Joy follows IGBC standards for sustainable real estate construction, incorporating eco-friendly practices and solutions.



Photo courtesy, Joyville Homes by Shapoorji Pallonji

Shapoorji Pallonji Joyville Hinjewadi is a pre-certified gold rated project based in Pune.

recognise and promote sustainable and environment-friendly buildings. Gandhi emphasises that these rating systems promote multiple strategies such as the choice of materials, energy and water consumption, air quality monitoring, and occupant well-being. All these initiatives put together can lead to a positive environmental impact.

Expenses, advantages and green ratings

Gera acknowledges that while vernacular construction in a suitable environment is ideal for sustainable development, it is not practical in real estate at scale. He suggests that a green project offers significant advantages while balancing the additional expenses involved. The additional costs vary with the level of green rating one wishes to achieve. For instance, the amount of renewable energy generated is dependent on the quantum of solar PV panels that can be installed, which would come at an additional cost. Similarly, the use of recyclable



Sriram Mahadevan, Managing Director, Joyville Shapoorji Housing, and COO, Shapoorji Pallonji Real Estate (SPRE)

materials would improve the rating of the project but would come at a higher cost. Gera believes that it's about weighing and balancing the cost and the benefit, the cost to the developer versus the benefit to the end consumer.

Sharing his insights, Mahadevan adds that there are certification fees associated with obtaining different green ratings, and these fees can vary depending on the rating system, the size, and the complexity of the project. To meet the green rating criteria, additional design and construction costs may be required, such as using more expensive materials, installing energy-efficient systems, and adding green features like solar panels or green roofs. An additional 5-10 per cent cost over the regular development cost for a conventional building is usually incurred.

Summing up the validity of the different ratings, Gandhi says, "Ratings are typically valid for two to five years, depending on the rating system selected, and projects have

the option to renew their ratings. During recertification, any equipment that has deteriorated over time can be refurbished or replaced to extend its lifespan, which leads to lower operational expenses and a longer life for the building and its equipment. Continual monitoring and verification contribute to these positive outcomes."

Indeed, green rating systems have become an essential tool to evaluate the sustainability and environmental impact of buildings in India. While each rating system has its own set of criteria and standards, they all aim to promote the efficient use of resources, reduce environmental impact, and enhance the health and well-being of occupants. As the demand for sustainable buildings continues to grow, it is important to ensure that these rating systems are updated and aligned with the latest environmental and social standards. Nevertheless, the implementation of green rating systems in India is a crucial step towards creating a more sustainable and resilient built environment for future generations.

