

HELENA COLLEGE OF THE UNITED STATES  
ELECTRICAL ENGINEERING DEPARTMENT

THESIS

DESIGN OF THE ELECTRICAL SERVICES OF A  
MULTISTORY BUILDING.

by  
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UNIVERSITY

**HIGHER TECHNICAL INSTITUTE**

**DESIGN OF THE ELECTRIC SERVICES  
OF A MULTISTORY BUILDING**

**PROJECT REPORT SUBMITTED BY :**

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**In partial of the requirements for the diploma award of the technician engineer in electrical engineering department of the Higher Technical Institute , Cyprus .**

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## SUMMARY

**This project deals with the electrical services of a multistory building regarding :**

1. Illumination design work in order to decide the quantity , type and luminaires in accordance with the CIBS code .
2. Lighting and power services based on the 16th edition of the IEE wiring regulations and the local EAC conditions of supply .The power design is applied based on the three phase 415Vrms 50Hz , T.T. earthing system .
- 3.The telephone design was based on CYTA requirements .
4. Calculations and brief explanations on the Central antenna and T.V. system were made .
5. Costing of the work is achieved , regarding all the equipments we use, labour cost and according to Cyprus values.
6. Finally this project includes also some appendices , which outline the information given by the manufacturers of the equipment used .

Chapter  
lighting

Chapter  
outlets, switches  
Conditions of supply  
selection of conductors  
, check of  
conditions

Chapter  
of phase  
Board  
board

Chapter  
short

Chapter  
and brief  
given.

## INTRODUCTION

This project deals with the electrical services of a Multistory building. It consists of 11 chapters and each chapter deals with a different subject. In each chapter, at least one example of the calculations is made and all the results are tabled. At the end of this project, conclusions of the whole project are represented and necessary appendices and drawings are included.

**Chapter 1:** deals with the **illumination design**. With the illumination design, the minimum number of lamps is calculated, in order to provide a sufficient amount of light. After that, the exact position of luminaires is calculated.

**Chapter 2:** deals with the **lighting installation** and gives details for each lighting circuit.

**Chapter 3:** deals with the **power services** of our building (i.e. **socket outlets, cooker unit, water heater, Lift motor, water pump and Air Condition**) and provides calculations for the selection of circuit breaker, selection of phase conductor, selection of c.p.c., check for shock protection, check for thermal constraints, test for energy let through and selection of conduit size.

**Chapter 4:** deals with the **diversity applied on the loads, the balancing of phases and the selection of supply cables to Distribution Boards**. Tables at the end of this chapter give details for each distribution board and also for each circuit.

**Chapter 5:** In this chapter **fault level calculations** are carried out. The short circuit fault current and the power factor was determined.

**Chapter 6:** In this chapter **Central Antenna calculations** are carried out and **brief explanations of the Central Antenna and T.V. System** are given.

**Chapter 7:** deals with the **telephone installation**. It also gives a description of the telephone system and conduit diagrams, wiring schematic and analytical tables are shown.

**Chapter 8:** deals with the **requirements for safety** and protective devices used.

**Chapter 9:** deals with the **earthing design** and the **protection** that must be taken into consideration in an electrical installation.

**Chapter 10:** This chapter deals with the **testing** that must be done to the installation after the finishing of it, so that to ensure that there is no fault.

**Chapter 11:** deals with the **costing of the electrical installation**. One table of costing is applied for estimating the cost of the electrical installation with the analytical method (i.e. quantities needed, material costing and labour costing)