PROGRAM BROCHURE

CEPT UNIVERSITY
FACULTY OF TECHNOLOGY

M.TECH BUILDING ENERGY PERFORMANCE (MBEP)

FACULTY OF TECHNOLOGY

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About CEPT University

CEPT University, established in 1962, is focussed on understanding, designing, planning, constructing, and managing human habitat. Its teaching programs are designed to build thoughtful professionals and its research programs aim to deepen the understanding of human habitat. CEPT University also undertakes advisory projects human habitat. CEPT University also undertakes advisory projects.

CEPT University has been recognized as a Centre of Excellence by the Government of Gujarat. CEPT's alumni are leaders in their respective fields in private practice, consulting firms, government organizations, multilateral institutions, and academic institutions across the world.

The University comprises of five faculties,

Faculty of Architecture (FA)
Faculty of Planning (FP)
Faculty of Technology (FT)
Faculty of Design (FD)
Faculty of Management (FM)

Faculty of Technology at CEPT University

With the Indian construction industry rapidly expanding multifold, there is an increasing need for efficient and qualified professionals to sustain this growth. Our courses lays the foundation for students to engage in the dynamics of the industry and understand the construction and design process. With a strong foot-hold on fundamentals and well-rounded exposure, students step out well-equipped to plan, design and construct human habitats.

CEPT established the School of Building Science and Technology (SBST) in 1982 that focuses on issues concerning Planning, Design, Construction & Management of Human Habitats. SBST has now been renamed as Faculty of Technology (FT).

FT offers total of 5 programs:

Bachelor's in Civil Engineering (Honors) - (BCE)

Master's in Building Energy Performance - (MBEP)

Master's in Construction Engineering & Management - (MCEM)

Master's in Geomatics - (MGEO)

Master's in Structural Engineering Design - (MSED)

What is unique about programmes at FT?

Studio Based Pedagogy:
o Teacher Student Ratio 1:8
o Creative Problem Solvers
o Innovative Engineers
Pre-Admission Scholarships
Earning while Learning
Practical Training
Cutting edge Library and workshops NABL accredited laboratory
o CARBSE, a NZEB building
o Single Patch Sky Simulator
o Guarded hot box
o Thermal comfort chamber
o Engineering Materials
o Earthquake engineering
o Fluid Mechanics
o Geotechnical Engineering
o Concrete Technology
o Non-Destructive Testing
o Surveying & Levelling
o Building Energy efficiency
o Environmental Engineering
o Conservation lab.
Computer lab
o Auto Desk Products
o ArcGIS
o Bentley Education Suite
o ENVI-met
o Design Builder
o Light Stanza
o Primavera
o ETABS
o EnergyPlus

Master's in Building Energy Performance (MBEP)

Buildings having a low environmental footprint are a social and economic imperative for India and other tropical regions that will see the high growth in the next few decades. Energy use largely determines the environmental footprint of a building over its life span. New research, environmental challenges, green buildings rating programs, and policy are making building energy performance an area of growth and career opportunities. Increasingly, a new cadre of professional is needed as part of building design and operations team to help achieve energy efficient and climate responsive buildings.

At CEPT University's Master's in Building Energy Performance (M.Tech BEP) program, the students get an opportunity to:

1. Learn building energy performance through scientific principles including heat and mass transfer, day lighting, thermal comfort and electro-mechanical systems.
2. Work with state of art infrastructure to evaluate building energy performance and master the digital simulations.
3. Embark upon complex technical problems and participate in a multidisciplinary environment.
4. Influence the design and operation of energy-efficient buildings, while considering all building systems such as HVAC, Controls, Lighting, architecture, occupant health and comfort.

M.Tech BEP program has been recognized internationally through awards and student placements. The students get the benefit of our background in high quality research and practical experience with energy efficiency and net-zero energy buildings. CEPT University's focus on design, operation and management of human habitat provides a supportive eco- system for learning about building energy performance. Our faculty members consist of academicians, industry experts, experienced practitioners and researchers who have a solution-oriented approach. They come from engineering, architecture, physical science and social science background. CEPT University have a world-class research facility that houses the latest equipment for testing and measuring thermal and luminous effects in buildings.

India and other tropical regions are experiencing an unprecedented economic growth and environmental concerns. Regulations, green building rating systems, and owners' preferences have created a demand for building energy professionals. With a focus on warm climate, the graduates of this program are attractive candidates for job markets in India, South-east Asia, and the Middle east, and for research careers in Europe and North America. Our students have secured research internships in the USA and have been placed at high profile firms throughout India. They work with energy consulting firms, building design teams, building owners, and government agencies to pursue energy efficiency with a whole building perspective.

Dean's Message

Dr. Aanal Shah
Dean
Faculty of Technology

"CEPT University offers teaching programs, aimed to build thoughtful professionals, where the students are engaged with studios offering well-designed life-like problems. This objective is realized by collaborative work of eminent practicing professionals and faculty members of the university. Faculty of Technology is one of the five faculties of CEPT University offering a Postgraduate Program in Building Energy Performance.

The Master's in Building Energy Performance (MBEP) program is a technologically enriched course imparting multiple skills to the students leading to energy efficiency in built habitats. With hands-on experience in conducting simulations, assessing energy consumption of the buildings and linking with its occupant's comfort level, this program develops a unique group that tackles energy related issues of built habitat.

The graduates from this program are working in energy consulting firms, building design teams, with building owners and government agencies, taking a leading role for pursuing energy efficiency with a whole-building perspective."

