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The Case Study of 30 years UiTM Pahang's Development as a Sustainable University Campus

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Abstract: On 22 August 1988, Universiti Teknologi MARA (UiTM) Pahang was announced to be a permanent campus for ITM Cawangan Pahang by the Menteri Besar, Y.B. Dato Seri Haji Khalil Yaakob. The state government of Pahang had allocated 1000 acres of land in Bandar Pusat Jengka, in the Maran district, to be the site for the permanent campus to be built. The process in building the campus involved two phases, the initial phase to accommodate 2500 students and eventually the campus, with its full facilities and infrastructure, to be able to accommodate 4500 students. Recently, UiTM Pahang has achieved its 30 years of the development in the academic as well as in providing facilities and infrastructures. This study focuses on the development of facilities and infrastructures of UiTM Pahang as a sustainable campus. Based on the location of UiTM, the campus is portrayed by the sustainability with the nature as it is located in the agricultural area. The aim of this research is to study the construction in UiTM for 30 years in order to conclude that UiTM Pahang can be considered as a Sustainable University Campus. This is very important for the future as UiTM Pahang should be the first University that applied the sustainable development, which is a process for meeting our development goals while sustaining the ability of natural systems to continue to provide the natural resources and ecosystem services upon which the economy and society depend.

Keywords: Facilities and Infrastructures, Sustainable development, Sustainable University Campus, UiTM Pahang

1. Introduction

In recent years, sustainability has become an important part of many corporate social responsibility agendas. Pitsiava-Latinopoulou et al. (2013) stated that the findings and evidence presented in the United Nations Climate Change Conferences in Mexico (2010) and South Africa (2011) have further highlighted the need for a paradigm shift towards building a low-carbon sustainable society to deal with climate change. As such, there is an urgent need for every level of society to review their actions and aim to be better stewards of our natural resources for developing low-carbon economies. While it is acknowledged that the different dimensions of a sustainable campus are equally important, the interpretation of term "sustainable campus" is typically focused on minimising environmental impacts.

According to the location of UiTM Pahang, it has been pictured by the sustainability with the nature as it is located at the agricultural area. The construction in UiTM Pahang for 30 years can be considered as a Sustainable University Campus as they typically focused on minimizing the environmental impacts. This is very important for the future as UiTM Pahang should be the first University that applying the sustainable development, which is a process for meeting our development goals while sustaining the ability of natural systems to continue to provide the natural resources and ecosystem services upon which the economy and society depend. To move towards a sustainable campus, Velazquez et al. (2006) proposed a sustainable university must not have poor access to public transportation and that transport was one of the

weaker links in campus sustainability. In a study of sustainable development of campus, the transportation planning is also considered as the major factor, as Krizek et al. (2007) observed that in order to promote walking and cycling, there must be adequate facilities provided. For instance, to encourage walking habit, facilities such as pavements, public spaces and/or road crossings should be equipped for the residents.

Besides, as for cycling purposes, amenities like wide curb lanes, on-street or off-street bicycle paths, secure parking and showers at the workplace must be provided too. Ferrer-Balas et al. (2008) stated that without a long term plan for an ideal campus physical structure, evolutions in growth patterns will inhibit the development of the campus as a whole, and Ferrer-Balas et al. (2008) also suggested that the appearance of each building must be developed based on elements of the existing buildings on campus. However, this does not mean it should be exactly the same as the existing buildings; instead, there should be a balance of featured elements so that a unity is maintained throughout the entire campus architecture. This statement was also supported by Shuhana et al. (2007) when they suggested that planning should take into account aspects of unity in designing the buildings and their surroundings, while maintaining a necessary diversity of design to highlight areas that offer accommodations for varying disciplines, activities, and microcultures on campus. Thus, diversity can be achieved through a balance of consistent and unique elements, which will help to strengthen the campus structure to be clearly and simply characterized.

