

Research on the Performances of Seismic Isolation and Damping in High-rise Buildings

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Abstract

High-rise buildings are one of the primary building structures in the modern day metropolitan area. Since Taiwan is located in the western area of the Circum-Pacific Sismic Zone, the quality of quake insulation and damping capacity of buildings are the key factors which determines the safety of high-rise buildings. The study analyzes and discusses the current existing damping capacity and quake insulation mechanics. The examination of high-rise buildings' seismic restraints system theory, the inspection of seismic restraints of the complete architectural structure set of edifices, the current data gathered for both the advantages and disadvantages of seismic restraints, datas indicating the damages after earthquakes and the data usage of related past incidents to determine proper responses when accidents happen are also the focus of the study. The study uses the Japanese post-earthquake renovation plan as a reference for seismic restraints designs and post-quake responses.

Keyword : High-rise buildings; Seismic isolation; Seismic damping; Seismic design