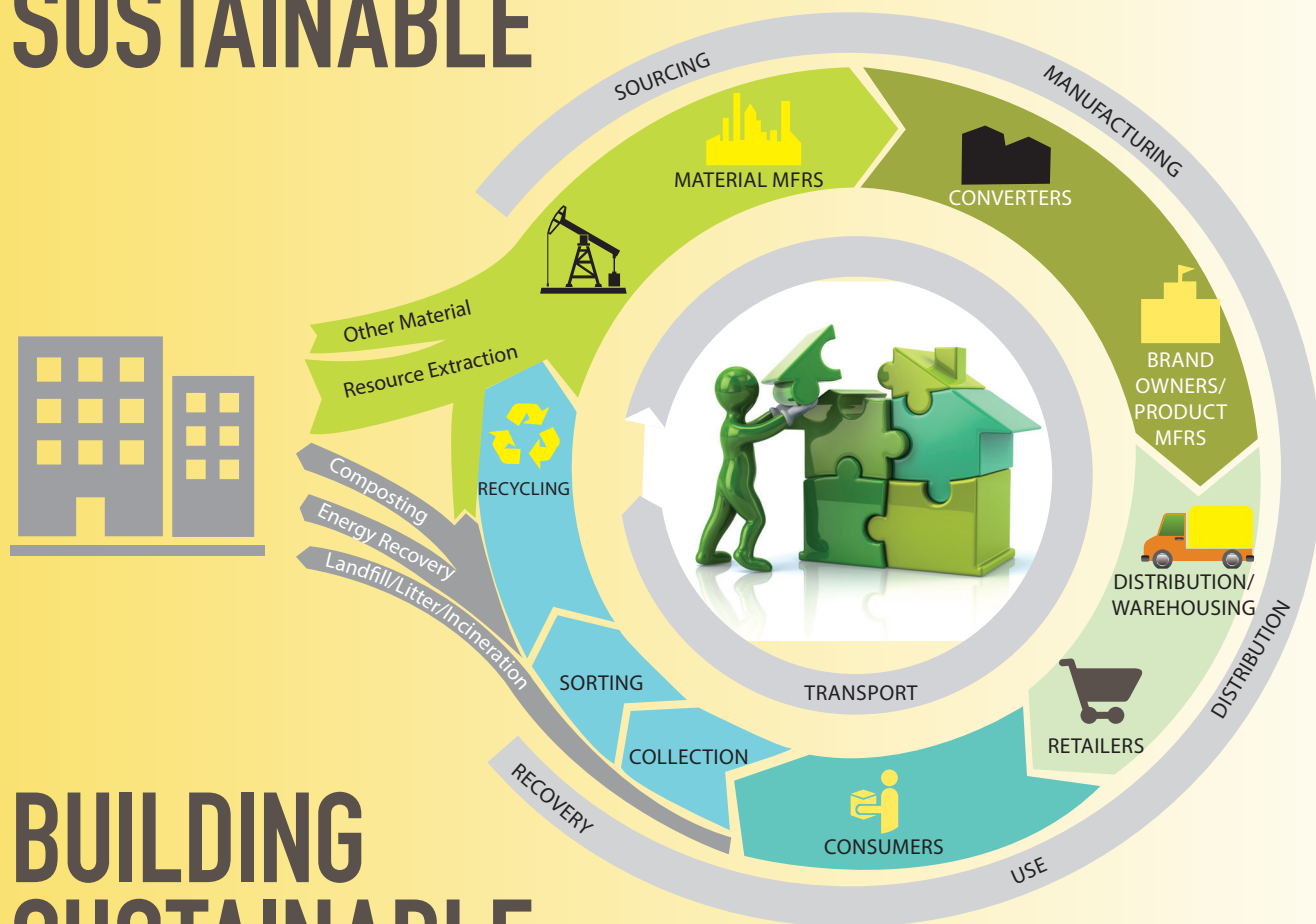


CHOOSING SUSTAINABLE



BUILDING SUSTAINABLE

THE 8TH REGIONAL GRIHA SUMMIT

2018

PROCEEDINGS OF THE SUMMIT

29–30 JUNE, 2018 | MUMBAI



THE 8TH REGIONAL GRIHA SUMMIT 2018

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Choosing Sustainable Building Sustainable





