



Global Initiative of Academic Network

Ministry of Human Resource Development  
Government of India



# CLIMATE RESPONSIVE DESIGN DEVELOPMENT FOR ENERGY EFFICIENT BUILDINGS

**Venue -** Department of Architecture and Planning  
Malaviya National Institute of Technology Jaipur

**05<sup>th</sup> February 2018- 09<sup>th</sup> February 2018**

**Organized by:**  
Malaviya National Institute of Technology Jaipur



**International Expert**

**Dr. Wolfgang Kessling**

TRANSSOLAR Energietechnik GmbH  
Munich, Germany

**Programme Coordinators**



**Dr. Nand Kumar**

Department of Architecture and Planning  
MNIT Jaipur 302017  
E-mail: [nkumar.arch@mnit.ac.in](mailto:nkumar.arch@mnit.ac.in)  
Phone: +91 9549659074



**Dr. Ashwani Kumar**

Department of Architecture and Planning  
MNIT Jaipur 302017  
E-mail: [akumar.arch@mnit.ac.in](mailto:akumar.arch@mnit.ac.in)  
Phone: +91 9549658116

## Registration

Register for the course through GIAN portal :  
<http://www.gian.iitkgp.ac> or contact the program coordinator

## Introduction

How can dynamical simulation tools inform a context sensitive sustainable design? Participants will collectively explore and discover the potential of an integrated configuration of envelope and energy systems that positively interacts with exterior environment and enhances indoor comfort conditions with minimal energy use. The goal is to develop a climate responsive approach towards high performance building design that stems from a rigorous quantitative understanding of environmental, physical, and technological context.

The lecture sessions will lay the grounds for a critical approach by reviewing climatic design principles and fundamentals of building physics, energy and thermal comfort. The studio work will introduce participants step by step to the techniques of dynamical thermal simulation. By utilizing computer based simulation model participants will assess climate response strategies and study performance based design decisions. This understanding will act as inspiration to explore new designs and to defend sustainable design decisions.

The method will take a generic cross section of a building and generate multiple iterations that respond to various climate engineering strategies. Within the conceptual boundaries of the model, the envelope, programming, materiality, and conditioning strategies will vary in response to place. Students will validate the performance of their design proposals for performance through parametric studies using the developed simulation models.

The course is intended to heighten the awareness of how quantitative analysis can help building design to adapt to the characteristics of the local climate.

<b>Modules</b>	<b>A: Energy and its consumption</b> <b>B: Thermal Building Simulation</b> <b>C: Thermal Comfort</b> <b>Number of participants for the course will be limited to fifty.</b>
<b>You Should Attend If you are a...</b>	<ul style="list-style-type: none"><li>• Student of Architecture and Engineering of year 4 and higher or faculty from reputed academic and technical institutions.</li><li>• Professionals and practitioners (Architects and Engineers) in the building design sector</li><li>• Executives, engineers and researchers from manufacturing, service and government organizations including R&amp;D laboratories.</li></ul>
<b>Fees</b>	The participation fees for taking the course is as follows: Participants from abroad : US \$300 Industry/ Research Organization Professionals: INR 7500 Faculty from academic institutions: INR 5000 Students: INR 2500 The above fee include all instructional materials and course kit. Meal and accommodation will be chargeable as per actuals.
<b>NOTE:</b>	<b>Students and participants need a lap top with Windows environment. The provided software will be fully functional for 364 days</b>  Register for the course through GIAN portal : <a href="http://www.gian.iitkgp.ac">http://www.gian.iitkgp.ac</a> or contact the program coordinator

Course Coordinators: Dr. Nand Kumar || Dr. Ashwani Kumar