Green Talk on Sustainable Material and Efficient Technologies for Green Building

Date: Wednesday, February 4, 2026
Time: 11:00 AM – 12:00 PM IST
Venue: Online (Google Meet) and Live Streamed on YouTube
Organized by: Department of Civil Engineering, Jaypee University of Information Technology (JUIT), Waknaghat, Solan, Himachal Pradesh
In Collaboration with: Indian Green Building Council (IGBC), Chandigarh Chapter

Executive Summary

The Department of Civil Engineering at Jaypee University of Information Technology (JUIT), Waknaghat, Solan, successfully organized a highly informative webinar titled "Green Talk on Sustainable Material and Efficient Technologies for Green Building" on February 4, 2026. The event featured Dr. Prateek Srivastava, an IGBC Accredited Professional and Director at Sustainergic Tech Pvt. Ltd., as the expert speaker.

The webinar received an overwhelming response with approximately **160 nominations from India and abroad**, representing diverse sectors including universities, government departments, and private industry. The session attracted significant participation from students, faculty, and professionals interested in sustainable building practices and green construction technologies. The event was coordinated by Dr. Tanmay Gupta, Assistant Professor, Department of Civil Engineering, JUIT, and was live-streamed on Google Meet and the official JUIT Civil Engineering YouTube page, ensuring maximum reach and accessibility.

Event Details

Inaugural Address

The webinar commenced with an inaugural address by **Mr. Jagjit Singh Maglha**, Chairman of IGBC Chandigarh Chapter and Managing Director of Innovative Housing & Infrastructure Pvt Ltd. Mr. Maglha emphasized the critical role of green building practices in addressing climate change and the importance of integrating sustainability principles in civil engineering education.

Expert Session

Dr. Prateek Srivastava, IGBC AP and Director of Sustainergic Tech Pvt. Ltd., delivered an extensive presentation covering multiple dimensions of sustainable building practices. His expertise in energy efficiency, HVAC systems, and green building certification provided valuable insights to the audience. The session was particularly beneficial for JUIT's BTech Civil Engineering students, who actively engaged with the speaker throughout the presentation.

Dr. Srivastava emphasized the growing importance of green building practices in India's construction industry and highlighted career opportunities for young engineers in this rapidly expanding sector. His presentation included real-world case studies from sustainable projects across India, demonstrating practical applications of IGBC principles.

Key Topics Covered

Dr. Srivastava's presentation encompassed the following critical areas:

1. Sample Building Materials and Resources

The session highlighted essential construction materials that continue to anchor modern building practices, each with distinct advantages and applications:

- Insulation Materials - Green Roofs
- Solar Panels
- Rainwater Harvesting Systems
- Insulated Concrete Forms (ICFs)
- Passive Solar Design
- Recycled and Sustainable Materials
- Energy-Efficient Windows and Doors
- Low-VOC and Non-Toxic Materials

2. Features of Green Building Materials

The presentation emphasized key characteristics that define sustainable building materials:

- **Sustainability:** Renewable, recyclable, and eco-sourced materials
- **Energy Efficiency:** Materials that cut energy use and emissions
- **Water Efficiency:** Smart water use and recycling systems
- **Low Environmental Impact:** Minimal carbon footprint and waste
- **Waste Reduction:** Recyclable and modular design approaches
- **Local Sourcing:** Reduces transport costs and supports local economy
- **Smart Technology Integration:** IoT sensors, automation, and energy monitoring
- **Healthy Air Quality:** Low-VOC, non-toxic materials
- **Durability:** Long life with low maintenance
- **Aesthetic Harmony:** Sustainability meets modern, natural design

3. Illustrations of Sustainable Materials

Dr. Srivastava provided practical examples of sustainable building materials with visual demonstrations:

Material	Application	Material	Application
Bamboo	Structural elements	Cellulose Insulation	Thermal insulation
Plastic Lumber	Decking, outdoor use	Silicate Paints	Low-VOC finishes
Living Plant Walls	Green facades	Solar Cells	Renewable energy
Carpets Tiles	Flooring	Natural Stone	Facades, flooring

