Event Report: One Day Awareness Workshop on

Green Buildings in the Residential Sector

On May 5th, 2025, the Centre of Excellence in Urban Planning and Design (CoEUPD) of IIT Kharagpur successfully hosted a one-day awareness workshop on *"Green Buildings in the Residential Sector"* at the IIT Kharagpur Research Park, Kolkata.

This event was meticulously organised by an esteemed team, comprising Prof. Subrata Chattopadhyay, Advisor to CoEUPD; Prof. Tarak Nath Mazumdar, Team Leader of CoEUPD; Prof. Haimanti Banerji, Deputy Team Leader of CoEUPD; and Professors Shankha Pratim Bhattacharya, Sumana Gupta and Prashant Anand. Integral support was also provided by the dedicated staff members: Mr. Somen Roy, Ms. Rituparna Chakraborty and Mr. Sadananda Chandra.

The event attracted key delegates from HUDCO, CPWD, SBI, S. S. Solutions, Ghosh Bose & Associates, along with the prominent developers like Sapnil Developers Pvt. Ltd., EGC Facility Management Pvt. Ltd., Swastic Group, etc. Additionally, the event was attended by a diverse group of participants, including school students from DAV Model School, IIT Campus, Kharagpur, as well as master's students and research scholars from various academic institutions.

The workshop aimed to deepen understanding of sustainable construction practices, energy-efficient housing, and green building techniques. Experts discussed critical aspects of green buildings, including global trends, India's future directions, and government initiatives designed to promote sustainable architecture.

Prof. Subrata Chattopadhyay, kicked off the session with a warm welcome. He emphasized the importance of green buildings in achieving India’s Net Zero target. Prof. Chattopadhyay’s engaging introduction set a friendly, team-oriented vibe for the event.

After his address, the workshop continued with keynote presentations from Prof. Shankha Pratim Bhattacharya & Prof. Prashant Anand as well as Dr. Himadri Guha, the Proprietor of S. S. Solutions, Kolkata.

The first keynote address, presented by Prof. Shankha Pratim Bhattacharya, discussed the importance of adopting green building strategies, focusing on reducing environmental impact while optimizing resource use throughout a building's lifecycle. He highlighted the core principles of green building design, such as energy efficiency, water conservation, and the use of sustainable materials. He also touched on India's prominent Green Building Rating Systems—GRIHA, LEED, and IGBC—which offer frameworks for sustainable construction. Additionally, he spoke the tangible benefits of green buildings, such as reduced environmental impact, energy and water savings, improved health, and long-term financial benefits.

The second keynote address was delivered by Prof. Prashant Anand, who focused on sustainable cooling strategies for residential buildings. He introduced innovative techniques like cool roofs, green roofs, and the use of smart materials, all of which help reduce the urban heat island effect and boost energy efficiency. Prof. Anand emphasized the importance of following guidelines like IGBC and IEA to ensure urban sustainability. This adherence would help residential areas stay strong and resilient in the face of climate challenges.

The final keynote address of the conference was delivered by Dr. Himadri Guha. In his thought-provoking presentation, Dr. Guha began by clarifying the concept of a certified green building and outlined India's national rating system, GRIHA, along with other certification frameworks like LEED and IGBC.

One of the key aspects of his talk was the practical execution of green building practices according to the standards set by GRIHA and IGBC. Dr. Guha outlined the step-by-step process of achieving green certification, from filling out the necessary documentation to following specific activities aimed at meeting the criteria for certification. He detailed how points are awarded for different green initiatives—such as waste management, water conservation, and energy efficiency—and how following green building practices could yield higher ratings. He shared a notable example from IIT Patna, where the institution received one point in the GRIHA rating for its innovative use of vermicomposting to process kitchen waste, showcasing how small but impactful initiatives can contribute to sustainability.

He encouraged the audience to embrace the green building practices not just as a trend, but as an essential approach to creating buildings that are energy-efficient, environmentally responsible, and healthier for their inhabitants. Through practical examples, he demonstrated how simple, innovative solutions can help achieve certified green buildings and drive sustainable urban development.

Following the keynote addresses, a delightful high tea was hosted for all participants, setting the stage for an incredibly engaging and insightful panel discussion that provided a wealth of learning opportunities and sparked meaningful conversations among attendees

The panel discussion featured a distinguished ensemble of experts, including Ms. Shakuntala Ghosh, Principal Architect and Partner at Ghosh, Bose and Associates; Dr. Himadri Guha; Mr. Debesh Chakraborty, Regional Chief of HUDCO (Kolkata); Mr. Durga Prasad Konar, Chief Engineer of CPWD (Kolkata); Mr. Rajneesh Kumar and Mr. Sanjay Kumar, Deputy General Managers at the State Bank of India, Kolkata; and Prof. Subrata Chattopadhyay. The session was presided over by Prof. Chattopadhyay.

