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Earthquakes and Buildings: Lesson Learnt from Past Earthquakes in Turkey

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Abstract : The most important criteria for structural engineering is the structure's ability to carry intended loads safely. The key element of this ability is mathematical modeling of really loadings situation into a simple loads input to use in structure analysis and design. Amongst many different types of loads, the most challenging load is earthquake load. It is possible magnitude is unclear and timing is unknown. Therefore the concept of intended loads and safety have been built on experience of previous earthquake impact on the structures. Understanding and developing these concepts is achieved by investigating performance of the structures after real earthquakes. Damage after an earthquake provide results of thousands of full-scale structure test under a real seismic load. Thus, Earthquakes reveille all the weakness, mistakes and deficiencies of analysis, design rules and practice. This study deals with lesson learnt from earthquake recoded last two decades in Turkey. Results of investigation after several earthquakes exposes many deficiencies in structural detailing, inappropriate design, wrong architecture layout, and mainly mistake in construction practice.

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