

# ARCHITECT and INTERIORS INDIA

Inspiration and insight for architects and interior designers

Volume 7 | Issue 3 | June 2015 | ₹50

Published by ITP Publishing India

**LEDs**  
Energy-efficient  
lighting

**Environment  
Special**

50 shades of Green  
Expert opinion by  
Green crusaders  
Carlo Ratti and the  
SENSEable city

# RAISING HOPE

A PHILANTHROPIC INITIATIVE BY THE SBUT, THE BHENDI BAZAAR REDEVELOPMENT IN MUMBAI  
SERVES AS A BENCHMARK FOR URBAN RENEWAL PROJECTS IN THE REST OF THE COUNTRY





# GREEN LANTERN

Crusaders of sustainable design and construction share their experience of battling odds to fight the good fight



1. Firms like Stantec Consulting accept sustainability as an essential part of the design culture.

2. Jayesh Hariyani, senior principal, Stantec Consulting.

**How do you view sustainability in the light of your practice and profession?**

**Jayesh Hariyani:** Sustainability what we call 'our responsibility'. Our approach and strategy is to accept sustainability as an essential part of our design culture. So, our design for any project has a basis of sustainability in all its aspects – from big idea to detail; and ranging from energy to materials, from site to building, from master planning to interior design.

**Meenal Sutaria:** Sustainability is a commitment, not used for competition or exclusiveness. It's embedded in the concepts and design process.

**Prof. Krishna Rao Jaisim:** Five decades in this practice is still a practice. Sustainable architecture, to me, is a continuum; great and good architectural practice must be like a story. Each project is a chapter. When chapters integrate well, it becomes an epic. Sustainability must have depth and character.

**Mala Singh:** In my company, PEC Greening India Group; we do not quantify our sustainability footprints in terms of creating the number of Green certified and sustainable structures alone. We believe in complete social transformation of existing societies into sustainable societies at the grassroots level. As a Green mentor/speaker in various national platforms, my role is helping masses to perceive awareness of the Green concept in a simpler manner. The Government of India has set up the National agenda for Climate Change policy with eight specific national missions, out of which three missions talk about

## MEET THE GREEN EXPERTS

**Jayesh Hariyani**, senior principal, Stantec Consulting

**Meenal Sutaria**, managing director, Green Angle

**Prof. Krishna Rao Jaisim**, principal, Jaisim Fountainhead

**Mala Singh**, chairperson & MD, PEC Greening India Group

**Manit Rastogi**, principal, Morphogenesis

**Dr Prem C Jain**, chairman, IGBC

Energy Efficiency, Solar Energy and Creation of Sustainable Habitats. Unfortunately, very few intellectuals are aware of this policy. I feel that these missions need to be communicated to all stakeholders in order to make them contribute towards them as responsible citizens of India.

**Manit Rastogi:** Sustainable design, in today's world, is significant for two reasons: buildings are one of the largest consumers of energy and, secondly, to re-establish man's relationship with nature. A sustainable building can be defined as one which depletes as little as possible of the natural resources during its construction and operation – the aim being to minimise the demand on non-renewable resources and maximise the utilisation efficiency of these resources when in use; maximise reuse and recycling of available resources; and utilise renewable resources during construction and operation.





**Do you think there are 'different faces' of sustainable construction?**

**Hariyani:** Yes and no. This depends on complexity and use of technology. We need to be responsible. We have to explore the basics, before we go in for extreme measures. For example, we need to be sensible in the use of glazed façade on south or west orientation. There is no point in using the most expensive and the best glazing technology in that direction because you want to use more glazed surfaces in the south. This also depends on size and scale. For example, handling a small dwelling based on a few effective measures for sustainability (say, best orientation, low energy use, power generation by solar or wind, cavity walls, shaded windows, etc) can be easily achieved at a domestic scale with good, measurable results. Likewise, a major project may be carefully orchestrated for predictable results, but the measures and methodology are painstaking and infinitely need more scrutiny – both in development and execution. Perhaps the difference is more a matter of scale and complexity than anything else.

**Sutaria:** The concept of sustainability is quite intangible. It has to be embedded in the value systems of not only the construction industry, but society as a whole. Manifestation of this could be different in societies across the world, and it may seem as different faces. When it is treated as an addendum or additional, it emerges as different faces.

**Jaisim:** Construction is another phase and world. Architects can define and specify, but actual construction is in the hands of the builder. The only area we can address is to ensure that the specifications set out have a sustainable character.

