

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES
OF A MULTISTOREY BUILDING

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BY: SOTERIOU CONSTANTINOS

JUNE 1998

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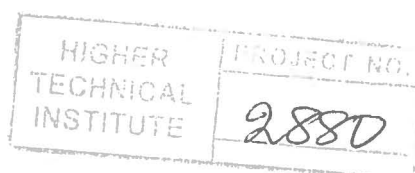
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OF A MULTISTOREY BUILDING**

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DESIGN OF THE ELECTRICAL SERVICES OF A MULTISTOREY BUILDING

Project Report submitted by:

SOTERIOU CONSTANTINOS

**In part of satisfaction of the conditions for the award of
Diploma of Technician Engineer in Electrical Engineering of the
Higher Technical Institute, Cyprus.**

**Project Supervisor: Mr. G. Gourtellis
Lecturer in Electrical
Engineering, H.T.I.**

Type of Project: Individual

June, 1998



Dedicated to my family and my friends.

ACKNOWLEDGEMENTS

This project

I would like to express my thanks to my project supervisor Mr. G. Gourtellis for his useful help and supervision during the whole process of this project.

- a) Planning
- b) Design
- c) Design
- d) Design
- e) Costing

The project

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ABSTRACT

This project deal with the electrical installation of a multistorey building which includes:

- a) Illumination designing of a multistorey building.
- b) Design of the electrical installation.
- c) Design of the telephone installation.
- d) Design of the central antenna installation
- e) Costing of the installation including labour.

The designing is carried out according to:

- The IEE and EAC Regulations for the Electrical Design.
- The CIBS code for the Illumination Design.
- The CYTA Regulations for the Telephone Design.

INTRODUCTION

This project is a design of the Electrical, Telephone and Central Antenna Installation of a Multistorey Building consisting of apartments including Illumination Design and Costing of this procedure.

The first Chapter is based on the theory and calculations of Illumination Design. The Illumination Calculations are carried out to find the required number of fitting to be used.

Safety which is an important factor of every installation, is also taken into consideration. The second and third Chapters are based on protection and earthing of the installation, so as to provide safety from fire shock and burns.

The Electrical Design Calculations are carried out in the fifth Chapter. The Electrical Installation is divided in circuits i.e. lighting circuits, power circuits (socket outlets & fixed appliances) and calculation for the appropriate overcurrent protective device (type and rating) live cables cross sectional areas taking into account voltage drop limitations and circuit protective conductor c.s.a. are done for typical circuit.

After Completion, the installation must be tested so as to ensure that the regulations have been fulfilled and also to ensure that there are no defective circuits.

Methods of testing are described in the fourth Chapter.

Finally Costing of the process is done by using the analytical method, and the overall cost of the installation is evaluated.

CONTENTS

CHAPTER 1 - ILLUMINATION

1. Introduction
2. Methods of illumination
3. Definitions
4. Procedure of illumination calculations
5. Typical calculations

CHAPTER 2 - PROTECTION OF THE ELECTRICAL INSTALLATION

1. General
2. Protection against Electric Shock
3. Protection against Overcurrent

CHAPTER 3 - EARTHING

1. General
2. Earth Fault Loop Impedance
3. Bonding

CHAPTER 4 - TESTING

1. General
2. Visual Inspection
3. Testing

CHAPTER 5 - ELECTRICAL DESIGN

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2. Data, Assumptions and Symbols used for the Electrical Design
3. Typical vertical run for all equipment
4. Single line diagrams
5. Lighting Circuits Design
6. Power Circuits Design
7. Fixed Appliances Circuit Design

8. Motor Circuits Design
9. Total Current Demand and Supply
10. Supply cables sizing
11. Distribution Board Sizes

CHAPTER 6 - TELEPHONE INSTALLATION

1. General
2. Definitions
3. Earthing
4. Telecommunication Network
5. Telecommunication Design

CHAPTER 7 - CENTRAL ANTENNA INSTALLATION

1. General
2. Central Antenna Design

CHAPTER 8 - COSTING

1. General
2. Costing by using the Analytical Methods