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Curtain Raiser

28th June, 2018

Venue: **The Ambassador Hotel**

Block 1, Plot 7, Veer Nariman Road, Churchgate, Mumbai, Maharashtra 400020

18:00 hrs onwards	Setting the theme followed by dinner
18:00 – 18:15	Registration & networking
18:15 – 18:20	Welcome Address - Mr. Sanjay Seth , CEO, GRIHA Council
18:20 – 18:40	Thematic Address - Dr. Ajay Mathur , President, GRIHA Council
18:40 – 18:45	Special additions: • Launch of ' GRIHA e-Product Catalogue ' • Presenting the GRIHA Rising Star Award 2018-19
18:45 – 18:55	Inaugural Address- Shri. Chandrakant Dada Patil , Hon'ble Minister of Public Works Department, Government of Maharashtra
18:55 – 19:00	Vote of thanks – Ms. Shabnam Bassi , Secretary, GRIHA Council
19:00 – 19:15	Media interaction and photo op.
At 19:15	Departure of Shri. Chandrakant Dada Patil, Hon'ble Minister of Public Works Department, Government of Maharashtra



Venue: Courtyard by Marriott, Cts 215, Carnival Cinemas, Andheri - Kurla Rd, Andheri East, Mumbai, Maharashtra 400059.

DAY-1

29th June 2018

09:00 - 10:00	Registration
10:00 - 10:45	Inaugural Function
10:00 - 10:15	Welcome Address by Mr. Sanjay Seth, CEO, GRIHA Council
10:15 - 10:20	Address by Ar. Anagha Paranjape-Purohit , Trustee Sustainability Initiatives
10:20 - 10:40	Keynote Address by Ar. Sangeet Sharma, Partner, SD Sharma and Associates
10:40 - 10:45	Vote of thanks by Ms. Shabnam Bassi, Secretary, GRIHA Council
10:45 - 11:00	Networking over coffee break
11:00 - 12:30	<p>Session 1 – Connecting the outside to inside: Materials for designing building envelope</p> <p>The façade of the building is the breathing skin which separates the outside dynamic environment from the stable indoors. This physical separator in buildings needs to be designed with utmost care and detailing since large savings in energy costs can be achieved. This session will explain how to make the right trade-off decisions with respect to the walls, windows and roofs and what materials should be used to achieve maximum indoor comfort.</p>
11:00 - 11:30	Speakers:
11:30 - 12:00	<p>Mr. Sudhir Paliwal, Expert Member, Maharashtra State Fly Ash Council, Nagpur</p> <p>Ar. Rajan Rawal, Executive Director, CARBSE, Ahmedabad</p>
12:00 - 12:15	Mr. Isaac Emmanuel , Head – Industrial Marketing & Advocacy for Business Unit Polyurethanes in Covestro (India) Pvt Ltd
12:15 - 12:30	Q & A

12:30 - 13:45	Session II – Low Energy Materials for Interiors <p>Appropriate selection of interior materials and finishes is crucial since these will have a significant impact on the indoor comfort of occupants and at the same time yield better productivity and ensure good environmental quality in the spaces. Having said this, in this session materials like interior paints, furniture, flooring and so on will be looked at more closely for its green quotient and how they contribute to make a green building. The session will primarily discuss the life cycle of these materials and how one can select low energy materials for making a green building.</p>
12:30 - 13:00	Speakers:
13:00 - 13:30	Mr. Harish Borah , ADW developments limited, London & New Delhi
13:30 - 13:45	Ms.Nidhi Gupta , Sustainability Consultant, Auroville consulting, Auroville
	Q & A
13:45 - 14:45	Lunch
14:45 - 16:15	Session III – Innovations and Entrepreneurship <p>There is continuous innovation and change that is undergoing in the building industry with new materials and technologies emerging in the market. Some of them are as nascent as in the research stage of development. However, these researches may make a significant impact in the coming years to the green building industry. There are many young entrepreneurs who are innovating and experimenting the green path. This session aims to give these innovators a platform for outreach. Sessions like, use of construction and demolition waste in building materials, phase change materials and their applicability to our region are some of the broad topics that will be addressed under this session.</p>
	Speakers:
14:45 - 15:15	Mr. Abhijeet Gawade , Head Business Development, Godrej construction.
15:15 - 15:45	Mr. Shreedhar Pandya , Sustainability Advisor, DNP Infrastructures Pvt. Ltd.
15:45 - 16:00	Mr. Mahesh Gangaramani , Country Head, Perfect Infra Engineers Pvt Ltd
	Q & A
16:00 - 16:15	
16:15 - 16:30	Networking over coffee break

