The GRIHA Summit 2015

12-14 MARCH, 2015 | IHC COMPLEX, LODHI ROAD, NEW DELHI-110 003

SUMMIT NEWSLETTER DAY 2 • Friday, March 13, 2015

GRIHA awards

Plenary Session

Welcome Address: Ms Mili Majumdar, Director, Sustainable Habitat Division, The Energy and Resources Institute (TERI) & Secretary cum Treasurer, GRIHA Council

Keynote Address: Mr Upendra Tripathy, Secretary, Ministry of New and Renewable Energy (MNRE), Government of India

Special Address: Dr Leena Srivastava, Acting Director-General, TERI & Acting President, GRIHA Council

Ms Mili Majumdar welcomed everyone to the second day of the Summit. Shri Upendra Tripathy, awarded GRIHA rating to certified projects and also felicitated GRIHA registered projects with exemplary performance. During the awards function, Shri Tripathy said that a transition in the GRIHA movement was needed, similar to the one witnessed in the renewable energy sector. He pointed out that the Ministry of New and Renewable Energy (MNRE) had identified three basic pillars to carry out this transition—expanding the number of institutions, generating innovative ideas, and bringing together more and more stakeholders. He emphasized on the need for "skill, scale, and speed" to give pace to the GRIHA movement.

Shri Tripathy invited 10 unique ideas from the Summit to be submitted to the MNRE for scaling up GRIHA; he also suggested awarding "the best idea in the next Summit", so as to encourage innovative thinking.

Dr Leena Srivastava said that GRIHA has been a key accelerator in the area of building efficiency for quite a few years now. On behalf of TERI, she thanked the MNRE for the support and encouragement provided for the promotion of GRIHA.

GRIHA/SVA GRIHA rated projects

New Administrative Building for Indian Railways Institute of Civil Engineering (IRICEN), Pune—5 star GRIHA rating

Circuit House, Pune—5 star GRIHA rating

SONA SIGMA BLOCK—5 star GRIHA rating

BPCL Residential Building (Block no. 39), Chembur, Mumbai—4 star GRIHA rating

Small Industries Development Bank of India (SIDBI), Bhubaneswar—3 star GRIHA rating

Income Tax Commissioner's Office, NOIDA—3 star GRIHA rating

Aishwaryam Courtyard, Pune—2 star GRIHA rating

Neelkanth Corporate Park, Mumbai—2 star GRIHA rating

SVA GRIHA project:
Residence of Mrs Aasha Jain and Mr Azad Jain, Indore

SVA GRIHA project:
Panedas Residence, Guatemala City

SVA GRIHA project:
Office Building at A-2/18, Safdarjung Enclave, New Delhi

"We need to transition from MW to GW." **Shri Upendra Tripathy**

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http://grihaindia.org/grihasummit/index.php

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ECO-INNOVATIONS

Plenary Session

Speakers: Ms Rozita Singh, Partner, Daily Dump; **Mr Alan Abraham,** Principal, Abraham John Architects; **Mr Ramit Malhotra,** Associate Fellow, Energy Regulation and Practice, TERI; and **Mr Samit Choksi,** CEO and Co-founder, THINK Idea Lab

This session discussed the emergence of sustainable development as a key driver of innovation in the 21st century, in view of the impending resource crunch worldwide and the knowledge of our common future. Keeping in mind the goal of sustainability, the significance of new ideas like improving efficiency of existing systems, filling gaps in the supply chain, exploring eco-friendly materials, etc., was highlighted. Ms Rozita Singh emphasized on the need of segregating waste at the source point. She highlighted that the organic waste generated in the kitchen can easily be converted into manure, a useful resource, through an extremely simple process and "khambas" are really helpful in this regard.

Mr Ramit Malhotra spoke about his research work on rooftop solar installation in Chandigarh. He also stressed on how the geospatial and radiation analyses conducted in the city led to drawing of analysis both for the users and policymakers.

Mr Samit Choksi made his presentation around the concept of innovative rainwater harvesting system, developed by his firm. The initiative, known as *Ulta Chaata* (it is an innovative rainwater harvesting system for open spaces), was engaged in designing products that influence behavioural changes. He cited the example of how a simple canopy and mast can be used for the purposes of providing shade and harvesting rain water. Mr Alan Abraham highlighted the daily problems faced by the city of Mumbai. He proposed that railway corridors could be covered since they possess a huge potential to enhance the city's social life. Thus, they can be used to connect the city from the eastern to the western parts and can be converted into parks, rainwater collectors, and flyovers.


