

Concept note			
A 3-days Hybrid Training programme on Disaster Resistant Construction Technologies is scheduled from 7th – 9th Sep 2022 .			
Subject	Disaster Resistant Construction Technologies		
Target Participants	Engineers of R&B Dept.		
Date of Training Programme	7 th – 9 th Sep 2022	Location	GIDM, Gandhinagar
Time	10.30hrs – 18.00hrs	Coordinator	Piyush Ramteke, Programme Manager, GIDM
Expected no. of Participants	33	Contact	+91-9662007130 rspm1-gidm@gujarat.gov.in
1. Aim			
To develop the capacities of target participants by linking their roles in DRM activities with field level actions using appropriate technologies considering global perspectives and action at local level			
2. Background			
<p>Gujarat is highly vulnerable to all major natural hazards, including Earthquakes, Tsunamis, Floods, Droughts, and Tropical Cyclones. The Kandla Cyclone of 1998 has caused widespread damage to the infrastructure including housing, industrial units, communication facility, administration buildings and commercial properties. Similarly, In the devastating earthquake of 2001, around 2,22,035 housing units were destroyed and 9,17,158 housing units were damaged. The total estimated loss to the State was around Rs 23,024 Crore. It is important to note that the structures built using indigenous technology have performed well during the earthquake as compared to recently build structures.</p> <p>The resilience of infrastructure has been defined as ‘The ability to reduce the magnitude and/or duration of disruptive events. The effectiveness of a resilient infrastructure or enterprise depends upon its ability to anticipate, absorb, adapt to, and/or rapidly recover from a potentially disruptive event’ (US: NIAC-2009). The infrastructure that are resilient can evolve in the face of disaster and stop failure from rippling through systems; they can reestablish function quickly and avoid long-term disruptions</p> <p>Traditionally, dwelling units in the country are constructed using conventional technology. With the massive construction requirement & taking into consideration the important factors such as fast depleting natural resources, achievement of Sustainable Development Goals (SDGs) & international commitments to reduce carbon footprints and building resilient infrastructure, there is urgent need to find substitute for energy intensive building materials such as burnt clay bricks, and minimize the use of scarce natural materials such as river sand, water, timber etc. Globally, there has been technological</p>			

advancement in the area of building materials and fast track prefabricated/pre-engineered construction practices. The use of alternate technologies in our country is in a limited extent so far.

Ministry of Housing & Urban Affairs, GoI has conducted a **Global Housing Technological Challenge** aimed to identify and mainstream globally best available proven construction technologies that are sustainable, green and disaster resilient through a challenge process which bringing a paradigm shift in construction practices for affordable housing

The newly constructed IIT-Gandhinagar campus is the first large-scale systematic application of modern confined masonry construction in India. Confined masonry uses locally available materials and known construction technologies and is particularly appropriate for up to four-storey buildings. It essentially combines two construction technologies that are currently prevalent in the country, masonry and RC. These technologies use locally available materials- cement, steel, and bricks. This is expected to facilitate acceptability of confined masonry technology in the Indian setting.

In the wake of increasing disaster risk in Gujarat and in the country, there's been a big push for resilient buildings to protect the people and cities that depend upon them for survival. There is an increasing need being felt for a more systematic, holistic and integrated effort to address the critical areas of concern responsible for the weak performance of buildings during any natural hazard over a period of time.

While it is not possible to avoid exposure to disaster events, land use planning and location decisions must be accompanied by other structural or non-structural methods for preventing or mitigating the associated risk. The priorities of the Sendai Framework for Disaster Risk Reduction have ample references to building and land use regulatory development and implementation thereof is a key element of disaster risk reduction. This agenda is a clear evidence of a strong international consensus to expand the full potential of effective building regulation in reducing risks.

As substantial population of Gujarat is exposed to frequent threat of various natural hazards, one of the suitable strategy is to use mix of indigenous and modern techniques to reduce the risk of structure failure and to improve the performance of the building.

SDG-11: Sustainable Cities and Communities lay emphasis on building resilient communities through sustainable development.

Agenda-1, 6 and 8 of Hon. PM 10 Point Agenda focuses on disaster risk management in all sectors and building local capacities and learning from the past disasters.

3. Objectives

- To develop a sound understanding about various Disaster Resistant Construction Technologies

- To enhance the knowledge of engineers in Disaster Resistant Construction materials
- To encourage the use of indigenous technologies for construction of houses in hazard prone areas.
- To promote cost effective confined masonry construction practices in hazard prone areas
- To encourage the use of resilient construction technologies

4. Why Training on Seismic Risk Assessment and Rehabilitation of Buildings ?

- Around 31.7% of area in Gujarat falls in seismic Zone- V and IV, which comes under Very High Risk Zone.
- Lack of understanding of resilient infrastructure.
- Lack of awareness among various stakeholders about the technological options for resilient construction
- Inadequate provision for execution of new construction systems.
- Absence of understanding about sustainable construction material in suburban and rural areas
- Lack of understanding about application of new technologies

5. Target Departments

- Roads & Buildings Department

6. Target Participants

S.No.	Target Group	Level of Participants
1	Dy. Executive Engineer	L-2
2	Assistant Engineers/Additional Assistant Engineers/Technical Resource Persons	L-3