DAY-2

30th June 2018

10:00 - 10:15	Networking Tea
10:15 - 11:30	Session IV – Improving Energy Efficiency in Green Buildings <p>The use of materials and its impact on allied resources like energy is large. This session seeks to address the impact that green materials have on the overall energy efficiency of the building and the benefits of using these materials to reduce heat gain and optimized thermal comfort. Sessions in this thematic will broadly talk about subjects like the role of insulation and its applicability in different climate zones, how to select the best glazing for a particular project and so on.</p>
10:15 - 10:45	Speakers:
10:45 - 11:15	Mr.Jayesh Vira , Managing Director at Enviro Consultancy Pvt. Ltd.
	Mr. Amol Desai , General Manager, Business Development, Supreme Petrochem Ltd.
11:15 - 11:30	Q & A

11:30 - 13:00	Session V – Significance of Materials for Indoor Environmental Quality Indoor environmental quality broadly looks at 3 major components- visual comfort, acoustic comfort and thermal comfort. Each of these components gets impacted by the choices of materials made and how efficiently they are used. This thematic will deal with this aspect of providing indoor environmental quality and comfort through right selection of sustainable building materials.
11:30 - 12:00	Speakers: Mr. Sanjeev Karpe , Managing Director, Native Konbac Pvt Ltd. Mr. Pradeep Joshi , Green Build Products, Pune Mr. Abhinav Gupta , Co-founder & Director, Active Buildings Q & A
12:00 - 12:30	
12:30 - 12:45	
12:45 - 13:00	
13:00 - 13:30	Lunch
13:30 - 15:30	Session VI – Demonstration of SVARGRIHA Tool SVAGRIHA is a guidance-cum-rating tool developed for small standalone buildings like residences, commercial offices, motels, dispensaries, schools etc. and/or set of buildings with a cumulative built-up area of 2500 sq.m. or less. The rating has been designed as a simple online tool with guiding parameters which will evaluate the performance of the project with respect to SVAGRIHA in a simple, easy to understand manner.
13:30-15:30	Speakers: Er. Gautam Aswani , Senior Project Officer, GRIHA Council
15:30 - 16:00	Valedictory and Closing Remarks by Mr. Sandeep Patil , Chief Engineer, PWD Maharashtra
16:00 onwards	Networking over coffee break

SIMULATION WORKSHOP

Venue: Royal Orchid Central Grazia Plot No. 67, Palm Beach Road, Sector 19, Vashi, Near Truck Terminal, Navi Mumbai, Maharashtra 400705

Simulation Workshop: 1 st July 2018	
10:00 - 10:15	Registration
	Session – Hands on training program on simulation software to meet the requisites of GRIHA compliance The training session will teach you simulation techniques and methods to gain more credits and ensure compliance with the mandatory GRIHA criteria, using the enhanced features of both, freely available softwares and paid. Attendees of the session will receive 60 days online support, to practice and gain confidence to use these computer aided tools. Ar. Aniket Chaudhari , Founder, Reinvent Design Technologies
10:15 - 11:15	Analyzing the prototype building design
11:15 - 11:30	Networking over coffee break
11:30 - 13:00	Energy Performance Analysis
13:00 - 14:00	Lunch
14:00 - 15:15	Occupant Comfort & Well being
15:15 - 15:30	Networking over coffee break
15:30 - 17:00	Performance monitoring and validation

THE 8TH REGIONAL GRIHA SUMMIT

The building sector today contributes to about 30% of the global greenhouse gas emissions and is responsible for about 50% of raw material extraction from the earth. In addition, the extraction, processing, transport and installation of materials associated with construction consume large quantities of energy and water.

Choosing construction materials with high content in embodied energy entails an initial high level of energy consumption in the building construction phase and also has a huge impact on the building performance during the operational phase. Having clear understanding of the natural processes and the interactions of building materials with human needs, designers can create buildings that are delightful, functionally productive and regenerative by design.

