

SUSTAINABLE PEDESTRIAN ROUTING WITHIN UMP GAMBANG

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Thesis submitted in fulfilment of the requirements

For the award of the degree

Of Bachelor Civil Engineering

Faculty of Civil Engineering and Earth Resources

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SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor (Hons.) of Civil Engineering

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I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged. The thesis has not been accepted for any degree and is not concurrently submitted for award for other degree.

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This hard work is dedicated to my beloved family and my precious friends who love me and support me during my whole journey of education at University of Malaysia Pahang.

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ABSTRACT

In order to encourage university in becoming a with world-class technology university, some improvement must be done within campus especially the walkways, by introducing sustainable routing within campus. The main reasons why this research focusing on the walkways are to provide convenience walkway passage for the campus community to walk and encourage further use of non-motorized transportation within the campus as well as making UMP Gombang as a sustainable campus. A sustainable campus integrated green elements and nature to provide healthy environment as well as spaces that support social integration among the community. The objectives of the study are to identify popular origin – destination of community within UMP Gombang, to identify the demand of walkway users within UMP Gombang and to identify the requirement needed by community for routes sustainability in UMP Gombang. 1000 set of questionnaires were distributed to 1000 respondents from UMP communities to get their respond and opinions. The questionnaire survey parameters include personal details of respondents within UMP Campus Gombang, the condition of the walkways, facilities, and personal safety while using the sidewalk, options for some improvement of the walkways, and community experience as pedestrian. The results of this study shows that most respondents age are between 18-27 years old, 91.9% respondents were using the walkways, the most mode of transportation is car and followed by walking, the origin and destination that most frequently used by UMP communities are from Bus Stop to Blok W, Residential College 3 to Etim Building and Cafeteria 3 to Cariff Building because it is the main route to go to the classes, office, cafeteria and mosque. For male respondents either staffs or students, they usually used the walkway to go to the mosque and cafeteria more than female respondents who daily used for class and college, the respondents majority used walkways 2 to 4 times per day. Then, a majority respondent wants to upgrading the walkways by replacement of roof and adding more lighting. In conclusion, this study shows that pedestrian within UMP Campus really need improvement for walkways especially for the female students who always used the walkways.

ABSTRAK

Dalam usaha untuk menggalakkan universiti menjadi sebuah universiti teknologi yang bertaraf dunia, beberapa penambahbaikan perlu dilakukan di dalam kampus terutama laluan pejalan kaki, menjadikan sebagai laluan lestari didalam kampus. Sebab utama kajian ini memberi tumpuan kepada laluan pejalan kaki adalah untuk menyediakan laluan yang selesa bagi warga kampus bergerak dalam menjalankan aktiviti seharian dan menggalakkan penggunaan pengangkutan tidak bermotor di dalam kampus. Sebuah kampus lestari haruslah bersepadu dengan elemen hijau dan alam semula jadi untuk menyediakan persekitaran yang sihat dan juga ruang yang menyokong integrasi sosial di kalangan masyarakat. Objektif kajian ini adalah untuk mengenal pasti asal dan destinasi yang sering digunakan oleh pengguna laluan dalam UMP Gambang, untuk mengenal pasti perancangan laluan sebagai medium dalam meningkatkan kelestarian kampus dan mencadangkan keperluan yang diperlukan oleh pengguna laluan pejalan kaki untuk kemampuan laluan di UMP Gambang. Terdapat 1000 set soal selidik telah diedarkan kepada 1000 responden yang terdiri dari warga kampus UMP untuk mendapatkan tindak balas dan pendapat mereka. Parameter kajian soal selidik termasuk butir-butir peribadi responden dalam UMP Kampus Gambang, keadaan laluan pejalan kaki, kemudahan dan keselamatan diri semasa menggunakan laluan pejalan kaki, pilihan untuk beberapa penambahbaikan laluan pejalan kaki, dan pengalaman pengguna sebagai pejalan kaki didalam kampus. Keputusan kajian ini menunjukkan bahawa kebanyakan responden adalah berusia antara 18-27 tahun, 91.9% dari keseluruhan responden telah menggunakan laluan pejalan kaki, pengangkutan yang paling banyak digunakan oleh warga kampus adalah kereta dan diikuti dengan berjalan kaki, tempat asal dan destinasi yang paling kerap digunakan oleh warga UMP adalah dari Perhentian bas untuk Blok W, dari Kolej kediaman 3 ke Bangunan Etim dan dari Kafeteria 3 ke Bangunan Cariff kerana ia adalah laluan utama untuk pergi ke kelas, pejabat, kafeteria dan masjid. Kebanyakan responden lelaki sama ada kakitangan atau pelajar, biasanya menggunakan laluan untuk pergi ke masjid dan cafeteria, manakala responden wanita menggunakan laluan pejalan kaki setiap hari untuk ke kelas dan kolej kediaman, majoriti responden menggunakan laluan pejalan kaki 2 hingga 4 kali sehari. Kemudian, permintaan tertinggi bagi menaik taraf laluan pejalan kaki yang telah dipilih oleh responden ialah penggantian bumbung dan menambah lebih banyak lampu jalan di sepanjang laluan. Kesimpulannya, kajian ini menunjukkan bahawa pejalan kaki di dalam Kampus UMP benar-benar memerlukan penambahbaikan untuk laluan pejalan kaki terutama bagi pelajar perempuan yang selalu menggunakan laluan pejalan kaki.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Universiti Malaysia Pahang (UMP) starts with Universiti Teknologi Malaysia Campus Pahang (UTM-KCP) operating in Bandar Indera Mahkota, Kuantan since 1999. On the instruction of the Ministry of Education, UTM-KCP has taken over by KUKTEM on 1st of May in 2002 and academic session started with taking a total of 307 students on May 30, 2002. To accommodate the growing number of students, KUKTEM has moved to a more strategic and conducive location in Bandar MEC, Gambang on 24 April 2003. The campus is located approximately 30 kilometres from Kuantan has an area of 126 acres² and is located near the East Coast Highway. After 5 years of operation, KUKTEM upgraded to Universiti Malaysia Pahang (UMP) from 1st February 2007, however, the program of study does not change according to the goal of achieving its objective of 10,000 to 15,000 students.

