

HIGHER TECHNICAL INSTITUTE	PROJECT NO 3825
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HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

**DESIGN OF THE ELECTRICAL SERVICES
OF A LUXURY HOUSE**

E.1443

BY

NEOPHYTOU MARIOS

JUNE 2009

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ELECTRICAL ENGINEERING
DEPARTMENT

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SERVICES
OF A LUXURY HOUSE

BY

NEOPHYTOU MARIOS

**In partial fulfillment of the requirements for the
award of the diploma of the Technician Engineer
in Electrical Engineering Department of the
Higher Technical Institute**

Nicosia – Cyprus

Project Supervisor: Mr. J. Demetriou

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CONTENTS

	PAGE
ACKNOWLEDGEMENTS	vi
SUMMARY	vii
INTRODUCTION	viii
CHAPTER 1: ILLUMINATION DESIGN	
1.1 Introduction.....	2
1.2 Definitions and units.....	2
1.3 Rules for Energy Efficient lighting	3
1.4 Method of illumination calculations	4
1.5 Procedure for lumen method	5
1.6 Typical calculations	6
1.7 Tables of illumination design.....	7
CHAPTER 2: LIGHTING CIRCUIT DESIGN	
2.1 Lighting Circuit design	10
2.2 Introduction.....	12
2.3 Typical Calculations.....	12
2.4 Tables of results.....	14
CHAPTER 3: SOCKET OUTLETS DESIGN	
3.1 Introduction.....	17
3.2 Typical Calculations.....	17
3.3 Table of results	21
CHAPTER 4: FIXED ELECTRICAL APPLIANCES	
4.1 Cooker unit calculations	23
4.2 Washing machine calculations.....	26
4.3 Water heater calculations	28

4.4 Refrigerator Diagram	30
4.5 Dish Washer	32
4.6 Towel Warmer	34
4.7 Water pump	36
4.8 Dryer Washer.....	38
4.9 Table of results	40

CHAPTER 5: AIR CONDITION DESIGN

5.1 Typical calculations	42
5.2 Table of result.....	46

CHAPTER 6: MAXIMUM DEMAND AND DIVERSITY

6.1 Diversity Factor	48
6.2 Diversity Factor for DB "F"	52
6.3 Diversity Factor for DB "B"	53
6.4 Diversity Factor for DB "G"	54

CHAPTER 7: SUPPLY CABLES

7.1 Protection and Isolation	56
7.2 Distributio board Design	56
7.3 Supply cables to DB "G"	56
7.4 Supply cables to DB "B".....	58
7.5 Supply cables to DB "F"	60

CHAPTER 8: TELEPHONE DESIGN

8.1. Introduction.....	63
8.2 Definitions and terms.....	63
8.3 Earthing	65
8.4 Installation of the access cable	66
8.5 Installation of the conduits	66
8.6 Conduit schematics	68

8.7 Telephone wiring	68
8.9 Drawing schematic	69
CHAPTER 9: FIRE ALARM SYSTEM	
9.1 Introduction.....	71
9.2 Manual fire alarm system.....	71
9.3 Automatic fire alarm system	71
9.4 Equipment	71
9.5 Design.....	73
9.6 Cables used.....	73
CHAPTER 10: INTRUDER ALARM SYSTEM	
10.1 Introduction.....	75
10.2 Main parts of the system.....	75
10.3 Design Zoning	77
10.4 Equipment used	77
CHAPTER 11: TELEVISION INSTALLATION	
11.1 Introduction.....	79
11.2 Circuit diagram.....	80
CHAPTER 12: LIGHTNING PROTECTION SYSTEM	
12.1 Introduction.....	83
12.2 Installation	83
12.3 Effects of lightning strike	83
12.4 Schematic diagram.....	84
CHAPTER 13: MATERIALS AND COSTING	
13.1 Introduction.....	86
13.2 The analytical method.....	86
13.3 Tables	87
13.4 Costing evaluation	94

CHAPTER 14: INSPECTION AND TESTING

14.1 Introduction.....96
14.2 TESTING98

CONCLUSIONS99
REFERENCES100
APPENDICES101

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SUMMARY

Project Title: DESIGN OF THE ELECTRICAL SERVICES OF A
LUXURY HOUSE

Student: Neophytou Marios

The purpose of this project is to design electrical services in a luxury house. The whole project must be carried out abiding by all the safety rules, in order to provide a safe working environment.

The electrical design of the building is carried out according to IEE regulations of the 16th edition.

For the telephone installation, CYTA regulations were considered.

The design of the electrical services of the house is explained in the main body of the report. At the end of the report appendices are included giving specifications for the devices and equipment used. Finally, detailed architectural drawings are provided, showing the location of the different equipment.

INTRODUCTION

The objectives of this project are:

- Power
- Lighting
- Telecommunication
- Data distribution

Terms and conditions:

1. Architectural drawing will be provided.
2. The phase supply 415V, 50Hz and TT earthing system must be used.
3. The IEE regulation 16th edition and all related local EAC conditions of supply should be considered.
4. Levels of illuminations must be in according with the CIBS code.
5. Telecommunications must confine with CYTA requirements.
6. In the design of the specialized services all appropriate standards and regulations must be considered.

Distances shown on the schematic diagram include:

- | | |
|----------------------------------|-------|
| 1. Height of distribution board | =1.6m |
| 2. Height of cooker unit switch | =1.5m |
| 3. Height of water heater switch | =1.6m |
| 4. Height of socket outlet | =0.5m |
| 5. Height of switches | =1.6m |

TO MY FAMILY

1.1. Introduction

Illumination in
areas need different
amount of light

The reasons are:

- Safety
- Productivity
- Comfort
- Accuracy
- Sales Promotion

1.2. Definitions

a) Luminous flux
radiated in
unit

b) Luminous flux
lumens
containing

c) Quantity of
time during
hour

d) Illuminance
surface of the

e) Maintenance
installs
expressed in

Chapter 1 Illumination

CHAPTER 1

ILLUMINATION DESIGN

1.1. Introduction

Illumination is the process of lighting an area or an object. Different areas need different amount of light. In order to find out the right amount of light required, we use illumination design.

The reasons for having good illumination are very important, such as:

- Safety
- Production Efficiency
- Comfort
- Accuracy Improvement
- Sales Promotion

1.2. Definitions and units

- Luminous flux, F:** is the quality, which expresses the capacity of radiated power to produce visual sensation. The unit is the lumen, lm.
- Luminous Intensity, I:** in a given direction is the quotient of the luminous flux emitted by a source in an infinitesimal cone containing the given direction, and the solid angle of that cone.
- Quantity of light, Q:** is the product of the luminous flux and the time during which it is maintained. The unit is lumen per hour, lm/h.
- Illumination or Illuminance, E:** is the luminous flux reaching a surface per unit area of that surface. The unit is lm/m^2 .
- Maintenance Factor, Nm:** The ratio of illumination from dirty installation to that from the same installation when clean. It is expressed as a decimal.