

HIGHER TECHNICAL INSTITUTE

CIVIL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN STEEL SIMPLE CONNECTIONS

C/926

BY: JOANNA CHARALAMBOUS

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# DESIGN OF STEEL SIMPLE CONNECTIONS

by

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Project Report

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HIGHER TECHNICAL INSTITUTE  
NICOSIA - CYPRUS

CIVIL ENGINEERING DEPARTMENT

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Diploma Project Number : C/

Title: Design of steel simple connections

Objectives:

1. To present structural steel as building material and the loads on structures
2. To discuss the use of simple connections in structures
3. To present the theory for the design of simple connections
4. To apply the theory on selected examples

Terms and conditions:

1. Design according to BS5950

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External Assessor :



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## INTRODUCTION

The use of steel is a new and now developed area of structural engineering in Cyprus. Since recently it was practically impossible to find structures using steel, if not entirely, then in main structural members.

Now there is a development in the area of design and steel is more and more used in different members of the structure.

Connections are one of the main components of the structure that steel is used. Design of connections is an interesting subject because it requires a great deal of rational analysis in arriving in a solution. There are literally an infinite number of possible connection configurations, and only a very small number of them have been subjected to physical bending. Even within the small group that has been tested, changes in load directions, geometry, material types and arrangements result in configurations which have not been tested. That is why connections are considered to be a very difficult and complex subject to deal with, and in cases it is impossible to describe them in terms of simple formulas or in terms of any formulas.

Connections are an intimate part of a steel structure and their proper treatment is essential for safe and economic structure. An intuitive knowledge of how a system will transmit load and an understanding of structural mechanics are necessary.

Mainly, the design of connections should not be left to the fabricator but the designer must give them the attention they deserve as a very important member of the structure.