BEHAVIOR OF SYMMETRIC AND ASYMMETRIC STRUCTURE IN HIGHSEISMIC ZONE

Abstract:

Buildings may be considered as asymmetric in plan or in elevation based on the distribution of mass and stiffness along each storey, throughout the height of the buildings. Most of the hilly regions of India are highly seismic. A building on hill slope differs in different way from other buildings. In this study, 3D analytical model of four and nine storied buildings have been generated for symmetric and asymmetric building models and analyzed using structural analysis tool “SAP2000 Nonlinear”. To study the effect of varying height of columns in ground storey due to sloping ground, the plan layout is kept similar for both buildings on plane and sloping ground. The analytical model of the building includes all important components that influence the mass, strength, stiffness and deformability of the structure. To study the effect of infill during earthquake, seismic analysis using both linear dynamics (response spectrum method) as well as nonlinear static procedure (pushover) has been performed.