**Singh:** In modern times, Green and Sustainable construction has been defined by incorporating ancient mythology of Panchabhutas in the design and construction style itself. Panchabhutas defines Prithvi (earth), Jal (water), Vayu (air), Agni (fire) and Aakash (sky). Only when we ensure that we maintain the delicate balance between these five elements of Panchabhutas in design and construction throughout the building development, will we be able to achieve the goal of sustainable construction, which will have a long-term positive impact on

the environment by conserving and preserving our valuable natural resources. Any type of development/construction on our Mother Earth is prone to deteriorate our environment. Only by means of minimising environmental hazards, can we achieve the objective of sustainable construction.

**According to you, which are two most effective sustainable construction methods?**

**Hariyani:** The design behind the construction is at play. If the idea and design are effective and integrated with all the engineering aspects, then the construction can follow accordingly. **Jaisim:** Simple and clear objectives. But simplicity is very difficult. Minimalism is another objective that very few understand and comprehend. Detailing becomes a major issue. It takes time to master this area.

**Singh:** According to me, the most effective sustainable construction method is to adopt the Green building approach right from the beginning. Being an executive board committee member of IGBC, I say with utmost belief – that the Green tools have been applied and successfully implemented in various kinds of buildings and developments across India. In fact, IGBC has also developed sustainable tools for not only premium buildings, but also for affordable homes as well as existing buildings – which will help to improve the current plight of our urban areas.

**Dr Prem C Jain:** Blending ancient practices with modern state-of-the-art technological innovations, will go a long way in the design of innovative and futuristic buildings, which are ecologically superior and economically viable. The need of the hour is to re-discover our past and build on our vibrant ancient concepts, such as *jali* systems, domed structures, water management practices, traditional cooling systems and the use of local materials

**There seems to be a steady rise in the adoption of traditional construction methods like mud/bamboo architecture. How do you view this movement? What are its pros and cons?**

**Hariyani:** All research and experimentation is a good thing,

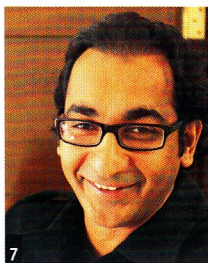


3. Bamboo architecture employed in a Green school in Indonesia. While experts applaud such traditional methods, they feel they can't be adopted for all projects – as they lack potential for major influence.

4. Dr. Prem C Jain, chairman, Indian Green Building Council.

5. Meenal Sutaria, managing director, Green Angle.





6. India Glycols Corporate office in Noida, designed by Morphogenesis, uses passive strategies to achieve the desired Green goals.

7. Mani Rastogi, principal, Morphogenesis.

concerning both traditional and new ideas. Mud architecture bring great benefits, particularly for low-cost buildings in hot climates, or any building with temperature swings of hot days and cold nights. Although there are examples of significant structures designed to accept and utilise the inherent qualities of bamboo for framing, flooring and cladding, it also has its limitation. Hence, we don't see any huge change in the use of bamboo as the adoption of sustainability increases – except perhaps, for domestic and shelter structures.

**Sutaria:** It is very refreshing to see, after almost a century, that the trend of using natural materials in construction is gaining momentum. However, this may not be able to keep pace with the fast-paced demands of urban construction typologies and costs. Much more research and knowledge dissemination is required to once again popularise these methods and make them applicable for mass construction. It would be an alarming threat if these natural materials are used without replenishing them, as in the case of today's mining and quarrying. If mud and bamboo have to be used for mass housing in the fringe areas, a simultaneous attempt must be made to even replenish what is consumed.

**Jaisim:** Literally, ever so often someone walks in and says, "Sir, build me with bamboo or mud or something earthy." A smile usually crosses my face and my eyes twinkle. Does that person even understand the word? They hear these masters voiced, and they think they are the saviours of this earth. Yes, there is tremendous scope. It is time-consuming work involving the architect, builder and construction worker; in total integration – but at the end, it creates a unique architecture.

**Singh:** Frankly speaking, the integration of traditional methods like mud/bamboo architecture is not practically feasible in urban areas. In fact, the use of these traditional construction methods like mud/bamboo architecture can be thought upon and implemented in the hospitality sector – like in resorts, spas and, maybe, even in weekend homes located on the outskirts of the city.

**Rastogi:** Traditional construction methods like mud/bamboo architecture find their place in projects of smaller scale – individual homes, small schools – and that's just fine. With larger group housing and commercial projects being the majority of what is being built, the greatest challenge is to ensure that they are built sustainably. The goal when building Green, is to use energy and natural resources wisely and in a healthy manner. The most effective approach would be to build with local materials in a way that responds to the local climate while remaining economically viable. While it may not be possible to build with traditional construction methods at larger scales, what is very easy to do is to use the wisdom of the past to design these in a way that reduces consumption requirement by passive means.