Injection Wells	Water management	Lightning Fixtures	Energy efficiency
Certified Lumber	FSC wood products	Bio Bricks	Alternative masonry
Steel Studs	Framing systems	Permeable Pavement	Stormwater management
Geo Polymer Concrete	Low-carbon concrete	High Performance Glass	Energy efficiency

Table 1: Sustainable building materials and their applications

4. Main Components of Green Building

The presentation outlined the five fundamental pillars of green building design:

1. **Sustainable Site and Planning:** Optimal site selection, orientation, and landscape design
2. **Water Efficiency:** Rainwater harvesting, greywater recycling, low-flow fixtures, and efficient irrigation
3. **Energy Efficiency:** HVAC optimization, renewable energy integration, building envelope performance, and efficient lighting
4. **Building Materials and Resources:** Use of recycled, locally sourced, and low-embodied carbon materials
5. **Indoor Environment Quality:** Air quality management, daylighting, thermal comfort, and acoustic performance

5. Envelope Efficiency

A significant portion of the session focused on building envelope performance, which directly impacts energy consumption:

Roof Insulation:

- U-value < Heat transfer
- Cost: Rs 60/sqft
- Reduces heat gain and cooling loads

Wall Systems:

AAC Blocks:

- Cost: Rs 4.5/block
- U-value < Heat Transfer
- Superior thermal performance

Conventional Red Clay Brick Wall:

- Cost: Rs 3.5/brick
- Higher heat transfer
- Traditional construction method

Fenestration:

- U-value < Heat transfer
- SHGC < Heat transfer
- VLT > Daylighting
- Optimal glazing selection for climate-responsive design

6. Alternative Sustainable Finishes

Dr. Srivastava highlighted innovative natural finishing materials that replace conventional cement-based products, sparking considerable interest among JUIT students:

- **Hemp-Based Paints:** Natural, low-VOC alternative to synthetic paints with excellent breathability and durability. Hemp paints offer superior indoor air quality benefits and reduce the carbon footprint associated with conventional petroleum-based paints
- **Clay-Husk-Lime Plaster:** Traditional finishing material that replaces cement plaster, offering superior thermal mass, humidity regulation, and significantly lower embodied carbon. The speaker demonstrated how this mixture of clay, agricultural waste (husk), and lime creates a breathable, naturally insulating wall finish
- **Lime Plaster Benefits:** Breathable, naturally antimicrobial, flexible, and heritage-compatible. Particularly relevant for Indian climatic conditions where moisture regulation is crucial
- **Natural Pigments:** Earth-based colorants for sustainable aesthetics without chemical additives
- **Cost-Effectiveness:** These natural alternatives often prove economically competitive when considering life-cycle costs and durability

The discussion on these traditional yet innovative materials resonated strongly with the audience, as many participants from JUIT and other institutions expressed interest in incorporating these techniques in future projects.

7. HVAC Systems and Energy Efficiency

The presentation covered advanced HVAC strategies for minimizing energy consumption:

- Variable Refrigerant Flow (VRF) systems
- Energy Recovery Ventilation (ERV)
- Radiant cooling and heating systems
- Demand-controlled ventilation
- High-efficiency chillers with low Global Warming Potential (GWP) refrigerants
- Building Management Systems (BMS) for optimized performance

8. Water Efficiency Technologies

Dr. Srivastava discussed comprehensive water management strategies:

- Rainwater harvesting and storage systems
- Greywater treatment and reuse
- Wastewater treatment plants for zero discharge

- Low-flow and sensor-based fixtures
- Efficient irrigation with drip systems
- Water auditing and monitoring

9. Low-Wattage Lighting Solutions

The session emphasized the importance of efficient lighting design:

- LED technology with high luminous efficacy
- Daylight harvesting with sensors
- Occupancy-based controls
- Task lighting strategies
- Color temperature optimization for comfort
- Integration with building automation

10. Star Rating and Energy Performance

Dr. Srivastava explained the significance of energy star ratings for appliances and buildings:

- Bureau of Energy Efficiency (BEE) star labeling
- Energy Performance Index (EPI) for buildings
- IGBC rating systems (Certified, Silver, Gold, Platinum)
- Minimum Energy Performance Standards (MEPS)
- Life-cycle cost analysis for appliance selection

Event Coordination

The event was expertly coordinated by **Dr. Tanmay Gupta, Ph.D.**, Assistant Professor and Chairman of JUIT Student Chapter, IGBC Department of Civil Engineering, JUIT. Dr. Gupta ensured smooth execution of the webinar and facilitated engaging discussions between the speaker and participants.