Wheeler (2002) has proposed that, one of the challenges of sustainable development is to develop buildings within the existing campus area, apart from the new green areas and 'infill' development, which refers to the development that occurs within the currently existing areas. This concept will minimize the use of vehicles and services. However, people can use the existing facilities and avoid expansion into new areas. Drumheller et al. (2001) also support that it is better to develop the existing areas (infill) than to develop new areas to reduce new loads on the transportation systems. The distance between destinations will become shorter and driving needs will be reduced.

Burton (2000) stated that compact development planning is able to encourage sustainability. Compact development planning not only provides advantages in terms of the environment but also promotes the creation of a healthy social life and reduces economic problems. There are the seven advantages of compact development, which is a reduced land usage, reduced vehicle dependency, reduce usage of resource and emission of pollution, encouragement of public transportation, walking and cycling, better access to facilities and services, efficient provision of infrastructure and utilities and lastly is redevelopment of existing areas.

According to Burns (2001), a principle called 'total environment' could potentially provide a sustainable campus life as described above. This principle refers to the implementation of a space allocation system wherein usage is multi-functional. It describes the creation of an area that contains residential, academic, business, facilities and social functionality in the same space. Thus, a livable community can be achieved in which movement distance and cost can be reduced and natural surveillance can be increased.

Furthermore, Burton (2000) stated the research found that different approaches have been used to plan the physical development of each campus. Research also found that each approach has its own advantages and disadvantages. However, there are common problems shared between the developments of sustainable campuses, which is the structural layout of the campus, the accessibility, building design, landscape and surrounding, transport and movement, and lastly is safety and lighting.

A 6-P community engagement framework for a sustainable campus is the preceding section that has illustrated the term in order to use in each professional discipline to suggest some points of differentiation, also a common theme that cuts across them all is how to encourage more positive practical actions towards sustainability. It can thus be inferred that in the development of sustainability programs, these attributes should also be considered to better engage with the community (Linda Too & Bhishna Bajracharya, 2013).

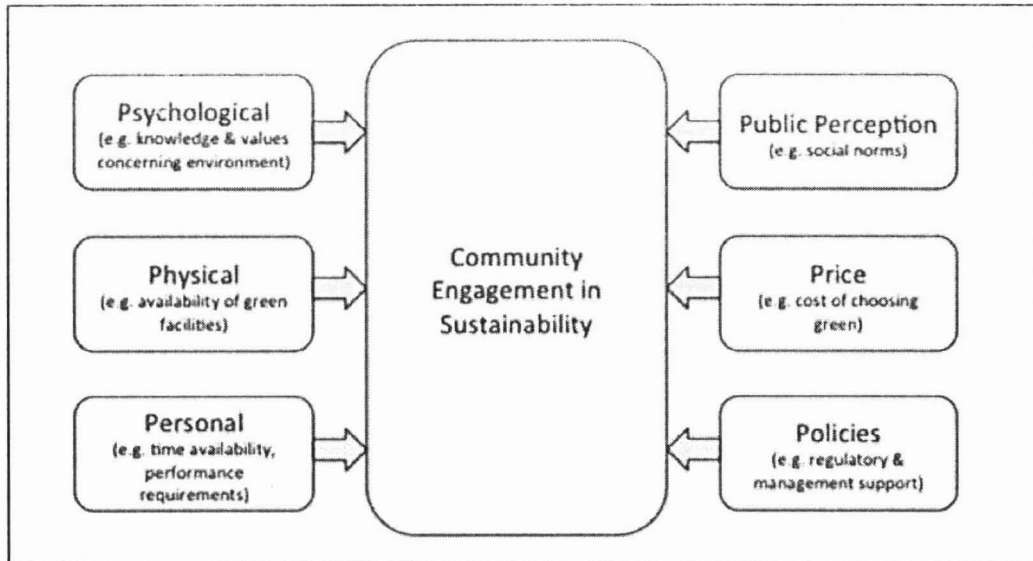


Fig. 1 The 6-P community engagement in sustainability framework

The establishment of a sustainable campus is very important. A sustainable campus provides a better environment for the campus community, especially for students in terms of their environmental, social and economic quality of life. The physical development planning of a campus has a great impact on student life and affects their decision making. These findings have proven that the best way to create a sustainable campus is by developing a compact campus. There is a distinct evidence that supports the idea that a compact campus can be more satisfying by increasing accessibility; providing more efficient circulation and transportation systems; and increasing the level of security and lighting. In contrast, a dispersed campus contradicts the goal of sustainability.