Program Chair's Message

Dr. Minu Agarwal
Program Chair
Building Energy Performance

Decarbonizing buildings, through conscientious design and reduced need for operational energy, is on the critical path of India's commitment to achieve a state of net-zero carbon emissions by 2070. The drive for operational energy efficiency of buildings has already been a national imperative for two decades in order to reduce the environmental impact of buildings over their life cycle. To achieve our decarbonization goals, a specific class of professionals is needed to understand energy issues and systems—well equipped to identify and quantitatively recommend cost-effective solutions for building efficiency.

To meet this crucial demand, the Master's Program in Building Energy Performance (MBEP) at CEPT University provides a well-structured learning "laboratory" that integrates knowledge from diverse disciplines such as building design and engineering, building physics, human physiology, and psychology. This unique blend of interdisciplinary learning trains and transforms engineers and architects into professionals who can facilitate the creation of low-carbon, healthy buildings that respond to both economic realities and the developmental needs of our time.

The program offers a unique pedagogical framework with an incremental nature of the curriculum that not only takes students through increasingly complex and real-world-like problems, but also enables them to build deep and nuanced understanding of the subject over time. By the end of the program, graduates are not only technically proficient but also well-positioned to drive meaningful change in the building sector -- championing sustainability, health, and equity in the built environment.

Teaching Team

Rajan Rawal

Abhishek Gautam

Minu Agarwal

Deepa Parekh

Associate Director | Environmental Design Solutions

ECBC Master trainer

Rajendra Pandya

Retired Sr. Project Executive & HOD | GEDA

Smita Chandiwala

Founder, Energe-se | Building Energy Narratives

Course Pedagogy

At MBEP, a hands-on learning by doing approach is followed in all our studios. Design challenges and functionality are realized on scientific and quantitative grounds. A studio is divided into 3 basic modules, namely; concepts and practices (C&P), measurement & experimentation (M&E), and building simulation.

The C&P module helps students understand the fundamentals of a given topic in building physics. In the M&E module students learn to use different instruments for measurement of environmental variables. They get an idea of what to measure, how to measure and where to measure. Finally in the simulation module, different scenarios are developed and building simulations are carried out. The potential of different energy conservation and energy efficiency measures is evaluated based on quantitative information and appropriate metrics. Parametric studies are also carried out for optimizing the building performance.

The key aspects of our pedagogy are:

- Hands-on learning using the learning-by-doing approach
- Realization of design challenges and functionality by scientific and quantitative assessments
- Course delivery through a studio based setting
- Exposure to industry-relevant concepts and practices, as well as new advancements and innovations
- Experimentation and analysis through measurements
- Interactive teaching through simulations

Core Competencies

To reduce the environmental impact of buildings over their life cycle, energy efficiency of buildings has taken prime importance, and building energy performance has become a substantial area of research and innovation. Within this context, there is an increasing need for a new kind of professional who can provide support to the design team to achieve energy efficient and comfortable built environment. Such a professional should be competent enough to use state-of-the-art tools for building modelling and incorporate all the input details for a realistic and complete simulation. The post-process and analysis of the simulation output plays an important role to identify and quantify strategies for energy ef□ciency. The representation of the observations in appropriate graphs and tables is another aspect needed to demonstrate the energy savings quantitatively. Knowledge of measurement and experimentation is also valuable to carry out post occupancy surveys and on-site measurements.

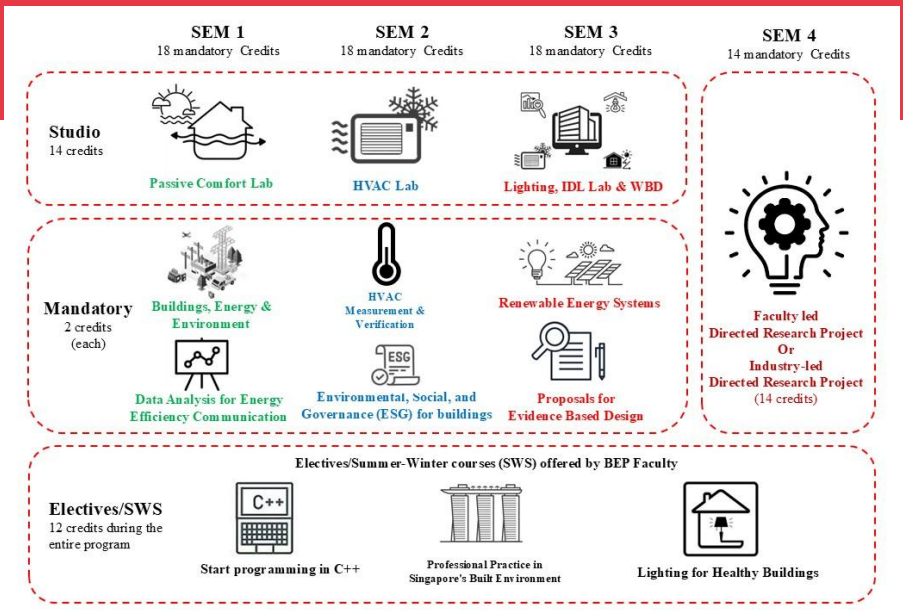
The MBEP program's learning pedagogy is geared towards equipping young professionals with the skills they will need to meet the sector's problems and changing dynamics. The professional competencies of our graduates include:

- Proficiency in using state of the art tools to conduct modelling, evaluations, simulations and assess building energy performance
- Effectively communicate quantitative information of energy savings and propose innovative solutions
- Provide technical support for policy formulation in the area
- Ability to tackle complex technical problems and participate in a multi disciplinary environment
- Contribute to and in□uence the design of energy-ef□cient buildings, while considering the architecture and environment, occupants' behaviour, health and comfort

Course Curriculum

The Master of Technology in Building Energy Performance is a unique program that aims to fill the need for a new kind of professional who can influence the design, construction, and operation of buildings to ensure low energy use and high performance. The program uses the tropical climate as the context to prepare professionals who will tackle the challenges in the economies that are expected to grow in the next two decades. CEPT University's focus on design and management of human habitat provides a supportive ecosystem and context for a building energy performance program. Research work done at Center for Advanced Research in Building Science and Energy (CARBSE) at CEPT University, its net-zero-energy building, and the array of testing and metering equipment will be used in the learning environment. 24 students with a background in various disciplines of architecture and engineering will form the cohort (Please refer eligibility criteria).

The coursework is designed to be hands-on in nature combination of lectures and studio-based learnings. In the first three semesters, students take up one 14 credits lab studio course and mandatory courses worth 2 credits. The studio courses comprise of three modules each, the semester starts with focus on core subjects' concepts, theory and practices, digital simulations for virtual experimentations, and measurements for physical experimentations. The mandatory courses complement studio learning and widen the domain knowledge. The fourth semester is dedicated to directed research project (DRP) and industry internships.



Course Summary

Passive Comfort Lab (Studio)

The Passive design and Thermal Comfort Laboratory (PC-Lab) addresses the essential aspect of building envelope optimization for thermal comfort and energy efficiency of buildings. The building envelope, comprised of walls, roofs and fenestration plays a substantial role in determining the heat and mass transfer between indoors and outdoors. The course content includes topics of climate analysis, shading analysis, heat transfer, moisture transfer, heat load calculations. Simultaneously, students also learn to measure environmental variables affecting indoor thermal comfort and energy. Towards the end students develop various scenarios in the digital environment to explore buildings thermal and energy performance under various indoor and outdoor conditions.

HVAC Lab (Studio)

The HVAC Laboratory (HVAC lab) course introduces the discipline of HVAC. It starts with the first principles of thermodynamics and psychrometry followed by the understanding of types of Heating, Ventilation and Air conditioning systems. It also provides an understanding of alternative cooling systems other than conventional vapor compression cycle-based systems. The HVAC lab introduces the types of indoor contaminants, their filtration techniques, its integration with HVAC. The course starts with theory lectures, followed by hands-on experiments and concludes by developing capabilities to digitally simulate the buildings and HVAC for their energy and comfort performance.

Lighting, Integrated Design Lab (IDL) and Whole Building Performance (WBD) studio

This studio is offered in the 3rd semester of the MBEP program in two modules. The first module (6 weeks) prepares the students for evaluating electric lighting and daylighting solutions for building energy efficiency; and the second module allows for integration of prior learnings in the BEP program namely Passive Comfort, HVAC, Lighting, Daylighting and Communications. The goal of the WBD module is to help students integrate prior learnings using a “real” building project, and providing analysis and simulation results through a sequence of deliverables.

Course Summary

Buildings, Energy, and Environment (Course)
This course provides an introduction to building energy use, strategies for reducing use and integrating renewable energy in the building stock. It builds a larger context with an overview of the energy sector, highlighting the current status of conventional resources, technologies, supply and demand, and potential of renewable energy deployment. Using case studies, exercises, and class discussions, the course covers challenges and approaches to sustainable energy planning.

Communication for Energy Efficiency Business (Course)
This course introduces the basic communication for doing and getting energy efficiency work in the profession. Students learn about techniques for reading early design documents and communicating the potential for low-energy strategies reading construction documents, communicating errors and omissions, preparing compliance reports, and writing project proposals.

Environmental, Social, and Governance (ESG) for buildings (Course)
This course introduces the need and importance of Environmental, Social, and Governance (ESG) in the context of sustainable development. The course will also focus on optimization strategies and tools for implementation of the most appropriate and effective measures for ESG compliance of existing and proposed buildings.

HVAC Measurement and Verification (Course)
This course offers insights into measurement and verification approaches designed for assessing the performance of HVAC systems. The course aims to demonstrate how these metrics can be effectively utilized to verify that HVAC systems achieve intended performance goals and comply with industry standards and building codes. Topics include data cleansing, data analysis techniques, and key performance metrics.

Renewable Energy Systems (Course)
This seminar course introduces the different types of renewable energy systems and their economics. Students do □eld trips to review installations, monitor the performance of an installed system, learn to assess on-site generation potential, and review integration issues for renewable technologies.

