
LEED
U.S. GREEN BUILDING COUNCIL
LEED
USGBC

Brief history of USGBC

The **U.S. Green Building Council** (**USGBC**), co-founded by Mike Italiano, David Gottfried and Rick Fedrizzi in 1993, is a non-profit trade organization that promotes sustainability in how buildings are designed, built, and operated**. USGBC is best known for the development of the LEED green building rating systems.**

What is LEED?

• **LEED (Leadership in Energy and Environmental Design)** is a voluntary, market--driven program that provides third-party verification of green buildings.

• **From individual buildings and homes, to entire neighbourhoods and communities, LEED is transforming the way built environments are designed, constructed, and operated.** Comprehensive and flexible, LEED addresses the entire lifecycle of a building.

• It provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

How LEED works?

For commercial buildings and neighbourhoods, to earn LEED certification, a project must satisfy all LEED prerequisites and earn a minimum **40 points on a 110-point** LEED rating system scale. Homes must earn a minimum of **45 points on a 136-point scale.**

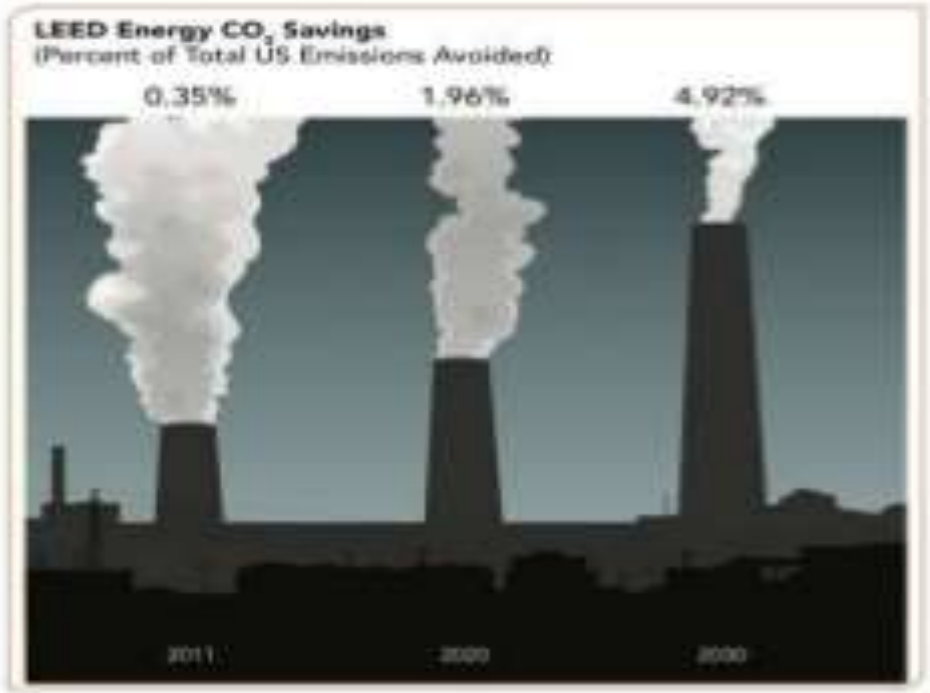
Four Certification Levels

- **Projects earn points to satisfy green building requirements.**
- **Within each of the LEED credit categories, projects must satisfy prerequisites and earn points.**
- **The number of points the project earns determines its level of LEED certification.**

Why LEED?

LEED-certified buildings are designed to:

- Lower operating costs and increase asset value
- Reduce waste sent to landfills
- Conserve energy and water
- Be healthier and safer for occupants
- Reduce harmful greenhouse gas emissions



MAIN CREDIT CATEGORIES:

- Sustainable sites credits encourage strategies that minimize the impact on ecosystems and water resources.

- Water efficiency credits promote smarter use of water, inside and out, to reduce potable water consumption.

- Energy & atmosphere credits promote better building energy performance through innovative strategies.

- Materials & resources credits encourage using sustainable building materials and reducing waste.

- Indoor environmental quality credits promote better indoor air quality and access to daylight and views.

OTHER CREDIT CATEGORIES:

• Awareness & Education encourage home builders and real estate professionals to provide homeowners, tenants and building managers with the education and tools they need to understand and make the most of the green building features of their home.

