

Workshop on

EARTHQUAKE RESISTANT PRACTICES FOR UNDERGRADUATE STUDENTS OF ARCHITECTURE

June 1-2, 11-15, 2024, IIT Kanpur

The National Information Centre of Earthquake Engineering (NICEE) at IIT Kanpur is dedicated to enhancing earthquake safety in the built environment by empowering stakeholders in the building delivery process through information sharing and dissemination of the latest developments in earthquake engineering. As part of this mission, NICEE has been actively involved in awareness, sensitization, and training programs for architecture and civil engineering faculty across India through the NPEEE program, which operated from 2003 to 2007.

Recognizing that architects are key initiators in building projects, primarily coordinating with professionals responsible for the building delivery process, there was an urgent need to educate future architects on seismic safety issues to prepare them for their professional roles. To support this agenda, NICEE participated in the NASA 2007 Convention held at MANIT Bhopal in December 2007, the SAARCH Convention 2008 in New Delhi in March 2008, and the SAARC NASA Convention in Pune.

The National Advisory Committee of NICEE unanimously agreed on the importance of targeting future architecture professionals by offering specialized training modules to architecture students across India. The primary goal of these workshops is to equip participants with the expertise needed to create architectural design solutions that are inherently capable of resisting earthquake loads from a conceptual standpoint.

To achieve this goal, a pilot workshop on Earthquake Resistant Design Practices for undergraduate architecture students was first conducted in 2008. The workshop was highly successful, leading to its establishment as an annual event.

Workshop 2024

The 16th National Workshop for UG Students of Architecture took place at IIT Kanpur in a hybrid format from June 1st to June 15th, 2024. The event featured online technical sessions from June 1st to 2nd, followed by offline studio sessions on the IIT campus from June 11th to 15th. A total of 34 students, who had completed six semesters of their architecture programs, participated in the seven-day workshop. These students represented institutes from Maharashtra, West Bengal, Punjab, Gujarat, Haryana, Rajasthan, UP, Assam, and Nepal.

The primary objective of the workshop was to sensitize students to earthquake safety issues and build their capacity in the fundamentals of earthquake-resistant design at a conceptual level. Through a combination of online technical session lectures and hands-on studio sessions focused on tackling a design assignment, the workshop aimed to help students internalize earthquake-resistant practices as an integral part of their design decision-making process.



The workshop featured resource faculty from both architecture and structural engineering disciplines, aiming to simulate real-life architectural practice as closely as possible. After the technical sessions, each selected participant received PDFs of the NICEE publication and additional reading materials and were advised to review them before attending the workshop studios. The existing awareness levels about seismic resilience in the built environment were also considered before proceeding to the hands-on studio sessions.

Technical sessions were conducted by Dr Harikumar - GeoHazards International New Delhi; Dr Vasudha Gokhale & Dr Meera Shirolkar - Dr B. N. College of Architecture for Women; Dr Atanu Dutta - Professor & Principal Jorhat Institute of Science and Technology, Jorhat. The following resource faculty members viz. Dr. Meera Shirolkar, Dr. Vasudha Gokhale and Dr. Sujata Mehta - Dr B. N. College of Architecture for Women; Dr. Bhavna Vimawala and Dr. Nehal Desai - Sarvajanik University Surat, Dr. Nayanmoni Chetia - Jorhat Engineering College, Assam mentored the students in hands on design studios. Dr. Durgesh Rai, Coordinator of NICEE and Professor in the Department of Civil Engineering, delivered a session on the significance of architectural practice from a seismic perspective. This session set the tone for the students as they began working on their design assignment.



Design Problem

The design brief for the workshop was an architectural assignment that required participants to design an office complex on a one-hectare site in Gandhidham, a

rapidly developing city in the Kutch district of Gujarat in seismic zone - V. Gandhidham is a municipality and the economic capital of Kutch. Participants were divided into 17 groups, each consisting of two members from different institutes. They were tasked with developing a design proposal that was rational in terms of functionality, structural integrity, and aesthetics. While innovative design approaches were encouraged, the primary objective of this exercise was to evaluate the participants' understanding of earthquake-resistant architecture and their ability to apply these principles in a design project.

Evaluation of Design: The design prepared by the participants was evaluated on June 15th, 2024 by a team of jury comprising of a practicing architect and a structural engineer. Jury board members were as follows.

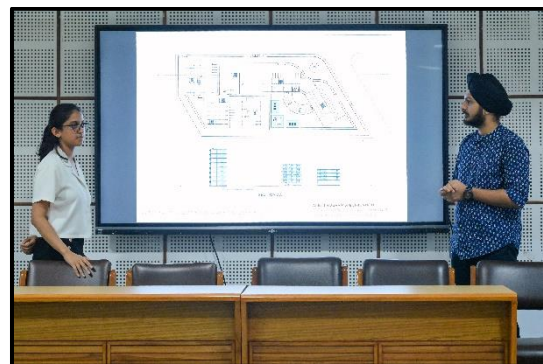
- Dr Atanu Dutta - Principal Jorhat Institute of Science and Technology, Jorhat;
- Ar. Vikram Hundekar, Practicing Architect, Pune;
- Dr Indrani Gogoi - Training & Placement Officer Directorate of Technical Education Kahilipara, Guwahati, and
- Dr Rajiv Kackar - Professor Faculty of Architecture and Planning, Dr. A.P.J. Abdul Kalam Technical University, Lucknow.

In the initial round, the Jury Board shortlisted six designs that effectively integrated earthquake-resistant features while maintaining functionality and addressing climatic considerations. The jury focused on evaluating a clear understanding of structural systems capable of withstanding earthquake loads.

The award-winning designs included:

First Position

- Ms. Chiara Niket Karnik, Pillai College of Architecture, Navi Mumbai, Maharashtra
- Mr. Anantjeet Singh Nagpal, Malaviya National Institute of Technology, Jaipur, Rajasthan



From Left: Prof Durgesh Rai, Chiara Niket Karnik, Anantjeet Singh Nagpal and Prof Rajiv Kackar.

Second Position

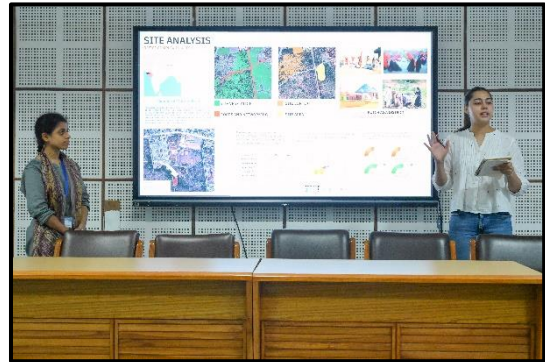
- Mr. Kush Alpeshbhai Ribadia, Sarvajani University, Surat, Gujarat
- Ms. Arya Umesh Ranaware, Vidya Pratishthan's School of Architecture, Pune, Maharashtra



From Left: Prof Durgesh Rai, Kush Alpeshbhai Ribadia, Arya Umesh Ranaware and Prof Rajiv Kackar.

Third Position

- Ms. Afreen Ashfaq Sable, Pillai College of Architecture, Navi Mumbai, Maharashtra
- Ms. Vedanshi Ostwal, Chandigarh College of Architecture, Chandigarh, Punjab



From Left: Prof Durgesh Rai, Afreen Ashfaq Sable badia, Vedanshi Ostwal and Prof Rajiv Kackar.