**Jain:** This indeed is a step in the right direction and augurs well for the National Green Building Movement. Adopting traditional construction methods would not only facilitate lower energy consumption, lesser material utilisation and reduced emissions, but will also result in improved quality of life for the occupants. Green buildings, intrinsically, result in energy consumption reduction by 30-40% and fresh water consumption reduction by 20-30% – which, in turn, will facilitate a greener and healthier India.

**Can traditional sustainable methods be adopted universally? If yes, how? If not, why not?**

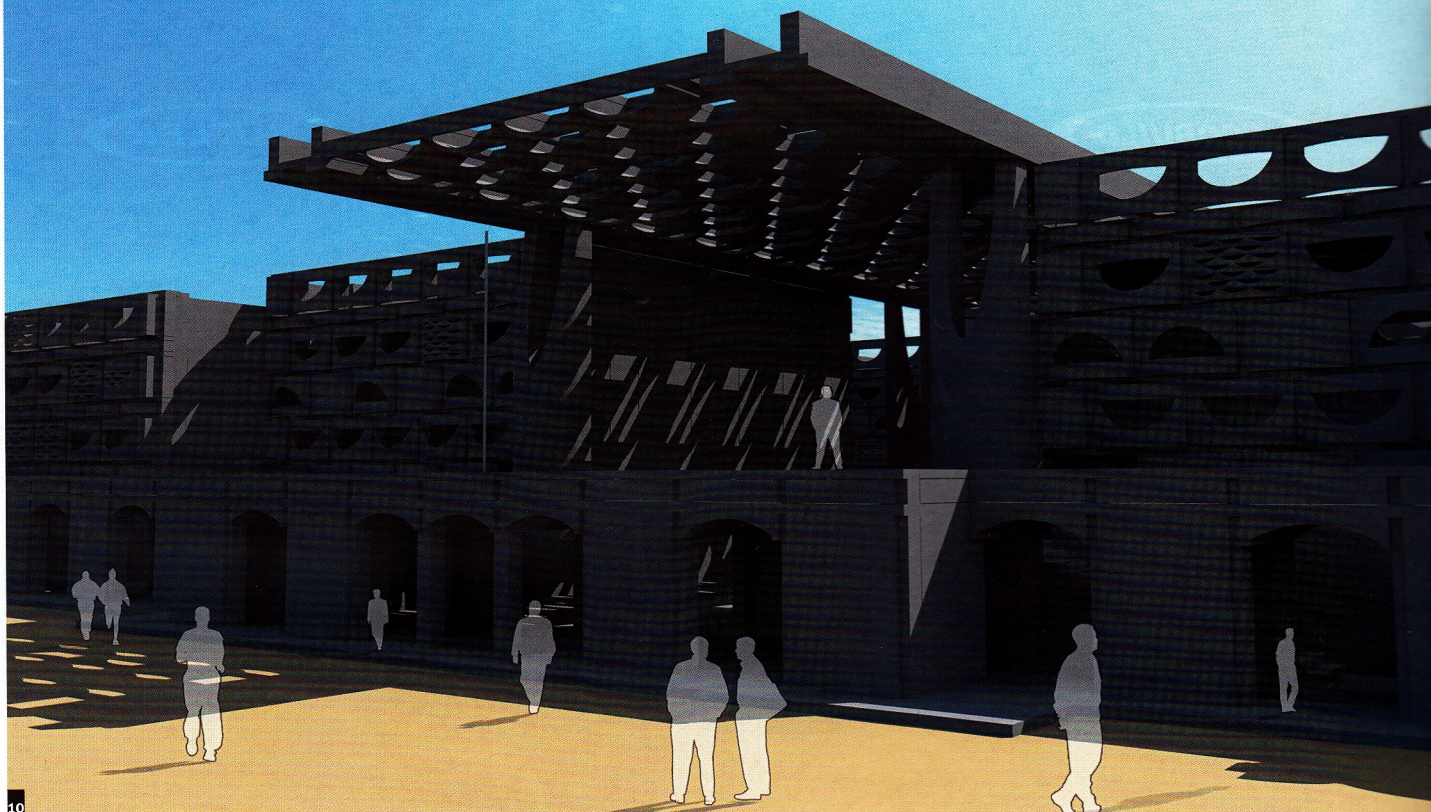
**Hariyani:** Yes. The direct adoption of traditional methods is possible in areas where the tradition is strong and accepted; and it can be replicated or adapted elsewhere through analysis of its functional aspects and re-employed.

**Jaisim:** No, they cannot be. It is individualistic and is an art blended with detailed hands-on technology. It is a grandmother's recipe.

