

**REDESIGN OF THE UPPER STRUCTURE OF UNISA CAMPUS
YOGYAKARTA USING THE FLAT SLAB METHOD BASED UPON
SNI 03-2847:2013**

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ABSTRACT

Aisyiah Yogyakarta University is one of the high-rise buildings with 9 floors including a semi basement. The building still uses a conventional building structure with a column, beam and plate structure. Flat slab refers to the reinforced concrete plate directly supported by columns without any intermediary beams. It has the sufficient shear strength with a drop panel which is a plate thickening in the column area. This research aims to determine the dimensions of column structure, drop panels, floor slabs and column reinforcement in the flat slab design and to make a comparison between conventional buildings and flat slab buildings based on concrete volume, reinforcement requirements and the use of appropriate concrete quality. The methodology for redesigning the structure of the UNISA Yogyakarta campus building using the flat slab method was with the assistance of ETABS 2016. The software analysis of building performance against the regulatory standards for structural resistance to earthquake loads was by using the Equivalence Static in accordance with SNI 03-1726-2012. The results of this research showed that the column dimension used consisted of 6 types of columns: K1 (800x800 mm), K1 (700x700 mm), K2 (800x800 mm), K2 (700x700 mm), K3 (400x1600 mm), K4 (600x600 mm), K5 (600x600 mm), K6 (600x600 mm) and KL (500x500 mm). Meanwhile, the dimensions of the drop panel = 3200 x 3200 x 150 mm used the reinforcement D13. It also obtained the dimensions of the floor plate of = 8000 x 9600 x 270 mm and roof plates of = 8000 x 9600 x 150 mm by using D10 reinforcement. It then can be concluded that the reinforcement diameter was larger than the building column of conventional structure and required more concrete volume.

Keywords: Drop Panel, Flat Slab, Column, SNI 2847:2013

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