

## A Building Saved IS A Building Built

### National Network Of Retrofitting Clinics

(Status as on 28.05.2007)

#### CIDC Accredited Regional Centers of Retrofitting

Department of Civil Engineering  
Indian Institute of Technology  
Guwahati (Assam)  
Tel: 91-361-2690401 (O)

Engineering College Bikaner  
Karni Industrial Area  
Pugal Road, Bikaner - 33404 (Rajasthan)  
Tel. 151-223404

#### CIDC Accredited Retrofitting Clinics

Maulana Azad National Institute of Technology (Deemed University)  
Department of Civil Engineering  
Bhopal 462007 (Madhya Pradesh)  
Tel.: 0755-54206006-10, 416, 417 Extn. 1419

Deenbandhu Chhoturam University of Science and Technology  
Department of Architecture  
Murthal - 131032 (Haryana)  
Tel.: 01302484004-08-09 Extn. 108

Rajkiya Polytechnic Mahavidyalaya  
Barmer (Rajasthan)  
Tel.: 02982-220634

Govt. Polytechnic College  
Sirohi  
Tel.: 9414448098

Govt. Polytechnic College  
Hanuman Garh Road, Richo Industrial Area  
Churu 301 001 (Rajasthan)  
Tel.: 9829077277

Govt. Polytechnic College  
Alwar - 301001 (Rajasthan)

Govt. Polytechnic College  
Bharatpur (Rajasthan)  
Tel.: 05644 22254

Uttarakhand Building Centre  
Srikot Ganganali  
Srinagar (Gharwal) - 246174 (Uttarakhand)  
Tel.: 9412033340

The Govt. Polytechnic, Jhajjar  
Jhajjar (Haryana)

#### List of Major Equipment Needed at a Retrofitting Clinic

- \* UPV (Ultrasonic Pulse Velocity Tester)
- \* Schmidt Hammer; Rebound Hammer
- \* Corrosion Analyzer ; G-core cutter for assessing corrosion levels
- \* Profometer
- \* Concrete Core Cutting Equipment (with diamond core bit)
- \* Porosity meter for permeability determination (Water & Chlorine)
- \* Crack Microscope

\* Advanced Condition Assessment Systems such as improved thermography, Impact Echo, Spectral Analysis of surface waves, surface slabs impulse response

Dr. P. S. Rana, Chairman  
Boston Infrastructure & Development (P) Ltd.  
Former CMD, HUDCO, New Delhi

Shri B Majumdar, Former Director General  
Central Public Works Department  
Govt. of India, New Delhi

Prof. Mahesh Tondon  
Tondon Consultants (P) Ltd.  
New Delhi

Concrete Testing Laboratory Equipment including  
AIM 344 (15 x 15 x 15)

#### Resource Persons and Experts

Dr. A S Arya, Padamshri Awarded by  
President of India, National Seismic Advisor  
Ministry of Home Affairs (GOI), Disaster Risk  
Management Program, Professor Emeritus

IIT Roorkee, New Delhi

Prof. Yudhbir, Former Professor  
Geotechnical Engineering  
Indian Institute of Technology, Kanpur  
Dehradun

Dr. T V S Apparao, Former Director SERC (M)  
Scientist Emeritus  
SERC - CSIR Complex, Chennai

Shri R K Bhandari, Chairman  
Center for Disaster Mitigation & Management  
VIT University, Vellore

Dr Prem Krishna, Hon. Visiting Professor  
Department of Civil Engineering  
Indian Institute of Technology, Roorkee

Prof. D K Paul, Professor and Head  
Department of Earthquake Engineering  
Indian Institute of Technology, Roorkee

Shri S Ratnave, Chief Executive  
Scea Consultancy Services  
Madurai

Dr. Mohini Saxena, Head  
Materials Development, Group  
Regional Research Laboratory, Bhopal

Dr. J. S. Chauhan, Professor & Head  
Civil Engineering Deptt.  
Samrat Ashok Technological Institute  
Vidisha

Prof T K Datta, Chair Professor  
Department of Civil Engineering  
Indian Institute of Technology, New Delhi

Prof Ravi Sinha  
Department of Civil Engineering  
Indian Institute of Technology,  
Powai, Mumbai

Prof Alok Goyal  
Department of Civil Engineering  
Indian Institute of Technology  
Powai, Mumbai

Shri V Suresh, Former CMD, HUDCO  
Advisor Good Governance India Foundation  
Gurgaon

Shri S. A. Reddi, Advisor  
Gammon India Limited, Mumbai

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Govt. of India, New Delhi

Prof. Mahesh Tondon  
Tondon Consultants (P) Ltd.  
New Delhi

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Shri Rajendra Desai  
Hon. Jt. Director (Technical)  
'National Center for Peoples' - Action in  
Disaster Perparedness, Ahemdabad

Dr. V M Sharma, Chief Consultant  
Advance Technology Engineering Services  
'Naimax House' A-8, New Delhi

Prof. Yogendra Singh  
Department of Earthquake Engineering  
Indian Institute of Technology, Roorkee

Shri K B Rajoria, Former E  
ngineer-in-Chief  
Public Works Department, Govt. of Delhi  
New Delhi - 48

