

## عنوان مقاله:

EVALUATION OF AN EARTHQUAKE DAMAGED BUILDING AND LESSONS LEARNED

## محل انتشار:

دومین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1374)

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## خلاصه مقاله:

A reinforced concrete ۳-storey building damaged during the ۱۹۹۲ Erzincan Earthquake is chosen for analysis. Firstly, it was carefully screened for damage. Then, the building structure under study is analysed by a ۳-dimensional computer model using equivalent static earthquake forces. The same building was also dynamically analyzed by using the Response Spectrum Method. The structure under study had been designed by using the ۱۹۶۸ Earthquake Code of Türkiye. The dynamic analysis results indicate that the column reinforcement required is greater than what is provided by the ۱۹۶۸ Code. The structure is symmetrical on both axes. As a consequence, symmetrical damage is expected. However, the observed damage is on columns at only one side of the building. When the staircase is included into the ۳-dimensional model, the load effects on the damaged column increase which explains why only one line of columns are damaged. Interestingly, inclusion of the staircase does not change the modal periods of the structure. The damage of the basement columns have all occurred on top at the beam-column connections. The structural analysis, of course, indicates that the column-footing connections are subject to moments of greater intensity. The reason for this reversal of damage location is the accumulation of poorer concrete at top of the columns due to vertical concreting. Additionally, there are obvious anchorage of reinforcement deficiencies. A study of the undamaged columns shows .that the response modification factor R of  $\lambda$  is justifiable, as recommended by many codes

## کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1281371>

