

Design of Reinforced Concrete Beam Bridge

Prepared by: Aric Chye Chang Sheng

ABSTRACT

The purpose of the project is to design a Reinforced Concrete Beam Bridge.

In Malaysia, the most popular bridge that can be found is the concrete beam bridge. There are many parts of design for a bridge which including foundation, abutment, pier, tendons, girder, bridge deck, and more depending on the type of the bridge. For this project, I will only need to focus to the bridge deck and girder. For calculation of box girder, BS8110 is referred. However, since prestressed topic is beyond my area of study, a specification of the box girder which is prepared by using a software called 'Response 2000'.

For information, my design of this 45m-long and 10.5m-wide bridge is crossing a river without any pier in between of the span and it is a post-tensioning bridge as to reduce the reinforcement for bridge elements. The design load is basically according to BS 5400 which only HA and KEL loading is concerned in the project. BS 8110 also being used for the design of my bridge deck.

Some research on the UHPC and post-tensioning process also have been conducted for this project. It is because UHPC is the material used for my box girder.