Course Summary

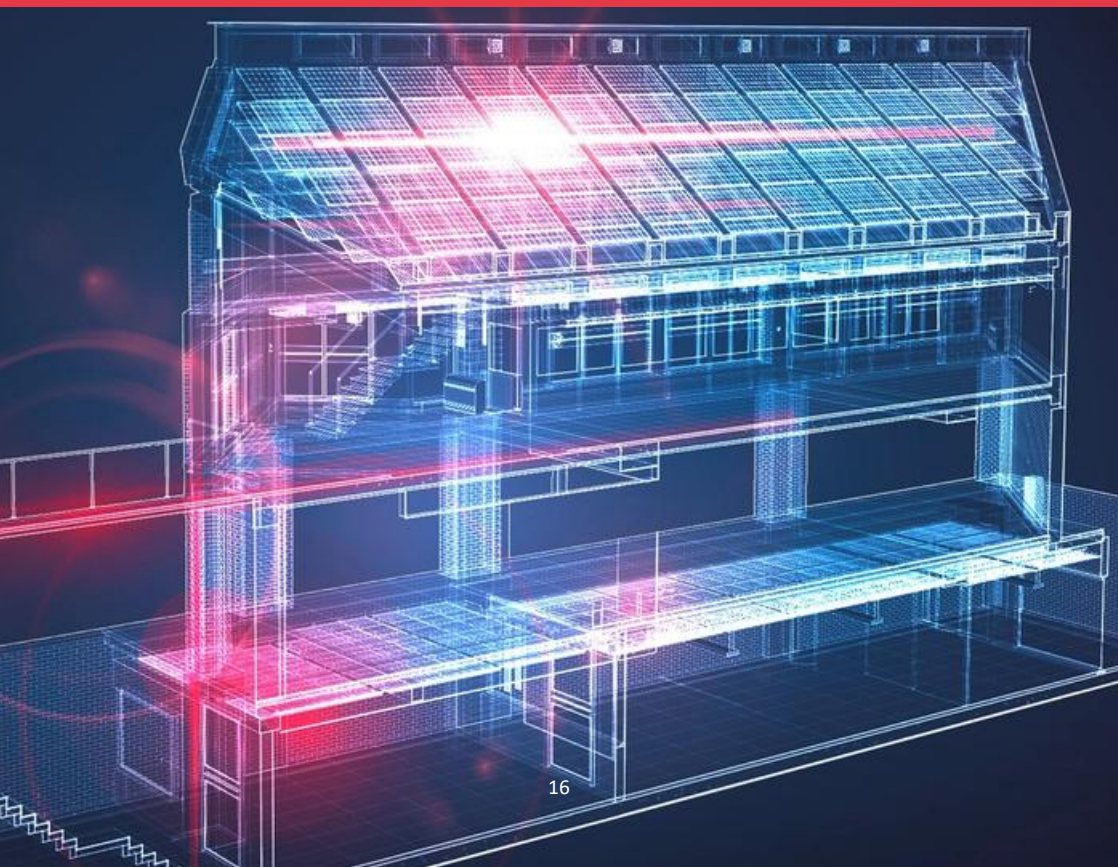
Proposal for Evidence Based Design (Course)

This course enables students to address gaps in current design approach towards high-performance building through first data-gathering/experimentation or meta-analysis. This class provides introduction to various components of research including identifying a knowledge gap, framing a research question around the gap, doing background study and collecting data, choosing an appropriate methodology for analysis, drawing inferences and concluding the research. This course demystifies the research process with exposure to implicit assumptions and warnings against common pitfalls. The course is conducted in a seminar format with high expectations from students in terms of weekly readings, class participation and regular assignments and presentations. At the end of this course the student will be able to able to carry out literature review on a given topic, propose appropriate methodology and scope of work that can be executed within a given time frame.

Electives & Summer Winter School

CEPT University cherishes the individual interests and abilities of its students. Students get a chance to chart their own learning paths by completing a portion of their credits by choosing from a wide range of elective courses offered at any of the five faculties at the University, to suit their practice orientation. It gives them a greater exposure to a wide range of disciplines related to built-environment and an opportunity to collaborate on a multi-disciplinary campus.

The Summer Winter School (SWS) programs differ from the regular semesters in terms of structure, approach and content. The key words that capture the spirit of SWS are experiment, variety and innovation. They explore emerging areas, provide space to test new ideas and methods, facilitate in situ experience, help understand critical sites and situations, and create opportunities to learn by making. The courses in SWS are intense and are for short durations of between two to four weeks.



Electives offered MBEP

Preserving night-time darkness through lighting design

In this elective students understand the term “light pollution” and physical properties of common sources of lighting pollution (e.g., outdoor lighting for buildings, street lighting, signage and displays). We delve into physical properties of night time lighting that has the most potential for interfering with a) biological processes b) visibility of night time sky. Student assess commonly available outdoor light fixtures assess them on the BUG rating method (IES TM-15-11) and suggest dark-sky friendly applications of the light fixtures.

Start Programming in C++

This course provides a basic understanding of programming for beginners. Students become conversant with the program syntax and start developing programming logic to solve problems. The initial part of the course focuses on the basics of programming which remains common across all the programming languages. The latter part of the course is dedicated to an object-oriented approach in C++ which opens up new avenues in programming.

Apart form the mandatory and electives offered by MBEP program, the students can take and interdisciplinary electives at the University level to widen and complement their domain knowledge. The following is a indicative list of elective courses opted by the students:

- Accounting and Financial Management Basics
- Applied Statistics with Python and Excel
- Construction Economics and Finance
- Digital Representation
- ERP for Construction Industry
- Future Cities and Technology
- Geotechnical Engineering
- Mechanical Electrical Plumbing and Firefighting
- Programming with Excel and R Studio
- Public-Private partnership in Infrastructure Projects
- Resource Efficient Built Environment
- Start Programming in C++
- Tackling Urban Climate Change using Systems Thinking
- Urban Planning: Practices and Case Studies

Lectures & Webinars

Guest lectures are organized within each studio unit by inviting experts in the respective field. These lectures are intended to give an industry perspective and include real-life experiences and challenges involved in the field. Students also attend the frequent talks arranged at the Faculty of Technology and Centre for Advanced Research in Building Science and Energy (CARBSE) at the CEPT University and are encouraged to attend the webinars arranged by the Bureau of Energy Efficiency (BEE), Allianz for Energy Efficient Economy (AEEE), International Building Performance Simulation Association (IBPSA) and other organizations in the field of energy efficiency. Following is an indicative list of lectures and webinars organized for our students:

Lectures

Green Transition in Denmark and EU: Policy and Market Interface
-By **Peter Andreas Sattrup**, (Head of the Green transition, Nordic construction Company, Denmark)

ASHRAE DL: Bedroom Ventilation- what do we know and what are the current standards telling us?
-By **Dr. Chandra Sekhar**, (Professor, University of Singapore)

Design of indoor environment by creating shared values
-By **Dr. Arsen Melikov**, (Professor Emeritus, Technical University of Denmark)

Climate-adaptive Strategies to Cool Garment Factories
-By **Dr. Mohataz Hossain**, (Senior Lecturer, Sheffield Hallam University, England)

Slipping through the net: Can Data science help target Energy Transition & Policy interventions.
-By **Dr. Ruchi Choudhary**, (Professor, Engineering Department at University of Cambridge)

Planning and Automating O&M of Solar Assets
-By **Shankaransh Srivastava**, (Vice President Marketing, Smart Helio)

Multi-Scale Modeling for Smart, Sustainable and Resilient Cities
- By **Dr. Wangda Zuo,** (Professor of Architectural Engineering and Mechanical Engineering, and Associate Director for Research of Global Building Network, Pennsylvania State University)

'Transforming Green Projects: Building Materials for a Sustainable Future'.
- By **Praveen Soma**, (Principal Counsellor, CII, and Lead, IGBC Residential and GreenPro Ecolabel)

Understanding India's Net-Zero commitment
-By **Dr. Vaibhav Chaturvedi**, (Fellow, Council of Energy, Environment & Water)

Save the night! Curb light Pollution through design
-By **Sudeshna Mukhopadhyay**, (Consultant & Vice president, Havells India Ltd.)

CATE conference conducted by CEPT from 12th - 15th December, 2023

Indoor environment affects occupants' health, comfort and performance. Energy used for heating, cooling, ventilating and air conditioning of buildings is substantial. Yet, in many buildings indoor environment is mediocre. Today ambitious energy saving goals are adopted in many countries. Is it possible to design indoor environment that improves occupants' health, comfort and performance and saves energy compared to the present practice? This will create shared values for employees well-being and comfort, for employers increased performance of staff and less energy use and for the whole society less sick leave days, decreased healthcare costs, energy saving.There is need for a change from design of collective indoor environment to design of individually controlled micro-environment for each occupant. This will be discussed and several solutions easy to be implemented in practice will be presented.

Dr. Arsen Melikov, Fellow ASHRAE, Fellow ISIAQ, is professor emeritus at the International Centre for Indoor Environment and Energy, Department of Environmental and Resource Engineering (DTU Sustain), Technical University of Denmark. The results of his research are included in engineering handbooks and guidelines as well as in International, European and national standards. He is author and co-author of 390 scientific papers published in 15 languages. He has received numerous awards, including the Rydberg Gould Medal of the Scandinavian Federation of Heating, Ventilation and Sanitary Engineering Associations in Denmark, Finland, Iceland, Norway and Sweden.

CARBSE Lecture Series

Dr. Chandra Sekhar
Professor
University of Singapore

Saturday
25th Feburary 2023, 06:30 p.m.
NZEB Seminar Hall
CEPT University

ASHRAE Western India Chapter

On an average, we spend roughly a third of our life either sleeping or attempting to do so. Although we may realise that sleep is important for our health and wellbeing, we often do not pay much attention to the adequacy and quality of sleep. This is strongly influenced by the bedroom environmental factors, most important of which would be the bedroom ventilation and bedroom air quality. This lecture is a review of field studies involving ventilation and CO_2 measurements conducted in bedrooms in residential dwellings across different climates. It will also include an overview of what some of the international standards are stipulating in terms of bedroom ventilation and CO_2 requirements. With a focus on enhancing sleep quality, the lecture will conclude with suggestions to improve ventilation and air quality in sleeping environments.

Chandra Sekhar, Ph.D., Fellow ASHRAE & ISIAQ, is currently a Professor and Programme Director MSc-Building Performance and Sustainability in the Department of the Built Environment at the National University of Singapore. His research interests include thermal comfort, ventilation and IAQ, airborne infection control, energy efficient HVAC systems and building energy analysis. He has more than 300 publications in these fields in international journals and conferences. He has delivered several Keynote talks in international conferences around the world. He has been an ASHRAE Distinguished Lecturer since 2006 and is regularly invited as a speaker around the world.

CARBSE | CRDF | CEPT UNIVERSITY

PETER ANDREAS SATTRUP

Peter is the Head of Green Transition at Nordic Construction Company, Denmark - a Swedish construction company, second largest in the Nordic region. Their operations include commercial property development, building and infrastructure project contracting, and asphalt and stone materials production. Peter Andreas previously served as the Head of Sustainability at the Danish Association of Architects and was also the Member of Management Board at the Green Building Council, Denmark

Denmark and EU are undergoing rapid green transition with various new initiatives and market regulations for new products, projects and services. In his talk, Peter Andreas will give insights into these changes and how the companies are navigating through them. He will also talk about the EU's Sustainable Finance Taxonomy and the Danish Strategy for Sustainable Construction.

