

ABSTRACT

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Based on the results of geological research, it is concluded that almost 95% more than natural earthquakes that are quite large usually occur in the boundary areas where the plates that make up the earth's crust meet and in fault areas. Planners must be able to design buildings that meet the requirements of earthquake-resistant buildings. In connection with some of the things above, the author wants to carry out an earthquake-resistant building structure planning using the (Dual System) method at the Menteng location, Central Jakarta. The reference standards to be used are SNI 2847:2019 and SNI 1726:2019. Structural analysis in building planning uses the ETABS application, this plan uses the Dual System as a design guideline. preliminary design to estimate the initial design of the structure in accordance with the provisions of SNI 2847:2019. The results of the analysis showed that the dimensions of the floor slab are 125 mm with reinforcement in the support area obtained D8-150 mm and the reinforcement in the field area obtained is D8-200 mm, the dimensions of the beam B1 350 × 500 mm for the longitudinal reinforcement of the upper support 4D22, the lower support 2D22, longitudinal reinforcement for the lower field 3D22, the upper field 2D22 for the support stirrups obtained D10-100 mm for the field stirrups D10-200 mm, and the column dimensions of 600x800 mm for the main reinforcement 16D25, the stirrup reinforcement for the support area D13-100 mm and the field stirrups for the field area D13-150 mm, and dimensions of Shearwall P1 to P8 200x4500 mm require 22D32-150 main reinforcement and D13-150 stirrup reinforcement. The foundation used is pile foundation with a diameter of 0.8 m and a depth of 27 m.

Keywords: Building, Reinforced Concrete, Dual System, Seismic Design, Earthquake Resistant Structure.