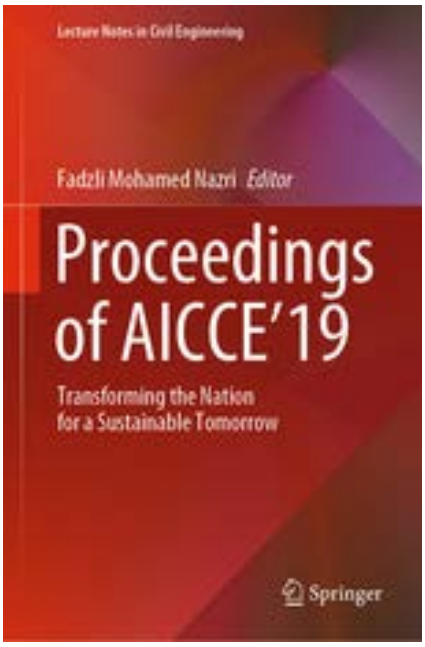

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Contents

Comparison on Total Weight of Steel Reinforcement for 5 Story Reinforced Concrete Building with and Without Seismic Design

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Abstract:
On June 5th 2015, Malaysia was shocked by an earthquake with Mw6.1 which had struck Ranau, one of the districts in Sabah. The moderate earthquake was the strongest recorded since the Mw5.8 earthquake which occurred in Lahad Datu in 1976. The Ranau earthquake had caused minor to severe damages to local buildings. Although Sabah is located outside the Pacific Ring of Fire, there are some regions which set at risk of earthquake namely as Kundasang, Ranau, Pitas, Lahad Datu and Tawau. After experiencing the tremors from both local and regional earthquakes, Malaysian now aware on the importance of seismic design on buildings and structures. However, the effect of seismic design application on cost of materials need to be studied beforehand. In relation to that, this study presents the seismic design of reinforced concrete hotel or dormitory building with consideration of different magnitude of reference peak ground acceleration, agR and different soil type. Result shows that both parameters strongly influencing the cost of steelreinforcement. The latter is estimated to be increase around 14–247% higher compared to similar building without seismic design.

Keyword: Seismic design; Eurocode 8; Reference peak ground acceleration; Soil type; Cost estimation