# A Proposal for Assessing Campus Landscape Character for Quality Educational Environment: Case Study of UPM Serdang

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## ABSTRACT

*Campus landscape could act as a campus heritage and asset to the campus communities. Landscape areas and spaces are crucial facets of a campus's identity and serve as functional components of campus life. It provides place for study environment as well as place for student to escape physically and emotionally from study pressures. Campus Landscape Character Assessment is a potential tool to be used in planning for sustainable campus development and for characterizing the campus landscape environment. The study focused particularly in assessing UPM campus landscape in identifying its character and distinctiveness through classification of the Campus Landscape Character Types (CLCT). It will be conducted based on GIS application as decision supporting tool in quantitative data. The study will incorporate the stakeholders' perception in addressing the Campus Landscape Character Area (CLCA). Collaboration of both quantitative and qualitative data would be aided to the final output of this study in clarification of distinctive character of UPM context. Finally, it is hope that this study would encourage collaborative endeavour of planner and end users in understanding and managing the campus, as well as creating and shaping the ideal learning environment for Malaysian Campus.*

**Keywords:** *Campus landscape, landscape character assessment, sustainability*

## Introduction

The universities environment could be seen as diminutive scale of cities atmosphere. Implementation of diverse expansion and developments that take place within the university region would resemble to the extensive soaring activities within a city. As Achyut and Miller (1969) and Habib and Abubakar (2008), indicate that a university campus has been compared to a city in a small scale which due based on its population, large size, as well as various activities that taking place in the campuses, simultaneously it also provides most of the needs for the university community. In a part of striving within the niche of rapidly changing world, university is evolving due to its expansion on fulfilling the intense growth of various aspects. Intense development within the campus have also led to the various direct influences to the environment, particularly changes on landscape resulted from the on going evolution and growth which reflected from the impact of human activities and interferences.

As major component of the environment, landscape incorporates massive and assorted elements within the campus atmosphere, e.g man-made/ built elements, wildlife, social, landform and others. Thus, petite disturbances of landscape might cause certain level of instability for those sub elements of landscape. According to Barbel and Gunter (2001), landscape related issues often touch on environmental, social, cultural, aesthetic and economic issues simultaneously. For instance, landscape is not a solitary component that formed within the environment, yet is assimilation from the integral part within physical, social and cultural factors in complementing to the contribution of biodiversity within environment. Hence, it is crucial in understanding, detecting, classifying, as well as monitoring the rhythm of growth from every major sub elements that might cause direct impact to the landscape and environmental planning. Consideration should be make on defining how would those elements get change across time, value and orientation of changes, types, form, territory and area of changes that would create significant influence to the forthcoming and future planning.

## Defining Character of a Place

In the process of creating a common indicator that encompass all the pertinent elements within landscape, classification of those elements should be scrutinized in accordance to its particular homogeneous unit. Every single unit will be clustered with its significant value that easy recognizable and differentiate to another group unit. Every unit that formed will contribute in defining a baseline to the character of a place.

Based on the definition by Jessel (2006), "character" in landscape could be defined as the result of characterization process that classifies, illustrates and describes areas that are similar in appearance. Nevertheless, the character itself will not be focused in certain particular area only, it appears part and parcel within a spatial component. Prior baseline criteria should be generated before the stage on determining scope of similarity in landscape character. Character that assigned within an area will be an indicator that delineates and summarizes the current uniqueness that makes a place different from another. It is not possible to figure out the quality of a place with just due based on visual aspect, it should be viewed from wider angle that provides a holistic prospect to a ground. Swanwick (2002) defined the landscape character as distinct, recognizable, and consistent pattern of elements in the landscape that makes one landscape different from one another. For instance, it is crucial on detecting, preserving types and area of those significances of a place prior to implementation process that might cause enormous impact on the environment.

## The Needs of Campus Landscape Character Assessment

Development is a process mainly served on improving the quality of life for a community. Changes within development would consider as inevitable process while moving on parallel to the force of global influence. With an aim in creating a sustainable development, there is a need of an assessment in planning as tool in monitoring the change of landscape and environment.

Landscape Character Assessment is a comprehensive inventory and analysis approach/ tool for those entire researchers, landscape architects, town planner, policy maker or any personnel whom undertake the responsibilities in identifying and monitor the changes of development in regional scale. Based on the definition by Swanwick (2002), Landscape Character Assessment is a tool that provides significant contribution towards achieving goal that relate to 'prudent resource use', 'environmental protection', which is also as corner stones of sustainable development. In fact, the initial intention for the creation of this approach began in UK around 1970s. Accentuation has been made on landuse and landscape management on detecting the significance of a place that diverse to another, principally viewed from the perspective of landscape assessment.