Nowadays the business environment where the competition plays a vital role in fulfilling the customer needs and the deployment of efficient technologies, an educational institutions need to identify their strengths, weaknesses, opportunities and threats in order to form up a suitable strategic plan and make a right decision to enrich the business effectiveness. Thus, Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis is an important tool for an institution to provide a connection between employer and employee and areas for a reliable action to be taken into. Previous researches shows that SWOT analysis can be a good practice in helping the top management on deciding the strategic planning and decision making.

Both organizations in commercial sector government agencies, including the academic communities should utilize the flexibility of SWOT analysis in order to deploy a systematic and structural approaches (Koo, Chau, Koo, Liu, & Tsui, 2011; Phadermrod, Crowder, & Wills, 2014). Active institutions can change themselves by achieving the vision and educational mission. SWOT analysis provides a relevant perspective view among the customers in micro sourcing industry where the findings can build up the strengths, minimize the weaknesses, seize the opportunities and overcome the threats (Arshad & Salleh, 2013). Phadermrod et al. (2014) discovered that by involving the customer's perspectives and views into the SWOT analysis rather than the company point of views, it will help the companies to gain a better perception of their internal and external business environment when making business decisions and for the strategic planning purposes. As a result, the companies will be recognized and valued by their customers and the strategic planning vision is more accurate.

These arguments are supported by Sayed (2013) where the involvement of stakeholders in the university such as students, parents, academic staffs, administrative staffs, assessors, auditors, accreditors and society are important in providing an accurate information and needs

for the strategic planning. Yan & Yan (2011) used SWOT analysis to analyse the strategic situation of universities in terms of the advantages and disadvantages in order to gain the initiative in strategies. SWOT analysis has also fascinated a lot of business and marketing practitioners in evaluating the alternatives for complex decision situations (Helms & Nixon, 2010). Somehow, in other perspective of research done by Pitsiava-Latinopoulou, Basbas, & Gavanas (2013) it has been outlined that the successful of implementation of transport network among the staff and students in the university is depending on the urban transport network and commuting factors. As the conclusion, the physical development planning of a campus plays an important role in enhancing the sustainability of that campus. To ensure that a sustainable campus is successfully established, a compact physical development plan is encouraged.

2. Methodology

The first source of references is the documentation related to the sustainable university campus, including the articles in journals done by previous researchers in the specific topic. It is important that UiTM Pahang grasp the goal of sustainable university campus in order to sustain the ability natural system and ecosystem. Besides, a follow-up interview with members of Executive Management and Strategic Planning Unit has been done to help uncover the current issues raised, requirements and challenges in existing campus environment. The information gathered from all the sources was then compiled and analyzed as inputs for this paper.

3. Results And Discussion

The SWOT analysis is used to evaluate the elements of sustainable university campus from the previous research done and suit the elements to UiTM Pahang environment. The findings may available and exists within UiTM Pahang and some of the findings are not compulsory for it to have. By identifying these elements, UiTM Pahang can recognize its core competencies for decision making, strategic planning and building strategies within the campus. Reviewing these elements helps UiTM Pahang to identify the internal strengths and weaknesses and external opportunities and threats. Details of findings are described below.