THURSDAY
18h00, 23th Feb evening
NZEB Seminar hall,
CEPT University

CRDF

Organized by: Centre for Advanced Research in Building Science and Energy, CEPT University

Multi-Scale Modeling for Smart, Sustainable and Resilient Cities

CARBSE Lecture Series

Dr. Wangda Zuo
Pennsylvania State University, National Renewable Energy Laboratory

THURSDAY
30th March 2023, 6.00 p.m.
NZEB Seminar Hall,
CEPT University

Organised by:

ASHRAE Western India Chapter

Dr. Zuo is a Professor in Architectural Engineering and Mechanical Engineering, as well as the Associate Director for Research of Global Building Network, which is an initiative of Penn State and United Nation on high performance buildings. Dr. Zuo also holds a joint appointment at the Community and Urban Science Group at the National Renewable Energy Laboratory (NREL) and was a former Scientist at Lawrence Berkeley National Laboratory (LBNL). Dr. Zuo is the recipient of IBPSA Fellow, ASCE ExCEED Fellowship, IBPSA-USA Emerging Professional Award, Eliahu I. Jury Early Career Research Award, and ASHRAE Distinguished Service Award.

This lecture introduces his research in developing and applying the Modelica-based multi-scale modeling technology for the optimal design and operation of smart, sustainable, and resilient cities. It demonstrates the sustainability-focused projects that develop Modelica models for energy-efficient data centers, grid-interactive efficient district energy systems, and multi-scale building energy modeling that reduces operational carbon emissions considering the dynamic composition of carbon in electricity generation. The lecture also discusses smartness-focused projects that develop modeling and control methods to turn a net zero energy community into a resilient community, as well as a project investigating ventilation strategies to protect against COVID while balancing the energy, cost, and CO_2 emission. In the end, the lecture will introduce new inittatives for collaboration, including the new Baltimore Social-Environmental Collaborative (BSEC).

CARBSE | CRDF | CEPT UNIVERSITY

Transforming Green Projects: Building Materials for a Sustainable Future

CARBSE Lecture Series

Praveen Soma
Principal Counsellor at CII | IGBC Residential | GreenPro Ecolabel

Thursday
Aug 22, 2024, 6:00 p.m.
NZEB Seminar Hall,
CEPT University.

Organized by:
Center for Advanced Research in Building and Energy,
CEPT University

About the Lecture: 'Transforming Green Projects: Building Materials for a Sustainable Future' will cover the green building movement in India highlighting the CII GBC India's first green building in 2001 to Net Zero Energy in 2019, The lecture will elaborate on the Paradigm shift in Design Thinking – Conventional, Green Buildings, Net Zero buildings. It will further discuss the role of building materials in improving energy efficiency, enhancing indoor air quality, and achieving Net Zero waste during construction. It will talk about the importance of green procurement and material circularity in driving sustainable building practices. Towards the end, best practices from real-life projects will be discussed.

About the Speaker: Praveen Soma is a Principal Counsellor at CII, and leads IGBC Residential and GreenPro Ecolabel. He holds a B. Arch from SPA, JNTU in 2001 and Certified Climate Change & LCA professional. He has facilitated more than (300 homes, 80 interiors and 200 other green building certification projects) across PAN India. Conducted over 50 Advanced Green Building Training programmes.

The world is our classroom - Site Visits

Environmental Sanitation Institute, Sughad

Citizen Industries - Daikin

The world is our classroom - Site Visits

Environmental testing facility: Johnsons controls - Hitachi Air-conditioning

Air-conditioner manufacturing plant: - Johnsons controls - Hitachi Air-conditioning

Student Achievements

2025

- MBEP student team won BS2025 Competition organized by IBPSA, 2025.
- MBEP student won 3rd prize at the ASHRAE Building EQ Competition 2025

2024

- Team of two students secured the First Position in ASHRAE Western India Chapter Quizo 7.0
- Student won the Project StaSIO Annual Competition 2024 under the 'Student Winner' category.
- Students won 'Honorable Mention - Clarity' in the Project StaSIO Annual Competition 2024.
- Team Navika was recognized as ‘Rising Stars’ in the 2024 Setty Family Foundation Net Zero Energy Design Competition, organized by the ASHRAE.

2023

- MBEP student team won BS2023 Competition organized by IBPSA, 2023.
- A student won Project Stasio’s 2023 Annual competition, in “Students Category” for “The impact of occupant behavior on daylight availability in homes”.
- Two students won Honourable mention in Project Stasio’s 2023 Annual competition.

2022

- A student won Project StaSIO’s Spring competition focusing on “Natural ventilation.” Students won an energy modelling hackathon that focused on providing creative answers for determining and forecasting the energy needs for transit-oriented development in Bengaluru.

2021

- Runner-Up at IBPSA Student Modelling Competition in September 2021.
- The student received an honourable mention for Clarity in a Project StaSIO competition for the “Daylight + Glare” Challenge.

2020

- Student team won the Merit Award of ‘ Architecture at Zero 2020’.

