

# REPORT ON EARTHQUAKE AND SOLUTIONS

## IN ARCHITECTURE

The lecture on 7<sup>th</sup> of August, 2021, was on the topic of earthquake and its solutions.

The various problems that are caused by the earthquake in our country are related to structures.

- The problems that created were torsion that was caused by heavy variations in strength and stiffness of the buildings.
- The stress which is concentrated at the joints is high than the strength of the joints which breaks down the building
- The slab that couldn't maintain its strength de to the excessive vibrations of the earthquake.
- There were many configuration problems of wing with different stiffness, and tied together, the wings tend to move in the other direction at the joints.
- The change of stiffness at points is the soft storey building and the change of strength at points is the weak storey building.

Some of the architectural related statements that stated are:

- The old buildings require a perfect program to withstand against the earthquake of smaller scale.
- The vertical related circulation to use spaces.
- Blank walls at the corner for fire station use.
- Some open plazas would help, the open parking spaces, giving large open spaces at regular floors.
- Setbacks were introduced due to some reasons like to preserve light and air at adjoining sites and giving lower floor space as the building goes higher.

Solutions given to help in earthquakes are:

- Divide the building in sub levels but horizontally and not vertically.
- Using light weight materials likes frames on the side of the building to help evacuate while a situation.
- Not giving 90 degree corner edges and giving a tapered form to the building, also giving examples of Arch B.V.Doshi.
- Having simpler joints between walls (interior and exterior)
- Giving complete walls to help reduce the load on the columns.
- Using curtain walls to help reduce the weight of the building and reducing the load on the core of the building.