Verification of rapid vulnerability assessment method for low-rise infilled RC frames in Thailand

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ABSTRACT

One of the key issues in calibrating rapid seismic vulnerability screening method, especially for areas with infrequent earthquakes, is the lack of past damage and building performance data for references. To circumvent this problem, potential rapid seismic vulnerability assessment methods for Thailand were assessed using collapse simulation of selected building structures. Typical representative low-rise RC frames were selected as case studies. These included a school building, an office building, a commercial building, and an apartment building. The buildings were first assessed using selected rapid vulnerability screening methods. Collapse analysis of the selected representative buildings was then carried out using the Multiple Strip Analysis Method. The results of from the collapse simulation were compared with the results from the rapid screening methods. The probability of collapse of selected buildings was identified and was used as the basis to fine-tune the rapid seismic vulnerability assessment scoring method. Recommendations for the improved scoring method were then provided.

Keywords: RC frames with Infill Walls, Collapse Simulation, Rapid Screening Method

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