

SEISMIC PERFORMANCE OF MULTI-STOREYED BUILDING ON SLOPING GROUND

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Abstract

The buildings situated on hill slopes in earthquake prone areas are generally irregular, torsionally coupled & hence, susceptible to serve damage when affected by earthquake ground motion. Such buildings have mass & stiffness varying along the vertical & horizontal planes, resulting the center of mass & center of rigidity do not coincide on various floors, hence they demand torsional analysis, in addition to lateral forces under the action of earthquakes. These unsymmetrical buildings require great attention in the analysis & design. Analysis of hill buildings is somewhat different than the buildings on leveled ground, since the column of hill building rests at different levels on the slope. The shorter column attracts more forces & undergoes damage, when subjected to earthquakes.

Keywords: Earthquakes, Earthquake ground motion, center of mass & center of rigidity, torsionally coupled.