

H. T. I

ELECTRICAL ENGINEERING

COURSE

DIPLOMA PROJECT

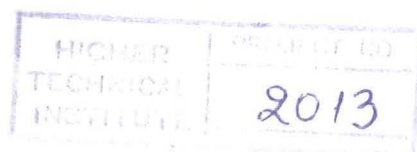
DESIGN OF THE ELECTRICAL SERVICES

OF A CO-OPERATIVE BANK

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This project deals with the electrical installation design of a co-operative bank situated in Limassol.

The design consists of the illumination design, some theory on the approach followed for the electrical design, sample calculations, all the results involved and analytical costing.

The parts stated above are followed by all the relevant information used during the procedure of the design (Appendices).

The bank is consisted of a basement, a ground floor, a mezzanine, first floor, second floor and a roof. All the interior spaces were illuminated in accordance to C.I.B.S. code and with the aim that comfort and safety would be provided.

The electrical installation part was designed in such a way to provide safety, easy maintenance and ease in any future changes.

Each floor is consisted of only lighting circuits and socket outlets circuits either ring or radial. All these circuits are listed in chapter 5.

The building after consulting the mechanical engineer is to be provided with a central airconditioning system. Since the installation of the relevant machinery of the airconditioning system is completely independent from the other electrical installation

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(in the case of this project) and concerns the mechanical engineer contractor the electrical provisions made in this project are:

The necessary distribution boards as well as the heavy duty trunking for the provision of supply is provided.

Spare space in the EAC room as well as in the distribution rooms is also provided for the extra distribution boards.

The mechanical contractor is responsible to the design and provide the necessary wiring.

The building is also provided will three elevators. In each one of the three corresponding lift rooms a distribution board with the corresponding supply trunking is provided. The wiring shall be done by the lifts' manufacturers. The supply for the lifts will be from MDP and the necessary provisions on the panel as well as on the bus-bars are made.

### Conditions and Terms.

1. All the architectural drawings will be provide.
2. Voltage supply 415/240V, 50Hz with TT earthing system.
3. IEE and EAC regulations must be complied with in the design of this project.
4. In the lighting load design the C.I.B.S. code must be considered.

### Assumptions

In order to provide ease in the construction of these project the heights stated below

are considered:

- (a) All the distribution boards are 1,7m above floor
- (b) Switches are 1,65m above floor
- (c) Socket outlets as well as skirting trunking are 0,4m above floor except from ground floor where part of it is situated on bench
- (d) The wall lights are 2m above floor

For calculation purposes the values below were considered:

- (a) External earth fault loop impedance = 1 Ohm =  $Z_e$
- (b) Grouping factor:  $C_g = 1$
- (c) Ambient temperature: 30° C,  $C_a = 1$
- (d) Thermal insulation factor:  $C_i = 1$ .

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