Prof S K Deb, Associate Professor  
Department of Civil Engineering  
Indian Institute of Technology, Guwahati

Prof M N Joglekar, Director  
"Vastukala Academy"  
School of Architecture, New Delhi

Shri A N Purohit, Managing Director  
Avas Vikas Limited (AVL), Jaipur

Dr. Protima Rani Bose, Principal  
Government College of Engineering  
Jafarpur Netaji Subhash Institute of  
Technology, Delhi

Shri S Ratnave, Chief Executive  
Scea Consultancy Services  
Madurai

Dr. Mohini Saxena, Head  
Materials Development, Group  
Regional Research Laboratory, Bhopal

Dr. J. S. Chauhan, Professor & Head  
Civil Engineering Deptt.  
Samrat Ashok Technological Institute  
Vidisha

Prof T K Datta, Chair Professor  
Department of Civil Engineering  
Indian Institute of Technology, New Delhi

Prof Ravi Sinha  
Department of Civil Engineering  
Indian Institute of Technology,  
Powai, Mumbai

Prof Alok Goyal  
Department of Civil Engineering  
Indian Institute of Technology  
Powai, Mumbai

Shri V Suresh, Former CMD, HUDCO  
Advisor Good Governance India Foundation  
Gurgaon

In the present programme CIDC is  
partnering their efforts with

- National Disaster Management Authority
- State Governments
- Local Governments
- Institutions imparting education in engineering/architecture
- R&D Institutions
- Technology Transfer Organisations
- Eminent Experts and Peer Groups
- Public & Private Sector Construction organisations
- State level Disaster Management Institutions
- Building Materials Manufacturers/ Suppliers
- Organisations providing construction and engineering services
- Equipment manufacturers
- NGOs engaged in disaster mitigation & management activities
- Directorate General of Resettlement, Ministry of Defence

#### Scope of Training Program

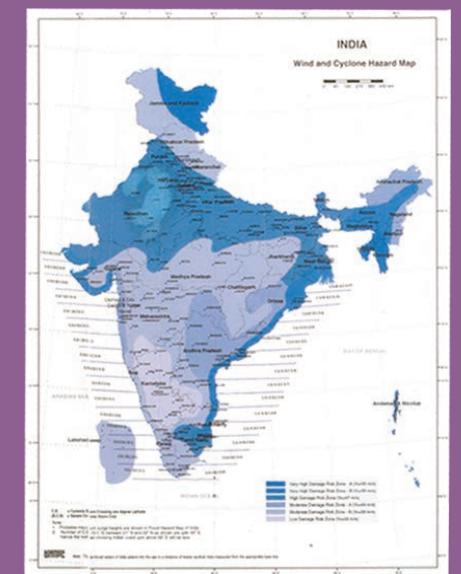
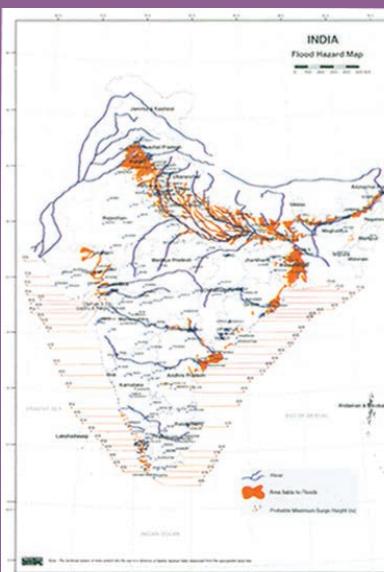
- ❖ To introduce participants to the concept of risk, vulnerability and reasons for dismal performance of buildings during earthquakes
- ❖ Knowledge of severity of earthquake forces – depending upon measure on Richter scale, likely MSK intensities their on, types of buildings including soil and foundation types
- ❖ Methods of risk and Vulnerability assessment relating to following three tiers of assessment
  - i) Rapid Visual Screening (for masonry/ RC frame/ Wooden buildings)
  - ii) Quick structural evaluation based on drawings if available
  - iii) Detailed assessment using NDT and other methods
- ❖ Based on assessment how to determine vulnerability and risk levels for different types of super structures including foundations
- ❖ To determine "Retrofitting Level" depending upon importance of buildings to prevent their destruction and loss of human life and lifeline structures to maintain functionality during hazards events
- ❖ Methods of "Seismic Strengthening" or "Seismic Retrofitting" or "Seismic upgrading"
- ❖ Introduction to relevant standards and codes, and provisions therein for earthquake resistant designs and retrofitting etc.

While the course will predominantly focus on and cover "Buildings of different heights" constructed with different materials, standing on different soil types and performance of super-structure and foundations, it is intended that the participants are also introduced to methods of risk and vulnerability assessment of bridges, culverts, flyovers, roads etc.

an initiative of CIDC

## National Network of Retrofitting Clinics

### - INVESTING IN SAFETY OF BUILT ENVIRONMENT



#### For further information please contact:

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Director General

Design : Lai Graffin

**CONSTRUCTION INDUSTRY DEVELOPMENT COUNCIL**  
An Apex Organisation Dedicated to the Cause of Construction

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