Participation and Reach

The webinar witnessed strong participation through multiple channels:

- Direct participation via Google Meet platform
- Live streaming on YouTube for wider accessibility
- Promotion through JUIT Civil Engineering Department's social media channels
- Active engagement from BTech Civil Engineering students
- Participation from faculty members and external professionals
- Real-time Q&A session during the event

Interactive Session and Q&A

Following the presentation, Dr. Srivastava addressed numerous questions from JUIT students and other participants covering topics such as:

Technical Questions:

- Practical implementation challenges of sustainable materials in the Indian context, particularly in hilly regions like Himachal Pradesh
- Durability and maintenance requirements of hemp-based paints and clay-lime plasters in varying climatic conditions
- Performance comparison of AAC blocks versus conventional red clay bricks in terms of thermal efficiency
- Integration of traditional materials like clay and lime with modern construction techniques

Career and Professional Development:

- Career opportunities in green building consulting and IGBC certification pathways
- Software tools for energy modeling and building performance simulation (such as DesignBuilder, EnergyPlus, and eQUEST)
- Steps to become an IGBC Accredited Professional (AP)
- Industry demand for green building expertise and salary prospects

Economic and Implementation Aspects:

- Cost comparison between conventional and green building approaches, with life-cycle cost analysis
- Return on investment timelines for energy-efficient technologies
- Government incentives and policies supporting green building adoption in India
- Availability of sustainable materials in smaller cities and rural areas

HVAC and Energy Systems:

- Selection criteria for appropriate HVAC systems based on building type and climate zone
- Star rating interpretation for appliances and their impact on overall building energy performance
- Integration of renewable energy systems with building design

The interactive session demonstrated JUIT students' strong grasp of fundamental concepts and genuine interest in pursuing sustainable construction practices. Dr. Srivastava appreciated the quality of questions and the engagement level of participants from JUIT and other institutions.

Key Takeaways

1. Green building practices are essential for sustainable development and climate change mitigation
2. Material selection significantly impacts both embodied and operational carbon footprint
3. HVAC systems represent the largest energy consumption component in commercial buildings
4. Traditional materials like clay, lime, and hemp offer sustainable alternatives with excellent performance

5. Water efficiency and rainwater harvesting are critical in the Indian context
6. Star-rated appliances and efficient lighting contribute substantially to energy savings
7. IGBC certification provides a structured framework for implementing green building strategies
8. Young engineers and students have significant opportunities in the growing green building sector

Participation Impact and Reach

The webinar achieved remarkable reach and impact:

Attendance Statistics:

- Approximately **160 nominations** received from India and abroad
- Participants from leading universities across multiple states
- Representatives from government departments including Public Works Departments (PWD) and urban development authorities
- Professionals from private construction firms and green building consultancy organizations
- International participants joining from neighboring countries

Geographic Diversity:

- Strong participation from North Indian states, particularly Himachal Pradesh, Punjab, Haryana, and Delhi-NCR
- Representation from institutions in South and West India
- International viewers from SAARC countries

Live Streaming Success:

- Seamless broadcast on Google Meet platform managed by JUIT's Civil Engineering Department
- Simultaneous YouTube live stream on JUIT Civil Engineering official channel for wider accessibility
- Recording archived for future reference and educational use

Vote of Thanks

Prof. Ashish Kumar, Head of Department, Civil Engineering, JUIT, delivered the vote of thanks, expressing gratitude to:

