

ABSTRAK

Perencanaan gedung bank OCBC 6 lantai dengan menggunakan struktur beton bertulang tahan gempa yang berlokasi di Jalan Jendral Ahmad Yani RT 003 / RW 14 kota Pontianak. Dalam perencanaan gedung ini mengacu pada standar yang berlaku yaitu SNI 2847:2019 dan SNI 1726:2019. Berdasarkan analisis gempa, gedung yang direncanakan ini di desain menggunakan Sistem Rangka Pemikul Momen Khusus (SRPMK) yang menerapkan konsep *strong column weak beam* supaya lebih aman dengan keruntuhan balok terlebih dahulu dibanding dengan kolom. Analisis struktur yang dilakukan dibantu dengan *software* analisis struktur.

Berdasarkan hasil perhitungan, digunakan pelat lantai beton bertulang dengan ketebalan 120 mm menggunakan *wiremesh* M8-150, M10-150 dan M12-150. Pada balok beton bertulang digunakan dimensi (400x1000), (350x700), (300x600), (250x500), (250x400), (200x400), dan (150x300), sedangkan untuk tulangan longitudinal menggunakan tulangan diameter D22, D19, D16, D13, dan D10, tulangan transversal menggunakan tulangan diameter Ø10 dan Ø8. Untuk kolom beton bertulang dengan dimensi (700x700), (600x600), dan (500x500) menggunakan tulangan longitudinal D19 dan tulangan transversal diameter Ø12 dan Ø10. Pile cap direncanakan dengan dimensi (2300x2300x900), (1600x2300x800), (1600x1600x700), dan (900x1600x600) menggunakan tulangan D13 dan D19.

Kata kunci: perencanaan struktur gedung, gedung Bank OCBC, struktur beton bertulang, gempa, sistem rangka pemikul momen khusus (SRPMK), *strong column weak beam*

ABSTRACT

The planning of 6-story OCBC bank building using reinforced concrete structure resist to earthquake that located on Jendral Ahmad Yani Street, RT 003 / RW 14, Pontianak city. This building planning is refer to valid standards those are SNI 2847:2019 and SNI 1726:2019. Based on earthquake analysis, this planned building need to be design by using special moment resisting frame system (SMRF) that applying strong column weak beam concept for safety by failing of the beam first compared to the column. Structure analysis assisted by structural analysis software.

Based on the calculation, the slab is reinforced concrete with 120 mm for it's thickness by using wiremesh M8-150, M10-150, and M12-150. Reinforced concrete beam's dimensional are (400x1000), (350x700), (300x600), (250x500), (250x400), (200x400), and (150x300), meanwhile the diameter of longitudinal reinforcement bar are D22, D19, D16, D13, and D10, and diameter of transverse reinforcement bar are Ø10 and Ø8. The dimensional of reinforced concrete column are (700x700), (600x600), and (500x500) by using D19 longitudinal reinforcement bar and diameter of transverse reinforcement bar are Ø12 and Ø10. The plan of pile cap dimension are (2300x2300x900), (1600x2300x800), (1600x1600x700), and (900x1600x600) by using D13 and D19 as the reinforcement bar.

Keyword : *building structure planning, OCBC Bank building, reinforced concrete structure, earthquake, special moment resisting frame system (SMRF), strong column weak beam*