

## **Rectification of Sabah Stilt House Using Shear Wall Subjected to Earthquake**

### **ABSTRACT**

A moderate earthquake with 6.0-magnitude hit Sabah in 2015 especially in Ranau, Sabah has been labelled as one of the most powerful earthquakes ever in Malaysia. Numerous buildings in Sabah have become defective with the severity level of damages as absolute (non-repairable) in the RC beam-column joints and softstorey structures. Seismic design and construction requirements were not considered in most buildings in Sabah. Hence, this research is to investigate how to mitigate the effect of earthquake on the low-rise building using a more practical and economical method. A stilt house model is developed using ABAQUS software to determine the behaviour of the stilt, low-rise building subjected to earthquake by constructing shear wall at the short columns support. There are 4 models constructed namely, frame model without shear wall (W1), with shear wall of 100mm (W2), 300mm (W3) and 500mm (W4). The results of seismic response are evaluated and compared. Different length of shear wall affects the displacement and stress of the frame model. As shear wall length increases, the displacement, stress at columns and stress at walls decreases. Thus, adding a shear wall can be used to retrofit stilt houses and a credible way to mitigate damage due to earthquake load for new houses along hill slopes.