

## Background

Safe and secure shelter is one of the basic needs of human being and right to shelter has been recognized as a fundamental human right in international covenants. The International Covenant of United Nations on economic, social and cultural rights, to which India is a signatory, upholds the right to adequate housing as a human right. Article 21 of the Constitution of India which defines the protection of life and personal property encompasses the right to shelter and right to livelihood also which are integral to the dignified living of the individual.

Govt. of Gujarat (GoG) under various housing schemes provides affordable housing to improve the economic conditions of the needy citizens. Under PMAY (Pradhan Mantra Awas Yojna), it has been envisaged to provide all-weather pucca houses across the nation with the vision of 'Housing for All'. Further, Govt. Department such as Home Dept., Rural Development Dept. and R&B Dept. are also providing housing facilities to the government employees based on their mandates.

Gujarat is one of the seismically active regions in the country due to its geographical location near major tectonic plates. The State lies within seismic Zones III, IV and V as classified by Bureau of Indian Standards (BIS) with Zone V being the most hazardous. Fault lines such as Kutch rift basin, Cambay Basin, and Narmada Fault increase the state's vulnerability. 2001 Bhuj earthquake caused widespread destruction and loss of life, emphasizing the State's high seismic risk. Other moderate earthquakes have also been recorded, indicating frequent seismic activity. Rapid urbanization in major cities & towns, dense populations and inadequate enforcement of building codes could exacerbate risks.

Due to the high risk profile of earthquake in Gujarat, housing units provided under various housing schemes as well as developed by Govt. Depts. for its employees should be designed and constructed to meet the requirements of structural safety not only against earthquake but for flood, cyclone, landslides, etc. also conforming to the NBC norms and other relevant Bureau of Indian Standards (BIS) Codes.

### **Why earthquake risk reduction in housing schemes?**

- Earthquakes can displace thousands of families, leading to social and economic instability. Safe Housing minimizes the likelihood of large scale displacement and the associated social issues.
- Investing in earthquake resistant construction reduces long term costs associated with rebuilding, rehabilitation and compensation after a disaster.

- Housing schemes often cater to economically weaker sections of society who are particularly vulnerable to disasters. Earthquake resistant designs ensure that homes can withstand seismic shocks, reducing fatalities and injuries.
- By integrating earthquake-resistant practices in public housing, governments set an example for the private sector to adopt similar standards, promoting widespread adoption of safer construction practices.

## Objective

**The programme has following objectives:**

- Develop understanding on Risk, Hazards, Exposure, Vulnerability and Capacity
- Raise awareness about earthquake risks in Gujarat
- Enhance the ability of participants to design & implement earthquake resistant construction in risk prone areas
- Increase knowledge regarding seismic strengthening of buildings through retrofitting techniques
- Encourage participants to promote safe construction practices on site

## Expected Learning Outcome

**The expected outcomes of the program are:**

- Participants understand the basics of disaster risk management
- Participants can implement earthquake resistant construction on site
- Participants can strengthen buildings through various retrofitting techniques.

## Program duration

The duration of the program is for two days.

- Start date- 4<sup>th</sup> March 2025
- End date- 5<sup>th</sup> March 2025

## Facilities

During the course of the program following facilities shall be provided;

- **Accommodation** on twin sharing basis
- **Food** which include Breakfast, Tea, Lunch & Dinner
- **Recreational facilities** which include, access to fitness center, cycling, lawns and Miyawaki forest

## Pre-requisite

There are no pre-requisites for this training course, but prior knowledge on basics of construction practices and Disaster Risk Reduction may be beneficial.

### **Targeted Participants**

The course is targeted for Engineers and Architects working in Gujarat Housing Board (GHB), Gujarat Police Housing Corporation Limited (GPHCL), Rural Development Department and R&B Dept.

### **Training Pedagogy**

The training will be held at Seminar Hall, GIDM, facilitated by Subject Matter Experts (SME). The training will include active learning techniques such as presentations, group discussions, interactive exercises, case studies, simulations, exposure visits and hands on experience which will encourage participants to engage actively with the training content

### **Training Certificate**

Certificate of participation will be given to participants who attend all the sessions during the 2-days training program

## Tentative Schedule

Day – 1: 4 <sup>th</sup> March 2025			
Time	Session	Session Details/ Objectives	Resource
8.30-10.00	Breakfast		
10.00-10.30	Registration	<ul style="list-style-type: none"> <li>Online registration of participants</li> <li>Training kit distribution</li> <li>Facility briefing</li> <li>Safety briefing</li> </ul>	GIDM
10.30-10.45	Pre-Test & About GIDM	<ul style="list-style-type: none"> <li>15 Question online Test</li> <li>Establishment of Ground rules</li> <li>Introduction of participants</li> <li>Introduction about GIDM</li> </ul>	GIDM
10.45-11.45	Basics of Disaster Risk Management	<p>At the end of the session participants would be able to understand:</p> <ul style="list-style-type: none"> <li>Understanding of disasters</li> <li>Hazards, Vulnerability, Exposure and Risk</li> <li>Disaster Management Cycle</li> <li>Earthquake risk in Gujarat</li> <li>Understand Risk reduction strategies</li> </ul>	GIDM
11.45-12.00	Tea break		
12.00-13.15	Earthquake Fundamentals – The Science behind the shaking	<p>At the end of the session participants would be able to understand:</p> <ul style="list-style-type: none"> <li>Interior of Earth and its layers</li> <li>Why earthquake happens?</li> <li>Types of plates and its movement</li> <li>Seismic waves and its impact on surface</li> <li>Measurement of an earthquake</li> </ul>	Institute of Seismological Research (ISR), Gandhinagar
13.15-14.00	Lunch break		
14.00 – 15.15	Visit to ISR  Unveiling Seismic Secrets: Gaining Knowledge at the Institute of Seismological Research (ISR)	<p>At the end of the session participants would be able to understand:</p> <ul style="list-style-type: none"> <li>Vision, Objectives and Functions of ISR</li> <li>How seismic waves are recorded?</li> <li>Sampling of geo-materials at geotechnical lab</li> <li>Early warning mechanism for earthquakes</li> </ul>	Institute of Seismological Research (ISR), Gandhinagar
15.15-15.30	Tea break		