ABSTRACT

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Based on data on soil type, building location, and spectrum response acceleration parameters, it is included in risk category IV with an earthquake priority factor of 1.50 and included in seismic design category D. According to SNI-1729-2019 the ordinary moment resisting frame system method (SRPMB) and intermediate moment resisting frame system method (SRPMM) for seismic design categories D, E, F is not permitted. Earthquake resistant building structure planning in the case study of the Maternal and Child Health Services Building at RSUP Prof.Dr.I.G.N.G. Ngoerah – Denpasar Bali with the aim of knowing the dimensions and design of beams, columns, shearwalls, slabs and foundations and getting a cost budget plan. Structural analysis in building planning using the ETABS application. This planning uses the Dual System method as a design guide. 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 Plate were 120 mm with the reinforcement in the support area in the X and Y directions obtained being D13-240 and the reinforcement in the Field area in the X and Y directions obtained was D13-360, the dimensions of the floor beams 1 -5 450 × 900 mm for the reinforcement longitudinal reinforcement of upper support 14D19, lower support 8D19, lower field longitudinal reinforcement 11D19, upper field 5D19 support stirrup reinforcement obtained D13-100 field stirrup D13-200, , roof beam dimensions 450 × 900 mm for longitudinal reinforcement of upper support 9D19, lower support 6D19, lower field longitudinal reinforcement 11D19, upper field 5D19 support stirrup reinforcement obtained D13-250 field stirrups D13-200 and column dimensions K1 600×900 mm for main reinforcement 20D19, stirrup reinforcement for support area 3D13-100 and stirrups for field area 4D13-100, and shearwall dimensions P1 350 × 3000 mm requires main reinforcement 21D22-200 and Sengkang reinforcement D13-150. The foundation used is a pile foundation with a diameter of 0.80 m with a depth of 30.95 m. The Budget Plan (RAB) includes 11% VAT on the reinforced concrete structure of the Maternal and Child Health Services Building, Prof.Dr.I.G.N.G Hospital. Ngoerah – Denpasar Bali is IDR 38,300,000,000.00.

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