

HIGHER TECHNICAL INSTITUTE
MECHANICAL ENGINEERING DEPARTMENT
DIPLOMA PROJECT

DESIGN OF A CENTRAL HEATING SYSTEM
FOR A BLOCK OF MILITARY BARRACS

M/850

PANAYIOTOU ANNA

JUNE 1999

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HIGHER TECHNICAL INSTITUTE	PROJECT NO. 3016
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DESIGN OF A CENTRAL HEATING SYSTEM FOR A BLOCK OF MILITARY BARRACKS

by

Panayiotou Anna

Project Report

Submitted to
the Department of Mechanical Engineering
of the Higher Technical Institute

Nicosia Cyprus

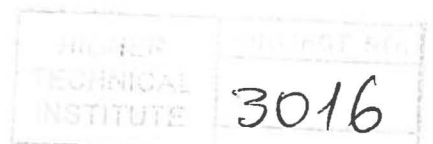
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This project is dedicated
to my parents who have supported and
encouraged me throughout this
and many other efforts and have fostered in me
the pursuit of knowledge and a
determination to succeed.

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SUMMARY

The following report presents the work done for the Final Year Project bearing the title "Design of a Central Heating System for a Block of Military Barracks". All the work done for this project is covered in detail in this report.

The project is divided into five chapters. The first chapter is about the estimation of the heat loss requirements of the military barracks. The second chapter involves the system of the space heating, the type of circuit, radiator selection, pipe sizing, and the third chapter includes the sizing of the plant equipment and also other technical specifications selected from various manufacturer's catalogues. Furthermore the fourth chapter includes a preventive maintenance of the system and finally the last chapter provides the cost analysis for the system employed.

INTRODUCTION

One of the most important industries in Cyprus and throughout the world generally, is the control of indoor climate. The science and practice of creating a controlled climate, that is conditions that are conducive to human comfort is called air-condition. The term air-conditioning is sometimes misunderstood and confused. Often only cooling is implied when air conditioning is mentioned. A complete air-conditioning system must accomplish all the following: Heating, Humidification, Dehumidification, Cooling, Ventilation, Filtering and Circulation.

The heating system to be designed in this project should create thermal conditions at the internal space for all rooms except shower-rooms and w.c's.

The objectives of the project were:

- 1) To calculate the heat requirements for space heating of a Block of Military Barracks.
- 2) To design the system to be employed.
- 3) To carry out sizing of equipment and piping.
- 4) To select the appropriate machinery from various manufacturers catalogues.
- 5) To prepare detailed drawings showing clearly the system layout and components.
- 6) To prepare an estimated cost analysis for the installation of the system.

For the purpose of carrying out all the project work smoothly and without any delays, a schedule program was set and was followed throughout the whole execution of the project. This schedule program is included in Appendix 1.