



An Interplay Of Sustainable Built Environment Policies And Incentives In India

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ABSTRACT

“Sustainable development in built environment is an often-overlooked perspective. Rapid urbanisation and industrialisation are largely to blame for the continuous environmental degradation. Due to the presence of clear barriers, industrial growth has already been purposefully limited. But supporting the green movement cannot be done at the expense of entirely suppressing urbanisation, and vice versa. Among the numerous steps the Indian government has made to improve energy efficiency and the sustainability of the built environment, the objective to engage important market actors and legislative incentives has begun to have an impact. Since the advent of GRIHA (Green Rating for Integrated Habitat Assessment), IGBC (Indian Green Building Council), and BEE (Bureau of Energy Efficiency), the main actors have disagreed over the best ratings, creating a confusing view due to the numerous regulatory indexes and boundaries. Because various governments’ regulations, rankings, and other methods for preserving the built environment’s energy efficiency are incompatible, there is a considerable margin of error. The participation of sufficiently powerful local organisations becomes crucial for the successful execution of these programmes. This cannot be done without first considering how current legal and regulatory frameworks impact energy use and the effectiveness of well-built surroundings, including both residential and commercial buildings. A crucial factor is being played by the economic incentives offered to different market players and stakeholders who participate in the transaction of sale and purchase. An overlook by statutory authorities and a uniform mechanism will strengthen the structure and rating framework.”

I. INTRODUCTION

A green building is essentially a constructed structure that relies substantially on environmentally friendly practises across all its design, functions, and operations. The objective is to encourage healthy and sustainable lifestyles among the local population in addition to emitting fewer carbon compounds into the environment. Modern architecture has not established the idea of energy efficiency in built structures. Ancient architecture placed a lot of emphasis on the elements of nature that provide nutrition. The five basic

components of nature—water, fire, earth, wind, and space—were stressed in Indian Vedic philosophy.¹

Buildings' central areas were left open to improve lighting and cross-ventilation in adjacent rooms. It was planned for prayer rooms and water storage spaces to face northeast so that early sunlight would help sterilise the supplies that would be used during the day. The south-western portion of the dwellings used to experience strong winds and rain because of the monsoon and retreat monsoon. Keeping that in mind, the area facing south-west once had thick walls. Simply put, it could be referred to historically as the bye-laws for civil construction in India. Even if historical records indicate that the planning, building, and maintenance of such buildings were governed by proper science, technology, and recorded knowledge, the impulse to explore such technologies and architectural methods at the time was driven by the adventurous urge to create. The lack of resources at the period did not necessarily result in a confrontation between man and environment. Even while the resources that were discovered were relatively fewer than what is presently available, the needs of today have quickly transformed to place a far greater load on metropolitan areas.

Not only do urban residents' requirements contribute to the growing burden. Although the need for residential complexes is significantly more pressing than any other element of economic development, this is because a population's living conditions directly affect other public health issues as well as how quickly an economy may grow. Rural areas rarely experience this imbalance, yet in every economy, many individuals move from rural to urban settings in pursuit of work. As a result of the efficient economic contributions made by those who operate in these fields, governing bodies are required to meet these demands and provide satisfactory responses.

The idea of "green building" is spreading throughout the world, with the United States taking the lead and India coming in second. Reduced carbon dioxide emissions are achieved by using supplementary cement ingredients in place of cement in green buildings. Energy savings are achieved by using as much natural light and air as feasible in green buildings. The utilisation of the rainwater system inside and outside of such constructions to raise the ground-water table is an additional noteworthy trait. In India, there are three key rating systems: GRIHA (Green Rating for Integrated Habitat Assessment), IGBC (Indian Green Building Council), which offers LEED (Leadership in Energy and Environmental Design) certification, and BEE (Building Energy Efficiency).