- Dr. Prateek Srivastava for sharing valuable expertise and practical insights on green building technologies
- Mr. Jagjit Singh Maglha, Chairman, IGBC Chandigarh Chapter, for his inaugural address and continued support
- Indian Green Building Council (IGBC) Chandigarh Chapter for collaborative partnership
- Dr. Tanmay Gupta for excellent coordination and seamless event management
- JUIT administration and Vice Chancellor for encouraging sustainable development initiatives
- All faculty members and students who participated enthusiastically

Prof. Kumar emphasized JUIT's commitment to integrating sustainability principles into civil engineering curriculum and encouraged students to pursue IGBC accreditation and green building careers. He highlighted that such industry-academia collaborations strengthen practical learning and prepare students for emerging challenges in the construction sector.

Outcome

The webinar successfully achieved its objectives of:

- Educating approximately 160 students and professionals about sustainable building materials and technologies from diverse institutions across India and abroad
- Demonstrating practical applications of IGBC green building principles with real-world case studies
- Highlighting career pathways in sustainable construction and green building consultancy for JUIT students
- Fostering strong collaboration between JUIT's Civil Engineering Department, IGBC Chandigarh Chapter, and the construction industry
- Promoting awareness of traditional and innovative sustainable materials, particularly hemp-based paints and clay-lime plasters
- Strengthening JUIT's position as a leader in sustainability education in Himachal Pradesh
- Creating networking opportunities for students with industry professionals and green building experts

Participants received e-certificates of participation, acknowledging their engagement with contemporary sustainable building practices. The event had no registration fee, making it accessible to all interested learners and demonstrating JUIT's commitment to democratizing quality education.

Dr. Tanmay Gupta, the event coordinator, emphasized JUIT's vision to become a hub for sustainable construction education in the Himalayan region.

Conclusion

The "Green Talk on Sustainable Material and Efficient Technologies for Green Building" organized by Jaypee University of Information Technology's Department of Civil Engineering in collaboration with IGBC Chandigarh Chapter was a resounding success. With approximately 160 participants from India and abroad representing universities, government departments, and private industry, the webinar demonstrated the growing interest in sustainable construction practices.

Dr. Prateek Srivastava's comprehensive presentation provided valuable insights into the multifaceted world of green building design, covering materials, technologies, and implementation strategies. The enthusiastic participation of JUIT students, coordinated expertly by Dr. Tanmay Gupta, and the thoughtful vote of thanks by Prof. Ashish Kumar, Head of Civil Engineering Department, highlighted JUIT's strong commitment to sustainability education.

The event reinforced JUIT's commitment to integrating sustainability principles into civil engineering education and contributed significantly to building awareness about green construction practices among future engineers. The successful collaboration with IGBC Chandigarh Chapter sets a strong precedent for future academia-industry partnerships in promoting sustainable development in the construction sector.

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY
WAKNAGHAT, P.O. – WAKNAGHAT,
TEHSIL – KANDAGHAT, DISTRICT – SOLAN (H.P.)
PIN – 173234 (INDIA) Phone Number- +91-1792-257999
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Waknaghat, Solan, Himachal Pradesh

IGBC
SHAPING INDIA'S GREEN BUILDING FUTURE, SINCE 2001

25 YEARS

Green Talk On

SUSTAINABLE MATERIAL AND EFFICIENT TECHNOLOGIES FOR GREEN BUILDING

organized by Department of Civil Engineering, JUIT in collaboration with Indian Green Building Council, Chandigarh Chapter

Inaugural Address
Mr Jagjit Singh Majha
Chairman, IGBC
Chandigarh Chapter & Managing Director, Innovative Housing & Infrastructure Pvt Ltd

Expert Session
Dr. Prateek Srivastava, IGBC AP & Director, Sustainergic Tech Pvt. Ltd.