Student Achievements

2019

- Student won the ASHRAE RAL International Competition at Jordan.
- Students' ISHRAE journal article selected as magazine cover article.
- Student-team was a finalist at US DOE Race to Zero Student Design Competition.
- Two students awarded the BHAVAN Internship 2019 by the Indo-US Science & Technology Forum (6-month internship at US).

2018

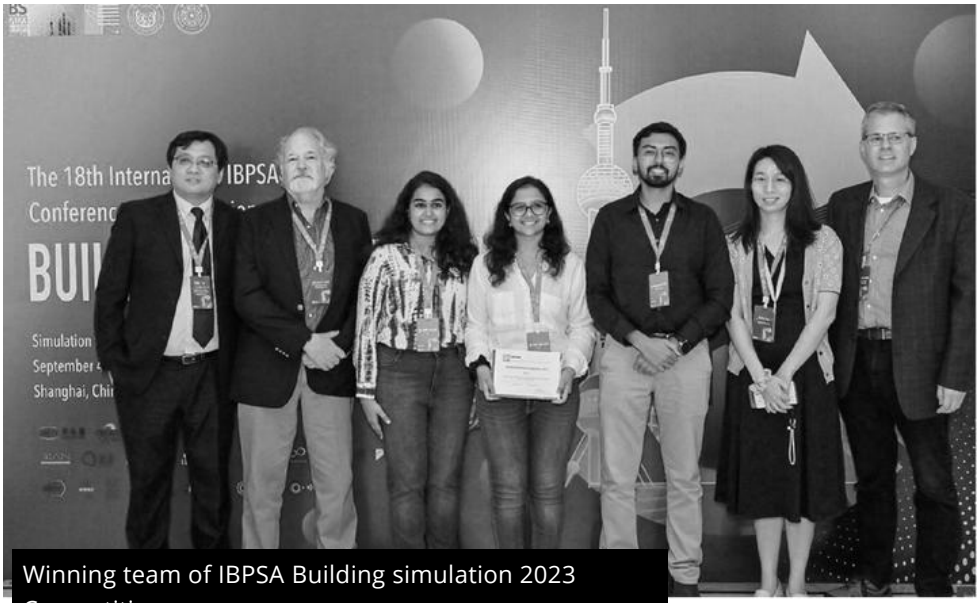
- Student team was a finalist at US DOE Race to Zero Student Design Competition Student awarded the BHAVAN Internship 2018.
- Student awarded Linda Latham Travel Scholarship.

2016

- Students won US DOE Race to Zero Student Design Competition Student awarded the BHAVAN Internship 2016

2015

- Student selected for ECOSPERITY Young Leader's Dialogue 2015, Singapore



Winning team of IBPSA Building simulation 2023

Technical Competitions

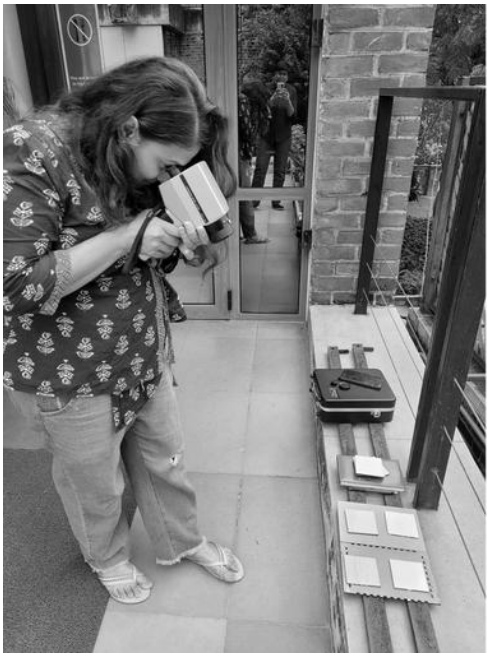
ASHRAE Quizo

Learning Environment & Campus Life

The atmosphere on CEPT campus is lively and conducive to free thinking. The University invites some of the brightest minds from around the world to speak to students on cutting-edge developments in construction, architecture, planning, design, urban habitat development, and other global issues. Interdisciplinary learning is encouraged and students get to collaborate with other built-environment professionals within the ecosystem of CEPT University.

Students have full access to workshops and other infrastructure such as the NZEB, Living Lab with the state-of-art equipment's. They also get a chance to work on a top- of-the-line software for climate, energy and lighting.

The state-of-the-art library has a wide variety of books, foreign journals, and other resources available to all students, making CEPT University one of the best for built- environment resources in the country. In-house IT support, premium printing and stationery facilities, student service of□ce, university press and other services are some additional facilities that enhance the learning environment at the university.



Student Activities

CEPT University boasts of its multifarious and multifaceted culture on and off campus ensuring all-round development of its students. The multicultural aspect of CEPT University makes it possible for students to celebrate traditional and regional festivals on campus with zest. Sports competitions such as the Amity Cricket Cup, Volleyball Tournament, Box Cricket League, and others, fosters a positive environment, giving ample opportunities to participate.

MBEP students also participate in national and international student competitions organised by IBPSA, Solar decathlon India, ASHRAE etc. They have consistently done well in such competitions and secured prizes. This gives them experience in solving real-life problems with a holistic approach. Students are encouraged to be members of ASHRAE which helps them to get access to the ASHRAE database and journals.

What defines us?

1. Beyond Four Walls

The teaching pedagogy of CEPT emphasizes on the practical application of knowledge. The complete life cycle of a project is studied, and the theory involved in managing a project is supplemented with real-life examples in the studio. Further, exposure to live projects in the form of internships and expert lectures, provide limitless learning to the students, extending far beyond the four walls of the classroom.

