PUBLIC OPINION OF HOSPITAL CAMPUS TO RESPONSE TO LOW CARBON CITY FRAMEWORK CRITERIA

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A project report submitted in partial fulfilment of the
requirements for the award of the degree of
Master of Engineering (Construction Management)

Faculty of Civil Engineering
Universiti Teknologi Malaysia

JANUARY 2016

This project report is dedicated to my lecturer, my parents and my friends

ACKNOWLEDGEMENT

First and foremost, I have to thank my parents for their wholehearted support. They have cared for me throughout all the semesters.

I would like to sincerely thank my supervisor, Dr. Rozana, for his guidance and support throughout this study, and especially for his confidence in me.

To Lim Liang Yee, thank you for your hospitality and providing me food and internet when I needed it most. And to all other friends as well, I cannot list all the names here, but you all have my gratitude.

ABSTRACT

Low Carbon City Framework (LCCF), is a system developed by Ministry of Energy, Green Technology and Water (KeTTHA) as a guideline and performance measurement to build a low carbon city. The system is made to give a guideline to all related parties at all levels to lower carbon dioxide emission. The LCCF guideline also has a carbon calculator to develop a baseline for carbon dioxide emission and achieve the intended target, which to reduce the carbon dioxide emission to the GDP by 40 percent by 2020 with comparison to 2005. To conduct a research on a city is costly and lengthy considering its scale. Therefore, the research is carried out in a hospital campus. A hospital campus is a hospital that has a similar system as a small city which consisted with building and infrastructures. The interest of this study is to investigate opinion of the public in regards to the performance of hospital in response to LCCF criterias on carbon reduction. With the feedback/results obtained from the public, it is recommended that the administration upgrade their policy to a more environmental friendly version and other involvement of the other ministry as the hospital has no direct control over some factors mentioned under some criterias.

ABSTRAK

Rangka Bandar Karbon Rendah (LCCF) merupakan satu sistem yang dibuat oleh Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA) sebagai garis panduan dan pengukuran prestasi karbon dioksida untuk membina sebuah bandar rendah karbon. Sistem ini dibuat untuk memberi garis panduan kepada semua pihak yang berkaitan di semua peringkat untuk bantu mengurangkan pengeluaran karbon dioksida. Garis panduan LCCF juga mempunyai kalkulator karbon untuk mewujudkan garis perbandingan untuk pelepasan karbon dioksida dan mencapai sasaran yang ditetapkan, iaitu untuk mengurangkan pelepasan karbon dioksida kepada GDP sebanyak 40 peratus pada 2020 berbanding dengan tahun 2005. Untuk menjalankan penyelidikan ke atas sebuah bandar adalah mahal dan memakan masa panjang kerana skala Bandar yang besar. Oleh itu, kajian ini akan dijalankan di kampus hospital. Sebuah kampus hospital adalah hospital yang mempunyai sistem yang hampir sama dengan sebuah bandar kecil yang terdiri dengan bangunan dan infrastruktur. Objektif kajian ini adalah untuk menyiasat pendapat orang ramai dalam hal prestasi hospital dalam kriteria LCCF pengurangan karbon. Dengan maklum balas / keputusan yang diperolehi daripada orang ramai, penyelidikan yang lebih terperinci adalah dicadangkan ke hospital megenai LCCF. Juga dicadangkan bahawa pentadbiran menaik taraf polisi mereka kepada versi lebih mesra alam sekitar dan penglibatan kementerian yang selain daripada hospital kerana hospital tidak mempunyai kuasa ke atas beberapa faktor yang dinyatakan di bawah beberapa kriteria.

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INTRODUCTION

1.1 Background of study

Global warming is one of a phenomena that is most discussed in the current times. With the technology advancement of humans, the increased amount of greenhouse gases has contributed in global warming, absorbing heat and gradually raising the temperature of earth. It has caused a lot of problems to the human society, eg: heat discomfort, rising sea levels due melting ice, more intense energy usage for cooling, indirect economic damage and much more [1].

With the effect of global warming throughout the world, the global society has increased the awareness about the cause of global warming, greenhouse gases. As urban development are unavoidable, many countries understand the needs to have policies and regulations to ensure a sustainable economic development to protect the natural resources and environment and to reduce the output of greenhouse gases [2]. Many companies has adopted the term carbon footprint, a measure of carbon equivalent output of a product or service to remind the society to help contribute in global warming [3].