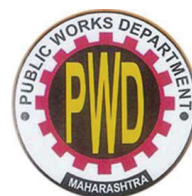
In the last decade or so, India has seen a fivefold increase in new building materials and technologies. However, recognition of these new materials and technologies by relevant stakeholders of the building industry is critical for sustaining the green market growth. Market demand is an important trigger for increased levels of green buildings, however globally it has witnessed a decline over last few years. Affordability, availability and applicability remain the vital attributes, which would impact the informed decision of choosing sustainable building materials and technologies for the projects. Bring the affair to the cognizance of the building professionals, having better understanding and unified action towards selection of right materials, techniques and technologies, for ensuring long term sustainability.

Thus, to reach out to wider stakeholders, GRIHA Council in association with Public Works Department (PWD), Government of Maharashtra and Sustainability Initiatives hosted the 8th Regional GRIHA Summit in Mumbai on 29th and 30th June, 2018 broadly focusing on sustainability aspects of materials.

The theme for this year's summit - "Choosing sustainable, building sustainable" was aligned to focus on selection of the most optimal building materials and technologies to minimize impact on our environment, economy and communities, critical to sustainable development. The 2-day Summit served as a platform for knowledge sharing among different domains of the green building industry. It also aimed at facilitating various multi-stakeholder partnerships and networking among governments, academia, civil society organizations, and professionals from different disciplines such as architecture, engineering, and construction management.



Organizers



THE GRIHA COUNCIL

In India, we are steering into an era of unprecedented public and private sector development but at significant environmental costs. This colossal increase in use of non-renewable resources has contributed towards climate change and unsustainable development. The time has come where we can no longer be deprived of the benefits of green building practices that can reduce the negative impact of construction activities on our environment. GRIHA was devised in pursuit of creating sustainable habitat, with minimal adverse impact on environment. GRIHA is point based green building rating tool that helps design buildings and habitats, which are resource efficient throughout their life cycle.

GRIHA Council is an independent not-for-profit society established jointly by The Energy and Resources Institute (TERI) and Ministry of New and Renewable Energy (MNRE), Government of India (GoI). MNRE has been endorsed GRIHA as the national rating system for green buildings in India. The council promotes and facilitates GRIHA in India. With support from the Government of India and active participation of the private sector, over 55 million square meter of built up area is registered to be GRIHA compliant.

GRIHA ensures implementation of full compliance with various relevant national codes and standards (such as the Energy Conservation Building Code, the National Building Code, guidelines issued by the Central Pollution Control Board) and contributes to meeting objectives set forth in the National Mission on Sustainable Habitat and the Jawaharlal Nehru National Solar Mission. The demonstrated impact of GRIHA projects includes quantification of resource use optimization, implementation of environmental commitments and enhanced transparency through a web based portal.

Various municipalities and government organizations in India have adopted the GRIHA rating to enable sustainable development through attractive incentives for both the

developer as well the owner. For instance, the Pimpri Chinchwad Municipal Corporation (PCMC) provides a 10-50% rebate to developers on premium charges for GRIHA and SVA-GRIHA (Small Versatile Affordable GRIHA) certified buildings, while to the owner it gives a 5-10% discount on property tax for 3-5 star GRIHA certified buildings and 5-15% for SVAGRIHA rated buildings.

GRIHA aims at reducing carbon footprint, saving on energy and water consumption, adopting renewable energy systems and providing a visually and thermally comfortable indoor environment to the end users while simultaneously reducing 30-40% of the operational cost.

A Joint initiative of



Ministry of New and Renewable Energy
Government of India



The Energy and Resources Institute

Let us deliver India's commitment to create sustainable habitat.

— The GRIHA way

CURTAIN RAISER



To mark the inauguration of the Summit, a curtain raiser dinner was organized on 28th June, 2018, at The Ambassador Hotel, Churchgate, Mumbai. The welcome address was delivered by Mr. Sanjay Seth, Chief Executive Officer, GRIHA Council followed by the thematic address by Dr. Ajay Mathur, President, GRIHA Council and Director General, TERI. The inaugural address was delivered by Shri. Chandrakant Dada Patil, Honorable Minister, PWD Government of Maharashtra and the vote of thanks by Ms. Shabnam Bassi, Secretary GRIHA Council.





