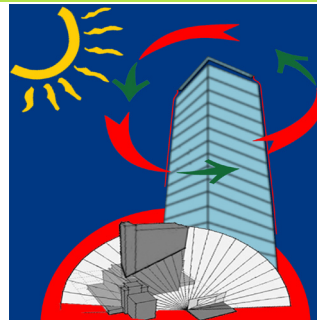


# Energy Simulation Training Workshop

December 26, 27 2008

Rachana Sansad's  
Institute of Environmental  
Architecture



**Introduction:** Importance of Energy Simulation and Energy Modeling tools for commercial buildings has increased by an order of magnitude with the launch of Energy Conservation Building Code (ECBC) by Bureau of Energy Efficiency. Architectural and Environmental Design Consulting firms are required to model commercial buildings to show compliance with ECBC. At the same time there are very few organisations in India with this specialized knowledge and expertise. This workshop offers a unique opportunity to learn about the concepts of energy simulation as well as state of the art building energy simulation program.

The skill that HVAC consultants, architects, MEP consultants and academicians will learn during this workshop is in tremendous demand because of the unprecedented growth experienced by Indian commercial buildings sector. This workshop will also allow them to develop energy simulation models needed to show compliance with various code and rating systems.

The objective of this workshop is to introduce energy simulation tools to architects who are familiar with the basic concepts of building physics, environmental science & HVAC systems. The course will cover the mechanics of building using simulation tools with an emphasis on basic concepts that provide a foundation for more advanced applications. Participants will model basic building envelopes and systems using the latest version of software on their own computers. Time for questions and answers will be provided for each topic.

### **Course Content:**

- Introduction to Energy Simulation: Basics and Fundamentals
- Importance of Energy Simulation: Integration and Processes
- Role of Energy Simulation in ECBC Compliance
- Relevance, importance and capabilities of software
- "Hands-On" exercises
- Create a building energy model
- Apply internal loads (lights, equipment, people)
- Describe and apply operational schedules
- Various parametric, load calculations with results
- Running simulations and analyzing results
- Incorporating Energy Conservation Measures (ECM)
- Demonstration of advance capabilities of tools and case studies

### **Instructors**

Dr-ing Jyotirmay Mathur, MNIT, Jaipur  
Rajan Rawal, CEPT University, Ahmedabad  
Dr Vishal Garg, IIIT, Hyderabad

### **Target Audience**

Architects and designers involved in designing ECBC-compliant and green buildings.  
Commercial building developers constructing high performance commercial buildings.  
Academicians and educators interested in developing energy simulation course at institutes.

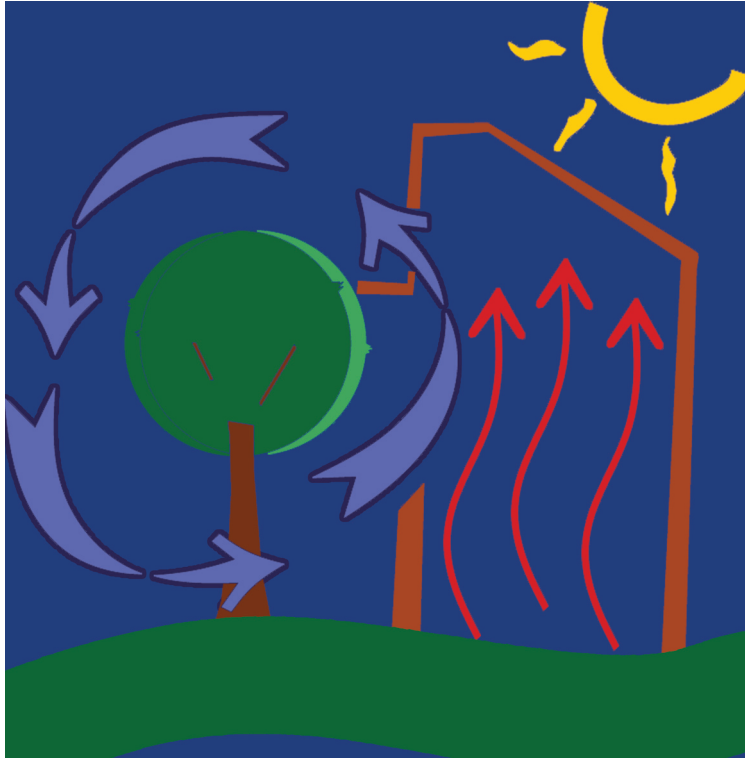
## **Building Energy Simulation Capacity Development**

The Energy Conservation Building Code (ECBC), formulated by the Bureau of Energy Efficiency (BEE), India, with support from United States Agency for International Development (USAID), is a high level policy measure to reduce the adverse impact of buildings on environment. Buildings that comply with this code feature reduced energy demand and efficient use of energy without compromising on crucial aspects like building function, human comfort; they in fact contribute to better health and productivity of the occupants. Buildings and the building industry can save significantly on energy costs through regulation of energy consumption levels in buildings, which is possible under the ECBC.

Energy savings in ECBC-compliant buildings accrue from the use of more energy-efficient building envelop design and equipment systems – ECBC provides prescriptive and performance based mechanism to reduce energy use in buildings. Energy modeling and simulation of different design options provides advance feedback to architects on the implications of different design decisions on the energy performance of buildings, along with maximum freedom for creative design to come into existence. Energy modeling and simulation helps to identify and implement the most cost-effective energy efficient measures. However, awareness alone would not result in compliance; human resource capacity constraint has been identified as one of the main barriers to design & construct ECBC compliant buildings

in India. USAID-supported Energy Conservation and Commercialization program phase 3 (ECO-III), which is aimed to implement ECBC in India, is working at various levels for implementation. International Resources Group (IRG) and its partners are implementing it by working closely with international experts and Indian organizations.

To strengthen these efforts, a collaborative has been launched by Alliance to Save Energy (ASE) and Centre for Environmental Planning and Technology (CEPT), Ahmedabad. This is being done through active technical participation from Malaviya National Institute of Technology (MNIT), Jaipur and International Institute of Information Technology (IIIT), Hyderabad. This project will also receive key coordination and implementation support from USAID ECO-III. The U. S. Department of Energy is supporting this project financially. This Building Energy Simulation Capacity Development project envisions capacity-building of working professionals to perform comprehensive energy simulation to achieve energy efficiency in buildings as well as in ECBC & other code compliance. While all partners have their unique and specific expertise & role, the collaboration is sure to build capacity for establishing building energy modeling and simulation as the norm in India for large commercial buildings where energy modeling and simulation can be most appropriate & cost effective. To achieve the project objectives, activities have been identified in four broad areas: Awareness & Training workshops, Pilot Demonstration project, 'Getting Started Manual' and establishment of IBPSA India Chapter.



### Support from United States Department of Energy



### Registration Details

Workshop registration fees :  
INR 15,000 (Fifteen Thousand Rupees)  
Two or More than two can avail discount of 10%

### Payment Details

Payment of registration through demand draft in favor of 'Institute of Environmental Architecture' payable at Mumbai

### Workshop Dates & Time:

0900 to 1700 hrs - 26<sup>th</sup> & 27<sup>th</sup> December 2008

### Venue:

Rachana Auditorium, Ground Floor, Rachana Sansad,  
278 Shankar Ghanekar Marg, Prabhadevi,  
Mumbai 400 025

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