• Innovation & Design address sustainable building expertise as well as design measures not covered under the five LEED credit categories. Six bonus points are available in this category.

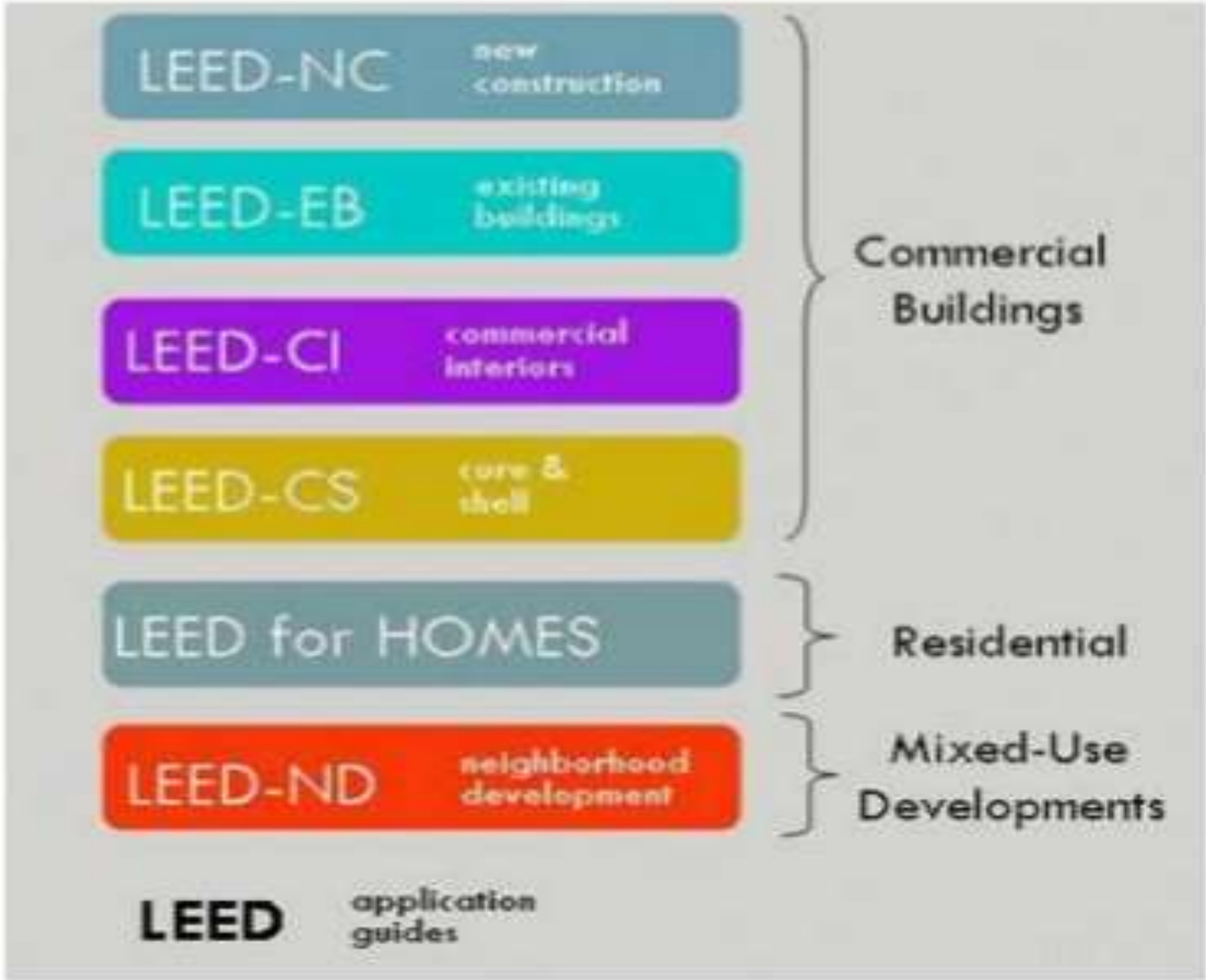
• Location & Linkages encourage construction on previously developed or infill sites and promotes walkable neighborhoods with access to efficient transportation options and open space.

• Green infrastructure & buildings credits reduce the environmental consequences of the construction and operation of buildings and infrastructure.

•Regional priority credits address regional environmental priorities for buildings in different geographic regions. Four bonus points are available in this category.

