HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING COURSE

DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES OF A BUILDING

E.1416

PANAYIOTIS ANTONIOU

JUNE 2007

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PROJECT SUBMITTED BY
ANTONIOU PANAYIOTIS V.

TO THE DEPARTMENT OF THE ELECTRICAL ENGINEERING OF THE HIGHER TECHNICAL INSTITUTE
NICOSIA-CYPRUS

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DIPLOMA OF

TECHNICIAN ENGINEER
IN
ELECTRICAL ENGINEERING

JUNE 2007

PROJECT SUPERVISOR: Mr A. GEORGIOU
SENIOR LECTURER OF THE ELECTRICAL ENGINEERING DEPARTMENT, H.T.I.

Dedicated specially
to my parents for all their support
also to my sister
and my best friends

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SUMMARY

The purpose of the project is to examine and study the design of electrical services of a building. The whole design must be carried out with care and responsibility as it is directly involved with the safety of people, livestock and property.
The whole design must be carried out in accordance to the IEE wiring regulations 16th edition, EAC and CYTA regulations.

The design of the electrical services of the building is explained in detail to the various chapters of this project. The main body of the project is divided in 12 chapters in order to simplify the study of the project.
At the end of the project appendices are included giving specifications for the devices and equipment used.
And at the end detail architectural drawings are provided showing the locations of the equipment used.

INTRODUCTION

The building is consisting of a ground floor, a two floors and roof.
In the ground floor there is parking place and in the others floors are eight apartments four in each floor.

Objective and project

1. to design the complete installation of the building which includes the following:
   - Illumination design
   - Lighting design
   - Power design
   - Telecommunication design
   - Lightning protection design
   - Fire alarm system design

2. To provide all necessary diagrams schedule of materials and costing including labor.

Terms and Conditions:

1. Three-phase 415 VRMS 50 Hz, T.T. earthing system
2. Ze: external earth fault loop impedance = 1 Ω
3. Ca: Ambient temperature 30 degree Celsius
4. General Purpose PVC Copper
5. Method 3 cables in conduit
6. Architectural drawing will be provided
7. The IEE Wiring Regulations 16th Edition as currently amended and the local EAC conditions of supply must be complied with
8. The illumination design must be in accordance with the CIBS code
9. CUTA requirements to be taken into consideration

Distance show schematic diagram include:

Height of Distribution Board = 1,7m

Height of cooker unit = 1,2m

Height of water heart switch = 1,5m

Height of Double pole switch = 0,5m

Height of socket outlet = 0,5m

Height of switch = 1,5m