LAPURAN PROJEK TAHUN AKHIR

KURSUS DIPLOMA LANJUTAN KEJURUTERAAN AWAM

KAJIAN KEJURUTERAAN, I.T.M., SHAH ALAM.

COMPUTER AIDED DESIGN OF SIMPLY SUPPORTED, CLASS 1, PRESTRESSED POST-TENSIONED CONCRETE BEAM WITH EFFECTIVE BOND, IN ACCORDANCE WITH BS 5400 : 1978.

BY:

AZMI IBRAHIM

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SYNOPSIS

A computer program in Basic Language has been developed for the design of simply-supported, Class 1 prestressed post-tensioned concrete beam with effective bond, in accordance with BS 5400 : 1978 using IBM-PC system.

A design of post-tensioned concrete beam both manually and using computer is included in the report for verification. Together with this, a users guide on how to use the program has also been included.

The program can be further modified to the design of Class 2 and 3 members by replacing certain requirements pertaining to each classes.

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1.0 INTRODUCTION

1.1 COMPUTER AIDED DESIGN (CAD)

CAD means the use of computer in structural design whereby both the designer and computer work together to carry-out design. This leads to better efficiency, and accuracy. Furthermore, with the help of computer, more complex problems can be solved much faster.

1.2 COMPUTER AIDED DESIGN PROCESS

Basically, there are 3 steps involved in the process of computer aided design.

1.2.1 PROBLEM ANALYSIS AND ALGORITHM DEVELOPMENT

The first step in the problem analysis is to review the problem carefully in order to identify what information must be produced to solve it and useful in obtaining the solution. Finally, a procedure to produce the designed results from the given data must be designed as a detailed sequence of simple steps known as algorithm.

The details of an algorithm is best shown by using a flowchart which uses symbols to display each operation or steps and their sequence.