

DEDICATED
TO MY FAMILY
AND ESPECIALLY
TO MY FATHER

DESIGN OF THE ELECTRICAL INSTALLATION
OF HOTEL APARTMENTS

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CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
<u>CHAPTER 1 ILLUMINATION</u>	
1.1 GENERAL	3
1.2 UNITS AND DEFINITIONS	3
1.3 DESIGN PROCEDURE	5
1.4 TABLES GIVING THE LIGHTING DESIGN LUMENS FOR VARIOUS TYPES OF LAMPS	7
1.5 EXAMPLE	8
1.6 ILLUMINATION DESIGN RESULTS	9
<u>CHAPTER 2 EARTHING</u>	
2.1 GENERAL	11
2.2 SITUATIONS WHERE SPECIAL PRECAUTIONS ARE NEEDED	12
2.3 EARTH FAULT LOOP IMPEDANCE	12
2.4 METHODS OF PROTECTION FROM SHOCK	13
<u>CHAPTER 3 TELEPHONY</u>	
3.1 EXTERNAL DISTRIBUTION NETWORK	14
3.2 BASIC PRINCIPLES GOVERNING THE INTERNAL TELECOMMUNICATION NETWORK	20
3.3 EARTING	24
3.4 GENERAL SPECIFICATIONS FOR TERMINAL EQUIPMENT	27
3.5 ELECTRONIC PRIVATE BRANCH EXCHANGE	30
<u>CHAPTER 4 LIGHTNING PROTECTION SYSTEM</u>	
4.1 GENERAL	33
4.2 NEED FOR PROTECTION	34
4.3 ZONE OF PROTECTION	37
4.4 COMPONENT PARTS	38

CHAPTER 5 POWER AND LIGHTING SYSTEMS

5.1 GENERAL	47
5.2 MAIN SWITCH GEAR	47
5.3 FEEDERS	48
5.6 WIRING METHODS	48
5.7 SOCKET OUTLETS AND SPURS	49
5.8 LOCAL SWITCHES	49
5.9 LAMP HOLDERS AND CEILING ROSES	49
5.10 INSPECTION AND TESTING	50
5.11 DESIGN PROCEDURE	51
5.12 DIVERSITY FACTORS	52
5.13 ACTUAL LIGHTING DESIGN	53
5.14 ACTUAL SOCKET OUTLET	57
5.15 RESULTS	61
5.16 SINGLE LINE DIAGRAMS	62

INTRODUCTION

This project deals with the electrical installation of hotel apartments which consists of a ground floor , a mezzanine and a first floor which is supplied by an underground cable.

For the purpose of the project , designs were carried out for the illumination of the premises , for the lighting and power systems , as well as for the earthing and lightning protection device of the installation , and the telephony system used.

The design was carried out according to:

- (a) The 16th Edition of the IEE wiring Regulations and the local EAC conditions of supply.
- (b) The C.I.B.S. Code recommendation for illumination.

This project is also considered to be designed from the consultant's , point of view.

Great care was taken on the decorative aspect of the project. Since the Subject is hotel apartments , special care was given to the design of such areas as the reception and the restaurant.

The main consideration , however , was safety and this factor caused a thorough analysis to be carried out.

N.B. for the design of the power and lighting systems , the following assumption have been made.

1. The working temperature of any circuit shall not exceed 30 C therefore the ambient temperature correction factor is $C_1=1$.
2. No Circuit will come in contact or be totally enclosed in thermal insulation, therefore the thermal insulation correction factor is $C_3=1$.
3. For motors the efficiency and the power factor of them have been assumed to be 0.85 and 0.8 respectively (typical values) .
4. Height of the lighting switches = 1.5m
5. Height of the socket outlets =0.3m
6. Height of the socket outlets above the benches = 1m
7. Height of the DB'S = 1.7m
8. The EFLI was given to be equal to 0.40

9. The supply is three phase 415/240 TT earthing system.
10. The cables which are going to be used are the PVC copper single core and the PVC / SWA / PVC.
11. The wiring method is the reference method number 3 which the wiring is done
in conduit on a wall or in trucking.
12. The prospective short circuit current is taken to be equal to $I_{s/c} = 6.56$
KA
a power factor $\cos \phi = 0.83$ lagging.