The discussion began with the question, “Are green buildings just a trend?” sparked thoughtful responses from the panel. Green buildings are not a passing trend but a vital solution to environmental challenges. While they may have a 15% higher initial cost, their long-term benefits—energy savings, reduced water consumption and a smaller carbon footprint—make them a smart investment. As global awareness of climate change grows, green buildings are becoming the standard for both residential and commercial construction, aligning with sustainability goals and fostering healthier environments.

The discussion also highlighted that India has a long history of environmentally conscious construction. Traditional buildings were designed to use less water and energy, using locally sourced materials. The industrial revolution changed this, but sustainable principles remain rooted in India's architecture. The first "green" building, built in 1994 for pollution control, set the foundation for today's eco-friendly designs.

A question was raised about banning appliances that don't meet a minimum 3-star energy rating. It was agreed that such regulations should be enforced to ensure energy efficiency. With reference to the ongoing Swachh Bharat Mission, which has developed a culture of cleanliness and environmental awareness among the youth, it was suggested that just as cleanliness has become a cultural norm, green building certifications should also be made mandatory.

The discussion highlighted the government's role in promoting green practices through incentives for solar panels, building retrofitting, and sustainability. Financing for green buildings is now more accessible, with banks offering favourable loans and the PM Surya Yojna supporting solar energy. Panelists debunked the myth that green buildings are too expensive, with the right financial instruments and incentives, they are both feasible and necessary.

The students in the audience raised compelling questions, including how they could influence their parents to adopt green building practices and whether it was possible to retrofit an ordinary building into a green one at minimal cost. The panelists shared practical advice, such as rainwater harvesting, waste segregation, and simple energy conservation practices like switching off lights when not in use and using reusable bags instead of plastic.

A key point raised during the discussion was the importance of proper air conditioning practices, such as using drapes or screens on windows to reduce cooling costs and make the room cooler with less energy consumption. Maintenance of green building infrastructure, especially facilities like Sewage Treatment Plants (STPs), was also discussed. If built to the proper specifications, these systems can be easily maintained, ensuring the long-term sustainability of green buildings.

The panel discussion concluded with a Green Pledge inspiring participants to embrace a mindset focused on a future where green buildings are the standard, not the exception.

Green Pledge

"Today, I pledge to embrace the power of Green Buildings in our journey towards a Net Zero Future.

By choosing eco – friendly construction, reducing carbon footprints, conserving resource, and adopting principles of sustainable lifestyle, our goal is to craft environments that support life while ensuring the protection of our planet for the generations that follow.

Together, we take the pledge to build a greener, cleaner and more sustainable India, and play our role which would bring us one step closer to a Net Zero World.

Let's design today for a sustainable tomorrow!"

Afterward, everyone gathered for a networking lunch, providing an opportunity to connect and exchange ideas. After lunch, the atmosphere shifted as the workshop took an unexpected yet refreshing turn. The workshop used interesting and hands-on games to show how cities can deal with climate change, build better infrastructure, and grow in a sustainable way. It was led by Dr. Balaji Kalluri, an Assistant Professor from FLAME University, Pune.

One of the games featured was Master of Disaster (MoD), a fast-paced board game developed by ASSIST Asia. As players engaged with the game, they suddenly found themselves facing natural disasters like floods and earthquakes. With every move, quick thinking and teamwork became vital, and smart decisions could mean the difference between chaos and safety. Through the game, participants discovered how ordinary citizens—when armed with the right knowledge and tools—can step up as first responders and community leaders. It was a powerful lesson in building stronger, more resilient communities in the face of a changing climate.

Next came Energetic, a cooperative game from City Atlas (USA), where players joined forces to rethink New York City's entire energy system. As they worked together, they faced real challenges—soaring energy demand, pollution concerns, and the need to win public support. Navigating these tough trade-offs, participants got a first-hand look at the careful planning and teamwork required to shift toward cleaner, greener energy while keeping the city running smoothly. It was a vivid, hands-on lesson in balancing innovation with sustainability.

Next up was City Runner, a game developed by KUDOS Lab at FLAME University and the eGov Foundation, where players took on the roles of city officials navigating the hectic life of India's bustling megacities. Battling issues like traffic jams and sanitation crises, they had to manage competing priorities with scarce resources. This immersive experience gave participants a deeper understanding of the daily struggles urban leaders face and highlighted the crucial roles of transparent communication, adaptability, and decisive leadership in running a city effectively.

The last game, BiBo stood out as more than just a game—it was a transformative experience. Developed by KUDOS Lab at FLAME University, the game took players on a complete journey through the challenges of creating cities in a rapidly shifting environment. Faced with limited land, dwindling resources, escalating climate emergencies and mounting energy demands, participants were immersed in a high-stakes environment where every decision counts. Each stage tested their creativity, collaboration and critical thinking. Through teamwork to overcome complex real-world problems, players learned how to design cities that are efficient, environmentally friendly, and socially sustainable. Engaging, thought-provoking, and highly relevant, BiBo offered a powerful glimpse into the cities of tomorrow—where sustainability is not just an option, but an absolute necessity.

At the workshop, participants dived into green building technologies, getting hands-on with real solutions that make sustainability tangible. By the end, they didn’t just learn—they became changemakers, ready to build a greener future.