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Vulnerability assessment of building structures.(A case study at Nyanyano, Ghana).

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This paper focuses on assessing the vulnerability of buildings at Nyanyano (Ghana) in case there are future earthquakes. Seismic data(local and CTBTO) was used as basis to forecast the occurrence of future earthquakes. Thirty buildings were sampled throughout the area and grouped into the different types according to European Macroseismic Scale (EMS-98) based on what was used for their construction. Fifteen classified as adobe structures, thirteen classified as unreinforced units and two classified as reinforced/confined.

The EM scale aims to classify the vulnerability of buildings explicitly based on the type of structure. Six classes of decreasing weakness (A-F) are therefore proposed, A to C which reflect the strength of "typical" adobe building, brick construction and reinforced concrete structure. According to the vulnerability classification, adobe buildings are one of the most vulnerable structures which has its vulnerability spanning from A to B. Unreinforced units mostly has its vulnerability at B and in few case scenarios a range between A and C depending on the state of the structure and reinforced or confined structures have their vulnerability at D, when reinforcements are low, its vulnerability falls to C and in some special cases of well-designed structures, the vulnerability may extend to E.

Promotional text

This abstract will contribute to issues of global issues of concern such as disaster risk mitigation during earthquake occurrence by helping people know best their structures will react during an earthquake therefore retrofitting their buildings or adopting proper building code

Primary author: Mr AMPONSAH FORDJOUR, Ahmed (University of Ghana, Accra, Ghana)

Presenter: Mr AMPONSAH FORDJOUR, Ahmed (University of Ghana, Accra, Ghana)

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