

Climate Smart Buildings

Development of Training Module on Thermal Comfort in Affordable Housing

Under the Indo-German Technical Cooperation, the Federal Republic of Germany and the Republic of India jointly agreed to promote the “Indo-German Energy Program” (IGEN). IGEN aims to advance sustainability in the built environment in turn improving environment and climate conditions. Within IGEN, the Climate Smart Buildings (CSB) programme targets to enhance climate resilience and thermal comfort in buildings. It is aligned with the commitments made by the Indian Government to meet its objectives submitted under SDG 11- Make cities and human settlements inclusive, safe, resilient, and sustainable.

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) commissioned by the Federal Ministry for Economic Cooperation and Development (BMZ), the Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety (BMUB), and the Federal Ministry for Economic Affairs and Energy (BMWi) facilitates the CSB programme.

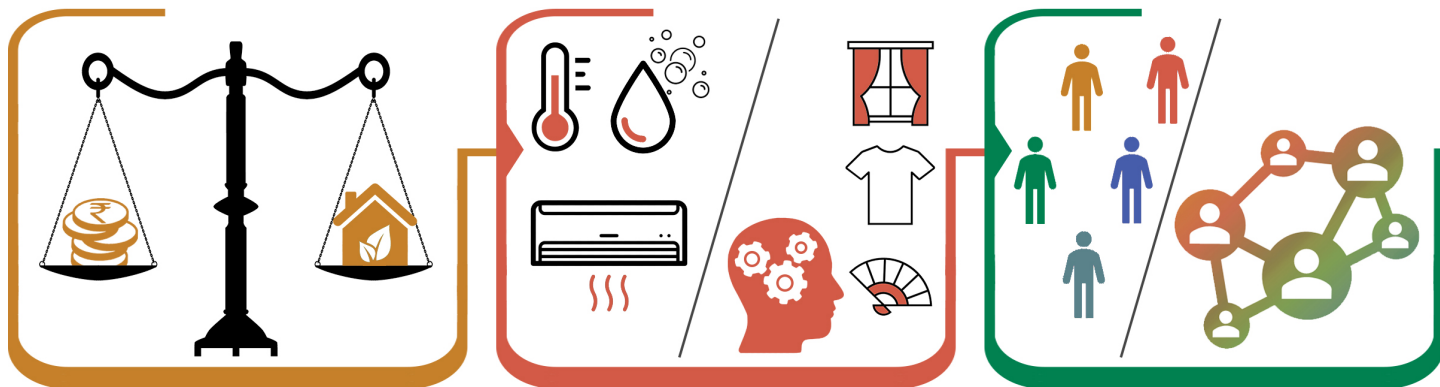
Overview

The Pradhan Mantri Awas Yojana PMAY-U facilitated by the Ministry of Housing and Urban Affairs (MoHUA) aims to add 11 million dwelling units adding another 360 million

square meters of construction. With a five-fold increase in buildings from 2015 to 2050, residential sector is projected to contribute 36.5% to the total electricity consumption in 2032. Expected increase in appliance ownership and cooling needs contributing to this dominance mean that thermal comfort is an imperative consideration in new construction.

Reduced embodied energy, improved consumption patterns and increased cost savings can be achieved by enacting energy efficiency in buildings. The development of Eco-Niwas Samhita 2018 (ENS) for multi-story residential buildings, and India Cooling Action Plan (ICAP) by the Ministry of Environment, Forest and Climate Change (MOEFCC) in collaboration with other stakeholders reflect India's efforts towards meeting Sustainable Development Goals (SDG) 7,9, 11 and 13.

The efforts of staff members of local, State, and Central government bodies, building material manufacturers, Architects & Engineers, Financing bodies and Green Building certification bodies and other relevant stakeholders can be amplified through a centralized platform. A one-stop national repository containing information on government



policies and their progress, concepts of thermal comfort and physiology, case studies on housing and comfort, design and technological innovations that bolster thermal comfort is the need of the hour. Additionally, organized professional trainings to disseminate this streamlined knowledge will impact a larger audience, inclusive of decision-makers and homeowners.

Aims

- To develop training modules to acquaint the larger audience with the nuances of thermal comfort through a multi-layered understanding and low/ or no-cost interventions in affordable housing.

Objectives

- Develop content for training modules (basic and advanced) with varying degrees of depth in knowledge
- Deliver training on thermal comfort utilizing developed modules.
- Develop online learning platform with integrated e-modules
- Identify a cadre of professionals who can act as trainers for capacity building through the “Training of Trainers” program
- Gamification of the training modules on e-learning platform

Task Schedule

Work Package 1 – Content development of training

- Develop a preliminary outline of the basic and advanced modules

Work Package 2 – Delivery of Training Modules

- Develop detailed work plan including criteria of participant selection
- Organize basic module training programs for senior officials from ULB/ State/ Central Governments
- Organize advanced module training programs for building design professional and technical staff in relevant state/ local government bodies

Work Package 3 – Development of online learning platform with integrated e-modules

- Develop a preliminary outline of both basic and advanced versions of e-modules
- Develop the e-learning web portal

Work Package 4 – Training of Trainers

- Develop a detailed work plan including criteria of participant selection
- Develop presentations and user guide for trainers, including recommendation on possibilities of training material adaptation based on need and level of participants
- Organize 4 ToT programs to identify potential trainers
- Organize 2 ToT programs for the faculty of higher educational institutions to enhance the capacity of educational entities on delivery of education on thermal comfort

Work Package 5 – Gamification of training modules on e-learning platform

- Develop a methodology for the gamification of modules on thermal comfort by considering the gamification approach, technical specifications and learnings from social sciences.

