

DESIGN OF A FACTORY WITH STEEL SUPERSTRUCTURES AND REINFORCED CONCRETE FLOOR WITH MATTRESS PILING SYSTEM

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ABSTRACT

Factory is a common building in Malaysia. In line with the country's aim to become an industrialized and developed nation, more factories are needed to overcome the shortage especially in rural areas.

The objective of this project is a factory with steel superstructures and reinforced concrete floor with mattress piling system. The factory consists of purlins, roof trusses, universal steel column, base plate, reinforced concrete floor and foundation.

The purlins are constructed by using structural steel channel sections. It is used to support cladding on the slopping roof.

The roof trusses span 30 meters and used at interval of 6 meters. The members are made of structural steel angle sections. The trusses are joined to the respective columns by bolts.

Steel universal columns are used to support roof trusses. Base plate is provided at the base of every column so that axial load and moment can be distributed safely to the stump.

The floor of the factory is designed as reinforced concrete flat slab floor. A flat slab floor means that the floor is supported directly by column without using beams. In this project, the floor is supported by reinforced concrete piles.

Piles caps are used in the design of foundation. The purpose of the pile cap is to transfer the load safely from the stump to piles