2024 RIZVI COLLEGE OF ARCHITECTURE

Council of Architecture Training & Research Centre TRC

COA-TRC's TEACHERS TRAINING PROGRAMME

BUILDING ENVIRONMENTAL PERFORMANCE & SIMULATION

DATE: 19th February to 23rd February 2024

MEERA MALEGAONKAR

DATE: 19th February 2024 **TIME: 2:30 pm to 3:30 pm**

INTRODUCTION TO SIMULATION DESIGN AND ITS INTER-RELATION IN ACADEMIC TEACHING

This introductory presentation will discuss the timeline of sustainable development and role of Building Environmental Performance – Assessment & Simulation in reducing ecological footprint and increasing comfort and health of built environment.

Urban areas, especially buildings, are major environmental impactors and improving building performance in combating climate change extends beyond energy efficiency. It includes sustainable materials, renewable energy integration, and other environmental impacts . Simulation software are pivotal in visualizing the environmental performance. Incorporating this comprehensive approach in architectural education is important, equipping future architects to create sustainable, green, and comfortable urban spaces, aligning with global environmental sustainability goals.

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Professor Meera Malegaonkar is the Principal of Rizvi College of Architecture and Urban Design. Her academic interests include Sustainability and Urbanism Analytics. She specializes in evidence-based research using quantitative research methods.

Meera was awarded Nuffic fellowship by Netherlands Government in 2015. She holds a master's degree in Urban Management & Development with specialization in Urban Competitiveness and Resilience from the Institute of Housing Studies (IHS) of Erasmus University, Rotterdam, the Netherlands. She is pursuing PHD in Spatial Analytics and Urban Management.

As an Architect & Urbanist, she has spearheaded diverse urban design projects since 1999 including ADB funded infrastructure development projects, Sports Architecture, Health Architecture, Eco-tourism etc.

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ROSHINI UDVAYAR

DATE: 19th February 2024 **TIME: 3:30 pm to 4:30 pm**

APPLICATION OF BUILDING SIMULATION DESIGN AND METHODOLOGY

The use of simulation software has transformed the design process when it comes to energy efficiency and thermal comfort of occupants. It has made possible to project the energy consumption of a building based on its envelope, HVAC systems, equipment and typology. This is a decision support system that has become indispensable.

The presentation will provide an overview of how building simulation assists the architect or designer in determining appropriate building envelope - materials, form, orientation, fenestration design, window wall ratio, as well as type of HVAC system and equipment for a building. It is also useful in daylighting design and ventilation analysis through the use of computation fluid dynamics.

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APPLICATION OF BUILDING SIMULATION DESIGN AND METHODOLOGY

Dr. (Ar.) Roshni Udyavar Yehuda is a Practicing Architect and Academician, whose core competency is energy efficient and environmental design of buildings. Roshni has a Ph.D. in Resource Management and is a qualified Master Trainer and Empaneled Expert on the Energy Conservation Building Code (ECBC) of India awarded by the Bureau of Energy Efficiency (BEE-UNDP-GEF) since February 2015. She was Head, Rachana Sansad's Institute of Environmental Architecture from June 2003 to July 2017 where she initiated several environmental projects in addition to a postgraduate course on Environmental Architecture.

She is committed to local and global sustainability through creative educational and professional initiatives, and appropriate technology, with an emphasis on equity, scientific thought and ecological values.

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SHAILEE MODY

DATE: 19th February 2024 **TIME: 4:45 pm to 5:45 pm**

LIVE DEMONSTRATION THROUGH SOFTWARE REVIT WITH PLUG-INS FOR ENERGY ANALYSIS, WINDFLOW AND SOLAR ANALYSIS

Building performance simulation tools have been increasingly used for efficient designing and operation of the buildings. These simulations when carried out prior to the execution of a proposed building prove to be essentially important in increasing the building performance while saving energy and utility cost throughout the buildings life span.

Aim of the Building Energy Assessment workshop is to carry out simulations for a building and its context in an iterative and integrated approach by creating artificial environmental conditions in the simulation software. The revit simulation workshop shall be focusing on the urban and contextual scale and on building simulation and analysis.

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Shailee Mody is an architect and bio climatic designer. She completed her bachelors in architecture from APIED Gujarat. She holds an MSc in Sustainable Architecture Studies from University of Sheffield UK. Her interests traverse in Building Environmental Simulation and Analysis, Principles of Building Physics for Sustainable Design, Low Impact Material study, Renewable Energy and Post occupancy evaluation. She is principal architect at Studio Vitarka and is involved in teaching as a visiing faculty at Rizvi college of Architecture. She received first position in Passivhaus Design competition in 2019.

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HRISHIKESH PANDIT

DATE: 20th February 2024 **TIME: 4:15 pm to 5:45 pm**

LIVE DEMONSTRATION THROUGH SOFTWARE: RHINO AND GRASSHOPPER WITH PLUG-INS FOR DAY LIGHTING

Passive design strategies often include elements like appropriate building orientation, natural ventilation, and optimised daylight utilization. These considerations can significantly reduce the need for active interventions. However, the synergy between passive and active measures becomes crucial in achieving high performance.

Case studies presented in this talk, serve as practical illustrations of successful projects that have embraced this integrated approach, and showcase how a continuous questioning process and collaborative efforts have led to sustainable designs, efficient resource utilization, and enhanced building performance. In essence, the talk advocates for an ongoing and inclusive dialogue through various stages of the project, to navigate the complexities of sustainable architecture and construction.

