

# CODE FOR GREEN BUILDINGS: NEED OF THE HOUR

Are architects in India failing to realise the importance of sustainable construction and green buildings, in the absence of a comprehensive code? Can future generations of architects be able to meet the standards of green buildings in a cost-effective manner?

Being one of the fastest growing economies in the world, the demand for construction and infrastructural development in India is also growing. In such a scenario, even though the importance of green buildings has been fairly well understood, it is unfortunate that the country does not have a comprehensive Green Building Code.

From merely 20000 square feet of green buildings in 2003, the country now has over 20 million square feet of green buildings! If there had been a code applied, the figure could definitely have been a lot more impressive.

## Green Building Code in India

In India, the Green Building Code is a medley of codes and standards contained in the State by-laws, the National Building Code, the Energy Conservation Building Code (ECBC) and in the norms set by the ratings programmes, such as Leadership in Energy and Environmental Design-India (LEED-India), the standards and guidelines put down for the Residential Sector by the Indian Green Building Council (IGBC), TERI-GRIHA and other such certifications.

Basic and general guidelines for efficient energy usage in the National Building Code (NBC) do exist but they are merely guidelines. These efficient energy usage guidelines made an appearance after 18 years during an amendment of the NBC in 2005!!

It is urgent and imperative that not only should we adopt policies requiring all existing buildings as well as new construction to meet green building criteria, but also put in place relevant laws and regulations for effective implementation of those policies. Honest implementation of laws is the need of the day. These laws should offer incentives to commercial builders in the form of tax benefits and quick permits. Penalties should also be imposed wherever required.

Green building laws and codes in our country are voluntary. Till date, India does not have an effective and comprehensive green building code. The United States Green Building Council established LEED, which stands for Leadership in Energy and Environmental Design. Today, LEED is an internationally recognized green building certification system, which provides third-party verification for a building or community designed and built using strategies intended to improve performance in metrics, such as energy saving, water efficiency, reduced CO2 emissions, improved indoor environmental quality, stewardship of resources and sensitivity to their impacts. The green indicators of LEED have been adopted by as many as 57 countries, and are considered benchmarks. The LEED benchmark has been recognised and accepted by most developers, builders, architects and users for constructing core or shell buildings as well as for furnishing buildings in India.

LEED India sets down standards that have been customised according to Indian conditions, in terms of the design, construction and operation of buildings for environment-friendly performance. Its rating system is amended regularly to address not only the Indian environmental and climatic conditions but also the sustainability issues of buildings. Site development, water resource utilisation, energy, material selection and indoor environment are the key areas focussed upon while amending the system.

The Indian Green Building Council (IGBC) is attempting to indigenise LEED according to the environmental conditions prevalent in India. The IGBC Green Homes rating is said to

be the first rating programme created exclusively for Indian homes by the Council. It defines green buildings as buildings which use less water, optimise energy efficiency, conserve natural resources, generate less waste and provide healthier spaces for occupants, as compared to conventional buildings.

Presently, LEED India and IGBC offer certifications in two categories:

- i) The builder or the construction company developing a particular green site/building for a client, which will be leased out.
- ii) Those who are undertaking a green initiative for their own personal use, and this could either be a commercial space or corporate office.

Standards vary for both categories. While the first category is designed as an enveloping structure, the second focusses on the design concepts from within.

The Indian Society of Heating, Refrigerating and Airconditioning Engineers (ISHRAE), established 30 years ago on the lines of the American Society of Heating, Refrigerating and Airconditioning, offers guidance in the art and science of ventilation, heating, refrigeration and airconditioning. It has joined hands with IGBC to act as a guide for energy-efficient airconditioning.

GRIHA, an acronym for Green Rating for Integrated Habitat Assessment, is now the National Rating System of India. Conceived by TERI (The Energy and Resources Institute), and developed jointly with the Ministry of New and Renewable Energy, Government of India, GRIHA is a green building design evaluation system. It provides basic prerequisites for green buildings in

terms of the following:

- a) climate-based layouts and designs to minimise energy consumption
- b) waste water treatment and recycling with zero external discharge
- c) use of fly ash blocks for walls and slabs to maximise use of recycled material
- d) maximum use of natural lighting and optimum indoor air quality

Apart from the two agencies just mentioned, India also has few environment-conscious firms which demand extremely strict green designs. Still, there are a large number of developers, architects and designers who have not yet realised the importance of sustainable construction and green buildings. They are victims of the misconception that green buildings are more expensive and require complete air conditioning. The truth is just the opposite. It is an established fact that the percentage of additional expenditure (after initial investment) required in green buildings is very small. However, the long-term cost saving offered is quite significant. Also, the payback period of this additional investment is merely two to three years.

There is abundant daylight which makes it unnecessary to switch on artificial lights in the entire building, throughout the day. The Integrated Energy Policy (IEP) brought out in 2006, is designed to address the issues of climate change and sustainable development, is being implemented by our government for such buildings.

There is no dearth of environment-friendly construction techniques in the architectural heritage of our country. The intellect and foresight exhibited in heritage buildings should be combined with modern-

day resources, designs and materials. The very basis of new construction guidelines should offer alternatives that may help develop a green character in buildings, in harmony with the new and existing practices. What is required is a framework, around which a design can be woven with creativity.

The initiatives discussed encompass three principles of environmental law:

- i) Polluter pays principle
- ii) Principle of precaution
- iii) Principle of inter-generational equity

The outcome of all three principles in the green effect of urban development should be incorporated in a comprehensive mandatory code of practices. Following of this code should be made mandatory for the construction of green buildings. A

competent authority should ensure its effective implementation.

The Rio+20 United Nations Conference on Sustainable Development was held in 2012. One of the main topics of discussion, as always, was the balancing of economic opportunities with the principles of sustainable growth. In developing countries like India where there is significant poverty and economic deprivation, green issues have to take into account the larger issues of economic development and growth. Any mandatory green building code has to be implemented taking into account these matters.

To sum up, the green building culture needs to spread, and spread fast. This requires a mandatory code in the form of building by-laws to guide architects and developers of the

present and future generations. Merely introducing laws and codes will not suffice. There is also a need for a proper enforcing authority to check building construction if urban development has to meet the core environmental standards. The challenge for architects would then be to meet the desired standards of green buildings in a cost-effective manner. ■

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**Prof Yogesh Kumar is an architect from IIT Roorkee in 1970 and did PG in Human Settlements Planning and Development in 1980 from Asian Institute of Technology, Bangkok. He has worked in India besides South East Asian Countries and is presently teaching architecture.**

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Ph : +91 491 2872285, Mob : 08547884063. Email: globalinstituteofarchitecture@gmail.com | www.gia.org.in



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