Structural Steel Design of a Braced Building
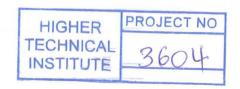
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BY

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Project Report

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CHAPTER I : INTRODUCTION

The great importance of computers in our daily life is more than obvious because they help us save precious time by processing a huge amount of data in an easier and much faster way. That's why are considered essential tools for all types of work.

The plan and construction of any kind of structure, nowadays is carried out by specialized civil engineering software, which are the engineer's structural "toolkit" as they contain various component analysis and design module groups. They estimate costs make decision of the specific materials to be used and carry out drawings.

One of the most powerful civil engineering programs, well known and respected worldwide, is the STAAD software, which i used to carry out my project.

We know that there exist two types of steel structure: **Braced** and **Unbraced**. My project was based on **Braced Structure**.

IN GENERAL: Bracing is required to resist horizontal loading in buildings designed to that simple design method. The bracing also generally stabilizes the building and ensures that the framing is square. It consists of the diagonal members between columns and is usually placed in the end bays. That bracing carries the load by forming lattice girders with the building members.

The most difficult part of my project was to find the drawings to start the design. As this seemed impossible, I chose to make my own drawings.

During the implementation of STAAD I found numerous difficulties the cause of my inexperience with the software navigation. Despite these difficulties and with hard and constant effort I became more and more accustomed to it.

The hardest part was during the Analysis and Design Procedure when I had to choose the proper sections to use in every member of the braced structure.

Now that I managed to familiarize myself, components of STAAD I find it very interesting and highly rewarding.

CONTENTS

The analysis included in Analysis and Desig was performed for some specific members using only Truck 2 (* **without checks of reactions and Member end foces because this checks are in the full analysis).**