

H. T. I.

MECHANICAL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF AN AIRCONDITIONING  
SYSTEM FOR BUILDING

M/1002

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**DESIGN OF AN AIR CONDITIONING SYSTEM  
FOR A BUILDING**

By

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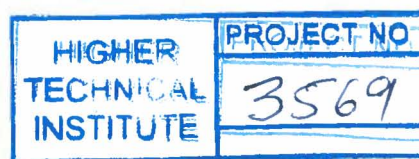
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## SUMMARY

The subject of this project is to design a full air conditioning system (heating and cooling) and examine the best system fitted to be installed. The place which is going to examine is a 3-floor building which is going to use for shops, offices and apartments.

In part A of this project were used the design conditions of Nicosia as collected from meteorological services. The thermal and cooling load of the building was calculated by using HCC3 program by putting inside the appropriate data like number of occupants and number of electric systems in the building. Part B deals with the selection of the system, the appropriate piping system, and the equipment use separately in every room. Part C deals with maintenance of hole system and cost analysis.

Finally, a complete set of Drawings is provided showing the locations of all equipment used.

## INTRODUCTION TO AIR CONDITIONING

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We all appreciate the relief from discomfort afforded by a modern air Conditioning system. Many of our homes and most offices and commercial facilities would not be comfortable without year-round control of the indoor environment. Only in a few favored areas of the earth's temperate zones can people live comfortably and work effectively without some form of winter heating or summer cooling.

Today, air conditioning engineers, architects, contractors, and technicians are modifying indoor climate in houses, factories, commercial establishments, hospitals and offices in nearly every country in the world. Consider for a moment the consequences that would result if all air conditioning system were stopped operating. Not only temperature and humidity conditions become intolerable but industrial production would be adversely affected, and activities involving computers, electronics, aircraft production, precision manufacturing and many more activities would come to a halt.

The first man who made this great invention of some kind of air conditioning was W. Carrier at 1902. This kind of system was first installed in a paper industry. Later on Carrier finished his invention by achieving the construction of a mechanism for humidifying air. At 1911, carrier invented the graphical presentation of the psychometric charts. With this charts all the difficult problem has now become easily solving for studying the air conditioning air until nowadays.

By the year 2000 more than 75% of the buildings all over the world are air conditioning.

What we are trying to achieve by air condition is:

- Temperature
- Humidity
- Cleanness of air.
- Velocity of air.
- Noise level.