

Qualitative Review of Seismic Response of Vertically Irregular Building Frames

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Abstract : This study summarizes state-of-the-art knowledge in the seismic response of vertically irregular building frames. Criteria defining vertical irregularity as per the current building codes have been discussed. A review of studies on the seismic behaviour of vertically irregular structures along with their findings has been presented. It is observed that building codes provide criteria to classify the vertically irregular structures and suggest dynamic analysis to arrive at design lateral forces. Most of the studies agree on the increase in drift demand in the tower portion of set-back structures and on the increase in seismic demand for buildings with discontinuous distributions in mass, stiffness, and strength. The largest seismic demand is found for the combined-stiffness-and-strength irregularity.

Keywords : mass irregularity, set-back structure, stiffness irregularity, strength irregularity, vertical irregularity

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