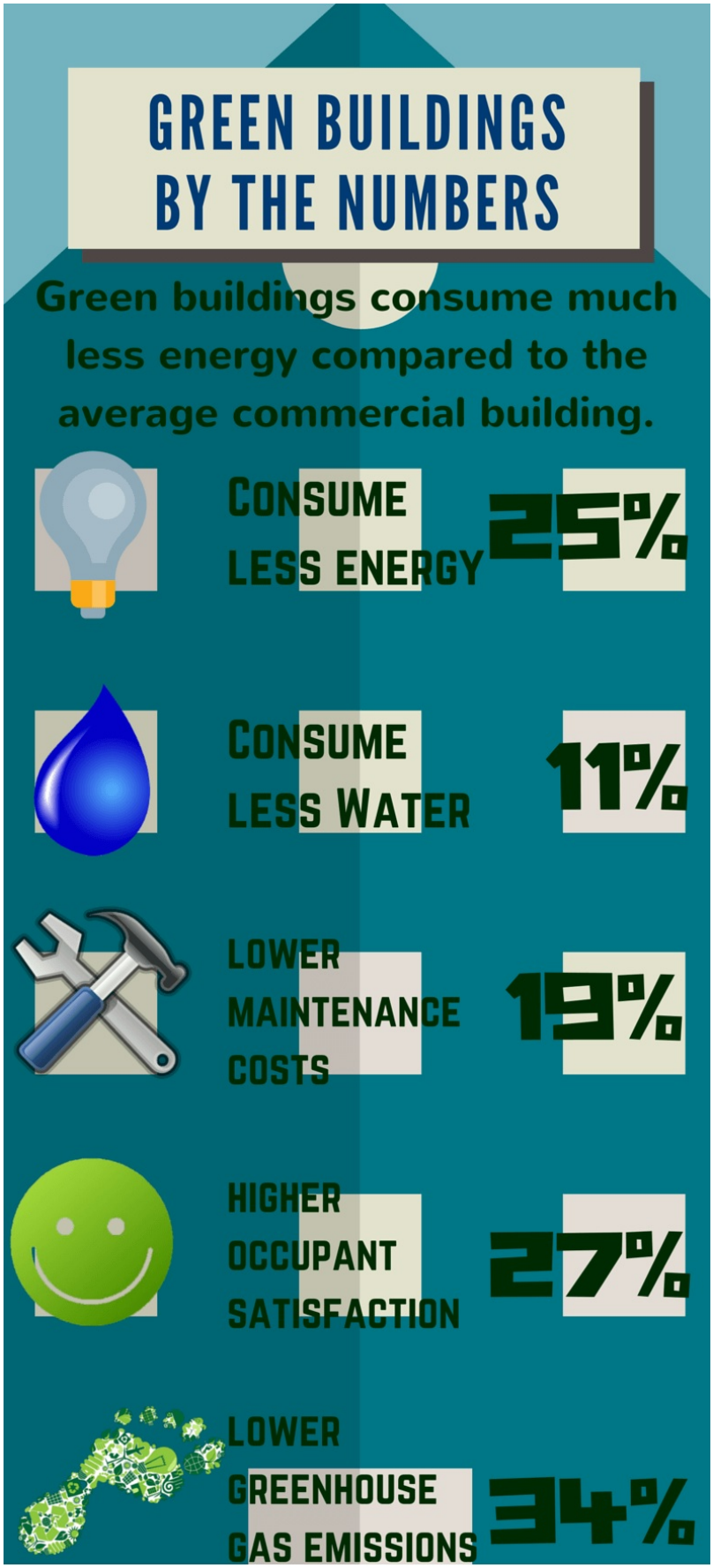
Making the Building Industry Sustainable

Why in news?

Since India lacks standards for appropriate material use in buildings, reducing carbon footprint during the construction and life-cycle of a building are vital.

What about the Indian building and construction industry?

- The construction industry is the engine of the Indian economy as it is responsible for propelling the country's overall development as good infrastructure is the basis for all other projects.
- The building and construction industry accounts for around **6.5% of the India's GDP**.
- The Construction industry in India consists of the real estate as well as the urban development segment.
- India is expected to become the **third largest construction market globally by 2025**.



What are the challenges in the sector?

- **Energy intensive** - Throughout the life-cycle of a building, the sector consumes a significant amount of energy.

- **Carbon intensive** - The increase in the total building floor area will significantly escalate the demand for embodied carbon-intensive construction materials like cement, steel, bricks, glass, etc.
- **Less focus on embodied carbon** - The decarbonisation initiatives are focused mainly on tackling operational carbon, with little attention on the embodied carbon.
- **Lack of standards for appropriate material use** - India lacks a well-defined set of standards for appropriate material use in buildings, inhibiting the exploration of alternative materials.
- **Low public investment** - India spends 0.65% of its GDP on R&D, which is very low compared to that of major economies like China (2.4%) and the US (3.06%).
- **Lack of commitment** - Only a few cement producers and construction companies have committed to net-zero operations.
- **Lack of reliable data** - The lack of reliable data from life cycle assessments and environmental product declarations makes setting benchmarks and establishing targets challenging.
- **Commercialisation of technologies** - Commercialisation of technologies like carbon capture and hydrogen-based production of iron for steel is yet to happen.

What steps were taken by the government for sustainable buildings?

- **Indian Green Building Council (IGBC)** - The IGBC was formed by the Confederation of Indian Industry in 2001.
- It is the first rating program exclusively for the residential sector.
- It is the India's premier body for green building certification and related services.
- It aims to create sustainable building environment & wants India to be a leader in it.
- **Green Rating for Integrated Habitat Assessment (GRIHA)** – GRIHA is the National Green Building Rating System.
- It is an assessment tool to measure and rate a building’s environmental performance.
- The rating is based on energy consumption, waste generation, renewable energy adoption etc.
- **Bureau of Energy Efficiency (BEE)** - BEE has launched the Energy Conservation Building Code (ECBC).
- It aims to optimize energy savings & launched a five-star rating scheme.
- Buildings that comply with the provisions are termed as ECBC Compliant Building.
- **ECO-NIWAS** – New Indian Way for Affordable & Sustainable homes (ECO-NIWAS) was launched as an online interactive portal.
- It aims to increase awareness about sustainable building and energy-efficient homes.
- **LEED India** - Leadership in Energy and Environmental Design (LEED) India is another Green Building rating program.
- **The Energy and Resources Institute (TERI)** - TERI plays a very crucial role in developing green building capacities.

What is the need of the hour?

- To achieve the target of a 5 trillion dollar economy by 2025 and to meet the demands of its entrepreneurial citizenry, building and upgrading existing infrastructure is essential.

- It is necessary to find and evaluate the viability of best practices/tech for decreasing embodied carbon emissions in the building and construction sector.
- A building's life cycle can be increased with reduction in demolition waste by utilising the built space for adaptability, disassembly, and reuse.
- The 4Rs (Reduce, replace, recycle and reuse) can be incorporated to benefit communities, owners, tenants, economy and the environment.
- Increased participation and coordinated action from stakeholders in the entire value chain are imperative to de-risk the industry from climate hazards.

Quick facts

Embodied carbon - Embodied carbon is all of the carbon dioxide (CO_2) released during a building's construction

Operational carbon - Operational carbon is carbon released during the building's operations in terms of lighting, heating, air-conditioning, use of elevators, etc.

References

1. The Hindu Businessline | Making the building industry sustainable
2. Make in India | Construction Industry