II. RATING MECHANISM FOR BUILT ENVIRONMENT IN INDIA

The World Green Buildings Council, a conglomerate of independent, non-profit organisations made up of companies and organisations in the building and construction industry, stated that these energy-efficient buildings promote 09 out of the 17

¹ Narendra D. Patel and Nikesh P. Shah, 'Green Housing- Review, Rating and Implementation', The Indian Concrete Journal, September 2007, Available at: <https://www.yumpu.com/en/document/read/18879191/green-housing-the-indian-concrete-journal>

Sustainable Development Goals of the United Nations Development Programme.² According to the report, Green Buildings firstly improve people's health and well-being promoting SDG number 03, i.e. 'Ensure healthy lives and Promote well-being for all at all ages'; it runs on renewable energy, which is cheaper to run promoting SDG 07, i.e. 'Ensure access to affordable, reliable, sustainable and modern energy for all'; the creation of such structures creates jobs and boosts economy promoting SDG 08, i.e. 'Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all'; it also spurs innovation & contribute to climate resilient infrastructure boosting SDG 09 of 'Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation'; further creating a fabric for sustainable communities and cities meanwhile pushing the completion of SDG 11, i.e. 'Make cities and human settlements inclusive, safe, resilient and sustainable'; it further uses circular principle causing no wastage of resources aiming at SDG 12, i.e. 'Ensure sustainable consumption and production patterns'; it also reduces carbon emissions by built structures fulfilling SDG 13, i.e. 'Take urgent action to combat climate change and its impact'; with further methods to improve biodiversity, save water resources & measures to protect green cover, these built structures also help in fulfilling SDG 15 i.e. 'Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss; lastly, the partnership among key players of market, industry and governance, these fulfill SDG 17 i.e. 'Strengthen the means of implementation and revitalize the global partnership for sustainable development'.³

The judicial discourse has been limited to the relocation of hazardous industries away from residential buildings and petitions for denied possession where the builders have exceeded the permitted storey limit by appropriate municipal authority in the absence of a mandatory legal document relating to energy efficiency with available sanctioning power to appropriate authorities on the building construction and regulations.⁴ However, the National Green Tribunal has recently become more aware of its obligations after ordering a green audit of Delhi's buildings to monitor air quality. Additionally, the NGT has begun to levy steep fines on private builders who failed to get the required environmental approvals in accordance with the 2006 Environment Impact Assessment Notification. By virtue of the National Green Tribunal Act 2010, the NGT has the authority to impose any type of environmental penalty on a built structure.⁵

² World Green Building Council, 'Green Buildings and Sustainable Development Goals', Available at: <https://www.worldgbc.org/green-building-sustainable-development-goals>

³ World Green Building Council, 'Green Building: Improving the lives of billions by helping to achieve the UN Sustainable Development Goals', Available at <https://www.worldgbc.org/news-media/green-building-improving-lives-billions-helping-achieve-un-sustainable-development-goals>

⁴ *Padamchand J. Kothari v State of Maharashtra* Bombay High Court O.S. Writ Petition No. 920 of 1985; *Pratibha Cooperative Housing Society Ltd. v State of Maharashtra* AIR 1991 SC 1453; *West Coast Builders (P) Ltd. v The Collector* Bombay High Court Appeal No. 92/1994 in Writ Petition No. 391/94

⁵ TK Rohit, 'NGT says Environmental Clearance a must before starting construction projects, The Hindu, January 22, 2020

The Ministry of Power, Ministry of Environment, Forest and Climate Change, and Ministry of Renewable Energy collaborate to develop policies for the energy efficiency of the country's building stock. Three main rating systems, namely GRIHA (Green Rating for Integrated Habitat Assessment), IGBC (Indian Green Building Council), and BEE (Bureau of Energy Efficiency), have historically been used to promote this notion.

III. ECONOMIC INCENTIVES

The government's promotion of green buildings is now connected to the rating systems. Governments are increasingly connecting governmental incentive programmes to encourage building rating in order to support the country's green construction movement. The builders and developers are the target audience for the MNRE's incentives.⁶ MNRE has adopted GRIHA as a national rating system and has given a number of incentives to various stakeholders, including reimbursement of 90% of the registration cum-rating fee for projects up to 5000 sq. m. of built-up area with a minimum 3-star rating and for projects > 5000 sq. m. of built-up area with a minimum 4 star rating to the owners.⁷ Awards of INR 50 lakhs to Municipal Corporation and INR 25 lakhs to other Urban Local Body who performs best.⁸