RATING SYSTEM SCALE FOR LEED PLATINUM:

CATEGORIES OF LEED:



HOW TO REGISTER A PROJECT:

1. CHOOSE
2. REGISTER
3. SUBMIT
4. REVIEW
5. CERTIFY

HOW LEED CONRTIBUTES:

LEED for New Construction & Major Renovations addresses design and construction activities for both new buildings and major renovations of existing buildings, which includes major HVAC improvements, significant envelope modifications, and major interior rehabilitation.

LEED for Existing Buildings helps maximize the efficiency of your operations while minimizing the impact on the environment by:

- exterior building site maintenance programs
- water and energy use
- environmentally preferred products and practices for cleaning and alterations
- sustainable purchasing policies
- waste stream management
- ongoing indoor environmental quality.

LEED for Commercial Interiors is the recognized system for certifying high-performance green tenant spaces that are healthy, productive places to work; are less costly to operate and maintain.

INTERIOR OF MCAMI/CT SCAN SUITE

LEED for Core & Shell can be used for projects where the developer controls the design and construction of the entire core and shell base building (e.g., mechanical, electrical, plumbing, and fire protection systems) but has no control over the design and construction of the tenant fit-out.

LEED for Homes **promotes the design and construction of high-performance homes – energy efficient, resource efficient, and healthy for occupants.** A home that achieves LEED certification has been designed to maximize fresh air indoors, minimizing exposure to airborne toxins and pollutants. It also has the potential to use 20-30% less energy.

THE VANDEMUSSER RESIDENCE
A LEED CERIFIED BUILDING IN NEWYORK

LEED for neighborhood contributes towards Thoughtful neighborhood planning can limit the need for automobiles and their greenhouse gas emissions. Mixed-use development and pedestrian-friendly streets encourage walking, bicycling and public transportation.

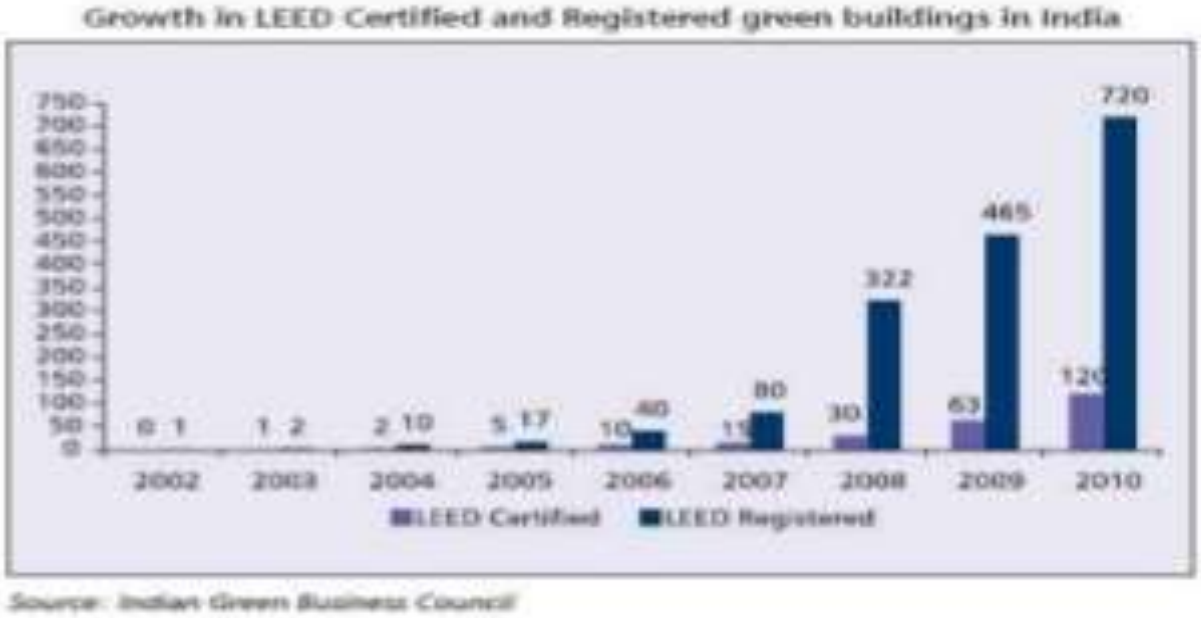
LEED RATING IN INDIA:

IGBC has licensed the LEED Green Building Standard from the U.S. Green Building Council and currently is responsible for certifying LEED-New Construction and LEED-Core and Shell buildings in India. There are many energy efficient buildings in India, situated in a variety of climatic zones.

