

DESIGN OF THE ELECTRICAL
INSTALLATION SERVICES
OF A HOTEL

Project report submitted by
CHRISTOU G. NEDI

in part satisfaction of the award of Diploma of
Technician Engineer in Electrical Engineering of the
HIGHER TECHNICAL INSTITUTE, CYPRUS.

Project supervisor: Mr. J. Demetriou

Type of Project : Individual

Group

June, 1989

HIGHER TECHNICAL INSTITUTE	PROJECT NO. 1475
----------------------------------	---------------------

ABSTRACT

This project deals with the electrical installation design of a hotel. Analytically this project is an electrical design of a hotel including:

- (a) Lighting
- (b) Power
- (c) Standby Supply

This project includes the design procedure, typical calculation examples for each part of the design and also includes the relevant drawings. All the technical and theoretical information are given at the end of the project.

C O N T E N T S

	<u>Page</u>
ACKNOWLEDGEMENTS	I
ABSTRACT	II
INTRODUCTION	III
<u>CHAPTER 1</u>	
ILLUMINATION	1
1.0 Introduction	1
1.1 Surfaces	1
1.2 Lighting laws	1
1.3 Glare	2
1.4 Stroboscopic effect	3
1.5 Choice of lamp type	3
1.6 Luminaires	3
1.7 Incandenscent lamps	4
1.8 Fluorescent lamps	4
1.9 Definition of terms-Units	5
1.10 Design Procedure-Lumens method	7
1.11 Actual design	8
1.12 Table of illumination results	10
<u>CHAPTER 2</u>	
LIGHTING AND POWER REQUIREMENTS	13
2.0 Introduction	13
2.1 Fundamental requirements for safety	13
2.2 Control of electrical installation	13
2.3 Diversity and maximum demand	14
2.4 Installation of motors	14
2.5 Design procedure	15
2.6 Actual design procedure	20
2.7 Schedule and balancing of distribution boards	51
2.8 Fault level calculations	65

CHAPTER 3

EARTHING	68
3.0 Introduction	68
3.1 TT system of earthing	68
3.2 Definitions	69
3.3 Protection against Earth leakage currents	71
3.4 Earth leakage circuit breakers	73
3.5 Protection against electric shock	75
3.6 Earth electroce-Earthing conductor	75
3.7 Overcurrent protection	76
3.8 Effects of overcurrent	77
3.9 Short circuit protection	77
3.10 Protective devices	78

CHAPTER 4

BATH CALL SYSTEM	81
4.0 Introduction	81
4.1 Form of bath call system	81
4.2 Basic principle of operation of the system	82

CHAPTER 5

STAND-BY SUPPLY	83
5.0 Introduction	83
5.1 Standby generators	84
5.2 Emergency lighting	86
5.3 Positioning of emergency lighting	88
5.4 Calculation for the standby generator	90

CHAPTER 6

INSPECTION AND TESTING	92
6.0 Introduction	92
6.1 Visual inspection	92

6.2	Continuity of ring final circuit conductor	93
6.3	Continuity of protective conductors	93
6.4	Insulation resistance	93
6.5	Polarity test	94
6.6	Operation of the residual current operated protective device	94

CONCLUSIONS	95
-------------	----

REFERENCES	97
------------	----

LEGEND	98
--------	----

APPENDICES	99
------------	----