HIGHER TECHNICAL INSTITUTE

DIPLOMA PROJECT

ANALYSIS AND DESIGN OF A STRUCTURAL STEEL BUILDING

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BY

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HIGHER TECHNICAL INSTITUTE CIVIL ENGINEERING DEPARTMENT.

ANALYSIS AND DESIGN OF A TALL STRUCTURAL STEEL BUILDING.

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CHAPTER I: Introduction

Day by day the use of computer becomes more and more necessary in many offices, shops and houses. Computer's programs are discovered in order to perform any kind of job and to take over tasks of any degree of difficulty and time consuming, in ease and very fast.

The Civil Engineering Department is related to a high degree with computer's programs. These programs may range from the very simple ones , such as Domus, to the highly complex but flexible ones, such as the STAAD Pro.

When the STAAD Pro. is used for the first time it may seem to be a very difficult program to use, but when using it more and more a familiarity growths up from this use and easier ways to carry out the design may be discovered.

STAAD Pro. indisputable saves time to a designer or a Civil Engineer who would like to design a structure with too many members or a structure whose some elements are repeated for one and more times. But in no case should he trust in blind the results of the program. He should make some checks in order to ensure the results are correct.

The first step done, as to become familiar with the program, was to do some training by solving in hand some structures which were then solved   in the program. Also by this way, a verification was performed to the results if they are found the same using both ways. After this training a familiarity growths with the program. But even after this and after the performance of all the project only the surface of the program is scratched.

The structure designed and analyzed in this book can be used to perform as a Hotel. The design of the beams was done using Universal Beams, of the columns using Universal Columns, and of braces using Hollow Rectangular Sections. During the carrying out of the design many changes were done to column sections and to bracing sections. In some floors less efficient column sections were used, than in the rest structure, in order to make economy.

Finally, this program helps very much to understand better the design and analysis of any member. It saves time and money, as mentioned and above, which are the most important factors a designer or a Civil Engineer consider and are based on to carry out the design.