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APPLICATION OF ENERGY EFFICIENCY IN GREEN BUILDING

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ABSTRACT

In this sophisticated there are many buildings were built by using the latest technology in line with the government's vision to make Malaysia as a develop nation by the year 2020. Therefore, government has begun to realize the importance of green building in the future. In Malaysia, Green Building Index is a Malaysia's industry established by PAM (Persatuan Arkitek Malaysia) and ACEM which is responsible for evaluating the performance of the building from time to time in accordance with the criteria and rating tools that has been set out besides to promote sustainability in the built environment and raise awareness among Developers, Architects, Engineers, Planners, Designers, Contractors and the Public about environmental issues. The criteria that are need to be evaluate as a green building are sustainable site, water efficiency, energy efficiency, indoor environment quality, material resources and innovation.

Not all buildings in Malaysia apply energy efficiency. Energy efficiency is one of the features that have been set by GBI to make the building more energy efficient and at the same time enable to save energy. The research aim is to study the application of energy efficiency in green building. To achieve the research objectives, several methods have been used by researcher to gather information. The methods used by researcher are primary sources and secondary sources. For primary sources, researcher chooses to used observation, direct communication (interview session) and survey questionnaire to gain information. Besides that, for secondary sources, researcher gets information from books, articles, academic journals, conference proceedings, previous research and official website. Therefore, 3 buildings have been selected as case studies which are Diamond Building, Leo Building and Complex Perdana Putra. Results obtained for all of the sessions with responsible person such as Energy Manager, Executive Officer and Project Coordinator and Maintenance Team will be used as a source of information. 60 of samples survey forms were distributed in

three buildings. Purpose of questionnaire distributed in each building is to determine whether the performance of the building is very good, good, fair and poor.

By having questionnaire, it will help researcher to complete the research. Results obtained from the questionnaire results showed that each building recorded a percentage between 31% -37% for each element of application energy efficiency in green building.

As conclusion, applications that are used to save energy are very efficient and effective. Therefore, commercial buildings should try to apply method that has been used in green building to save energy for the sake of prosperity in the future.

CHAPTER 1

INTRODUCTION

1.1 RESEARCH BACKGROUND

Based on Green Building Index Sdn Bhd (2013) green building focus on increasing the efficiency of resources use of energy, water, and materials while reducing building impact on human health and the environment during the building's lifecycle, through better sitting, design, construction, operation and removal. Green Building should be designed and operated to reduce the overall impact of the built environment on its surrounding. Other than that, for future and way of live about five (5) years to come, green building will give positive social and environmental ramification that assert commitment to the environment. The Governor's Green Government Council (2011, p.3) as United State agency which is embed environmental sustainability state there are four (5) principle for green building which are site plan, water efficiency, energy and environment indoor environmental quality and materials and resources. However, Cottrell (2011) give in wide perspective there are two (2) advantages from green building which are environmental benefits, economic benefits and social benefits. Save water, energy and material resources in the construction and maintenance of the buildings also is the concept of green buildings envisions a new approach which can reduce or eliminate the adverse impact of buildings on the environment and occupants.

Electricity is a very important source in a building. In this era of globalization, there many new development where is apply advanced technologies. Similarly, the constructions of green buildings are increasingly attracting the attention of developers and contractors. Therefore, with the construction of sustainable green buildings, so that application of energy efficiency must be practice.