**COMPARISON BETWEEN SEISMIC ANALYSIS AND NON-SEISMIC
ANALYSIS OF G+17 BUILDING USING SAP2000**

**Abstract:**

Earthquake is considered as a catastrophic natural disaster. Many people die every year due to collapse of buildings due to earthquakes. The most recent example is the Ecuador earthquake of 7.8 magnitudes on Richter scale which struck on 16th April 2016. It killed more than 650 people with buildings collapsing hundreds of kilometers from the epicenter of earthquake. The damage to structures can be reduced by adopting principles of earthquake resistant designs.

This paper shows a comparative analysis of G+17 storey residential building between non-seismic analysis (with dead loads and live loads) and seismic analysis (with dead, live and earthquake loads). Seismic response of a structure can be obtained by using linear, non-linear, static, dynamic analysis. Various methods of seismic analysis include (i) Equivalent Static Analysis, (ii) Response Spectrum Analysis, (iii) Linear Dynamic Analysis, (iv) Non-linear Static Analysis and (v) Non-linear Dynamic Analysis also known as Pushover Analysis. This paper employs Equivalent Static Analysis to obtain seismic response of G+17 storey residential building.

This paper uses much simpler Equivalent Static method to analyse G+17 storey building to resist
earthquake forces using SAP2000 software. The seismic analysis is further compared with non seismic analysis using DL+LL combination. It was observed that the seismic results obtained consisted of drastically increased maximum moments and shear forces than the non-seismic analysis