Abstract

Earthquakes have severely damaged the structures which are already built. Due to this there is large number of deaths, injuries and economic loss. Therefore there is an urgent need for
seismic evaluation of structures. The concept of performance based seismic engineering using pushover analysis is a modern and popular tool to earthquake resistant design due to its simplicity and better seismic assessment of existing and new structures. It gives better understanding of the structural behavior during the strong earthquake ground motion. The present study gives an effect of increase in number of storey on seismic responses by performing pushover analysis. Reinforced concrete structures of G+4, G+5 and G+6 storey have been modeled and analyzed using CSI ETABS 9.7.4 software. Comparison of seismic responses of the structure in terms of base shear, time period and displacement has been done by performing nonlinear static pushover analysis. From analysis results it has been observed that base shear and spectral acceleration is reduced, whereas displacement, time period, spectral displacement is increased as the number of storey increases. Analysis also shows location of plastic hinges at performance point of the structures with different number of storey.

References

Index Terms

Computer Science
Applied Sciences

Keywords
Nonlinear Static Analysis; Pushover Analysis; Performance Based Seismic Assessment