

Evaluasi Implementasi Building Information Modeling pada Struktur Beton Pracetak Rumah Sakit XYZ = Evaluation of Building Information Modeling Implementation in XYZ Hospital Precast Concrete Structure

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Abstrak

Rumah sakit merupakan salah satu komponen penting dalam merespon keadaan darurat dalam bencana alam dan harus tetap beroperasi walaupun mengalami kerusakan setelah terjadi gempa. Integrasi perencanaan suatu bangunan sangat penting agar tidak terjadi clash dalam pelaksanaannya karena melibatkan berbagai pihak. Penelitian ini membahas implementasi BIM dalam perencanaan struktur beton pracetak pada kasus Rumah Sakit XYZ. Salah satu faktor kegagalan struktur beton pracetak adalah lemahnya perencanaan sambungan antar komponen pracetak. Model BIM dari Rumah Sakit XYZ dibuat untuk menganalisis kekuatan struktur terhadap beban gravitasi dan juga beban gempa dengan metode statik ekuivalen dan respons spektrum sesuai SNI 1726:2019. Hasil desain sambungan basah komponen pracetak kemudian dimodelkan untuk nantinya didapat gambar detail sambungan struktur. Dari model BIM tersebut juga dianalisis volume beton komponen struktur dan dibandingkan terhadap perhitungan manual. Maka hasil penelitian yang didapat dengan hanya menggunakan satu model BIM berupa hasil analisis struktur, gambar detail sambungan struktur, visualisasi 3D, dan volume beton dari Rumah Sakit XYZ.

.....Hospitals are an important component in responding to emergencies in natural disasters. After experiencing the earthquake the hospital had to remain standing and operational even though it suffered damages. Of course, the integration of the planning of a building is very important so that there is no clash in its implementation because it involves various individuals. This study discusses the implementation of BIM in the planning of precast concrete structures in the case of XYZ Hospital. One of the failure factors for precast concrete structures is the weak connection planning between precast components. The BIM model from XYZ Hospital was created to analyze the strength of the structure against gravity loads and also earthquake loads with the equivalent static equivalent method and response spectrum according to SNI 1726:2019. The results of the wet connection design of precast components are then modeled to obtain detailed drawings of structural connections. From the BIM model, the volume of required structural component material is also analyzed and compared to the manual calculation of the volume of material. So the research results obtained using only one BIM model in the form of structural analysis results, detailed images of structural connections, and material volumes from XYZ Hospital.