STRUCTURAL STEEL DESIGN

OF A CANOPY

BY

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PROJECT REPORT

SUBMITTED TO THE

DEPARTMENT OF CIVIL ENGINEERING

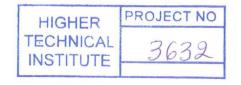OF THE HIGHER TECHNICAL INSTITUTE

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Introduction

As the time goes by steel construction becomes a more frequently use for larger buildings or projects. A steel frame structure consist of a skeletal framework which carries all the loads which the structure is subjected to and its task is to transfer those loads safely to the foundations.

The general idea of a steel structure is that all the loads are transferred from the floors to the floor beams and from there to the girders. From the girders the loads are transferred to the columns. Loads are pass down from all the floors of the structures via the columns and finally are transmitted to the foundations and the soil.

For the designing of steel structures a steel design code was created. When we refer to the term design we mean the selection of the proper section size to have the needed moment and shear capacity. After the proper section is selected then the proper connections are needed to be selected.

For terms of safety the sections used must have higher capacity from what is actually required.

All the steel members are produced and fabricated beforehand in standard size and sections thus the designer has to choose from those standardized steel members.

In our days various computer programs were created for the purpose of assisting the engineer to design and create clearer design documents.

This project is concerned with the design of a canopy using computer program STAAD Pro 2004. Before the computer program is used for the design of the canopy it was used to solve smaller steel structures that were also solved by hand. Thus the results taken by the STAAD Pro 2004 program were compared with the results obtained from our calculations.

There were two designs proposed for the canopy. One was by using only rectangular hollow sections and the other was by using I-beams, channels and rectangular hollow sections. At the end the two designs were compared

CONTENTS

Chapter 1