There are other incentives available. For instance, the Ministry of Environment and Forests (MoEF) in 2011 gave pre-certified LEED India and GRIHA projects extra treatment by creating a distinct clearance queue. This is allegedly done in the belief that the green rating organisations have investigated the project designs thoroughly and would be held responsible for the environmental performance of such projects. Pre-certification, however, is merely a pledge, and there is no legal need that project proponents obtain the level of rating they have stated in the pre-certification application.⁹

The rating agency cannot hold the project proponent responsible for a pre-certified LEED Platinum project's final rating of LEED Gold or lower. Even after receiving pre-certification and fast-track environmental clearance, the rating agency is unable to guarantee that the projects will return for an actual rating. Therefore, in the absence of follow-up and monitoring of the recipient initiatives, these green incentives may be ineffective. For the first time in India, public regulations, incentives, and subsidies are

Available at: <https://www.thehindu.com/news/national/tamil-nadu/ngt-says-environmental-clearance-a-must-before-starting-construction-projects/article30613176.ece>

⁶ Narendra D Patel & Nikesh P Shah, "Green housing- Review, rating systems and implementation", The Indian Concrete Journal (September 2007), Available at: http://icjonline.com/views/POV_Narendra_Patel.pdf

⁷ Anupama Mohanram, "A complete green rating code in place now," 10 October 2009, The Hindu, Available at: <http://www.thehindu.com/features/homes-and-gardens/a-complete-green-rating-code-in-place-now/article31941.ece> (last accessed in June 2020)

⁸ "MNRE announces incentives for adopting GRIHA," 5 February 2009, Ministry of New & Renewable Energy, Available at: http://www.grihaindia.org/index.php?option=com_news&limitstart=250&order=&title=&id=7#detail

⁹ S Unnikrishnan, "TERI sets 15 million sq. m target for green building projects", 24 April 2013, Live mint, Available at: <http://www.livemint.com/Industry/zM8DgXs6mLzCOUJto5dopO/TERI-sets-15-million-sq-m-target-for-green-buildingproject.html>

supporting voluntary rating systems.¹⁰ Therefore, to justify the investments, verifiable post-construction performance, accountability, and openness are required. Therefore, it is crucial to make sure that the structures that are being rated maintain their high performance and don't deviate considerably when they are in use. India currently lacks an efficient institutional and legal framework for building performance monitoring. There is no enforceable way to confirm that the rated buildings are accomplishing their stated objectives.¹¹

Cities like Noida are encouraging building green ratings by granting additional built-up areas, tax breaks, etc. However, there is no connection between these incentives and the structures' actual performance. Due to this, assessing the performance of the rated buildings has become all but impossible. Green buildings may perform worse than conventional structures if performance is not properly monitored.

A growing amount of research demonstrates that there is a disconnect between the performance of the building after occupancy and the design and construction that received a LEED rating. A quarter of the newly certified buildings are using more energy than anticipated by their design, according to the USGBC. According to the USGBC, of the 121 new structures that were evaluated through 2006, 53% did not meet the requirements for the Energy Star label, and 15% received a score below 30, which indicates that they consumed more energy per square foot than at least 70% of comparable structures in the country's existing stock. The bulk of the buildings with the designation also do not monitor their energy usage once they are in use, providing no promise of operational savings—which is hailed as the most evident advantage of green buildings. In Australia, where rated commercial and institutional buildings are underperforming, related concerns have also surfaced.¹²

India has not created a comprehensive legislative framework for tracking post-construction performance. Other nations have previously experienced this. For instance, owners of multifamily and commercial buildings are required to track their buildings' annual energy performance under the Seattle Building Energy Benchmarking and Reporting legislation.¹³

IV. NEED FOR A TRANSPARENT MECHANISM

There is no doubt that the “green” building movement has elevated the term to fashionable status. If one keeps tabs on the new construction projects popping up in the metro areas, one would notice that the term “green” appears in around half of the project

¹⁰ “Green Building Rating: Overrated”, Centre for Science and Environment (2012), Available at: <http://www.cseindia.org/userfiles/04%20Green%20Building.pdf>

¹¹ “Towards Sustainable Buildings- Policies and Practices; 3- Day Training Programme”, Centre for Science and Environment, Available at: <http://www.cseindia.org/content/towards-sustainable-buildings-policies-and-practices-3-daytraining-progr>