Primarily, the idea of conducting this study also departed on presently seen condition and rapid development within UPM area, which has become a research university. The university needs to address this development issues and at the same time develop a quality educational environment for their student. From the point of landscape, UPM incorporate vast amount campus land size, people, flora and fauna. Combinations of these components are crucial into the contribution of biodiversity and uniqueness to the campus. Changes of these factors across time may cause direct impact to the landscape, scenic quality, as well as the educational environment. Antrop (2005), stated in previous research that landscape always change because they are expression of the dynamic interaction between natural and cultural forces in the environment.

As driving force in landscape changes, globalization refers to all general processes and initiatives that affect decision and action at local level. Economic globalization emphasized hypermobility, global communications and the neutralization of place and distances(Sasson 2000). The similar concept could also be applied even in modest scale of development, e.g campus district. A transparent and significant guidance as well as campus planning (e.g Landscape Character Assessment) should be make prior to proposed stage where it might assists in the revealing of those potential area within the campus. Hence, process of provoking to the involvement of investors would be make in the easier way with the provision of clear guidance of the university.

According to Cole (2002), Landscape Character Assessment can provides information for a range of other sustainability tools and methodologies, equally these other tool may assist in

making decisions regarding with the conservation and enhancement of the landscape. In detail, Landscape Character would act as a core reference in development, design enhancement, as well as any project that might cause strong influence to the environment(e.g sensitive area, restoration project) particularly while considering local development in regional scale.

## Sustainable Concept in Creating Quality Educational Environment

With an aim on producing a quality educational environment, landscape plays a vital role within the campus atmosphere as forefront stage that served to the campus community. Based on Cole (2002), QoL (Quality of Life) Capital defined as decision supporting tool for maximizing environmental, economic and social benefits as part of any land use planning and other management decision. The Campus Landscape Character Assessment that distinguishes and indicates significance of a place might be very useful for QoL Capital process. The resulting map of Campus Landscape Character Assessment would be aided information that served to the Qol Capital assessment in an integrated way. This is principally due based on the capability of Campus Landscape Assessment in detecting and evaluating spatial condition of a place with greater appraisal. As a result, information that generated from this research will also provide much more substantive information on the perspective of quality, and the significance of a place. This is particular important in planning process that mainly managed in prioritize the useful environmental asset with an infusion of sustainable concept.

## The Importance of Interdisciplinary Stakeholder Participatory

Defining the intrinsic behaviors of the environment would be served as basic platform in detecting the value of landscape which integrates to the local community's lifestyle. Hence, local communities with certain detail knowledge on dealing with landscape characters, as well as interrelated backgrounds would be an added exertion into the contribution on articulating towards the research aim. Interferences of several direct or indirect disciplines are important towards developing a wider perspective evaluation, as well as envisaging an inclusive landscape planning that concerned on collaboration of different professions and knowledge. Even though landscape itself by the definition are not classified as solitary on going process, Mary and Stephen (2001), defined landscapes are mosaics of habitat patches, the composition, configuration and connectivity of these elements changes in space and time as a result of 'natural' and human disturbance. Hence, involvement of several disciplines expert is fundamental which believed would create better understanding, cooperation, as well as contribution towards Landscape Character Assessment into the planning process.

Decision making process often involves multiple choices, alternatives with different level of significant, and value of preferences from those specialist from the pertinent backgrounds on dealing with uncertainty. Swanwick (2002), defined the term of 'stakeholder' as the whole constituency of individuals and groups who have an interest in a subject or place. There are two broad categories of stakeholders, first group been classified as 'Communities of interest', which referring to those participants with direct or indirect involvement in shaping the landscape. This group mainly comprises personnel of government agencies, non-government organization and local authorities. The group which incorporate finite member but yet with better understanding in wider perspective would assist in outlining the regional issues, as well as representing community needs in vicinity. Second group of stakeholder are commonly recognized as 'Communities of place'. These categories of contributors are those who stay or work in particular area. It is believed that they are people who have the greatest 'stake' in their local environment. Likewise, these groups are considered much easier to involve themselves yet with better familiarity about the changes within their territory about landscape that shaped their community or vice versa. In UPM context, accentuation been determined to integrate for both 'communities of interest' and 'communities of place' while selecting the stakeholder into the research. For instance, selection of stakeholder that fit to both categories will be rather easier in this research. All the selected expert stakeholder are those professional academic personnel (lecturers/ government server) who keen in contributing their brilliant ideas, but yet fulfilling the second categories criteria where they also
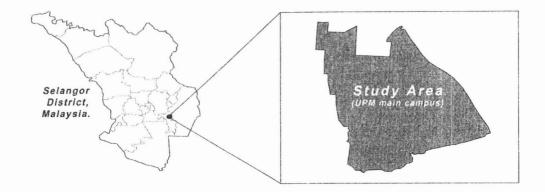
work within the territory of UPM at the same time.



Figure 1: Location of Research Study Area

## Methodology

### The case study area- UPM main campus

The University Putra Malaysia main campus was selected as research area is principally due based on its huge land size, rapidly develop area, as well as its biggest number of students on a single campus within Malaysian region. The study area of the research covers 2938 acres, incorporating the whole patch of Serdang campus. The UPM main campus is anticipated will keep on growing in the future with the purpose of fulfilling the campus community needs.

