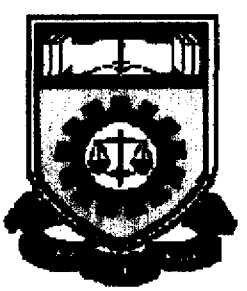
ENERGY AUDITING IN
AN OFFICE BUILDING

Thesis presented in partial fulfillment for the award of the
Bachelor in Electrical Engineering of
UNIVERSITI TEKNOLOGI MARA



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Abstract

Energy is vital for the economic development of countries and for improving our living conditions. Energy efficiency is a process involves in using the most efficient technology, to achieve specific task, thus reducing energy consumption.

The study focuses on the existing Heat Ventilating Conditioning (HVAC) and Lighting system of the Menara Perkeso. Opportunities for improving the energy consumption were identified and evaluated. The economic analysis was carried out to determine the payback period.

Good energy management should result in a reduction of usage by eliminating wastes and increasing efficiency. Energy efficiency has also several other benefits including the reduction of pollution to the environment.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

An industrial country will consume all sorts of energy sources to groom their economy. Electrical energy is the most commonly used. In the development country like Malaysia, efficiency energy usage is called to promote economic growth [1]. Recently, Tenaga Nasional Berhad (TNB) has started to promote energy efficiency technologies in the country. The body encourages consumer to invest their money wisely on energy efficiency appliances and equipment.

The shift from the supply side to demand side by utilities has been implemented to save energy [2]. Demand Side Management (DSM) programs are developed to improve the efficiency of electricity usage.

Besides this, recent advancement and technology in electrical product have increased the opportunities to cut the energy cost. In this project, energy efficient opportunities in Heat Ventilating Air Condition (HVAC) and lighting systems are suggested for existing building.

Light levels were measured and the type of lamp used was examined. The energy conservation opportunities include delamping, installation of electronic ballast, prismatic diffusers and proper lighting maintenance.

Efficient energy opportunities in air conditioning systems are also suggested. An energy audit is carried out to identify areas where energy consumption by air conditioning equipment has been performed.