

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES
OF A MULTISTOREY BUILDING

E/1142

L. K. CAROLOS

JUNE 1998

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

**DESIGN OF THE ELECTRICAL SERVICES
OF A MULTISTOREY BUILDING**

E/1142

LONDOS KYRIAKOS-CAROLOS

JUNE 1998

HIGHER TECHNICAL INSTITUTE	PROJECT NO. 2877
----------------------------------	---------------------

INSTALLATION OF A MULTISTOREY BUILDING

Project report submitted by:

Londo Kyriako-Carolo

Project Supervisor:

Mr G. Kourtellis

Type of project:

Individual

JUNE, 1998

HIGHER TECHNICAL INSTITUTE	PROJECT NO. 2877
----------------------------------	---------------------

ABSTRACT

This project deals with the complete electrical installation of a multistorey building and the objectives are:

- 1) to design the complete electrical installation.
- 2) to study the illumination engineering work involved.
- 3) to provide all necessary diagrams, schedule of materials and costing including labour.

The design was carried out according to:

- 1) The E.A.C. supply i.e. 415/240V, 50Hz.
- 2) The I.E.E. regulations (16th edition).
- 3) The GIBS code for designing the lighting load.

CHAPTER 3 ILLUMINATION

GENERAL	11
DEFINITION USED IN ILLUMINATION	11-13
METHODS OF ILLUMINATION CALCULATIONS	13-15
ILLUMINATION CALCULATIONS	16-19
TABLES OF ILLUMINATION RESULTS	20-26

CHAPTER 4 LIGHTING DESIGN

LIGHTING DESIGN CALCULATIONS	27-41
TABLES OF LIGHTING DESIGN RESULTS	42-48

CHAPTER 5 SOCKET OUTLETS DESIGN

SOCKET-OUTLETS DESIGN CALCULATIONS	49-63
TABLES OF SOCKET OUTLETS DESIGN RESULTS	64-66

CHAPTER 6 FIXED APPLIANCES DESIGN

WATER HEATER INSTALLATION	67-70
WASHING MACHINE INSTALLATION	70-73
COOKER INSTALLATION	73-76
CABLES FOR FIXED APPLIANCES INSTALLATION	77-78

CHAPTER 7 MOTORS CIRCUIT DESIGN

LIFT INSTALLATION	79-87
WATER PUMP INSTALLATION	80-82

CHAPTER 8 MAIN SUPPLY CABLES DESIGN

DIVERSITY FOR SINGLE PHASE CIRCUITS	83-85
SINGLE PHASE SUPPLY TO A FLAT	85-90
INSTALLATION OF PUBLIC D. BOARDS TO MAIN	90-93
CONNECTION OF MAIN D BOARD TO E.A.C METER	93-96
TABLES OF RESULTS OF SIZE OF D. BOARDS	97-98
TABLES OF RESULTS OF SUPPLY CABLE SIZE	99

CONTENTS

CHAPTER 1: EARTHING

GENERAL.....	1-3
TYPES OF EARTHING SYSTEMS.....	3-5
DEFINITIONS OF EARTHING TERMS.....	5

CHAPTER 2: INSPECTION AND TESTING

GENERAL.....	6
TESTING SEQUENCE.....	6
EXPLANATION OF THE DIFFERENT TESTS	7-10

CHAPTER 3: ILLUMINATION

GENERAL.....	11
DEFINATION USED IN ILLUMINATION.....	11-13
METHODS OF ILLUMINATION CALCULATIONS.....	13-15
ILLUMINATION CALCULATIONS.....	16-19
TABLES OF ILLUMINATION RESULTS.....	20-26

CHAPTER 4: LIGHTING DESIGN

LIGHTING DESING CALCULATIONS.....	27-41
TABLES OF LIGHTING DESIGN RESULTS.....	42-48

CHAPTER 5: SOCKET OYTLETS DESIGN

SOCKET OUTLETS DESIGN CALCULATIONS	49-63
TABLES OF SOCKET OYTLETS DESING RESULTS.....	64-66

CHAPTER 6: FIXED APPLIANCES DESIGN

WATER HEATER INSTALLATION	67-70
WASHING MASHINE INSTALLATION.....	70-73
COOKER INSTALLATION.....	73-76
TABLES FOR FIXED APPLIANCES INSTALLATION.....	77-78

CHAPTER 7: MOTORS CIRCUIT DESIGN

LIFT INSTALLATION.....	79-80
WATER PUMP INSTALLATION.....	80-82

CHAPTER 8: MAIN SUPPLY CABLES DESIGN

DIVERSITY FOR SINGLE PHASE CIRCUITS.....	83-85
SINGLE PHASE SUPPLY TO A FLAT.....	85-90
INSTALLATION OF PUPLIC D.BOARDS TO MAIN.....	90-93
CONNECTION OF MAIN D.BOARD TO E.A.C METER.....	93-96
TABLES OF RESULTS OF SIZE OF D.BOARDS.....	97-98
TABLES OF RESULTS OF SUPPLY CABLE SIZE.....	99

CHAPTER 9: TELEPHONE INSTALLATION

USEFUL DEFINITIONS AND TERMS.....100-101
TABLES SHOWING THE DEMAND OF THE INST.101-102
WIRING AND CONDUIT SHEMATICS103-104
LISTS OF CONNECTIONS.....105

CHAPTER 10: COSTING

METHODS OF COSTING.....106-107
TABLES OF COSTING108-110
TOTAL COST111

SINGLE LINE DIAGRAMS OF THE INSTALLATION

APPENDICES

DRAWINGS

CHAPTER - 1 -
EARTHING