Methodology that employed in this study in principally due based on key idea that developed by Countryside Agency and Natural Heritage in United Kingdom with an approach called Landscape Character Assessment. In fact, Landscape Character Assessment is an approach that widely applied elsewhere in the world, particularly in landscape and urban planning process, from municipal level up to regional scale and national level.(Table 1). In the past few years in Europe and UK, Landscape Character Assessment has undertaken as among the crucial approach in most of the planning process, which mainly used as comprehensive landscape assessment in providing baseline information for environmental enhancement and conservation purpose.

Table 1: Example of LCA Application in Elsewhere of the World on Planning Process

| Country | Year of Assessment | Level of Assessment | Types/ Level of Stakeholder Participatory |
|---|---|---|---|
| **United Kingdom,** Wales | 2002 | National level | Local level public, Expert stakeholders |
| **China,** City Information services, Hong Kong. | 2001 | National Level | Expert , professional stakeholders |
| **Northern Ireland** | 1997 | Regional level | Expert assessment by consultant |
| **Indonesia** Ujong Kulon National Park | 2001 | Local level | Nil |
| **New Zealand,** North Shore City, Auckland. | 1998 | Local level | Brief review in physical scope by local public |

The methodology generated for the research primarily divided into 3 major stages.(Figure2.) In detail, it is process with further combination of 4 major steps. Step one incorporates initial desk study's data acquisition process on baseline element/ parameters that derived from previous scholars work on similar approach of Landscape character assessment application. The selected parameters could be considered as main force on driving to the recognition of landscape character. Principally, it was due based on 2 major subdivisions of landscape concept, natural factors and social-cultural factors.

Step two encompasses extension of step one on desk study's data collection. This stage focused more on spatial data calibration process, data conversion from various sources into a standard scale format with an extension that recognizable via GIS application. This task is conducted via ArcGIS 9 which developed by ESRI. ArcGIS 9 application is adopted as major programme in this research on spatial data procession, such as data input from CAD file, satellite image, GPS data and etc. An advantage of ArcGIS 9 includes absorbing versatile digital format yet with its user friendly application without much sophisticated conversion process. This is also a particular important stage where all the pertinent mapping overlaid via GIS application. At the same time, field work task also be initiated at step three with Ground Truthing/ photo snapshot session as primary record/ an overview towards the existing site of the research area. This step works in parallel to an interview session to those selected interdisciplinary stakeholder as verification group in defining to the weightage/ significance level of every particular parameter.

The forth step is mainly an output based stage that initiated with draft without interference of interdisciplinary participatory. The results of interview from the previous session also include verification on the types and force of changes on every particular landscape character. All the information gathered via field and desk survey was further accumulate to the final session of the research for the preparation of final map. The map principally divided in two parts, i) map of the key landscape character types and, ii) Map of landscape character area with homogenous unit. As complement to the resulting maps, this research would be attached with a specific description that delineating all those detected landscape characters within campus area.
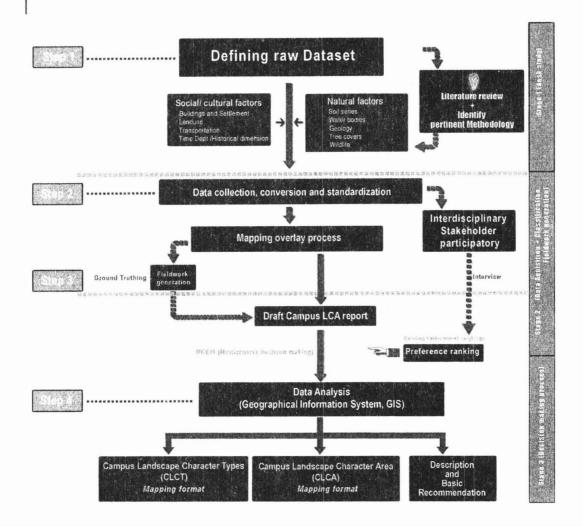
Figure 2: Key Framework in Landscape Character Assessment

## Conclusion

The ultimate outcome and output of the research will be a comprehensive Campus Landscape Character report that accumulates expert and interdisciplinary stakeholders from Malaysian context, particularly in UPM main campus. This report will include the Campus Landscape Character Types and Campus landscape Character Area in mapping format that provides very useful information to the campus development in providing conducive learning environment. Meanwhile, description and outcome of the report would provide more substantive evidence to the future researcher in measuring and providing useful guidance with comprehensive and better justification on campus landscape character and overview of this unique learning environment into their relevant research.

Integrated results of the interdisciplinary stakeholders would be precious baseline information for future planner and developer in figuring on how the professional end-user perceived towards the development of UPM, and what should we consider while infusing new development in UPM area. As a result, information that generated via this research will be precious and transparent idea on detecting compensation and conservation of campus environment assets which is very useful to future planning.

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