DESIGN MODIFICATION OF PUNCAK KERTAJAYA APARTMENT BUILDING STRUCTURE WITH DUAL SYSTEM STEEL STRUCTURE FOR STRONG QUAKE AREA

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Abstract

One of many things that need to be concerned on high story building construction is earthquake. When designing an earthquake resistant building requires stable, strong, and rigid between the joints. Basically earthquake load is a lateral load whose frequently characteristic so that the structure need to have bracing for hold that load.

This Final Project discussing about modificate design of Puncak Kertajaya Apartment in Surabaya City which will be allocated to Bengkulu City with scale 6 of quake zone. This design modification use dual system steel structure. This design involve floor plate design, stairs, lift, roof, beam, bracing, column and foundation. At first, this building designed with
precast concrete and then will be modified with dual system which consist Moment Resisting Frame (MRF) and Eccentric Braced Frame (EBF).

After old design had modified, the building structure can resist any earthquake loads but still need to studied more to create structure design by considering technical, economic, and aesthetic aspects. So structure design expected to be implemented close to real conditions at the field and the results convenient to the purpose of design, which is strong, economic, and can be on time for its implementation.

**Keyword**: steel, puncak kertajaya apartment, scale 6 of quake zone, dual system.