

Earthquake Engineering Laboratory

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After devastating earthquake of 26th January 2001, need aroused to create awareness regarding earthquake resistant construction among the stakeholders of construction industry. The most effective level for awareness is the education. Separate subject on earthquake engineering is introduced at Undergraduate (B.E. Civil) as well as Post Graduate (M.E. Civil- CASAD) courses. At the same time to faculty members of Applied Mechanics Department Prof. C S Sanghvi & Prof. M V Bhatti took special one semester long training on “ Earthquake resistance Design” at IIT, Kanpur under National Program on Earthquake Engineering Education, sponsored by MHRD, India. These faculty members achieve top ranking in this national level training. Prof. B J Panchal took 3 weeks training at BITS, Pilani on Earthquake Engineering. Center of Excellence in Earthquake Engineering is required in the state of Gujarat & L D Collage of Engineering is ready to make the same. Institute being a lead center, received good grant under Technical Education Quality Improvement Program (TEQIP). But before receiving that grant a good Earthquake Engineering Laboratory is developed by Applied Mechanics Department. Students of M.E. (Civil- CASAD) were given a project to prepare models on Earthquake Engineering under the guidance of Prof. C S Sanghvi, Prof. B J Panchal and Prof. M V Bhatti & motivation of Prof. M N Patel and Prof. J I Devashrayee.

Shake Table of size 8 feet × 4 feet, one of its kind & first ever in Gujarat was created. Along with this, 11 other models were prepared by enthusiastic students of M.E.(Civil-CASAD) which exhibit behavior of structure under Earthquake. Now its possible to study, behavior of structures under Earthquake through models for the first time in Gujarat.

Students prepared following models.

- i. Base isolation
- ii. Tune mass damper
- iii. Gravity balance system
- iv. Liquefaction
- v. Bracing System
- vi. Seismic wave propagation
- vii. Ductile detailing as per IS 13920
- viii. Retrofitting of structures
- ix. Determination of natural frequency
- x. Difference between wind load & earthquake load

In future with the help of TEQI Project, it will be possible to make Center of Excellence in the field of Earthquake Engineering at L D College of Engineering.

Some modern & sophisticated instruments are up coming in laboratory under TEQIP like,

- i. Broad band Seismometer- 22 lac
- ii. Data logger – 7.5 lac
- iii. Shake Table- 22 lac
- iv. Vibration Analyzer- 22.5 lac
- v. Controller System- 45 lac
- vi. UTM- 75 lac
- vii. Spectral Analysis of surface waves- 15 lac
- viii. Cyclic Dynamic Tri axel Test Equip- 41 lac

This laboratory is also being helpful in training programs for students, practicing Engineers and Architects private as well as govt. in practical session under UEVN Program.

Some Photographs:



