

# **DESIGN OF THE ELECTRICAL INSTALLATION SERVICES OF A HOTEL**

**PROJECT REPORT SUBMITTED BY**

**GEORGE PANAYI**

**In part satisfaction of the award of Diploma of Technician Engineer in  
Electrical Engineering of the H.T.I**

**Project Supervisor: Mr. Ch. Chrysafiades  
Lecturer in Electrical Engineering, H.T.I**

**JUNE 1994**



## **INTRODUCTION**

This project deals with the design of the Electrical Services of a Hotel situated in Paphos.

It consists of the Basement, the Ground floor, the Mezzanine, the Typical floor and the Roof.

The whole installation is carried out in accordance to the following requirements:

- (1). The 16th edition of the IEE Wiring Regulations and additional local Regulation.
- (2). EAC Conditions of supply.
- (3). C.I.B.S. code for interior lighting.
- (4). Interior Lighting Design.

## CONTENTS

ACKNOWLEDGMENTS  
INTRODUCTION  
CONTENTS

### CHAPTER 1

#### ILLUMINATION

A. The lumen method of design.....	1
calculation procedure.....	2
B. Point to point method.....	2
ACTUAL ILLUMINATION DESIGN.....	3
Results of illumination design.....	7

### CHAPTER 2

LIGHTING AND POWER REQUIREMENTS.....	11
2.1 Objects and effects.....	11
2.2 Fundamental Requirements for safety.....	11
2.3 Design procedure.....	11
2.4 Actual design procedure.....	15
2.5 Socket outlet circuits.....	15
2.6 Design of a typical lighting cct.....	24
2.7 High power circuits.....	27
2.8 Supply cable calculations.....	37
2.9 Fault level calculations.....	77

### CHAPTER 3

FIRE ALARM SYSTEM & SOUND DISTRIBUTION & LIGHTNING PROTECTION.....	80
3.1 General.....	80
3.2 Type of fire alarm.....	80
3.3 Actual design calculation.....	84
Design procedure of sound distribution.....	85
3.4 Need for protection from lightning.....	90

### CHAPTER 4

#### EARTHING

4.1 Situations where special precautions are used.....	92
4.2 Definitions.....	92
4.3 Protection for safety.....	94
4.4 Safety and earthing.....	96

<b>CHAPTER 5</b>	
INSPECTION AND TESTING	
5.1 General.....	97
5.2 Visual inspection.....	97
5.3 Testing.....	98
<b>CHAPTER 6</b>	
P.F CORRECTION	
6.1 Actual design.....	101
<b>CHAPTER 7</b>	
TELEPHONE DISTRIBUTION	
7.1 Definitions.....	103
7.2 Conduit and conduit sizes.....	104
7.3 Tables.....	107
Conclusions	
Appendices	
References	