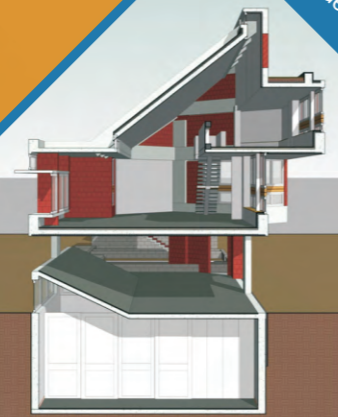


# NZEB

## A Living Laboratory

CEPT University



### What Is Net Zero Building

- An NZEB has two key energy features:
  - Proven, highly energy-efficient technologies that significantly reduce energy demand; and
  - Renewable sources that supply as much energy as or more than the building needs over the course of a year. An NZEB can deliver electricity to the grid during times of surplus production, and draw from the grid when necessary. An NZEB can also be grid independent.

CSEE has been awarded a status of a "Regional Energy Efficiency Centre on building energy efficiency" by USAID ECOIII program and "Centre for Excellence in Solar Passive Architecture & Green Building Technologies" by Ministry of New and Renewable Energy, Government of India. CSEE is building its own building to house building energy testing simulation laboratory and building to house performance testing simulation laboratory along with facilities to conduct training and dissemination activities. It is envisaged that this demonstration building will act as living laboratory to conduct research and development in area of building energy efficiency, thermal comfort modeling, daylighting and low energy cooling technologies-Attempts have been made to make this building as Net Zero Energy Building.



### About CSEE:

Centre for Sustainable Environment and Energy (CSEE) at CEPT University Ahmedabad aims at providing an impetus for research in energy efficiency in built environment & resource management at large. Its objective is to carry out in depth research in the fields of energy efficient buildings design, energy efficient building construction processes, environment friendly construction materials and resource audit & management.





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**Vision of NZEB:**

The architect, Prof. Balkrishna V. Doshi's vision of this building is to re-establish the context and importance of sustainable low energy architecture. Since the building is part of the academic and research environment, it is imperative that it not only demonstrates the design and practice of sustainability but also inspires next generation of professionals. The building has been envisioned as an experience that will enable the occupants and visitors to understand the importance of resource efficiency through sensorial aspects of design. The spaces within the facility houses different activities and provides varying visual and thermal comfort levels. The design, as a whole, serves to emphasize the perceived physical and psychological strategies to achieve the targeted comfort levels. The design process and demonstrates the importance of integrated design process and demonstrates the symbiotic relationship between architecture, interior architecture, structure and services.

**Project Partners:**

- Gujarat Energy Development Agency, Government of Gujarat
- Ministry of New and Renewable Energy, Government of India
- US Aid for International Development
- Glazing Society of India



**Objectives of the building facility to house CSEE are:**

- Demonstration of low energy building design to achieve Net Zero Energy building
- Research and practice of appropriate strategies to achieve thermal comfort
- Harness and maximize the usage of daylight as part of architectural design
- Integrate renewable energy sources to all
- Monitoring of buildings for their energy efficiency potential by in-house research scholars and use the collected data to develop a comprehensive database accessible to all
- Use of low embodied energy materials and innovative structural system

The foremost objective of the CSEE building design is to translate its physical working space into a living laboratory. The aim is to develop a building that incorporates key demonstrative strategies and offers opportunities for scholars, researchers, industry professionals and students to experiment with various design strategies and technologies. The building serves as a test-bed not only during the design and construction phase, but also during its operation and usage. Conscious efforts are made to make CSEE building a true Net-Zero Energy Building.