2. Future Ready

Incorporating futuristic technology-dependent learning, the MBEP program ensures that the students possess the necessary software skills that are required in the industry. The knowledge of theory coupled with technical skills helps the students to adapt faster on the site, making them competent in finding the perfect blend between diverse disciplines.

3. Master of all Trades

The university offers scholars a large variety of elective courses across all disciplines in the university, to widen their horizons and broaden their scope. It allows them to work on their soft skills and gives them a learning experience that goes beyond the classroom. The flexibility to choose a topic of their interest and to integrate it into their skill-set helps them to stand out from their peers.

4. Guided by the Best

The students in the MBEP program are not only guided by excellent set of academics, but also by industry leaders. The review, evaluation, critique, and guidance of the best from the field help mould these young minds and provides a blueprint for the institution and the students to evolve in academic prospects.

5. Balancing Act

CEPT University perseveres to produce students with a holistic personality. Presentations form an integral part of the curriculum, equipping the students with the much-needed soft skills along with the technical know-how. The comprehensive development inculcates a sense of conceptual clarity, and leadership ability, also training the students to structure their ideas logically.

6. Assortment of the Best

The batch consists of students from architecture and civil engineering disciplines, who The batch consists of students from architecture and civil engineering disciplines, who creates a conducive environment for positive learning and productive discussion which further benefits their overall development.

7. A Class of its Own

The culture at MBEP helps the graduates become complete professionals with proficiencies ranging from technical understanding to artistic skills. Today, our alumni are some of the most sought-after executives in India and abroad. We have created some of the best leaders in the field and continue doing so every year.

8. We Adapt

CEPT University aims to create leaders who do not stop due to obstacles and effortlessly adapt to changes. This fundamental outlook has helped the management and students work through situations of uncertainty, such as a global pandemic, without any impact on the quality of work. Delivering the best outcome on time forms the foundation of the MBEP graduates.

Past Recruiters

Alumni Work Profiles

Mili Jain

Founder, Monk Spaces

As Monk Spaces' founder, Mili emphasizes simplicity, concentration, and mindfulness for both people and buildings. Leading projects on carbon quantification, net-zero goals, and carbon offset measures, she also conducts life cycle assessments for carbon reduction. Mili organizes workshops on embodied carbon and carbon reporting for startup incubators like Villgro and companies such as Infosys.

Priyanka Raman

Building Energy Analyst, IGBC

Priyanka, a sustainability professional at CII IGBC, is a key member of the building energy analysis team with expertise in the domain of building energy efficiency and performance. She also works on the low carbon building materials, products and technologies in view of sustainable development of built environment. The CEPT faculty and campus played a crucial role in her growth during the two-year building energy performance program. Her thesis work was focused on greenhouse gas emissions of the cities in India.

Sakshi Nathani

Assistant Program Manager, Shakti Sustainable Energy Foundation

Sakshi Nathani, an Architect and Building Energy Analyst in New Delhi, specializes in designing low-carbon, high-performance buildings with a focus on occupant well-being. As Assistant Programme Manager at Shakti Sustainable Energy Foundation, she actively supports initiatives for decarbonizing the building sector, contributing to evidence-based policy interventions for climate-friendly solutions. Her work combines strategic philanthropy, policy research and stakeholder engagement.

Kartikay Sharma

PhD researcher, Next generation Cities institute, Concordia University Kartikay, a PhD researcher at Concordia University, is a key member of a multidisciplinary team addressing innovative solutions for urban energy systems. His expertise spans building-scale solutions, urban greenery, data science, and 3D city modeling. Kartikay's research focuses on managing geospatial data, optimizing urban building energy modeling workflows, and contributing to a data-driven archetype model for Montreal and Concordia University's decarbonization plan. He also serves on the IBPSA educational committee and has led the development of a 3D urban energy model for Ahmedabad at CEPT University.

Siddhi Vashi

Research associate at the Centre for Advanced Research in Building Science and Energy (CARBSE), CEPT University

Siddhi, a recent graduate of the MBEP program, is pursuing research at CARBSE in the domain of environmentally responsive buildings. She is a keen analyst focussing on the data-driven design of high-performance buildings, with a particular interest in occupant well-being, indoor environmental quality, and personal environmental control systems. The MBEP program helped her develop a core understanding of the subject, including first principles and building science, which laid the foundation for all the knowledge she has acquired.

Shreya Nigam

Sustainability Analyst at Terra Viridis

Shreya leverages her expertise to drive design solutions for high-performance buildings. Her role involves conducting detailed quantitative analyses through simulations and optimizing the building performance to enhance energy efficiency. She also implements sustainable design strategies across various project types. The MBEP program provided a strong foundation of technical knowledge and equipped her with the skills essential to excel in this field.

Abraham Philip

Manager GBCI India.

Abraham Philip is currently working at GBCI India as a Manager in Technical Development. His responsibilities include research and developmental work on LEED rating system programs with an emphasis on Energy and GHG emission Management. The M-Tech program in Building Energy Performance, combining lectures with experimentation and simulations, has equipped him with the right skill set to excel in the industry. Moreover, the course work's emphasis on 'how to learn' has been particularly beneficial for his role, which focuses on research in the industry's rapidly evolving topics.


BUILDING
SCIENCE AND
TECHNOLOGY

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