

DIPLOMA PROJECT

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

BY

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**In partial fulfillment of the requirements
for the diploma of Technician Engineer
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Department of the**

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**DEDICATED TO MY
FAMILY AND ALL
MY GOOD FRIENDS**

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INTRODUCTION

This project has to do with the design of the Electrical Services of a luxury house. The objectives of this project is:

To design the complete electrical installation of a building which includes:

- a) Power
- b) Lighting
- c) Telephone installation
- d) Television installation
- e) Fire and burglar alarm systems
- f) heating and cooling

The whole installation is carried out in accordance to the following requirements:

- a) the 16th edition of the IEE wiring regulations
- b) EAC conditions of supply
- c) CYTA regulations

ASSUMPTIONS

- 1) Supply voltage: 240V – 415V, 50Hz, TT earthing system
- 2) Wiring method: PVC enclosed in conduit (method 3)
- 3) Earth conduit carries one circuit only so grouping factor $C_g = 1$
- 4) Ambient temperature is assumed 30C so ambient temperature factor $C_a = 1$
- 5) Thermal insulation is not used so insulation factor $C_i = 1$
- 6) External earth fault loop impedance = 1Ω
- 7) Height of first floor = 3m
- 8) Height of distribution boards from the floor = 1.5m
- 9) Height of switches from the floor = 1.5m
- 10) Height of socket outlets from the floor = 0.3m

CONTENTS

	Page:
Chapter 1: General on the electrical installation.....	1
Chapter 2: Illumination.....	6
Chapter 3: Lighting circuits.....	9
Chapter 4: Socket outlets.....	13
Chapter 5: Fixed appliances.....	17
Chapter 6: Peak storage heaters.....	27
Chapter 7: Airconditioning units.....	31
Chapter 8: Telephone installation.....	34
Chapter 9: Television intallation.....	40
Chapter 10: Burglar alarm.....	42
Chapter 11: Fire alarm.....	45
Chapter 12: Supply cables.....	47
Chapter 13: Costing.....	53
Chapter 14: Fault level calculations.....	57
Single line diagram.....	59
Conclusions.....	60
Appendices.....	61