Ms Rozita Singh


Mr Ramit Malhotra


Mr Samit Choksi


Mr Alan Abraham

USING BAMBOO FOR CONSTRUCTION

Keynote Address

Chair: Mr Subhash Chand Mehrotra, Principal Consultant, Mehro Consultants & President of the Indian Association of Structural Engineeers

Speaker: Mr John Hardy, Founder, Green School, Bali, Indonesia

Mr John Hardy highlighted the sustainability aspect of the bamboo plant and showcased some facts about its growth and readily replenishable nature. He said that bamboo is the most sustainable material for rapidly increasing building industries. He also said that to use the bamboo for building, it is harvested after three years of planting. It provides a virtually endless supply of sustainable material for making permanent buildings. He spoke about how people have been living in bamboo buildings since a very long time. He showcased a bamboo bridge built in 1930 located in Java.

Mr John Hardy further illustrated many innovative ideas being implemented at the Green School such as solar PV supported by bamboo, turbine to generate electricity through vortex, strainer for river, composting the biomass from stained garbage, plastic bags reused to make shipping barge which is made of 15 kg of waste plastic, etc.

Mr Subhash Chand Mehrotra in his keynote address discussed the characteristics of bamboo, for structural use in buildings. Through his presentation, he explained that the new codes have information about different bamboo types available in India and their characteristics for structural use. He cited an example of a Jain temple that has used bamboo, as the reinforcement material instead of steel. In that structure, bamboo was used in piles, columns, slabs, beams, etc. He also emphasized that more research is required to bring bamboo to the mainstream of the building construction industry.

> "Bamboo grows . . . shooting out of ground like a train."
> **Mr John Hardy**

> "Bamboo is well suitable to replace RCC and concrete."
> **Mr Subhash Chand Mehrotra**

Transform to Perform

Parallel Track-I

Opening Remarks: Ms Mili Majumdar, Director, Sustainable Habitat Division, TERI & Secretary cum Treasurer, GRIHA Council

Presentation on regionalized LEED EB by **Mr Apoorv Vij**,Programme Manager–Technical, GRIHA Council

Keynote Address: Mr Mahesh Ramanujam, Chief Operating Officer, USGBC

Address on adoption of LEED EB and LEED Dynamic Plaque at Paharpur Business Centre by **Mr Kamal Meattle,** CEO, Paharpur Business Centre and Software Technology Park

Chair: Mr Kamal Meattle, CEO, Paharpur Business Centre and Software Technology Park

Panellists: Mr Mahesh Ramanujam, Chief Operating Officer, USGBC; **Mr Alwyn Noronha,** Executive Vice President—Projects, ITC Ltd; **Ms Mili Majumdar,** Director, Sustainable Habitat Division, TERI & Secretary cum Treasurer, GRIHA Council; **Ms Deepa Sathiaram**, Executive Director, En3 Sustainability Solutions Pvt. Ltd; **Mr M Selvarasu,** Director, Lead Consultancy & Engineering Services (India) Pvt. Ltd; and **Mr Dheeraj Wadhwa**, Assistant Director, Commercial Applied Business, UTC Carrier

The panellists discussed the status of the collaboration between TERI and USGBC for development of LEED EB for India. This was also followed by the launch of a publication on LEED EB guidelines for India.

Mr Mahesh Ramanujam, spoke about the shared vision of TERI and USGBC for transforming the built environment in India. He stressed on following the approach of "one building at a time" to start the change which could be aggregated at a national level. He also discussed the different versions of LEED to cover all typologies of building while informing the audience of the recent establishment of the LEED international round table to discuss the best international practices. He also deliberated the challenges in the retrofitting of green measures in existing buildings, pointing out the various technological, financial, and policy barriers in their introduction. He emphasized on the need for and development of LEED EB and LEED Dynamic Plaque.

Mr Apoorv Vij gave a presentation on the usefulness of the LEED Dynamic Plaque for assessing the performance of buildings in

terms of energy, water, waste, transportation, and human experience. Mr Kamal Meattle shared his experiences of renovating a 30-year-old building in Delhi. He emphasized the gap between the designed and actual operating performance of buildings where the significance of Dynamic Plaque could be immensely useful.

