

HIGHER TECHNICAL INSTITUTE
ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DESIGN OF THE ELECTRICAL SERVICES
OF HOTEL APARTMENTS

ARISTI MARIOS

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by

ARESTI MARIOS

Project Report

Submitted to

the Department of the *electrical* Engineering

of the Higher Technical Institute

in partial fulfillment of the requirements

for the Diploma of

TECHNICIAN ENGINEERING

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HIGHER TECHNICAL INSTITUTE	PROJECT NO. 2551
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TO

THE PERSONS THAT I LOVE MORE THAN MY OWN LIFE , MY WIFE AND MY DAUGHTER , AND TO MY DEAR PARENTS :

For all their help which they offered me with love and understanding throughout my years at the H . T . I and especially throughout this project .

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**ARESTI MARIOS
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ABSTRACT

This project deals with the design of the electrical services of hotel apartments .

The electrical services are the lighting , power and telecommunication installation .

It is based on the fundamental regulations of the IEE and

Provides full analysis of results and design procedures together with all the necessary informations , pictures , cataloges and aarchitecdure drawings regurding the project design given in each appendix respectively with each chapter .

CHAPTER 1 : This chapter deals with the illumination designn and in accordance with the CIBS code the level of illumination of the various areas was found :

CHAPTER 2 : This chapter deals with the earthing .

CHAPTER 3 : This chapter deals with the electrical circuit designs that means with the power and lighting circuits .

CHAPTER 4 : This chapter deals with the distribution boards ratings and interconnecting cables .

CHAPTER 5 : This chapter deals with the balancing and diversity .

CHAPTER 6 : This chapter deals with the fault level calculations .

CHAPTER 7 : This chapter deals with the telephone distribution design ofthe hotel apartments in accordance with CYTA requirements .

SYMBOLS AND ABBREVIATIONS

MDB	Main distribution Board
DB	Distribution Board
AC	Alternative Current
DC	Direct Current
MDC	Main Distribution Case
DC	Distribution Case
BS	British Standard
IEE	Institution of Electrical Engineers
EAC	Electricity Authority of Cyprus
MCB	Miniature Circuit Breakers
MCCB	Moulded Case Circuit Breakers
RCCD	Residual Current Circuit Breakers
PCV	Polyvinyl Chloride
CPC	Circuit Protective Conductor
SWA	Steel Wire Armoured
EFLI	Earth Fault Loop Impedance
CIBS	Chartered Institute of Building Services
DBM1	Distribution Board of apartment M2
S/O	Socket Outlet
M	Meter

Introduction

This project deals with the design of the Electrical services of hotel apartments situated in Paphos .

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

- (1) The 16th edition of the IEE wiring regulations and additional local regulations .
- (2) EAC conditions of supply .
- (3) CIBS code for interior lighting .
- (4) CYTA regulations .

ASSUMPTIONS

- (1) Supply voltage : 415Vrms 50Hz , TT earthing system .
- (2) Wiring method : PVC conduit (method 3) .
- (3) Cables : (a) PVC copper cable single core .
(b) PVC / SWA / PVC .
- (4) Each conduit carries one cct only , so grouping factor : $C1 = 1$
- (5) Ambient temperature is assumed to be 30 C , so ambient temperature factor $C2 = 1$.
- (6) Thermal insulation is not used , so insulation factor $C3 = 1$.
- (7) Height of distribution boards from the floor= 1.5m .
- (8) Height of switches from the floor= 1.5m
- (9) Height of socket outlets from the floor= 1.5m