Event Coordinator
Dr. Tanmay Gupta Ph.D
Assistant Professor.
Chairman JUIT Student Chapter IGBC Department of Civil Engineering JUIT

Google meet link

Video call link: https://meet.google.com/emu-vjqg-yxx Or dial: (US) +1 859-667-2127, PIN: 453 227 111#

Wednesday, 4 February 2026 · 11:00am – 12:00pm

No Registration Fee,
E-Certificate for
Registered Participants,
Contact us at +918107393059
tanmay.gupta @juitsolan.in

SCAN ME

Registration Link: https://forms.gle/ekXcZYyvhKKGv1E8A


Green Materials & Technologies for Green Buildings
Prepared by:
Dr. Prateek Srivastava
Sustainergic Tech Pvt. Ltd.
Prateek Srivastava
Prof. Ashish Kumar
Jagjit Singh Mehta
Nilesh Kumar Rana
Aaryaman Chand...
Vineet Sharma
Prabhu V biher
A.K.M. THOHIDU...
Khaja Mueenude...
PRANJAY PAL TH...
M. Kirithika
Arul selvam .M
d pavankumar
Venkata Krishnai...
83 others
Tanmay Gupta


Prateek Srivastava (Presenting)
Envelop Efficiency
Roof
<U-value = < Heat transfer
Insulation cost
Rs 60/sqft
AAC Block
Rs. 4.5/block
<U-value = < Heat Transfer
Fenestration
Walls
CONVENTIONAL RED CLAY BRICK WALL
Rs. 3.5/ brick
<U-value = < Heat transfer
<SHGC= < Heat transfer
>VLT = > Daylighting
Tanmay Gupta
11:52 | Sustainable material and efficient technologies for ...


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Contributors 72
Tanmay Gupta (You)
Meeting host
A.K.M. THOHIDUL ALA...
Akash Bhardwaj
Amar Kumar
AMREEN KHATUN 2466...
ankita bharti
Jagjit Singh Majha
Tanmay Gupta
11:07 | Sustainable material and efficient technologies for ...
Jagjit Singh Majha
Prof. Ashish Kumar
Nilesh Kumar Rana
Prateek Srivastava
Dr. Tanmay Gupta
Vineet Sharma
Prabhu V biher
A.K.M. THOHIDUL ALAM K...
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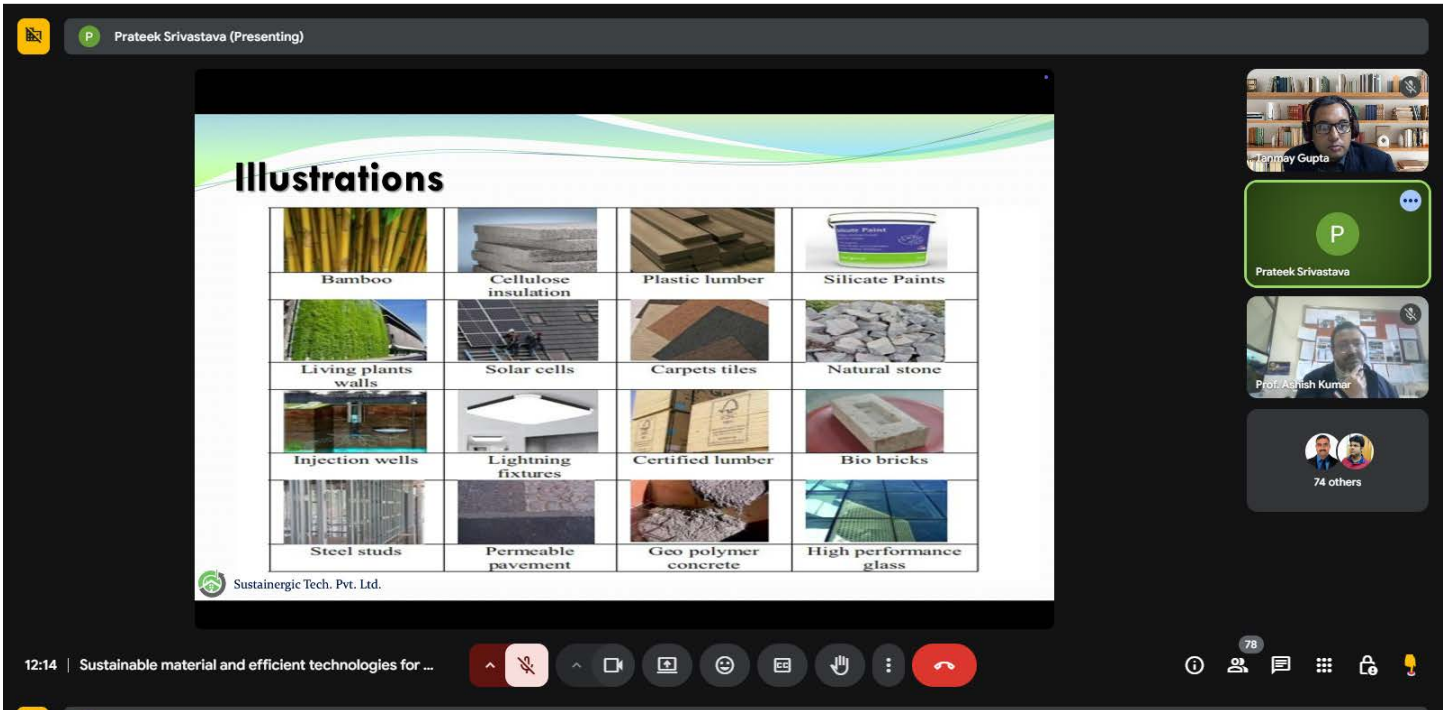
PRANJAY PAL THAKUR 255...
M. Kirithika
Arul selvam .M
d pavankumar
Venkata Krishnaiah R
55 others
Tanmay Gupta
11:08 | Sustainable material and efficient technologies for ...


