

STUDI KOMPARASI PERENCANAAN STRUKTUR GEDUNG BERTINGKAT PADA PEMBANGUNAN QUEST HOTEL MALIOBORO YOGYAKARTA BERDASARKAN SNI 1726:2012 MENGGUNAKAN PETA GEMPA 2010 DAN PETA GEMPA 2017

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ABSTRAK

Bangunan Quest Hotel Malioboro Yogyakarta direncanakan dengan memperhitungkan beban gempa sesuai dengan Peta gempa 2010. Ilmu pengetahuan tentang kegempaan kian berkembang ditandai dengan telah rilisnya peta gempa terbaru yaitu Peta Sumber dan Bahaya Gempa Indonesia Tahun 2017. Karakteristik gempa berdasarkan Peta Gempa 2017 berbeda dengan Peta Gempa 2010. Perbedaan karakteristik kedua peta gempa tersebut berpotensi mengakibatkan perbedaan perilaku struktur pada bangunan objek penelitian. Penelitian ini dilakukan untuk mengetahui perbedaan gaya lateral, simpangan antar lantai, jumlah penulangan pada bangunan Quest Hotel Malioboro Yogyakarta.

Data Penelitian diperoleh dari data proyek seperti gambar kerja. Beban-beban Gravitasi diperhitungkan dengan SNI 1727:2013. Beban gempa statik ekuivalen ditentukan dengan menggunakan peraturan SNI 1726:2012. Analisis struktur bangunan gedung Quest Hotel Malioboro Yogyakarta dilakukan dengan Sap2000 V.11. Analisis tersebut dilakukan dengan memberikan beban gempa berdasarkan peta gempa 2010 dan peta gempa 2017. Dari hasil analisis diperoleh perbedaan Gaya lateral berdasarkan SNI 1726:2012, Simpangan antar lantai berdasarkan SNI 1726:2012, Tulangan Kolom dan Balok berdasarkan SNI 2847:2013.

Hasil penelitian menunjukkan perbedaan gaya lateral dengan mengalami peningkatan 28,46% dari peta gempa 2010 ke peta gempa 2017. Beban gempa yang mengalami peningkatan berpengaruh pada gaya dalam yang dihasilkan pada balok dan kolom, rata rata meningkat sebesar 23,5%. Meskipun beban gempa meningkat analisis simpangan antar lantai dari kedua peta gempa tersebut, masih dalam level kinerja yang aman. Sesuai dengan persyaratan SNI 1726:2012. Peningkatan simpangan arah X sebesar 34,99% dan untuk arah Y sebesar 33,09%.

Kata Kunci: Komparasi, Statik Ekuivalen, Peta Gempa 2010, Peta Gempa 2017.

**COMPARATIVE STUDY OF BUILDING STRUCTURE
PLANNING IN THE DEVELOPMENT OF QUEST HOTEL
MALIOBORO YOGYAKARTA BASED ON SNI 1726: 2012
USING THE 2010 EARTHQUAKE MAP AND THE
EARTHQUAKE MAP 2017**

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ABSTRACT

The Quest Hotel Malioboro Yogyakarta building is planned by taking into account the earthquake load in accordance with the 2010 Earthquake Map. The science of seismicity is increasingly marked with the release of the latest earthquake map of the Source and Dangers of Indonesia Earthquake Year 2017. Earthquake characteristics based on 2017 Quake Map are different from the 2010 Earthquake Map. Differences in the characteristics of both earthquake maps have the potential to cause differences in behavior of structures in the building of research objects. This research was conducted to know the difference of lateral style, inter-floor drift, number of repetition in Quest Hotel Malioboro Yogyakarta building. Research data obtained from project data such as drawings. Gravity loads are calculated by SNI 1727: 2013. The equivalent static earthquake load is determined using the rules of SNI 1726: 2012. Analysis of Quest Hotel Malioboro Yogyakarta building structure is done with Sap2000 V.11. The analysis was carried out by providing earthquake loads based on the 2010 earthquake map and 2017 earthquake map. The analysis results obtained difference Lateral force based on SNI 1726: 2012, inter-floor drift based on SNI 1726: 2012, Column Reinforcement and Blocks based on SNI 2847: 2013. The results showed a difference in lateral force with an increase of 28.46% from the 2010 earthquake map to the 2017 earthquake map. The increased seismic load affected the inner forces generated on the beams and columns, averaging an increase of 23.5%. Although the seismic loads increased, the inter-floor drift analyzes of the two earthquake maps were still in a safe level of performance. The increase of X direction deviation is 34.99% and for direction Y is 33,09%.

Keyword: Comparison, Static Equivalent, Earthquake Map 2010, Earthquake Map 2017.