

ABSTRAK

PERANCANGAN STRUKTUR BANGUNAN GEDUNG KANTOR PRESISI II DKI JAKARTA

Novri Joncristo Sitorus, Aditiya Prayoga

Program Studi D-III, Jurusan Teknik Sipil, Politeknik Negeri Sriwijaya

Perancangan struktur bangunan Gedung Kantor Presisi II DKI Jakarta bertujuan untuk menghasilkan rancangan struktur bangunan yang kuat, aman, stabil, dan mampu mendukung kegiatan perkantoran serta pelayanan kepolisian secara efektif dan optimal. Gedung Presisi II merupakan fasilitas Polri yang berada di kawasan Jakarta Selatan dan digunakan untuk menunjang kegiatan operasional serta pelayanan kepolisian. Proyek ini melibatkan proses perancangan struktur gedung bertingkat menggunakan pendekatan teknis yang sesuai dengan standar konstruksi nasional, serta memanfaatkan aplikasi perangkat lunak permodelan struktur untuk analisis elemen struktural utama seperti pelat, balok, kolom, dan pondasi. Metode perhitungan mencakup pembebanan berdasarkan SNI, analisis momen dan gaya geser, serta perencanaan tulangan beton bertulang untuk memastikan kekuatan dan keamanan struktur. Selain aspek teknis, laporan ini juga membahas manajemen proyek yang mencakup perhitungan biaya, volume pekerjaan, analisa harga satuan, serta perencanaan durasi pelaksanaan konstruksi. Hasil dari perancangan menunjukkan bahwa gedung kantor ini dirancang untuk mampu menampung kebutuhan operasional dengan mempertimbangkan efisiensi biaya, kekuatan struktur, dan keselamatan kerja. Dengan perancangan yang matang, proyek ini diharapkan dapat menunjang kegiatan operasional dan pelayanan kepolisian secara efektif serta menghasilkan bangunan yang aman, kuat, dan sesuai dengan kebutuhan pengguna. Hasil dari perhitungan biaya diperoleh senilai Rp18.836.656.886 dan waktu yang dibutuhkan dalam penyelesaian proyek selama 309 hari kerja.

Kata kunci: perancangan struktur, beton bertulang, permodelan struktur , schedule, RAB.

ABSTRACT

STRUCTURAL DESIGN OF THE PRESISI II OFFICE BUILDING IN DKI JAKARTA

Novri Joncristo Sitorus, Aditiya Prayoga

Diploma Degree, Civil Engineering Department, State Polytechnic of Sriwijaya

The structural design of the Presisi II Office Building in DKI Jakarta aims to develop a structural system that meets the requirements of strength, safety, stability, and serviceability while supporting the operational and office activities of the Indonesian National Police (Polri). The Presisi II Building is a Polri facility located in South Jakarta that is intended to support police operational and administrative activities. The structural design process involves the analysis and design of the building structure using a technical approach based on the applicable Indonesian National Standards (SNI). Structural modeling and analysis are carried out using structural engineering software to evaluate the behavior of the main structural elements, including slabs, beams, columns, and foundations. The analysis considers various types of loading in accordance with the applicable standards, including dead loads, live loads, and earthquake loads. The design process includes the analysis of internal forces, such as bending moments and shear forces, as well as the design of reinforced concrete structural members to ensure adequate strength and structural safety. In addition to the structural design, this report also covers project management aspects, including cost estimation, quantity take-off, unit price analysis, and construction scheduling. The results of the structural design indicate that the building is designed to meet the required structural performance while considering structural safety, construction efficiency, and project feasibility. With proper planning and design, the project is expected to support police operational activities effectively and provide a safe, strong, and functional office building. The estimated total construction cost is IDR 18,836,656,886, with an estimated construction duration of 309 working days.

Keywords: structural design, reinforced concrete, structural analysis, structural modeling, construction cost, construction scheduling.