Indian Green Building Council, is continuously striving towards wider adoption of eco-friendly / green building concepts in the Indian Industry.

IGBC promotes a whole-building approach to sustainability, based on the principles of 5 elements of nature [earth, water, fire, air & sky] by recognizing performance in the following five key areas:

- Sustainable site development
- Water savings
- Energy efficiency
- Materials selection
- Indoor environmental quality



Source: Indian Green Business Council

IGBC Green Homes ratings are awarded according to the following scale:

- Certified 32-39
- Silver 40-47
- Gold 48-59

Platinum 60-80

ADVANTAGES AND DISADVANTAGES OF LEED RATING SYSTEM IN INDIA –

- LEED India certified projects blend enhanced environmental, economic, and occupant-oriented performance.
- They cost less to operate and maintain; are energy- and water-efficient; have higher lease-up rates than conventional buildings in their markets and are healthier and safer for occupants.

- Often when a LEED rating is pursued in India, it increase the cost of initial design and construction.
- One reason for the higher cost is that sustainable construction principles may not be well understood by the design professionals undertaking the project.
- Some of the finer points of LEED certification in India could possibly lead to misunderstandings between the design team, construction team, and client, which could result in delays.
- Also, there may be a lack of abundant availability of manufactured building components which meet LEED standards.

ITC GREEN CENTER

ITC GREEN CENTER is a hotels division Headquarter located in sector-32, Gurgoan.

It is a LEED PLATINUM certified building with 56 points.

At 170,000 sq feet, ITC Green Centre is the world's largest 0% water discharge, noncommercial Green building, and compared to similar buildings, ITC Green Centre has a 30% smaller carbon footprint with the use of sensible technologies.

HOW IT SATISFIED THE MAIN 5 CREDIT CATEGORIES

• One of the strongest aspects of ITC Green Centre is its design**. All our systems are integrated in a way so that they can function as naturally as possible.**

• For example, the L-shaped architecture of the building serves more than one function in more than one area of the immediate environment. The central atrium allows natural light to form in the heart of the building, thereby reducing the use of artificial light. It also ensures that one part of the façade is always in the shade, preventing too much heat from entering the structure, and the cooling effect is supported moreover by the discreet bodies of water placed in front of the building.

WATER CONSERVATION

• ITC harvests 100% of the rain that falls on the building and recycle 100% of all the water used in the building.

• Along with the rainwater harvesting at ITC Green Centre, there are interlocking tiles placed across the landscape of our building to harvest rain water through the grass that grows between the tiles while ensuring 0% surface run-off.

ENERGY SAVING TECHNIQUES

•The building design has ensured that it uses as little energy as possible in terms of basic lighting. **The architecture of ITC Green Centre allows enough natural light to penetrate throughout the building during daytime, so it needed very little energy to light the building at night.**

•The high albedo roof coating reduces the amount of heat absorbed by reflecting over 90% of visible and infra red radiations away from the building. This reduces the roof surface temperature by 30 degrees and brings down the use of energy for air conditioning in the top floor by 10-15%.

AIR QUALITY

• The low levels of Volatile Organic Compounds in the materials used in the construction of ITC Green Centre, in adhesives, sealants used for carpets, composite woods and paints ensures that there aren't any known harmful substances in the air that might affect inhabitants of the building.

CONCLUSION:

LEED can be integrated into any construction or renovation project:

- By taking an integrated approach to design, LEED brings valuable environmental savings and outcomes while also saving money through energy, water and waste reduction over the life of the building.

- Professionals, including architects, real estate professionals, facility managers, engineers, interior designers, landscape architects, construction managers, lenders and government officials, all use LEED to transform the built environment.

- State and local governments across the country are adopting LEED for public-owned and public-funded buildings. Federal agencies, including the Departments of Defense, Agriculture, Energy, and State, have LEED initiatives.

- LEED projects are in progress in 135 different countries – among these Canada, Brazil, Mexico and India.

THANK YOU