HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES OF A HOTEL

E/959

LEMONIS MARIOS

1995

DESIGN OF THE ELECTRICAL SERVICES OF A HOTEL

by

LEMONIS MARIOS

Project Report

Submitted to

the Department of the Electrical Engineering

of the Higher Technical Institute

Nicosia - Cyprus

in Partial fulfillment of the Requirements

for the diploma of

TECHNICIAN ENGINEER

IN

ELECTRICAL ENGINEERING

June 1995

To my mother and to my brother and to all who helped me in any way to complete the electrical engineering course in H.T.I.

ACKNOWLEGMENT

I would like to express my sincere appreciation to my project supervisor Mr. G. Kourtellis, lecturer in H.T.I. for his guidance and assistance throughout the project period.

I also like to thank all those who in any way helped me in competing my project.

Finally, I would like to thank Mrs. Maritsa Kalli-Zonia, who has kindly undertaken the drawings of this project.

Marios Lemonis

June 1995.

ABSTRACT

The present study is fully dedicated to the design of the electrical services for a hotel. The project, based on the fundamental regulations of the I.E.E., provides full analysis of results and design procedures together with all the necessary information regarding the present design.

The inclusion of drawings and typical calculation examples for each part of the design, as well as tables in which the results of all circuits, distribution boards ratings and illumination results are listed, were considered very important. The whole design is made in accordance to the relevant regulation for each system.

GENERAL INFORMATION

This project report is about, the design of the electrical services of a hotel.

OBJECTIVES

To design the electrical installation services of a hotel and to provide working drawings for the above installation, which include the following:

a. power
b. lighting
c. telephone distribution

Also to provide schedule of materials and costing including labour.

TERMS AND CONDITIONS

1. Three phase 415Vrms 50Hz and single phase 240Vrms shall be considered with the TT earthing system.
2. Architectural drawings will be provided.
3. The IEE Wiring Regulations 16th Ediction as currently amended and the local EAC conditions of supply must be complied with in the design of this installation.
4. In designing the lighting load the C.I.B.S. code must be considered.
5. The telephone installations must be carried out in accordance with the building plans provided and must conform with CY.T.A. regulations.

Student	:	Mr. Marios Lemonis
Supervisor	:	Mr. G. Kourtellis
External Assesor	:	

CONTENTS

CHAPTER 4 - EARTHING

CHAPTER 5 - TESTING

CHAPTER 6 - TELEPHONE INSTALLATION DESIGN

INTRODUCTION

The design of the electrical installation of this hotel is based of the 16th Edition of the IEE regulations. The telephone installation design was carried out in accordance to the CY.T.A. regulations.

The earthing system of supply is the TT System. The hotel consists of:

a. Basement

b. Ground Floor

c. First Floor

In order to facilitate the execution of the Electrical Installation Design the following assumptions were made:

Cable use	:	PVC single wire
Wiring Methods	:	PVC conduit
External Earth Fault Loop Impedance	:	1Ω
Floor Height	:	3m
Height of Distribution Board	:	1,5m
Height of Socket Outlets	:	0,3m
Height of Telephone Socket Outlets	:	0,5m
Height of switches	:	1,5m

The project is divided into six chapters, the content of which is outlined below:

Chapter 1

It deals with the illumination work. The final results are shown in a table form.

Chapter 2

It deals with the actual electrical design work for each different circuit used in the building.

Chapter 3

It deals with the distribution boards calculations / rating, type, size and size of cables used.

Chapter 4

It deals with the complete earthing of the electrical installation.

Chapter 5

It deals with the basic tests necessary to verify that the installation is safe and functions correctly.

Chapter 6

It deals with the design work for the telephone installation and internal communication distribution to the building.