**Singh:** Given the present developmental pattern in India, creating all developments like our ancient structures is not a feasible option. In fact, adopting such traditional architectural techniques and methods is more possible in government buildings and institutional buildings. Take, for instance, the Raksha Shakti University project in Gandhinagar, Gujarat, which is a first-of-its-kind university in India for conducting courses in the field of police science and internal security. This institutional project is being developed with the incorporation of various traditional architectural elements, to meet the climate responsive architecture and comfort requirements while integrating sustainability within the buildings. Still, in urban areas, considering that the preferred developments are high-rise developments, the ancient learnings rendered by these traditional architectural techniques and construction methods can be adopted as an inspiration to blend the present modern architecture and advanced construction methods – in order to create an innovative development methodology, which can be applied for all future developments.

**Jain:** Traditional sustainable methods can certainly be adopted universally. Generally, the principles/guidelines of traditional sustainable methods are resource conservation, enhanced comfort, and health and well-being of the occupants. However, actions/methods of implementation differ, to meet local needs. Hence, depending on the local conditions and





10



11

10. For the Raksha Shakti University project in Gandhinagar, Gujarat, PEC Greening India Group is incorporating various traditional architectural elements.

11. Mala Singh, chairperson and managing director, PEC Greening India Group.

or even the typical corporate or institutional client/user, is unwilling or unable to assess or afford the benefits of sustainable design and construction. Designers, builders and subcontractors have to believe in sustainability and market the benefits. Over time, with acceptance and regulatory requirements for sustainability, products and services will be economically available – resulting in greater acceptance of sensible and sustainable design and construction.

**Jaisim:** Traditionally, our architecture was sustainable in all the senses. It died about a few centuries ago. We forgot our own. It will take some time to rediscover this path.

**Singh:** In my opinion, with spreading awareness and social consciousness among the masses by agencies like IGBC, sustainable architecture has gained importance in recent times. I would like to appreciate IGBC for having come up with these Green tools for creating sustainable and environmentally compatible developments, while assuring the balance between development and environment – where sustainable architecture and design is given huge prominence.

**Rastogi:** Architecture of the future should successfully reduce the load on the environment in its construction strategy (assembly), material resource utilisation (transportation), spatial allocation (area optimisation), energy consumption (passive methods); and should increasingly rely on natural environmental resources and renewable ones such as daylighting, ventilation, passive methods of cooling, water recycling and access to nature. The idea of sustainability should now move on from buildings to our cities as well.

**What change would you like to witness in the country's sustainable pursuit? How could new technology help to quicken the process?**

**Hariyani:** Across the board acceptance through a predictable time-based programme for all projects, big and small, to be built per sustainable guidelines that are reasonable, affordable and easy to use. Terms like 'lifecycle cost analysis' or 'cost of ownership' are the key.

**Sutaria:** Overall sustainability in the industry can be obtained only through a top-down approach. When the country's administration makes vision statements and the local governments take measures to implement through policy and

programme levels, only then shall this movement have a large, level changing impact on society. Working in isolation as only material, construction or HVAC are only micro issues, but country level issues shall stay un-addressed.

**Jaisim:** New technology can make a lot of sense if the marketing is based on values, and not on sales figures. Value is inherent in a product. It must be taught and learnt. To make an element into a structure, to realise a sustainable architecture, takes wisdom.

**Singh:** New technology integration will help at some level in the country's sustainable pursuit, not in totality like in developed countries across the world. I personally feel that an optimised use of technology, along with efficient operational methodology and an adequate behaviour approach, will create more impact in the country's sustainable pursuit. To achieve this, we need visionary leadership, effective Government policies with strong Governance mechanism, responsible and committed attitude of the citizens. Then only would we be able to get the actual benefits of the modern-era technologies. As said by Jamie Lerner, Mayor of Curitiba, Brazil, "There is no endeavour nobler than the attempt to achieve a collective dream. When a country accepts as a mandate its quality of life; when it respects the people who live in it; when it respects the environment; when it prepares for future generations, the people share the responsibility for that mandate – and this shared cause is the only way to achieve that collective dream."

**Jain:** IGBC foresees that the next 10 years will be the decade of integrated sustainable built environment. This will mostly be in the form of large integrated townships, satellite cities, and campuses with mixed land use development. This presents an enormous opportunity to design all upcoming buildings as Green from day one, and influence people's way of life. I am sure, in days to come, the places we live in, work, study, play and commute, will go the Green way. Green buildings will become the way of life for all of us, and India will set new benchmarks in the design and construction of Green buildings. India has to continue marching ahead with renewed passion and commitment. We aspire to cross the mark of 10 billion sq-ft of Green building footprint for India by the year 2022, when independent India turns 75. **AS**