Mr. Sanjay Seth

Chief Executive Officer, GRIHA Council

Mr. Sanjay Seth, CEO, GRIHA Council welcomed all the dignitaries, honorable Minister, Shri. Chandrakant Dada Patil, delegates and organizer's for the curtain raiser of the 8th Regional GRIHA Summit 2018 planned on 29th -30th June 2018 in Mumbai, in association with Public Works Department, Government of Maharashtra, and Sustainability Initiatives. Mr. Seth further explained that to enhance local stakeholder engagement in different parts of the country, GRIHA Council organizes regional GRIHA Summit and this year is the 8th edition of the regional dialogue, which is a prelude for the upcoming 10th National GRIHA Summit, being co-hosted with University of New South Wales (UNSW), Australia in December 2018 at New Delhi, India.

To enlighten the delegates on the theme of the summit, he briefly explained the rationale for the designed technical sessions for the coming 2 days. He further expressed that the

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To enhance local stakeholder engagement in different parts of the country, GRIHA Council organizes regional GRIHA Summit and this year is the 8th edition of the regional dialogue.

-Mr. Sanjay Seth

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engaging discussions around sustainable building material and its connexion with attributes such as energy efficiency, indoor environmental quality, comfort of the occupants and so on, will encourage more designers, builders & developers, architectural & planning firms, material & equipment manufacturers, government bodies, nodal agencies and not for profit organizations to enter the sustainable real estate sector.

On that note, he thanked PWD, Government of Maharashtra for supporting the event, along with other conceptual partners and sponsors. Looking forward to the great success of the regional GRIHA summit, planned on the theme 'choosing sustainable building sustainable' to deliberate on sustainable building materials and technologies, being one of the key drivers for sustainable development, Mr. Seth concluded his welcome address.



Dr. Ajay Mathur
President, GRIHA Council

In the thematic address, Dr. Ajay Mathur expressed and urged the delegates to build sustainably as the built-up area is estimated to be double by 2030, considering the pace of development in India. Keeping sustainability at core, the aim of GRIHA Council is to rate and develop maximum number of upcoming buildings under GRIHA rating, so as to reduce the carbon emissions at both the levels, state and cumulatively at the national level. He explained that, GRIHA is a tool to evaluate the environmental performance of the building/project over its entire life cycle, by providing a rating, in the range of 1-5 stars with the help of third party assessment and standards. The system defines the greenness of the building/project to the owner, developer and end-users as well. Depending on the scale of the project, GRIHA has developed various variants to cater to all typologies of buildings.

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GRIHA is a simple tool for designing and construction of green buildings, ensuring the delicate balance between traditional practices and modern aesthetic.

-Dr. Ajay Mathur

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Emphasizing on the need of having greener future with integration of technological advancement, Dr. Mathur said that GRIHA is a simple tool for designing and construction of green buildings, ensuring the delicate balance between traditional practices and modern aesthetic. Thus, enabling the users to prefer green buildings over conventional. He concluded his address by thanking honorable Minister, PWD Government of Maharashtra and all officials of PWD for taking ahead this first of its kind initiative, in India and wished great success for this association and for the 8th regional GRIHA summit planned for the next two days.



Shri. Chandrakant Dada Patil

Honorable Minister, Public Works Department,
Government of Maharashtra

Shri. Chandrakant Dada Patil, initiated his inaugural address by informing the audience about the MoU signed between PWD, Government of Maharashtra and GRIHA Council for capacity building of PWD officials to ensure and enhance greener development in the state of Maharashtra. Further, he announced that a policy decision to reduce carbon footprints of the buildings and to construct all the new buildings as 'Green buildings and GRIHA compliant' has already been issued for government projects.

He expressed that, by adopting GRIHA, Government of Maharashtra shall have dual benefit. Firstly it can quantify energy and water savings, manage solid waste, improve resource efficiency and so on and secondly, it can assist GRIHA Council in evaluating and ensuring GRIHA compliance for government and private projects. Accentuating on the need

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By adopting GRIHA, Government of Maharashtra shall have dual benefit. Firstly it can quantify energy and water savings, manage solid waste, improve resource efficiency and so on and secondly, it can assist GRIHA Council in evaluating and ensuring GRIHA compliance for government and private projects.

-Shri. Chandrakant Dada Patil

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of reducing energy consumption, he informed that with the help of Energy Efficiency Services Limited, it has targeted to replace conventional lighting system and equipment of around 1500 government buildings with energy efficient lighting system and equipment, within a year.

Further to this, PWD Government of Maharashtra has taken the initiative to design and assess our own buildings on the lines of GRIHA rating system. He expressed that this initiative would help the PWD officials understand the rating system in and out and keep them upbeat with the current developments in building materials and technologies. He concluded his address by giving best wishes for the two days regional GRIHA summit planned in Mumbai, which will provide vision to improve knowledge in the field of sustainable development.