The Malaysian Government is willing to contribute on global warming issues, and has announced its commitment to the world in the 15th United Nations Framework Convention on Climate Change in Copenhagen, Denmark on December 2009. The Malaysian's Prime Minister has promised to reduce the carbon dioxide emission to the GDP by 40 percent by 2020 with comparison to 2005 [4].

In Malaysia, the population has increased from 18million in 1990 to 27.6 million 2010 [5] stated that a 53% increase of population. Other than that, the urbanization rate in Malaysia is increasing steadily as Malaysia is becoming more developed. It has increased from 42% (1990) to 61.8% (2010) and it is expected to grow to 75% in 2020 [6].

The United Nation report states that the greenhouse gases is contributed from Industrial, Agriculture, Deforestation and Urban Activities with the percentage of 19%, 14%, 17% and 50% respectively [7]. With the rapid growth of urban cities in Malaysia, it is dire that Malaysia to devise a plan in contributing to global warming.

To achieve this goal, Malaysia are to successfully acquire Low Carbon City Framework (LCCF) technology and implement it to reduce the environmental effects to the world as urban development are responsible for 50% of the greenhouse gases emission [7] stated that to achieve LCCF status on a city is not a simple matter as a city has many complex elements needed to be researched and taken care of. Therefore, a smaller scale research is conducted on hospitals, which is a similar but smaller scale of a city.

In Malaysia, hospitals has a neutral behavior towards low carbon initiatives. The average usage of energy per year for hospitals in Malaysia is 19311MWh per year, which is a big amount [8]. With some effort on applying green technology in hospitals, the energy usage can be reduced by a decent and contribute in terms of carbon footprint.

Once the hospitals succeeded to achieve LCCF technology, they will be a role model for the implementation of LCCF in Malaysia.

1.2 Problem Statement

Global warming is phenomena caused direct and indirect damage to the world. In efforts to reduce the effects of global warming, the emission of greenhouse gases are to be reduced. Malaysia has the promised the 2020 goal of to reduce the carbon dioxide emission to the GDP by 40 percent by 2020 with comparison to 2005. To achieve this, Malaysia is to build or equip most cities with LCCF technology. However, a city is very large, complex and expensive to be researched and analyzed in one go. Therefore, the first step suggested is first to research the correct, sustainable and efficient steps to a hospital, as the hospital includes many infrastructures such as buildings, roads, water treatment plant, sewerage treatment plant, etc. a small scale city in terms of structure, the main principles of developing a LCCF status city can be found and adopted.

1.3 Aim Of Research

To research and understand the public perspective of hospital performance towards LCCF, then propose a way forward towards improvement.

1.4 Objectives

The main aim is to investigate the opinion of the public in regards to the performance of hospital in response to LCCF. The objectives of this study are as follows:

- To identify LCCF criterias that are suitable for public opinion.
- To investigate opinion of the public in regards to the performance of hospital in response to LCCF.
- To observe and list the existing problems based on the results obtained from the public.
- Propose a way forward to improve the performance of hospital in response to LCCF

1.5 Scope of study

The research is carried out only on Hospital Sultan Aminah, Johor Bahru, Johor due to close proximity to the researcher base. Hospital Sultan Aminah is chosen because it is among all the older hospital which have historical building and also newly constructed building, equipped with facilities which is equivalent to a small scale city. In this study, the ordinary people that have been to Hospital Sultanah Aminah will be the respondents. This study used questionnaire survey as research instruments. Other hospitals will not be considered in this study. LCCF developed by Kementerian Tenaga, Teknologi Hijau dan Air (KETHA) as it is suitable for measuring a sustainable city. Some LCCF criteria were not selected and used in this research as they require inside knowledge where only technical staffs such as a civil engineer of a hospital or a technician possesses.

1.6 Significance of study

Although LCCF has been established, it is not practiced throughout Malaysia. With the study, the performance of the hospital in regarding carbon dioxide reducing can be evaluated. From there, a remedy or suggestion can be proposed to improve the current situation, where this may support any future study regarding LCCF in Malaysia.

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