Ms Mili Majumdar spoke about the role of policy, honesty of implementation, and capacity building of operating staff. Mr Mahesh Ramanujam stressed on the need to realize the potential of energy efficiency in the existing building stock and the need for leadership and learning from best practices such as Paharpur. Mr Alwyn Noronha shared his experiences from ITC about the costs of implementing green features in buildings. Ms Deepa Sathiaram emphasized on the importance of LEED Dynamic Plaque in helping building operators to understand energy performance of buildings which can further lead to proper utilization of budgets in financing building retrofits.

Mr M Selvarasu mentioned that the importance of LEED Dynamic plaque is more in owner-operated buildings than other facility-operated buildings. Mr Dheeraj Wadhwa mentioned that the LEED Dynamic Plaque empowers the building owners to question the manufacturers, in case the building is not found to be operating as designed.

GRIHA Trophy at NASA

Bridging the Gap between Theory & Practice of Architecture for Sustainable Buildings

Parallel Track-II

Presentation on GRIHA Trophy at NASA by **Ms Chitrangada Bisht**, Programme Officer, GRIHA Council

Chair: Mr Sanjay Prakash, Principal Consultant, SHiFt Studio for Future Habitats

Panellists: Mr P Sahel, Vice Chairman, Lotus Greens Developers Pvt. Ltd; **Prof. Mandeep Singh,** HOD Architecture, School of Planning and Architecture, New Delhi; **Ms Poorva Keskar,** Director at VK: e environmental & Principal in Charge of Masters in Architecture at BRICK School of Architecture, Pune; and **Ms Amritha Ballal,** Founding Partner of SpaceMatters, New Delhi

The session began by awarding the students, of the four colleges of architecture, who had participated in the GRIHA Trophy at the National Association of Students of Architecture (NASA). This was followed by a panel discussion, which focused on bridging the gap between theory and practice. The initiative by TERI and USGBC, sponsored by Lotus Greens Developers Pvt. Ltd, was launched in 2014. The theme for the Trophy was "Residential Complex in Noida". The students were expected to design the project on the lines of GRIHA and introduce innovation, while sustaining the alignment with the Development Control Rules of Noida. The students addressed the theme of the Trophy successfully, while experimenting with various features such as solar passive architecture techniques, water harvesting, landscape designing, and so on. The students presented their ideas using the best possible ways and media, which allowed them to put forward their thought process efficiently.

The panel discussion, comprising eminent panellists such as architects and developers, revolved around bridging the gap, that exists today, between theory and professional practice. Commenting on the presentations by the students, it was reiterated that ideas do not work without execution. Thus, the panel insisted on integrating practical aspects in their designing, while developing their imaginative ideas. The panel also stressed on the fact that though vernacular architecture, essentially taught in architecture schools, it is imperative to understand the evolution of sustainability in Indian culture, the adaptation to the current requirements, and making green buildings contemporary.

The session further emphasized on various aspects, like training the users while using the green buildings, introduction of the social, financial, and design sustainability into the curriculum, and so on. Meeting requirements of the clients, while retaining the ideas and sustainability from the developers' perspective was further deliberated upon.

"Sustainability is no more a frill, but is an inseparable part of architectural design."
Ms Amritha Ballal

Winner: Jamia Millia Islamia

1st Runner Up: Gateway College, Sonipat

2nd Runner Up: AMS Academy of Architecture, Chennai

Jury's recommendation award: NIT CALICUT

"Architecture is not just fancy ideas, but essentially is also a rational and conscious response to the client's requirements."
Mr P Sahel

"Architectural concepts should just not be concepts, but must imbibe the aspects of practicality and cost effectiveness."
Ms Poorva Keskar

Ideas

Innovative feats to enhance the performance of existing buildings

Parallel Track-III

Chair: Mr Pradeep Kumar, Associate Director, TERI

Speakers: Mr Rohan Parikh, Founder & CEO, Terrasol Sustainability Solutions LIp; **Prof. Rajan Rawal,** Coordinator, Centre for Advanced Research in Building Science & Energy; **Prof. Sanyogita Manu,** Senior Research Associate (Energy Efficiency), CEPT University; **Mr Ajay Raj,** Senior Manager (Tech) Public Building & Utilities portfolio, Energy Efficiency Services Limited (EESL); **Mr Rumi Engineer,** Senior General Manager, Godrej and Boyce; **Mr Rajat Malhotra,** Chief Operating Officer–West Asia, Integrated Facilities Management, Jones Lang LaSalle; **Mr Alwyn Noronha,** Executive Vice President–Projects, ITC Ltd; and **Mr Jayesh Deshpande,** Vice President, Applied Business, Daikin Air conditioning India Pvt. Ltd

The session was chaired by Mr Pradeep Kumar, who set the theme by stating that retrofitting in existing buildings is much more economic for an organization, rather than creating and developing something new which is sustainable.