Prof. Ashish Kumar
Tanmay Gupta
11:18 | Sustainable material and efficient technologies for ...
Prateek Srivastava (Presenting)
Sample Building Materials & Resources
Below are the essential construction materials that continue to anchor modern building materials and construction practices, each with distinct advantages and applications.
1. Concrete
2. Steel
3. Wood
4. Bricks and Blocks
5. Glass
6. Cement
7. Stone
8. Insulation Materials - Green Roofs
9. Solar Panels
10. Rainwater Harvesting Systems
11. Insulated Concrete Forms (ICFs)
12. Passive Solar Design
13. Recycled and Sustainable Materials
14. Energy-Efficient Windows and Doors
15. Low-VOC and Non-Toxic Materials
Features of Green Building Materials
Sustainability – Renewable, recycled, or eco-sourced
Water Efficiency – Smart water use and recycling
Energy Efficiency – Cuts energy use and emissions
Waste Reduction – Recyclable and modular design
Low Environmental Impact – Minimal carbon and waste
Local Sourcing – Reduces transport and supports local economy
Healthy Air Quality – Low-VOC, non-toxic materials
Smart Technology Integration – Adapts with sensors, automation and energy monitoring
Durability – Long life, low maintenance
Aesthetic Harmony – Blends sustainability with modern, natural design
Tanmay Gupta
Prateek Srivastava
Prof. Ashish Kumar
71 others
12:11 | Sustainable material and efficient technologies for ...


Prateek Srivastava (Presenting)
Illustrations
Bamboo
Cellulose insulation
Plastic lumber
Silicate Paints
Living plants walls
Solar cells
Carpets tiles
Natural stone
Injection wells
Lightning fixtures
Certified lumber
Bio bricks
Steel studs
Permeable pavement
Geo polymer concrete
High performance glass
Sustainergic Tech. Pvt. Ltd.
Tanmay Gupta
Prateek Srivastava
Prof. Ashish Kumar
74 others
12:14 | Sustainable material and efficient technologies for ...


Prateek Srivastava (Presenting)
Indoor Environment Quality
Indoor Environment Quality
Fresh Air Ventilation
Thermal Comfort
Smoking Prohibition
Low VOC Paints and Adhesives
CO2 Level Monitoring
Interior Lighting & Daylight
Quality Outdoor Views
Acoustic Performance
Sustainergic Tech. Pvt. Ltd.
Tanmay Gupta
Prateek Srivastava
Prof. Ashish Kumar
72 others
12:17 | Sustainable material and efficient technologies for ...