HIGHER TECHNICAL INSTITUTE ELECTRICAL ENGINEERING DEPARTMENT DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES OF A LUXURY HOUSE

E. 1201

BY: EMILIOS ROTSIDES

JUNE 1999

HIGHER TECHNICAL INSTITUTE

· [Kpilo

# ELECTRICAL ENGINEERING COURSE

# **DIPLOMA PROJECT**

# DESING OF THE ELECTRICAL SERVICES OF A LUXURY HOUSE

**BY : EMILIOS ROTSIDES** 

.

JUNE 1999



## **DEDICATED :**

To all the people who helped me to complete the Electrical Engineering Course in Higher Technical Institute and **specially to my family**. Design of the electrical installation of a luxury house.

Project Report submitted by Emilios Rotsides, in part satisfaction of the award of Diploma of Technical Engineering of the Higher Technical Institute, Cyprus.

Project Supervisor : Mr Tasos Michael

Lecturer in Electrical Engineering HTI

Type of Project : Individual

June 1999



#### CONTENTS

#### INTRODUCTION

## **CHAPTER 1 : GENERALLY ABOUT LIGHTING**

1.1 THE VISUAL EFFECTS OF LIGHTING

1.2 LIGHT SOURCES

1.2.1 TYPES OF LIGHT SOURCES

1.2.2 LAMP CHARACTERISTICS

1.2.3 CONSTRUCTION

**1.4 OPERATION** 

# **CHAPTER 2 : LIGHTING CIRCUIT**

2.1 INTRODUCTION

#### 2.2 CIRCUIT DESIGN PROCEDURE

CALCULATIONS

## **CHAPTER 3 : POWER DESIGN**

**3.1 SOCKET OUTLETS** 

**3.2 CALCULATIONS** 

3.3 FIXED APPLIANCES

## **CHAPTER 4 : STORAGE HEATERS**

4.1 CALCULATIONS

## **CHAPTER 5 : LIGHTNING**

**5.1DEFINITIONS** 

#### **5.2 CREATION OF LIGHTNING**

# 5.3 EFFECTS OF LIGHTNING

- 5.4 LOCATION OF LIGHTNING
- 5.5 LIGHTNING PROTECTION SYSTEMS
- 5.6 HOW IT WORKS
- 5.7 MATERIALS
- 5.8 COMPONENT PARTS
- 5.9 METHODS TO PROVIDE PROTECTION
- 5.10 NEEDS FOR PROTECTION
- 5.11 BONDING
- 5.12 EARTH ELECTRODES
- 5.14 DOWN CONDUCTORS
- 5.14 CALCULATION FOR OVERALL RISK FACTOR

#### **CHAPTER 6 : SAFETY**

- 6.1 INTRODUCTION
- 6.2 PROTECTION FOR SAFETY
- **6.3 DEFINITIONS**

#### **CHAPTER 7 : INSPECTION AND TESTING**

- 7.1 GENERAL
- 7.2 VISUAL INSPECTION

#### 7.3 CONTINUITY OF RING FINAL CIRCUIT CONDUCTORS

## 7.4 CONTINUITY OF PROTECTIVE DEVICES

#### 7.5 INSULATION RESISTANCE

7.6 POLARITY TEST

# **CHAPTER 8 : COSTING**

## 8.1 IMPORTANCE OF PROPER COSTING

CALCULATIONS

APPENTICES