Warming of the environment has resulted in temperatures soaring and exposing about 65 per cent of the Indian population to its ill effects. This is aggravated by the urban heat island effect (UHIE), which is a result of diminishing green spaces, waste heat from air-conditioners (AC), polluted air, heat absorbing building materials, constricted ventilation due to dense urban fabric, among others.

Bureau of Energy Efficiency predicts that India’s built-up area will increase by five times by 2030, dominated by residential use. Therefore, housing sector plays an instrumental role in shaping India’s future built stock to be resilient to the effects of climate change such as heat stress in urban areas, soaring energy budget due to rising demand for cooling and flooding due to extreme rainfall among others. As India is building about 12 million units in urban areas as part of Pradhan Mantri Awas Yojana, there is a strong need to mainstream climate-appropriate development practices.

Anil Agarwal Environment Training Institute (AAETI) offers this course to familiarize participants with the ambit of current government policies and schemes, inclusive spatial planning, innovative and cost-effective environmental services, and the role building geometry and material choice plays in planning and designing climate appropriate housing.

**SOME HIGHLIGHTS OF THIS PROGRAMME WILL BE:**

- Affordable housing in India, demand and supply footprints
- Housing environment, urban planning and climate vulnerability issues:
  - Health risk related to rising outdoor and indoor temperatures
  - Implication to energy consumption, mobility costs and other socio-economic disadvantages
- Housing and urban planning: Location attractiveness index and accessibility to socio-economic infrastructure
- Housing and mobility: land use and transport integration and pro-poor mobility
- Urban design impacts health and living costs: Heat island effect and its interface with urban landscape,
- Environmental Impact assessment for housing projects
- Conservation practices and their interface with design: rainwater harvesting, decentralised wastewater treatment, solar rooftop etc.
- Enabling thermal comfort for all via building geometry, layout and materials
  - Introduction to India Cooling Action Plan 2019 and the focus on thermal comfort
  - Eco Niwas Samhita 2018 for energy conservation in residential buildings
  - Walling materials and their properties; introduction to 24 alternative materials and construction technologies for housing
  - Building energy simulation exercise for indoor thermal comfort
- Daylighting and its components

AAETI is an ECBC compliant sustainable, state of the art campus. Participant interaction with the campus features will enable them to understand the working of all 5 natural elements coming together and acting as a learning tool for good building design practices. The campus has utilized passive techniques and decentralized systems (waste water, building waste, renewables, water sensitive design, etc.) which the participants will be made familiar with.

**Note:** This course involves various modelling exercises. Participants must bring a laptop.