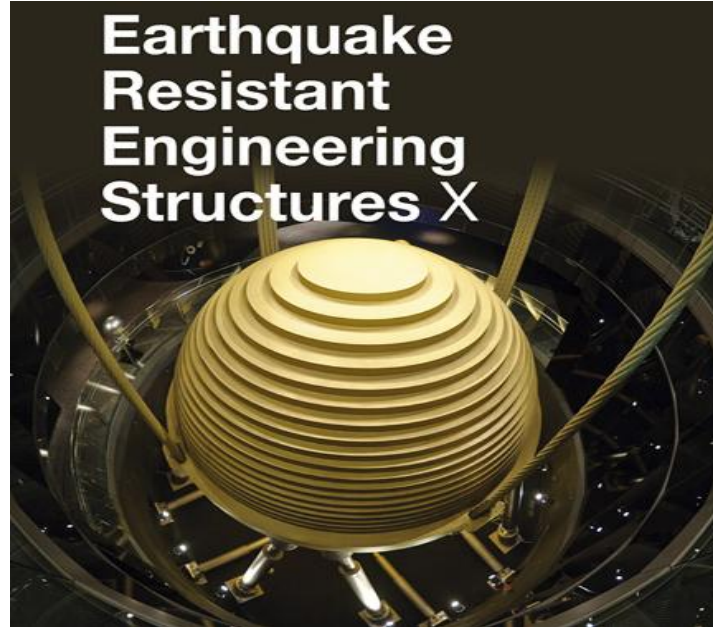




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DEPARTMENT OF CIVIL ENGINEERING

GUEST LECTURE ON

EARTHQUAKE SAFETY MEASURES, BASIC CONCEPTS, STANDARD PROVISIONS IN INDIA

DATE: 24-03-2022

Resource Person: Dr. Trishna Choudhury

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REPORT ON GUEST LECTURE ON EARTHQUAKE SAFETY MEASURES, BASIC CONCEPTS, STANDARD PROVISIONS IN INDIA

OVERVIEW:

Earthquake-resistant or aseismic structures are designed to protect buildings to some or greater extent from earthquakes. While no structure can be entirely immune to damage from earthquakes, the goal of earthquake-resistant construction is to erect structures that fare better during Seismic activity than their conventional counterparts. According to building codes, earthquake-resistant structures are intended to withstand the largest earthquake of a certain probability that is likely to occur at their location. This means the loss of life should be minimized by preventing collapse of the buildings for rare earthquakes while the loss of the functionality should be limited for more frequent ones.


The seismic design philosophy may be explained as follows:

1. Under minor but frequent shaking, the main members of the building that carry vertical and horizontal forces should not be damaged, however building parts that do not carry load may sustain repairable damage.
2. Under moderate but occasional shaking, the main members may sustain repairable damage, while the other parts of the building may be damaged such that they may even have to be replaced after the earthquake.
3. Under strong but rare shaking, the main members may sustain severe (even irreparable) damage, but the building should not collapse.

Sample Images

TRISHNA CHOUDHURY is presenting

San Andreas Fault



Tectonic plate boundaries, like the San Andreas Fault, can be the sites of **mountain-building events, volcanoes, or valley or rift creation.**

- The San Andreas Fault is the **sliding boundary** between the Pacific Plate and the North American Plate.
- It slices California in two parts: from Cape Mendocino to the Mexican border.

3/24/2022 Dr. Trishna Choudhury, TIET 7

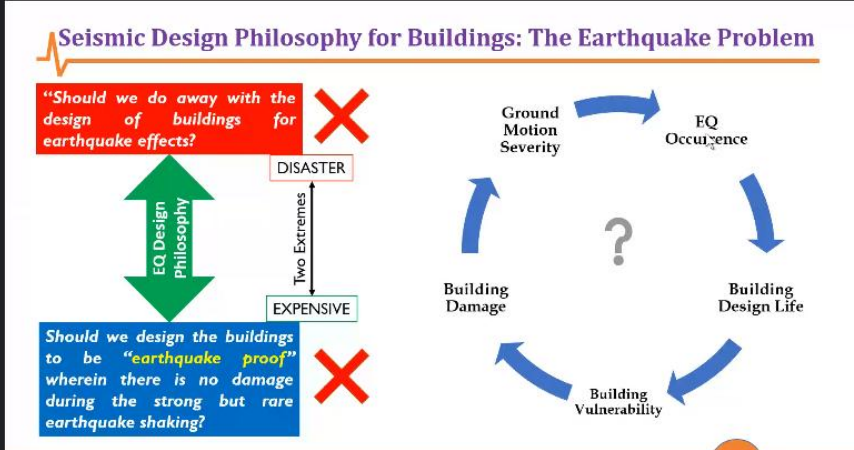
10:54 AM | nsa-uzpe-cxg

Meet - nsa-uzpe-cxg

https://meet.google.com/nsa-uzpe-cxg

TRISHNA CHOUDHURY is presenting

Seismic Design Philosophy for Buildings: The Earthquake Problem



“Should we do away with the design of buildings for earthquake effects?” ❌

DISASTER

EQ Design Philosophy

Two Extremes

EXPENSIVE

Should we design the buildings to be “earthquake proof” wherein there is no damage during the strong but rare earthquake shaking? ❌

Ground Motion Severity → EQ Occurrence → Building Design Life → Building Vulnerability → Building Damage → Ground Motion Severity

11:05 AM | nsa-uzpe-cxg



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The screenshot shows a Google Meet interface. At the top, it says "TRISHNA CHOUDHURY is presenting". The main content is a presentation slide titled "Remember for Seismic Design...". The slide contains a list of bullet points:

- Architectural features that are detrimental to earthquake response of buildings should be avoided or minimized.
- When irregular building features are included, a considerably higher level of engineering effort is required in the structural design.
- Even after doing so the building may not be as good as one with simple architectural features.
- Decisions made at the planning stage on building configuration are more important.
- The Four-Virtues of Earthquake-Resistant Constructions - Strength, Stiffness, Ductility and Configuration.
- Damage within acceptable limit are permitted

At the bottom of the slide, it shows the date "3/24/2022" and the name "Dr. Trishna Choudhury". On the right side of the Meet window, there is a list of participants: "TRISHNA CHOUDHURY" (highlighted), "viveka vadhan reddy", "S" (with a note "20 others"), and "You". The bottom toolbar shows various meeting controls like mute, video, chat, and end call, along with the time "11:46 AM" and the meeting ID "nsa-uzpe-cxg".