Ms. Shabnam Bassi

Secretary, GRIHA Council

Vote of thanks was delivered after the award ceremony by Ms. Shabnam Bassi, Secretary, GRIHA Council. All the conceptual partners, government bodies, bilateral & multilateral, real estate, speakers were thanked by Ms. Bassi, with a special mention of Shri. Chandrakant Dada Patil for giving a motivational inaugural address and Shri. Ajit Sagane, Secretary, PWD, GoM and Shri. Sandeep Patil, Chief Engineer (Electrical), PWD, GoM for their continuous support and help extended in making this event a reality.



Special Addition: LAUNCH OF E- PRODUCT CATALOGUE

GRIHA Product Catalogue is an online product catalogue which has been developed to provide green building designers and clients with all necessary information on green building products which can be used in order to make buildings GRIHA compliant. In recent times, the market of green building products has increased manifold and the ever increasing range of products has made the building

professionals unsure about whether a certain product meets the GRIHA parameters or not. Hence for ease of information and accessibility, the online catalogue was created. The 2018 GRIHA product catalogue was launched at the hands of Shri. Chandrakant Dada Patil, Honorable Minister, PWD, Government of Maharashtra.



Special Addition: THE GRIHA RISING STAR AWARDS 2018-19

During this flagship event, GRIHA Council acknowledged the efforts of individuals and organizations as "GRIHA Rising Star" for their contribution in promoting GRIHA in their respective area of work.





Day 1- 29th June 2018

Venue: Courtyard by Marriott Mumbai International Airport





Mr. Sanjay Seth,

Chief Executive Officer, GRIHA Council welcomed the speakers and the participants for the 1st day of 8th Regional GRIHA Summit 2018. He mentioned that the 2 day summit will largely deliberate on sustainable building materials keeping various attributes such as energy efficiency, indoor environmental quality, comfort of the occupants, which will encourage contribution of more green buildings in the country.



Ar. Sangeet Sharma,

Partner, SD Sharma and Associates gave the keynote address emphasizing on the approach to passive architectural design, sustainability and its integration at the planning stage. While elaborating on the key pillars of designing, he reiterated the significant role of having standards and tools to document the overall sustainability of the project and how GRIHA simplifies the entire process for the designer and the project team.



Session 1

Connecting the outside to inside: Materials for designing building envelope

The façade of the building is the breathing skin which separates the outside dynamic environment from the stable indoors. This physical separator in buildings needs to be designed with utmost care and detailing since large savings in energy costs can be achieved. Thus, the Connecting the outside to inside: Materials for designing building envelope Session primarily covered the following;

- How to make the right trade-off decisions with respect to the walls, windows and roofs.
- What materials should be used to achieve maximum indoor comfort?
- Target façade characteristic to optimize Building Envelope.

- Solution for affordable and sustainable homes.

The session further demonstrated various affordable materials and techniques.





Mr. Sudhir Paliwal

Expert Member, Maharashtra State Fly Ash Council, Nagpur

The use of fly ash material for building envelope, its generation, and utilization, along with the prevailing policies, government incentives and acts were discussed in detail by Mr. Sudhir Paliwal.

India has a vast reserve of 211 billion tones coal and this coal is extensively used in generating power in the country. About 900 million tones fly ash is expected to be generated in India by 2031. To address the problem of fly ash disposal and pollution caused by fly ash; Mr. Sudhir Paliwal talked about use of fly ash material for building envelope, its generation, and utilization, along with the prevailing government policies, acts and incentives.



Mr. Isaac Emmanuel

Head – Industrial Marketing & Advocacy for Business Unit Polyurethanes in Covestro (India) Pvt Ltd

High-tech materials like rigid polyurethane foam, polycarbonates and polyurethane raw materials for coatings as a connecting solution for affordable and sustainable homes were explained by Mr. Isaac Emmanuel. He further elaborated on the savings one can achieve through these products. For instance, he mentioned that the rigid polyurethane foam saves around 70 times more energy during its service life than is required for its production. The ease of installation and its benefits were reiterated with the help of case studies from Jaipur, Tamil Nadu, Rajasthan and Malaysia.



Ar. Rajan Rawal

Executive Director, CARBSE, Ahmedabad

Ar. Rajan Rawal initiated his dialogue by posing few very relevant questions like:

- Breathing Skin – Stable Indoors
Do we need stable indoors? Is that suitable?
- Trade off
Either / Or approach? Synergetic approach?
- Materials to be used
Prescription? Or Performance?

Post which, he elaborated on the adaptive and static model for thermal comfort, controlled environment for occupant comfort depending on the materials used and façade characteristics, including walls, roofs and windows.

Session 2

Low Energy Materials for Interiors

The Low Energy Materials for Interiors Session discussed various materials like interior paints, furniture, flooring available in the market today for its green quotient and how they contribute to make a green building.

The life cycle analysis and how one can select low energy materials for making the building more sustainable were also discussed during the session.





Mr. Harish Borah

ADW developments limited, London & New Delhi

Mr. Borah discussed the approach of integration of Life Cycle Thinking to evaluate the environment & economic performance of a material, process or service during its entire life cycle by LCC (Life Cycle Costing) and LCA (Life Cycle Assessment).

Life cycle thinking if inculcated in the building design and construction process will shape more sustainable building future, encourage durability of materials, provide data on actual performance and operation, facilitate value decision making and identify environmental performance of products and selection of relevant indicators of environmental performance. This change in the way we think about the building design and construction process will shape to a more sustainable building future.

Both Life Cycle Costing and Life Cycle Assessment methods have are used extensively to influence design for making better investment and green choices.



Ms. Nidhi Gupta

Sustainability Consultant, Auroville Consulting, Auroville

Choosing Green Interiors is crucial - Interior space has an effect on our health & wellbeing; interior works are carried out in approximately every 7-10 years, resulting in high recurring embodied energy. As the operational energy of materials reduces the impact of embodied energy increases.

- The Embodied energy in items like furniture & natural stone is more due to the transportation energy.
- Paints have lesser embodied energy than carpets, but comparatively much more surface area.
- Reducing False ceiling can bring the Embodied energy down by at-least 10-15%.
- Life expectancy & durability of the material plays an important role in overall embodied energy.
- Paint = 5-7 years
- Carpets = 10 years OR stone/ tile = 20 years
- Gypsum boards/ ceiling = 8 years
- Glass = 10 years

Hence, Ms. Nidhi Gupta says use materials which are sourced regionally with high recycled content, water based paints, minimal false ceiling and eliminate packaging waste as far as possible.



Session 3

Innovations and Entrepreneurship

Innovation and Entrepreneurship Session aimed at addressing use of construction and demolition waste in building materials, phase change materials and their applicability to our region.

The session benefited from young entrepreneurs who are innovating and experimenting green path in the building industry with new materials and technologies emerging in the market.





Mr. Abhijeet Gawade
Head Business Development, Godrej construction

Mr. Gawade showcased the efficient use of construction and demolition waste to manufacture recycled concrete blocks and pavers for the construction industry.



Mr. Mahesh Gangaramani
Country Head, Perfect Infra Engineers Pvt Ltd

Mr. Mahesh Gangaramani briefly discussed how a Solar Thermal Panel System creates affordable thermal energy combined with precise temperature controls. He simplified the working of the system by saying that it is a renewable energy method of adding pressure and heat to the refrigeration cycle which results in a decreased/displaced compressor workload, saving energy. He further elaborated that the solar thermal system displaces a portion of the mechanical energy used by various compressor types, including single speed compressors w/VFD's, variable capacity, multi-stage, and variable speed compressors. The compressor then can operate at low stage, low range or low capacity, while delivering full and part-load cooling requirements, creating significant energy savings of 25% to 40% per year, or more.



Mr. Shreedhar Pandya
Sustainability Advisor, DNP Infrastructures Pvt. Ltd.

Mr. Pandya commented that Circular economy model creates a closed loop system in the construction industry decoupling growth and prosperity by the use of natural resources and ecosystems. He shared the details and the journey of the operationalized 300 TPD C&D plant at Ahmedabad under a PPP model with Ahmedabad Municipal Corporation.





Day 2- 30th June 2018

Venue: Courtyard by Marriott Mumbai, International Airport



Session 4

Improving Energy Efficiency in Green Buildings

This session was designed to address the impact that green materials have on the overall energy efficiency of the building and the benefits of using these materials to reduce heat gain and optimize thermal comfort.

