

**Preliminary vulnerability assessment of existing state public buildings in moderate seismic region at Semporna, Sabah using rapid visual screening method**

**ABSTRACT**

The Ranau Earthquakes in June 2015, which hit the territory of Sabah, have highlighted the necessity to assess the vulnerability of the existing buildings. A special concern for vulnerability assessments on the existing public buildings in Sabah is also caused by the fact that earthquake design norms have only been enforced in its municipal area since 2015. Most of the existing public buildings in Sabah were designed without seismic resistance. Therefore, engineers are concerned about the seismic vulnerability of public buildings due to the lack of earthquake consideration in building design procedures. This paper presents the vulnerability assessment of public buildings in Semporna due to the earthquake using Rapid Visual Screening (RVS). Eleven (11) public buildings have been selected for the vulnerability study in Semporna, which is classified as a moderate seismicity region in Sabah. The RVS procedure that has been formulated in Federal Emergency Management Agency (FEMA) P-154 is then used to identify, inventory, and rank potentially seismically hazardous buildings. A high score (i.e., above the cut-off score) indicates the adequate seismic resistance of a building, whereas if a building receives a low score, it should be assessed in a detailed analysis by a professional engineer. According to the RVS score results, 91 percent, or ten (10) buildings, have a high potential seismic risk. These results indicate that further detailed assessment of the building is highly recommended.