> "One needs to change his/her thinking about comfort, rather than demanding comfort."
>
> **Mr Rohan Parikh**

All the panellists presented case studies and their learnings related to water and energy saving. Mr Rohan Parikh, while speaking about his organization, said that we need to change our perspective about comfort, rather than merely demanding for it. Prof. Rajan Rawal also supported this argument during his presentation. He, along with his colleague Prof. Sanyogita Manu, presented their research, based around comfort conditions in various climatic zones of the country.

Mr Ajay Raj discussed about the various opportunities and challenges faced by EESL, while promoting energy efficiency in existing buildings. He also explained about the energy savings company (ESCO) model taken up by the government recently.

Mr Rumi Engineer highlighted the problems related to tap water and waste management. He also showcased few projects from his organization,

wherein they implemented water and waste management at the site.

Mr Rajat Malhotra focused on the fact that operating and managing the building in a proper manner can increase its life by 10–15 years and minimize the operating cost by 30–40 per cent. He also spoke about the various operations and management (O&M) measures present in the market.

Mr Alwyn Noronha spoke about the initiatives of his organization in increasing energy efficiency. He presented a few case studies to strengthen the argument that green buildings are more efficient than conventional buildings.

Mr Jayesh Deshpande, while discussing the initiatives of his organization, spoke about various solutions present in the market today to enhance the efficiency of HVAC systems.

Experiences on Effective Implementation of Technologies and Energy Codes

Parallel Track-IV

Speakers: Ms Swati Reddy, Environmental Building Consultant, Terra Viridis; **Mr DVS Kiran Kumar,** Associate Fellow, TERI ; **Ms Pooja Shukla**, Consultant, TERI; **Mr Tarun Garg**, Fellow, TERI; and **Mr Vivek Jain**, Regional Lighting Application Specialist Manager, Northern Region, Philips India Ltd

Ms Swati Reddy discussed various day lighting and glare control strategies that are analysed and implemented by her organization. She mentioned the basic design principles that should be followed for proper daylight harvesting along with glare control. She presented the simulation and measurement exercises conducted by her organization which they further took to conduct occupant surveys.

Mr DVS Kiran Kumar presented different case studies on the analysis of thermally appropriate building materials. He discussed the role of initial embodied energy when there is a shift from low to high performance building materials. He also presented a case study where performance evaluation of phase change materials was conducted by monitoring the specified thermal performance indicators.

Mr Vivek Jain deliberated over the huge energy potential in building energy system retrofits. He then mentioned the various challenges that lie in retrofitting existing buildings, such as non-availability of baseline data and existing energy consumption patterns, behaviour of operating staff, etc. He mentioned that even though retrofitting of lighting systems is fairly simple and proven to be cost- effective, but still the transition to efficient fluorescent lighting or LED lighting is very low. He then discussed his organization's approach to green lighting design by transition to efficient lighting systems, with further integration of lighting controls and energy management systems.

Ms Pooja Shukla presented her experiences and key findings of an ongoing project at TERI, in which the actual implementation of Energy Conservation Building Code (ECBC) was assessed for 50 buildings. She discussed the key findings of the study and highlighted that operation and maintenance were major issues.

Mr Tarun Garg discussed the various gaps and barriers in effective implementation of technologies in India. These included, missing energy reporting framework, lack of identification of energy-saving measures, implementation of energy-saving measures, financial mechanisms to fund retrofits, and lack of supporting codes and standards. He further highlighted the importance of data collection for baseline development, measurement, and verification protocol. He also mentioned the major need to develop financial mechanisms to fund retrofits, especially in air conditioning systems.

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CONTACT DETAILS

GRIHA Council
The Energy and Resources Institute (TERI)
A - 260, Defence Colony, New Delhi - 110024
Tel. : (+91 11) 46444500/24339606-08
Fax : (+91 11) 2468 2144/2468 2145
E-mail: info@grihaindia.org
Helpline no.: +91-11-40589139

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