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LIVE DEMONSTRATION THROUGH SOFTWARE: RHINO AND GRASSHOPPER WITH PLUG-INS FOR DAY LIGHTING

Hrishikesh works as an Associate at Perkins Eastman's Mumbai office. He received his M. Arch degree from University of Wisconsin Milwaukee with minors in Ecological Design. His work experience involves design of international schools and master planning along with residential and cultural buildings within and outside India. Hrishikesh is interested in designing sustainable built environments and the idea of sustainability as an integral part of design. As a part of Perkins Eastman's Firmwide Sustainability Team, he works on building performance simulations and analyses for various projects across the world, including NetZero projects.

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HITEN CHAVDA

CASE STUDIES ON ENERGY EFFICIENCY AND BUILDING PERFORMANCE

It is my firm conviction that to Main stream Sustainability in India, Buildings will have to be Ecological as well as Economically sustainable. An architect's job is to discover design ideas that achieve results at both these levels simultaneously. This Presentation is about selected works since last 24 years, both in Academics as well as in Practice.

Academically my work stretches from making a playful Game to teach principals of Passive solar Architecture, to conducting design studios related to Sustainability since last 14 years. Many different flavors of Sustainable development are expressed in my works ranging from Earth Construction to Bricks to Aerated Concrete to High Tech steel construction. My Intent here is to exhibit practical ways of achieving sustainability. I will also explain the basic tools that we use to guide our design decisions at predesign stage.

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CASE STUDIES ON ENERGY EFFICIENCY AND BUILDING PERFORMANCE

Hiten Chavda has graduated with a Bachelor in Architecture from CEPT University, Ahmedabad. After 5 years of practice in India, his interests in Sustainability led him to do Masters in Energy Efficient and Sustainable Building from Oxford Brookes University, Oxford, UK. Few years as Principal Architect of one of the greenest developers of India in Bangalore, helped him in building practical solutions for sustainability. Currently he is the founder and partner at Anahat architects, Vadodara along with his association with academia.

Professionally he has worked with various corporates and has also collaborated with Gujarat Energy Development Agency (GEDA) for a project of formulation of a game to explain basic principles of Solar Passive Architecture to school children. Till date, the game is used to reach out to students with educational entertainment.

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BUILDING ASSESSMENT SOFTWARE - IESVE

ANIKET CHAUDHARI

"Optimization of built environment for better performance using simulation tools", Live demonstration of how to perform simulations for Daylight, Artificial Light, Block massing & Building envelope optimization, CFD, Dynamic Thermal Simulation using software tools and encouraging architects to use the early-stage performance analysis for informed decision making.

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BUILDING ASSESSMENT SOFTWARE - IESVE

ANIKET CHAUDHARI

A multi-talented personality essaying the role of an architect, engineer, research specialist, and businessman, Aniket Chaudhari has been actively involved in building classy & environment-friendly spaces by using superior technologies with prominence on integrative design beyond scales. Aniket has more than 16 years of solid experience in Architecture & high-performance building design, his keen interest in creating sustainable architectural designs is what made him a competent research and development consultant with IES Integrated Environmental Solutions India Pvt Ltd.

Aniket is Founder & Managing Partner of Reinvent Design Technologies LLP & also Authorized Training Partner and Authorized Software Reseller for IES VE in India, Sri Lanka, Bangladesh & Middle East region.

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CHRISTIAN DOBRICK

DATE: 21st February 2024 **TIME: 2:30 pm to 4:00 pm**

ASESMENT OF SUSTAINABILITY BY SITE AND PASSIVE DESIGN STRATEGIES IN LANDSCAPE AND URBAN DESIGN

How West 8 integrates Engineering and Climatic-responsive landscape architecture in the design of public space.
Within two case studies - Madrid Rio and Madrid Nuevo Norte - the lecture covers how we see sustainability as a holistic part of the building process.

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CHRISTIAN DOBRICK

ASESMENT OF SUSTAINABILITY BY SITE AND PASSIVE DESIGN STRATEGIES IN LANDSCAPE AND URBAN DESIGN

With over 25 years of complex landscape design experience, Christian has led a large number of international and interdisciplinary projects at West 8.

With a substantial track record of award-winning realised schemes, Christian engages, adapts and modifies his leadership to work within the local context. As a horticulturalist, he has a rich knowledge of seasonality and ecology, across many distinct climate zones. This knowledge base, combined with his attention to material choices, allow for a seamless integration of both maintenance, deadline and budget requirements within the reality of construction in an urban environment. He has led a wide range of West 8's flagship projects such as Madrid RIO, West Kowloon Cultural District, One Manhattan Square, Novartis Shanghai Campus and Tempelhof Habour.

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PROF SARAH DAVIDSON FRICS FHEA

DATE: 22nd February 2024 **TIME: 4:15 pm to 5:45 pm**

ASSESMENT AND BUILDING PERFORMANCE - BIM

Activities and assessment: building information management and modelling.

This session will explore the distinction between information management and modelling. It will consider how technology can be used to beneficially support knowledge and skills development in both areas and how assessment can be configured to evidence learning outcomes.

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ASSESMENT AND BUILDING PERFORMANCE - BIM

Sarah Davidson is a Professor of Information Management at the University of Nottingham. She is a Fellow of the Royal Institution of Chartered Surveyors (RICS), a buildingSMART certified practitioner and a Fellow of Advance HE. She teaches into the Architecture and Environmental Engineering programmes delivered to post graduates and under graduates and is currently developing information management courses for the University of Nottingham Online.

Sarah also works with industry bodies and clients to embed building information management and modelling and the principles of the UK BIM Framework into business as usual. She is active in nima focussing on skills development and is one of the co-editors and authors of UK BIM Framework guidance. She participates in the standards working group as a UK expert and supports European standards projects relating to guidance and competence. She is a technical expert for the UK Accreditation Services.