**ANALYTICAL STUDY OF BRACED UNSYMMETRICAL RCC BUILDING**

**ABSTRACT**

Present analytical seismic study deals with optimum location of steel bracing to the RC structure with unsymmetrical building plan of G+30 stories in Zone 5 following IS 1893(part-1):2002 and IS 13920:1993 by response spectrum analysis. Various steel bracing systems such as X, Single Diagonal, Inverted V braces are provided at different locations of structure. Braces are connected within the story and more than one story considering five different types. The results are compared with bare frame and five types and optimum location of bracing are compared. The response of the structure is compared with lateral displacement, story drift, story stiffness, base shear, story torsion, eccentricity and time period.

The field of Earthquake Engineering has existence from many years. Earthquake Engineers have made significantcontributions to the seismic safety of several important structures in the country. Braced frames, besides other structural systems, such as moment resisting frames or shear walls, have been an effectiveand valuable method to enhance structures against lateral loads. In seismic excitations, inclined elements react as truss web elementswhich would bear compression or tension stresses. This axial reaction results in less moments and therefore smaller sizes in beam andcolumn sections with respect to members in similar moment resisting frame. So, in this report two separate Unsymmetrical RCC framedbuildings one braced and another un braced subjected to lateral loads are analyzed. Seismic analysis is carried out using software SAP2000 V19the building is analyzed for different load combinations as per IS 1893:2002. The comparison is donebetween the braced and un braced building on the basis of floor displacements, storey drifts, base shear, axial force and bendingmoments. It was observed that seismic performance of the braced building is improved as compared to un braced building.