Statistics of the UMP population for year 2015 is 7210 people for students and 1800 people for staffs. The number of students who reside in campus is 6350 people for both gender of students and the rest outsider. The selected students qualify residing in the campus accordance with the number of merits obtained by students and highest priority is given to first year students. To encourage university to be more developed in line with the vision to become a world-class technology university and mission technology in a culture of creativity and innovation, is need to do some improvement within campus especially its walkways, by introducing sustainable routing within campus as well as making campus as sustainable campus is needed. A sustainable

campus is defined as a campus characterized by its operations, social and economy, which promote the long term survival of the environment and our own social structures (Mohdet al. (2011)).

UMP Campus have been designed to be equipped with adequate facilities for teaching and learning, however, the existing physical and spatial environment does not fulfil the functional needs of the sustainable campus community. Thus, they are not considered sustainable as teaching, learning and working environment. An important element in ensuring the establishment of sustainable development on campus is encouraging the use of non-motorized transport, such walking and bicycling as a medium of movement among the university community is also known as sustainable transportation. The sustainable transportation does not provide huge environmental implications to society (Jauch et. Al, 2009).

Based on observation, there are many paths commonly used by the students which from Cafeteria 3 to Cariff building, from Residential College 3 to Etim building, from bus stop to Block W, sidewalk alongside the road and from Residential College 3 to Block X, Y and Z as shown in Figure 1. To make a sustainable campus, the most important is to ensure existing path enable safe access for all pedestrian and cyclist. All the current places, the condition is good with the yellow lines but in terms of sustainability, it is lack of accessibility to the facilities area, causing inconvenience to the users particularly during the rainy seasons, when the students' movement will be scattered to avoid raining.

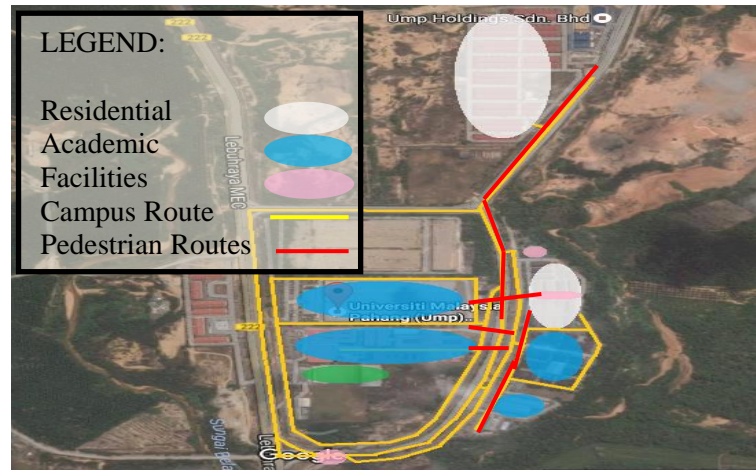


Figure 1.0: UMP Site Plan

1.2 PROBLEM STATEMENT

The main reasons this research focusing on the walkways because to provide convenience among the campus community to walking and encourage further use of non-motorized transportation within the campus. In UMP Campus, the number of student registered vehicle is 1063, while the staffs are 1769 people. There are 3 types of mode transportation used by UMP community within campus which are car, motorcycle and bicycle and increased every year. Although, the first year students were prohibited to bring their transport but senior students can bring their transport in spite of some of them reside in the campus. In this study, a sustainable campus integrates green elements and nature to provide healthy environment as well as spaces that support social integration among the community.

A pedestrian is any person who is traveling by walking from origin to the destination and considered as a pedestrian when running, jogging, sitting or lying down in the roadway. Road traffic crashes kill about 1.24 million people each year. More than one fifth of these deaths occur among pedestrians. Road accidents involving pedestrians should not be accepted because it is something that can be avoided. Everything depends on the attitude of drivers, such as speeding, alcohol use by drivers, lack of safe infrastructure for pedestrians and inadequate visibility of pedestrians. Other than the issue of accidents, the issue of sustainability has been around for a long time where, an

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