Sessions in this thematic broadly talked about subjects like the role of insulation and its applicability in different climate zones, how to select the best glazing for a particular project and so on.





Mr. Jayesh Vira

Managing Director at Enviro Consultancy Pvt. Ltd.

Mr. Vira presented comparative analysis of thermal and cost performance of the materials commonly used for constructing wall, roof and fenestration. Through case studies, he demonstrated the linkage between WWR (Window to Wall Ratio), day light penetration and energy performance of the building thereafter. He explained how different climate zones have different impact on the same material and construction assembly. Moreover, he demonstrated through case study, the impact of architecture design and passive cooling techniques on the trade-off of few “not so Green materials”.



Mr. Amol Desai

General Manager, Business Development, Supreme Petrochem Ltd.

Mr. Desai described the four basic elements of a building envelope namely the water, air, thermal and vapor barriers which need to be selected holistically and work together as a system. He focused on issue to reduce operating energy to provide services such as heating and power for equipment.

To reduce operating energy, he suggested the following:

- reduce air leakage through the building envelope.
- specify high-performance windows and extra insulation in walls, ceilings, and floors.
- Orientation of windows and walls.
- Provide more natural light.
- Use of solar energy

He further explained on how insulation like XPS, SPF, EPS and so on help to save energy by reducing thermal bridging.



Session 5

Significance of Materials for Indoor Environmental Quality

Indoor environmental quality broadly looks at 3 major components- visual comfort, acoustic comfort and thermal comfort. Each of these components gets impacted by the choice of materials made and how efficiently they are used.

This session dealt with this aspect of providing indoor environmental quality and comfort through right selection of sustainable building materials.





Mr. Sanjeev Karpe
Managing Director, Native Konbac Pvt Ltd.

Mr. Karpe showcased the use of Bamboo in construction industry being one of the strongest building materials having a tensile that rivals steel and weight-to-strength ratio surpassing that of graphite.

He also stated that the global bamboo market is dominated by China and India is endowed with largest natural bamboo cover of 10 million hectares. He demonstrated inspiring bamboo projects completed across India and internationally.



Mr. Pradeep Joshi
Managing Director, Green Build Products, Pune.

Mr. Joshi discussed various challenges faced by the construction industry in terms of water, time, waste and operational management. Bringing to a conclusion that water less construction technology for masonry, plaster and repairs is a resource saving, manpower saving, time saving, eco-friendly and a money saving solution.



Mr. Abhinav Gupta
Co-founder & Director, Active Buildings.

Mr. Gupta showcased the BMS integration model to improve the air quality in a commercial building for more productivity.

He demonstrated different case studies indicating the analysis based on the following:

- The non occupancy periods that show high amounts of particulate pollutants and occupancy periods that show marginally high CO₂ levels.
- Particulate pollution partial in co-relation with VOC peaks.

Session 6

Demonstration on SVAGRIHA Tool



Er. Gautam Aswani

Senior Project Officer, GRIHA Council

SVAGRIHA is a guidance-cum-rating tool developed for small standalone buildings like residences, commercial offices, motels, dispensaries, schools etc. and/or set of buildings with a cumulative built-up area of 2500 sq.m. or less. The rating has been designed as a simple online tool with guiding parameters which will evaluate the performance of the project with respect to SVAGRIHA in a simple, easy to understand manner.

Highlights

Following hands on techniques were demonstrated through an intensive two hour studio session,

- Detail session on understanding the SVAGRIHA criterions.
- Demonstration of the online SVAGRIHA tool.





Day 3- 1st July 2018

Venue: Royal Orchid Central Grazia, Vashi, Navi Mumbai

Session – Hands on training program on simulation software to meet the requisites of GRIHA compliance



Ar. Aniket Chaudhari
Founder, Reinvent Design Technologies

The training session was designed to teach simulation techniques and methods to gain more credits and ensure compliance with the mandatory GRIHA criteria, using the enhanced features of both, freely available softwares and paid. Attendees of the session received 60 days online support, to practice and gain confidence to use these computer aided tools.

Highlights

Following hands on techniques were demonstrated through an intensive day long training session:

- Detail session on understanding the GRIHA criterion and the simulation software.
- Demonstration of eQUEST tool.
- Practical training on the eQUEST software for energy simulation, day lighting, building modeling and passive designing.

NOTE

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NOTE

[illegible]



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