STUDY CASE OF LIGHTING SYSTEM AT FACULTY OF ELECTRICAL ENGINEERING IN UITM SHAH ALAM

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ABSTRACT

It is important to note that lighting systems consume most of electrical energy supplied in a building in Malaysia. In UiTM Shah Alam, most of the fluorescent lamps always turn on 24 hours per day at the corridor site. Even though the corridor site is bright on the day light, the fluorescent lamps still turn on. These contribute to energy wastage. Other than that, some of the places use too much fluorescent lamps to light up the places and these make the places become too bright and this will contribute energy wastage because this contribute more than enough energy to light up the places. There are two ways the wastage energy can be reduced. Firstly is by estimating the number of fluorescent lights that are suitable with the places. Secondly is by using a system that can control the lighting system while maintaining a comfort and safe environment in the building. This paper will presents about a lighting system focus on fluorescent lamps at Electrical Faculty in UiTM Shah Alam especially at electrical machine lab. Also reported in this paper is a control system that can control the lighting system in UiTM Shah Alam.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Lighting plays a significant part in many of our day to day activities and there is a considerable range of lamp available to suit the various activities taking place. Selecting the correct type of lamp is therefore important if it is to meet the need of a particular activity. The efficiency of the lighting systems is also a major consideration. [6]

The low pressure mercury vapour lamp is better known as fluorescent lamp and they use the effect of phosphorescence to produce light. Two cathode filaments coated with electron emissive material are sealed into a glass tube which contain gases such as argon and crypton with small quantity of liquid mercury, creating a low pressure region. The inside wall of the lamp is phosphor coated to produce the desired colour such as white, warm white and cool white. Figure 1.0 shows the fluorescent light and the data of fluorescent lamp is shown below:

- Efficacy range between 38 and 104 lumen per watt.
- Average life 12 000 hours.
- Wide range of color option available.
- Low operating temperature.
- Wide range of application in domestic, commercial and industrial premises.
- Dimming controls available.
- Lamp designation - MCF. [6]