¹² “Green Building Rating: Overrated”, Centre for Science and Environment (2012), Available at: <http://www.cseindia.org/userfiles/04%20Green%20Building.pdf>

¹³ Sakshi Chaddha, “A thin green coating”, 15th June, 2012, Down to Earth, Available at: <http://www.downtoearth.org.in/content/thin-green-coating>

names, with “Green” in its title. However, this sales spree takes place in a total information vacuum. When asked what is “green” about the project, the salespeople are unable to answer the question. More openness and public understanding are required. According to the websites of the IGBC and GRIHA, rated buildings also save 20–30% water while saving 30–50% on electricity. According to the IGBC website, the incremental cost of a green-rated building may be 2% to 3% higher than that of a conventional structure, with a payback period of typically 5 years. However, neither the GRIHA nor the IGBC websites provide any detailed information on the graded structures. There is practically no information on the expected performance and actual savings of the number of buildings that the IGBC has rated. The name of the building, its location, the owner or developer, and the project’s rating are the only pieces of information the website provides.¹⁴

The checklist of points given to the graded construction projects is a crucial and fundamental component of the green rating. These contain the points that are given to construction projects in a variety of categories.¹⁵ However, neither the GRIHA nor the IGBC websites have any mention of these checklists for the rated projects. All “approved” structures must adhere to local ordinances and be situated on suitable grounds.¹⁶ As a result, green rating systems should be held accountable for granting green ratings to projects that are improperly located. For instance, environmentalists expressed worry over the Commonwealth (CWG) village’s location because it is built on the Yamuna flood plain, but the project nevertheless received a TERI GRIHA 2 Star Rating.¹⁷

Many of the visible aspects of green buildings have caused controversy because there is not enough clear information in the public domain. As a result, questions about the greenness of green buildings and the graded structures are frequently raised. For instance, the use of glass in rated buildings is one of the most contentious design choices. Numerous structures that make substantial use of glass have received high ratings from IGBC. Despite using a lot of glass, all these structures achieved good LEED India ratings. It is noteworthy that Saint Gobain, a founding member of the IGBC, operates a website titled “glass is green.”¹⁸ The wisdom of employing a lot of glass in buildings during a heat wave has come under serious question. This is because buildings with more than 50% glass trap heat inside, increasing the need for air conditioning and the energy needed to operate these glassed or glazed structures. Buildings with glass walls consequently act as heat sinks, increasing the temperature of the surroundings and the environment.¹⁹ Glass

¹⁴ IGBC- Green Homes Projects, Available at: <http://www.igbc.in/site/igbc/certifiedgreenhomes.jsp>

¹⁵ “Green Building Rating: Overrated”, Centre for Science and Environment (2012), Available at: <http://www.cseindia.org/userfiles/04%20Green%20Building.pdf>

¹⁶ Sakshi Chaddha, “A thin green coating”, 15th June 2012, Down to Earth, Available at: <http://www.downtoearth.org.in/content/thin-green-coating>

¹⁷ CWG Village gets Green Award, Available at: http://www.grihaindia.org/index.php?option=com_news&limitstart=110&order=&title=&id=235#detail

¹⁸ Sunita Narain, “Green Buildings: how to redesign”, Centre for Science and Environment, Available at: <http://www.cseindia.org/content/green-buildings-how-redesign>

¹⁹ Sakshi Chaddha, “A thin green coating”, 15th June, 2012, Down to Earth, Available at: <http://www.downtoearth.org.in/content/thin-green-coating>

exteriors make sense in colder regions since they absorb heat and lower the heating load, but in India's hot environment, they behave as greenhouses, which raises the building's cooling requirements.

A healthy economy functions with a nexus between the state players and the private stakeholders. Considering a transaction between a seller and a buyer of a "green" real estate, the demand will be affected through numerous factors. A socialist economy which majorly cares about the welfare of people at large cannot mandate all the constructions to be sustainable according to any of the mentioned ratings. Reason being that these ratings are privately governed and are subject to change. It becomes pertinent to reach out to a common ground providing enough economic incentives to both buyers and sellers to involve in a transaction for a "green" property.