

INDO-SWISS

BUILDING ENERGY EFFICIENCY PROJECT



CASE STUDY: INDIA INTERNATIONAL INSTITUTE OF DEMOCRACY AND ELECTION MANAGEMENT (IIIDEM), DELHI



Schweizerische Eidgenossenschaft
Confédération suisse
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Swiss Agency for Development
and Cooperation SDC

OVERVIEW

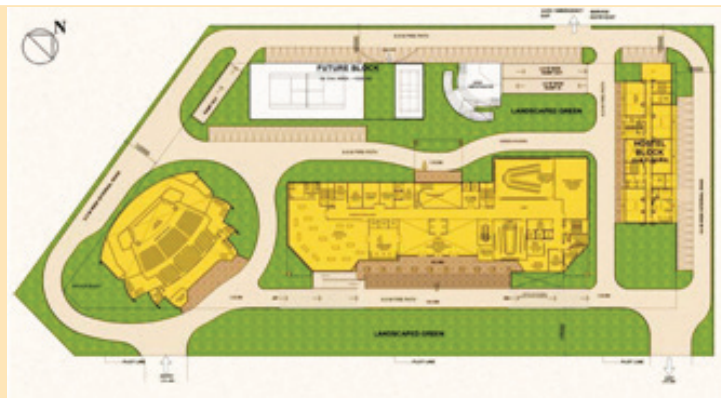
The Indo-Swiss Building Energy Efficiency Project (BEEP) provides technical assistance to builders and developers in designing energy efficient buildings. The technical assistance is provided by conducting a design charrette in the early design phase of the project.

The India International Institute of Democracy and Election Management (IIIDEM), set up in 2011, is an advanced resource centre of learning, research, training and extension for participatory democracy and election management. IIIDEM is presently running out of Nirvachan Sadan.

Due to the space constraints at its present premises in Nirvachan Sadan, the Election Commission of India (ECI) decided to develop an independent campus for IIIDEM. The proposed new campus is at Sector 13, Dwarka, New Delhi. The charrette for this project was held in July 2014.

PROJECT DETAILS:

- Built-up area: 26,240 m²
 - Institutional block: 11,600 m²
 - Auditorium: 2,270 m²
 - Hostel block: 5,870 m²
 - Basement: 6,500 m²
- Number of floors: Institutional block - G+4, Hostel block - G+7
- Types of spaces: Training halls, offices, library, record rooms, computer labs, museum, auditorium, hostel rooms, dining facility



ENERGY EFFICIENCY MEASURES IMPLEMENTED IN IIIDEM:

Institutional Block

- Dry stone cladding with air gap and insulated glazing to reduce heat gain inside the building.
- Non-occupied spaces (like staircase, machine rooms, toilets etc.) on the south-west face of the block.
- Free cooling, incorporating the use of ambient air for cooling whenever suitable.
- Heat recovery wheel (effectiveness 75%) to reduce the energy consumption for cooling the fresh air.
- Use of high performance water cooled chillers with better part load performance instead of air-cooled chillers. Automated control on the chiller to raise the chilled water temperature (gliding chilled water temperature) as per the cooling load.
- Solar hot water generation for kitchen.
- Renewable electricity generation through roof-top solar photovoltaics.



ENERGY EFFICIENCY MEASURES IMPLEMENTED IN IIIDEM:

Auditorium Block

- Insulating the auditorium's roof to keep it cool and keep the cooling loads to a minimum.
- Centralised water based cooling system of the IIIDEM campus for conditioning the stage and audience seating area of the auditorium.

Hostel Block

- Plantation of deciduous trees to shade the east and west facing balconies of the hostel block.



Auditorium Block

Hostel Block

INSTITUTIONAL BLOCK	BEFORE CHARRETTE	AFTER CHARRETTE
Energy Performance Index (EPI)	114.3 kWh/m ² .year	81.8 kWh/m ² .year
28.5% ENERGY SAVINGS		
APPROXIMATELY ~ 3,77,460 kWh ANNUAL ELECTRICITY SAVINGS		



INDO-SWISS BUILDING ENERGY EFFICIENCY PROJECT (BEEP)

The Indo-Swiss Building Energy Efficiency Project (BEEP) is a bilateral cooperation project between the Ministry of Power (MoP), Government of India and the Federal Department of Foreign Affairs (FDFA) of the Swiss Confederation. The Bureau of Energy Efficiency (BEE) is the implementing agency on behalf of the MoP while the Swiss Agency for Development and Cooperation (SDC) is the agency in charge on behalf of the FDFA.

The overall objective of the project is to reduce energy consumption in new commercial buildings and to disseminate best practices for the construction of low energy residential and public buildings.

The project contributes to strengthening and broadening the Bureau of Energy Efficiency's (BEE) building energy conservation programme. It has the following components:

- Component 1: Design workshops (charrettes) with public / private builders
- Component 2: Technical assistance in developing building material testing infrastructure
- Component 3: Developing design guidelines and tools for the design of energy-efficient residential buildings
- Component 4: Production and dissemination of knowledge products

Builders, developers and other interested agencies can apply for charrettes on: <http://www.beepindia.org/content/apply-integrated-design-charrette>

Indo-Swiss Building Energy Efficiency Project | www.beepindia.org
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