

HIGGINS COLLEGE INSTITUTE  
ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES  
OF SHIPPING CENTRE

BY  
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E1079

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## **DESIGN OF THE ELECTRICAL SERVICES OF A SHOPPING CENTRE**

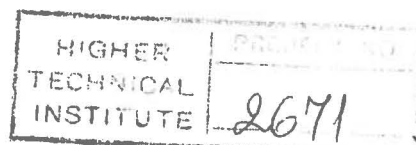
**SUBMITTED BY**

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Dedicated to  
my father and  
to Georgia.

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# CONTENTS

	Page
ACKNOWLEDGEMENTS	
SUMMARY	
INTRODUCTION .....	1
CHAPTER 1 .....	3
SWTCHGEAR	
1.1 Purpose .....	3
1.2 Devices for protection against electric shock .....	3
1.3 Isolation and switching .....	4
1.4 Devices for switching off for mechanical maintenance .....	4
1.5 Devices for emergency switching .....	4
1.6 Devices for functional switching .....	5
CHAPTER 2 .....	6
INSPECTION AND TESTING	
2.1 Importance .....	6
2.2 Testing .....	6
2.3 Certificate .....	7
CHAPTER 3 .....	9
EARTHING	
3.1 Introduction .....	9
3.2 Methods of Eartng .....	9
3.3 Direct or solid method of earthing .....	9
3.4 TT system of earthing .....	10
3.5 Earth Fault Loop Impedance ( E.F.L.I ) .....	11
3.6 Earth electrode .....	11
CHAPTER 4 .....	12
ILLUMINATION	
4.1 Introduction .....	12
4.2 Various units and definitions of illumination .....	12

4.3	Main points for the illumination . . . . .	14
4.4	Lumens method of illumination . . . . .	14
4.5	Room index . . . . .	15
4.6	Spacing of lighting fittings . . . . .	16
4.7	Typical example of an illumination calculation . . . . .	16
CHAPTER 5 . . . . .		21
LIGHTING DESIGN		
5.1	Main points to be considered in lighting design . . . . .	21
5.2	Procedure followed for lighting circuits . . . . .	21
5.3	Typical calculation of a lighting circuit . . . . .	26
CHAPTER 6 . . . . .		33
POWER DESIGN		
6.1	Introduction . . . . .	33
6.2	Typical calculation of a ring circuit . . . . .	33
6.3	Typical calculation of radial circuit . . . . .	37
6.4	Conduit diameter . . . . .	39
CHAPTER 7 . . . . .		43
AIR-CONDITIONING DESIGN		
7.1	Introduction . . . . .	43
7.2	Typical calculation for an air-conditioning system . . . . .	43
CHAPTER 8 . . . . .		47
DISTRIBUTION BOARDS DESIGN		
8.1	Introduction . . . . .	47
8.2	Typical example of shop No1 . . . . .	47
CHAPTER 9 . . . . .		51
FAULT LEVEL CALCULATIONS		
9.1	Introduction . . . . .	51
9.2	Typical example of shop No1 . . . . .	51
CHAPTER 10 . . . . .		54
FIRE ALARM SYSTEM		
10.1	General . . . . .	54
10.2	Zoning of the system . . . . .	54
10.3	Design . . . . .	55

CHAPTER 11 .....	59
TELEPHONE INSTALLATION	
11.1 Introduction .....	59
11.2 Main points to be consider .....	59
11.3 Telephone earthing .....	59
11.4 Actual design of the installation .....	60
CHAPTER 12 .....	62
COSTING CALCULATIONS	
12.1 Introduction .....	62
12.2 Electrical costing .....	62
12.3 Fire alarm costing .....	63
12.4 Telephone costing .....	64
12.5 Air-conditioning costing .....	65
12.6 Total costing .....	65

CONCLUSIONS

REFERENCES

SINGLE LINE DIAGRAMS

APPENDICES

TECHNICAL DRAWINGS

# SUMMARY

In order to fulfil a complete design of electrical installation of a shopping center, the following designs have done :

1. Illumination
2. Lighting
3. Power
4. Air-conditioning
5. Fire alarm
6. Telephony

The shops are divided into two floors :

1. Ground floor
2. Mezzanine

The design of the shopping center has done according to the "IEE" regulations 16th edition, the CIBS code for illumination, EAC conditions and CY.TA regulations.

The most important part in every installation is the earthing since the protection of life always come first. Considering this the installation had been designed very carefully and all the materials have been used was selected in detail. In extension the installation is also capable to protect and the valuable goods and machinery.



# INTRODUCTION

At the area the building is the distribution and the supply are overhead. The supply for the installation is single phase 240Vrms 50Hz and the earthing system used as we will see is TT.

The building is divided into five boards and they all have their own distribution board and of course their own E.A.C meter. The hole installation at this state does not need three phase supply since no elevator is used or any other part of the electrical installation needs to operate with three phase supply. The D.Bs have been earthed to an earth electrode outside the building. As we will see the all the circuits in the building are protected by MCBs and all the ratings of the MCBs are chosen having in mind the load they have to protect. For the protection of life and property RCCBs are used. Both RCCBs and MCBs are chosen in detail and very carefully in order to have fault discrimination.

The wiring of the hole installation was made through conduit runs, under floor and bared into the walls. The cables used are single-core p.v.c.-insulated cables, non-armoured, without sheath (copper conductors ) and for the supply of each shop multicore armoured p.v.c.-insulated cables ( copper conductors ).

The illumination design specifies the accurate number of luminary fittings in order to have a satisfactory illumination in every shop and also every room or any other place. For the illumination CIBS code for illumination is used.

The power and lighting installation are supplied directly from the D.B of each shop and in the case of the underground parking and stairs from their own D.C. The same stands for the Air-conditioning design and supply.

The fire alarm system is controlled by the fire alarm panel which protects each shop from a fire incident.

The telephone installation was done in order to satisfy the needs of each shop as they probably are at first stage of their opening.

The costing calculations were done by accurate prices of the materials and equipment used in the hole area of the building.

Any information used and not given are in the chapters are given in the Appendices at the end of the project and also the technical drawings are placed after the Appendices.