

**ELECTRICAL INSTALLATION DESIGN FOR 13 STOREY
APARTMENT BLOCK**



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ACKNOWLEDGEMENT

In the name of ALLAH S.W.T, the Most Beneficent, The most Merciful. Foremost, all praises due to Allah for the entire incredible gift endowed upon me and for giving me the health and strength to complete this final project.

I would like to take this opportunity to express my most grateful appreciation to my supervisor Ir Amir Bin Mohd Saad for his guidance, advice and willing in sharing the knowledge toward the completion of this final project.

Not forget, special thanks to my lovely friend who involved in completing this final project. Also thanks to everyone has contributed directly and indirectly throughout the preparation of this thesis and this project. Last but not least, the special thanks to my parents and family for their faith and prayers.

ABSTRACT

This project is about design of electrical installation of 13 storey apartment block which has been prepared with reference to wiring regulations and there are interpretations of particular technicalities. The scopes of the design are calculation of power consumptions, estimate of range of power, lighting installation, MATV (master antenna TV) and telephone.

As far as possible all information accords with the requirements of BS 7671: 2001 Requirements for Electrical Installation, the IEE Wiring Regulations. Issued jointly by British standards institution, the Electricity Regulation, Federations of Malaysia, and Tenaga Nasional Berhad (TNB). Besides that every item of equipment, which forms parts of an electrical installation, must be designed and manufactured so that it will be safe to use by consumer.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The 13 storey apartment block is a multi unit dwelling made up of several apartment and it is a high-rise construction. The overall area covers by this building is 1933 m² and it consists of several layouts such as apartment, tadika, surau, telephone room, pump room, main switch board (MSB) room, parking area, and playground. The total area of each apartment is 146.2 m² and there are 100 apartments in this building block. This apartment consists of bedroom 1, bedroom 2, bedroom 3, bathroom 1, bathroom 2, bathroom3, living room, dining, kitchen, drying yard and utility and a figure 1 is show apartment layout drawing. The electrical design involve in apartment is lighting and socket outlet. The apartments block also have a parking area and playground which the size of area are 2500 m². The design needs at both areas are street lighting. Tadika, telephone room, pump room, main switch board (MSB) room and surau cover area of 292.4 m², 10.44 m², 146.2 m², 17.04 m² and 292.4 m² respectively. The main electrical designs in this area are lighting and socket outlet design. Another required for the layout includes substation design, the cable size needed to optimize the distribution of power to the customer by considering the cost and without sacrificing the protection of the customer. This design was comply with the requirements such as:

- The Regulation for the electrical equipment of building (current edition) as issued by the institution of electrical engineer, London
- The electricity regulation, federations of Malaysia
- The British Standard Electrical Codes of Practice
- Jabatan Bekalan Elektrik dan Gas (JBE&G)

This building also was installed with two lifts which the power of each of lifts is 15kW and it can carry the consumers at least 20 persons or load weight is least than 2000kg at certain times. Whereas, in this project, the pump also was installed in pump room. The power for wet riser pump control panel and suction pump control panel are 70 kW and 10 kW.