

HIGHER TECHNICAL INSTITUTE

Nicosia - Cyprus

ELECTRICAL ENGINEERING DEPARTMENT

Diploma Project

**ENERGY MANAGEMENT CONSIDERATION
IN LARGE BUILDINGS**

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A C K N O W L E D G E M E N T S

SUMMARY

- (a) I would like to express my personal thanks to my project Supervisor Mr. P. Theopemptou lecturer of the Electrical Engineering Department of H.T.I.
- (b) My thanks also to my family for their support and guidance throughout the three years in H.T.I.

CHAPTER 2

CHAPTER 3

Lighting

Replacement

to one low power lamp

replacement of 40W lamp

to one

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**Energy Management consideration in
large buildings**

By Eftychia Nicolaou

This project in its first chapter deals with a brief study of electricity auditing methods and a suitable method for electricity auditing is selected to be used for the energy survey in Europa Hotel in Nicosia.

The results of the survey are listed in Chapter 2 and furthermore comments are made on the condition of the existing load utilisation.

The results from the basis on which recommendations are made (Chapter 3) for energy conservation measures.

In the final stage of the project measures for energy savings were proposed and their effects were analysed. Significant savings had been shown out with attractive pay-back periods.

I N T R O D U C T I O N

The need to conserve our declining fuel resources, especially of oil and natural gas is now widely accepted. By moderating our demand for energy we can usefully extend the period of time available for the safe and proper development of alternative sources. As it is already known energy is linked to food production industrial output, wealth health and lifestyle. Over half of the energy used by man is wasted and the more drastic energy-saving measures might require unacceptable changes to our present life.

There is a real need to conserve conventional forms of energy especially in industry and commerce. Industry and commerce should require little convincing of the need to conserve in order to cut their costs and to remain competitive.

Since an increasing portion of energy requirements is met in the form of electricity the efficient use of electricity has become an urgent international goal.

At a time when fuel shortages are occurring, prices are escalating and environmental constraints on energy conversion are increasing improved efficiency of utilisation is the best short term alternative for insuring that adequate supplies of electric energy remain available.

Electricity in Cyprus is almost the unique form of energy for commercial and industrial users, as well as for the domestic sector the cost of electricity often has significant impact on their present activities and their present activities and their future plans.

Proper energy management leads to an important control of the energy cost but at the same time provision of future energy requires substantial capital investment on the supply side. Expenditure on energy conservation reduces this requirement and provides recurring savings for end-users usually at a far better rate of return.

In this project information relating to the end-uses of electricity in "Europa Hotel" in Nicosia are collected and analysed. Suggestions are made on measures of electricity savings given in addition a view of the financial benefit resulting from the application of such measures.