

GREEN DESIGN



Ensuring resource use efficiency in buildings through GRIHA

The construction sector in India is exhibiting major growth and represents a large destination for investments, which are projected to increase rapidly in the future. In the 11th Plan this sector grew from 5.7% of the GDP at the beginning of the Plan to around 8% of the GDP in the final year. In the past two decades the sector has grown over four times reaching a level of Rs. 4050 billion in 2011-12. It is often stated that the majority of the buildings that would be standing in this country in 2030 are yet to be built. With increased incomes and related growth in demand for air conditioning, the demand for energy in buildings is projected to grow at unprecedented rates. So also would be the case with demand for water and, of course, construction materials. It is, therefore, crucial that buildings constructed in the country target the most efficient use of resources, including energy, water and construction materials. India's record of efficiency in these areas has been far less than satisfactory, if not quite deplorable. Yet, there is enough knowledge and experience available in the country by which buildings can be constructed to set benchmarks in efficiency, particularly in the use of energy and water.

The rating system Green Rating for Integrated Habitat Assessment (GRIHA) has been developed precisely with these issues in mind and with the objective of ensuring that build-

ings that are constructed in the future reach high levels of efficiency, and those already existing be retrofitted with features that can improve the efficiency of use of energy and water at a minimum. The implementation of measures to ensure the greenness of buildings using the GRIHA platform had till the beginning of March 2013 registered over 10 million sq.m. of built up space. This in itself would result in reduction of energy consumption in these buildings by up to 50%. Correspondingly, it is estimated that a 65% reduction would be achieved in water consumption, and the application of GRIHA will also facilitate installation of about 6.8MW of renewable energy supply with solar water heating systems providing 2000 kilo litres of hot water.

In order to ensure rapid spread of the GRIHA rating system, it is important for governments at the central, state and local levels to provide a policy framework which would facilitate the achievement of high levels of efficiency. These would be of benefit to the country as a whole. The term often used globally for reduction in energy demand through such measures is referred as negawatt. One negawatt of reduced demand for energy is generally much cheaper than installing corresponding capacity for supply of energy, which is also accompanied by transmission and distribution losses, quite apart from high capital cost of every unit of power supply capacity.



The Hon'ble President of India, **Shri Pranab Mukherjee** being presented the first copy of GRIHA Rating for Large Developments manual by **Dr. R.K.Pachauri**

For India, therefore, it is imperative that we take a balanced approach and ensure the adoption of techniques by which negawatts replace megawatts as long as the former are less costly. It is nobody's case that energy demand be curbed irrespective of the costs involved, but current building techniques and practices ignore energy efficiency to forego benefits to the nation and, of course, the user of a building. The application of GRIHA ensures the adoption of technologies and practices which would bring about optimal use of resources in the country and provide significant economic benefits.

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