Strengths:

- a) **Long history with good reputation** in spite of sit-and-wait habit in recruiting students
- b) **Strong vision, mission, motto, philosophy and objective**
- c) **UiTM Pahang is well-known with its own value**; Professionalism, Appreciation, Hospitality, Accountability, Nationalism and Global
- d) **Achievements in research, publication and innovation**
- e) **Large alumni body**
- f) **Off-street bicycle**
- g) **Cost effective operation without the involvement of main campus**

Weaknesses:

- a) **Internal transportation networks.** Sustainable university campus must not have poor public transport and internal road structure. A lot of effort needs to be put in enhancing the internal road structure such as pavements, public spaces, road crossings, wide curb lanes, on-street bicycle paths and secure parking. This is to ensure the students, staffs and visitors safety is been carefully measured by the top management of UiTM Pahang.
- b) **Expansion in new areas.** With the expansion a number of students nowadays, UiTM Pahang has developed several new buildings such as student colleges and administrative offices in new area, indirectly intruding the ecology system, the agriculture concepts and the growth of transportation network within the campus.

- c) **Compact development.** Even though the compact development is able to encourage sustainability, the expansion of students has been a crucial challenge to UiTM Pahang to promote a healthy social life and reduces economic problems. The distance between each building has been totally greater than before as the exploration of new area has been constructed. The objective to reduce the land usage is not achievable.
- d) **Space allocation system.** UiTM Pahang should emphasis the development of multi-functional building. All units and departments can be congregated here such as academic, business, facilities and social functionality in the same space in order to support a liveable community. For the time being, these units and departments are located at different places and building which cumbersome the students to fulfil their needs.

Opportunities:

- a) **Located at the agriculture area.** UiTM Pahang itself can generate a lot of self-income by utilizing the sales of the plantations and livestock. With the grown revenue, the development of buildings and facilities can provide a lot of satisfaction to the stakeholders in positioning UiTM Pahang as the first sustainable university campus in Malaysia.
- b) **Minimizing the environmental impacts.** The ecology system in UiTM Pahang is still well-preserved. With the existing of the natural pond, a forest, grassland, farming and so forth is the attractive factor for visitors and hardly to find in any campuses.
- c) **Appearance of each building.** The construction of buildings in UiTM Pahang can be considered as balance featured whereby the unity of the existing building and new buildings is maintained throughout the entire campus architecture. However, the construction of UiTM Pahang (Raub Campus) is totally different from the existing building in UiTM Pahang (Jengka Campus) due to the involvement of Private Funded Investments (PFI) government plans. Raub Campus is being developed with the new and updated design of building, complete with a lot of facilities and a walking distance campus. The consistency of building's name in accordance of the agricultural concept helps strengthen the campus structure clearly and simply characterized.
- d) **Redevelopment of existing areas.** For a better access to facilities and services, UiTM Pahang should consider to redevelop the existing areas and buildings to ease the stakeholders involved. By congregating all the facilities and services into one building such as photocopies services, post office, bank services, and so forth somehow can lighten the burden of the students facing due to the distance factors.
- e) **Landscape and surrounding.** Landscaping is one of the aspects that UiTM Pahang has to emphasize in campus planning. Rather than simply beautifying and brightening the campus area, landscaping plays multiple roles. Landscaping can adjust components of the campus microclimate, set psychological boundaries that define a space, help 'wayfinding' and, most importantly, complement the architecture. Therefore, the element of landscape is one of the most important components in creating a comfortable campus environment. This is consistent with the objective of a sustainable campus, which is emphasized in improving the quality of life for the staffs and the students in UiTM Pahang. ,

Threats:

- f) **State and local budget cuts.** Based on the 6 -P framework, the only major threats to overcome in order to achieved the sustainably campus is **PRICE** and **POLICY**. The price refer to the local budget cuts in UiTM Pahang as a lot of budget needed to have a total transformation for UiTM Pahang in becoming the sustainable University campus. Furthermore, the most important framework is policy which is stated for national and

state regulatory and management support from stakeholders in positioning UiTM Pahang as the first sustainable university campus in Malaysia.

4. Conclusion

To conclude, UiTM Pahang still cannot be classified as the sustainable university campus in Malaysia as this campus need to have a lot of major improvement especially in **internal transportation networks, compact development, expansion in new areas and space allocation system**. However, UiTM Pahang has a high potential in becoming the sustainable campus university because this campus already have a lot of strengths and opportunity. As for the future research, we hope that we can develop all of the UiTM campus in Malaysia to become the sustainable University campus.

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