

Abstract Details

Title: Retrofitting Techniques on Earthquake Damaged Buildings

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Abstract: Earthquakes are one of nature's greatest hazards to life on this planet. The impact of this phenomenon is sudden with little or no warning to make preparations against damages and collapse of buildings/structures. The hazards to life in case of earthquake are almost entirely associated with manmade structures such as buildings, dams, bridges etc. Prevention of disasters caused by earthquake has become increasingly important in recent years. Disaster prevention includes the reduction of seismic risk through retrofitting existing buildings in order to meet seismic safety requirements. The planning of alterations to existing buildings differs from new planning through an important condition; the existing construction must be taken as the basis for all planning and building actions. The new structure can be built sufficiently earthquake resistant by adoption proper design methodology and construction quality control. But the existing old structures which have mostly been planned without considering this important aspect, pose enormous seismic risk, in particular to human life and historical monuments. India is one of the most earthquake prone countries in the world and has experienced several major/moderate earthquakes during the last 15 years. About 50-60% of the total area of the country is vulnerable to seismic activity intensities. In India, almost 85% of the total buildings are non engineered buildings made up of earthen walls, stone walls, brick masonry walls, etc. These buildings are more vulnerable and in the event of a major earthquake, there is likely to be substantial loss of lives and property. The recent earthquakes have posed a serious threat to many existing Indian RC buildings which are designed mainly for gravity loads. Hence focusing on the damage and collapse of RC buildings, it is important to estimate the response of existing buildings under earthquakes from the viewpoint of life reservation and risk management.

Keywords: Retrofitting Techniques, Earthquake, Buildings.