

DETAILING SHOP DRAWING PROYEK HOTEL MANOHARA MENGUNAKAN APLIKASI TEKLA STRUCTURES

ANGGIT PRASTOWO JATI
16/401866/SV/12370

INTISARI

Tekla Structure merupakan aplikasi pemodelan tiga dimensi yang mampu mendesain struktur bangunan yang dapat berupa beton, baja, dan material lainnya. *Tekla Structure* dalam penggunaannya memiliki beberapa keuntungan antara lain mudahnya dalam pengoperasian, menambah efisiensi waktu dan biaya untuk menekan pengeluaran, mampu menangani struktur besar dan rumit, menambah akurasi pembangunan bangunan, memudahkan menginformasikan dari tahapan desain dan pendetailan ke lokasi konstruksi. Contoh dari pemodelan 3D yaitu pemodelan Hotel Manohara. Secara struktur, bangunan ini dibangun menggunakan beton. Dengan menggunakan *Tekla Structures* Hotel Manohara dapat dimodelkan mulai dari beton, penulangan, hingga kebutuhan material yang digunakan.

Perhitungan kebutuhan material menggunakan aplikasi *Tekla Structures* diawali dengan memodelkan bangunan secara 3D kemudian dilanjutkan memodelkan detail penulangan. Dari pemodelan tersebut didapatkan hasil berupa gambar *Detail Engineering Design* (DED) dan kebutuhan material.

Hasil kebutuhan material menggunakan aplikasi *Tekla Structures* pada pembangunan Hotel Manohara antara lain kebutuhan beton 3347,8 m³, baja tulangan P8 sebesar 5704 kg, baja tulangan D10 sebesar 177.931 kg, baja tulangan D13 sebesar 43.000 kg, baja tulangan D16 sebesar 17.023 kg, dan baja tulangan D25 sebesar 83.262 kg.

Kata kunci : *Tekla Structures*, tulangan, beton, kebutuhan material.

DETAILING SHOP DRAWING OF MANOHARA HOTEL PROJECT USING TEKLA STRUCTURES APPLICATION

ANGGIT PRASTOWO JATI
16/401866/SV/12370

ABSTRACT

Tekla Structure is a three-dimensional modeling application that is able to design building structure in the form of concrete, steel, and other materials. Tekla Structure has a few advantages in its use, such as ease of operation, increasing time and cost efficiency in order to minimize expenses, being able to handle large and complex structure, increasing the accuracy of building's construction, simplifying the transfer of information from the design phase and detailing to the location of the construction. An example of 3D modeling is the modeling of Manohara Hotel. Structurally, the building is constructed using concrete. By using Tekla Structures, Manohara Hotel can be modelled starting from the concrete, reinforcement, up to the material needs being used.

The calculation of material needs using Tekla Structures begins by modeling the building in 3D followed by modeling the details of reinforcement. From the model, Detail Engineering Design (DED) image as well as the material needs are obtained.

The materials needed in the construction of Manohara Hotel determined using Tekla Structures application include 3347.8 m³ concrete, 5704 kg P8 steel reinforcement, 177,931 kg D10 steel reinforcement, 43,999 kg D13 steel reinforcement, 17,023 kg D16 steel reinforcement, and 83,262 kg D25 steel reinforcement.

Keywords : *Tekla Structures, reinforcement, concrete, material needs.*