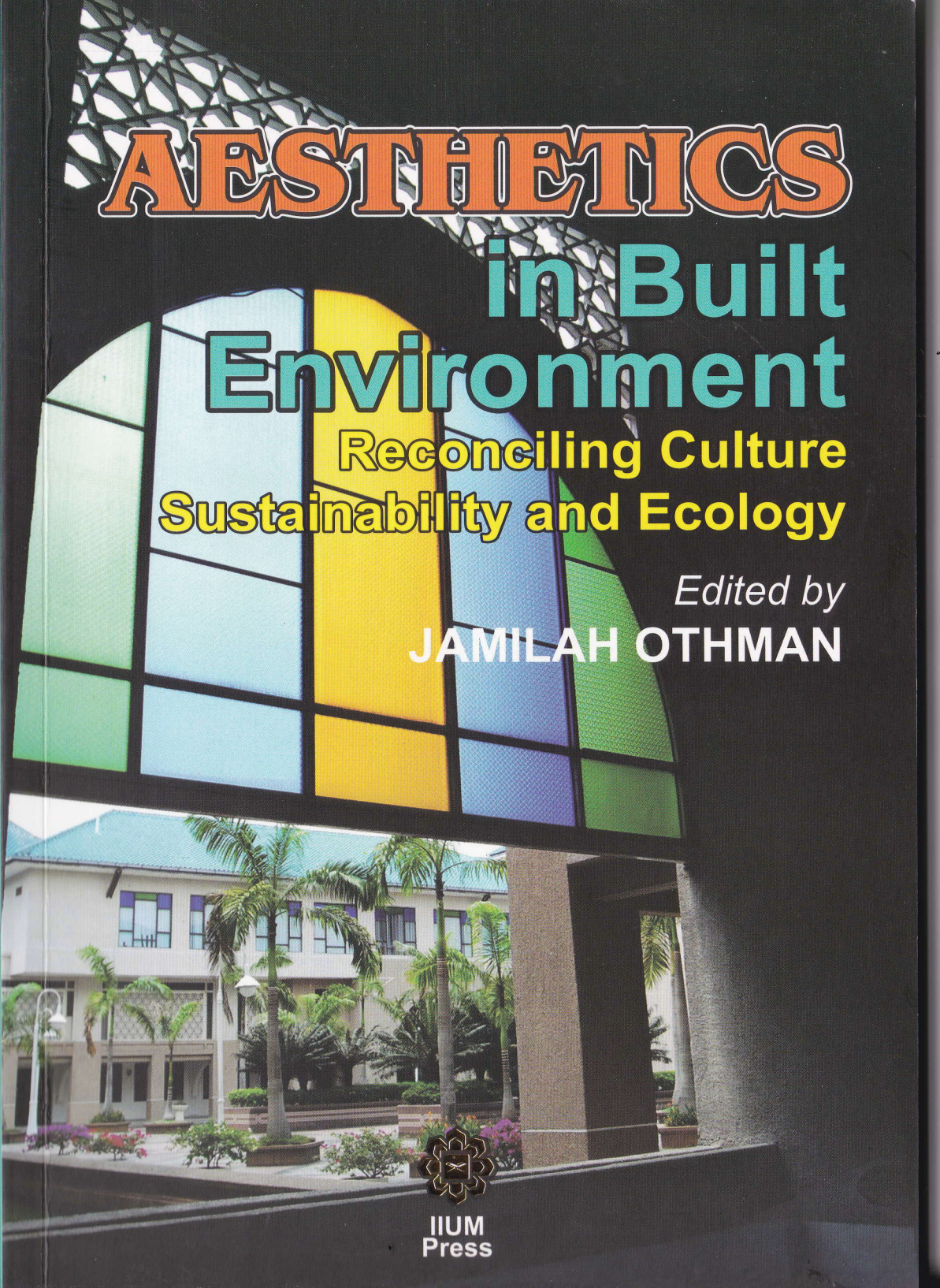
AESTHETICS in Built Environment

Reconciling Culture Sustainability and Ecology

Edited by
JAMILAH OTHMAN



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Chapter 2

Landscape Perceptual Theories and Humans' Aesthetics Preferences for Natural World

Mazlina Mansor

Introduction

Nature plays a special role on humans' physiology and minds. Since ancient times, humans have been intensely curious about nature. In countless ways the curiosity intersects with humans' cultures, subjecting it to observation and manipulation. There are even theories that link humans' preference for natural environment. These theories have been explored in varieties of discipline in the built environment. For example, studies in environmental psychology (e.g. Wilson, 1984; Heerwagen and Orians, 1993) suggest that experiences of natural environment influence humans' health and psychological well-being. The reason is because humans have innate tendency to affiliate with the natural environment. For instance, in one specific theory, Wilson (1984) has coined the word biophilia to state the innate human attraction to the natural environment. He discusses various types of evolutionary explanation that communicates as to how people prefer the pleasing attributes of the natural world such as water and greenery. Cross-cultural studies have also shown that humans instinctively crave for natural features in their surroundings (Lewis, 1996).

Studies that link humans' aesthetics preference for nature have re-emerged as an area of attention in various disciplines since the ancient times. This is mainly due to the growing interest and concern on the conditions of the deteriorating green environment due to civilization.

It has awakened an environmental awareness about the importance of natural world. In landscape architecture, the interest has begun as early as the 19th century (Gullone, 2000). For example, Frederick Law Olmstead made an observation in the 19th century and he noted that merely by experiencing and viewing nature can reduce stress of every day urban life (Lewis, 1996 and Jackson, 2003). He was well aware of the feelings evoked by nature, therefore, strove to invoke such feelings when designing parks; knowing that human responds to what is seen adds richness and quality to everyday experiences.

In healthcare study, the links between nature and effects to health have been observed many different societies across cultures. For example, the belief that viewing vegetation, water and other natural elements can reduce and improve stress and definitely gives benefit for patients in the healthcare environment have dated as far back as the earliest civilization in the cities of Persia, China and Greece (Velarde, Fry and Tveit, 2007). Studies in environmental psychology suggest that people, who are exposed to various types of natural environment in their daily live can heighten their perception of environmental problems that exist in the urban environment, influence their cognitive responses and affect them physiologically (Herzog, Chen and Primeau, (2002) & Korpela, Ylen, Tyrvainen and Silvennoinen, (2008). Therefore, recreational parks and small gardens have long been noted for their benefits to physical, mental and social well-being. Thus, research in various disciplines seeking to identify the relationships between humans' aesthetics response with the natural world is still gradually expanding in the Western and European countries.

Perceptual Theories on Aesthetics Preference for Nature

Within the study field of human responses to the natural environment a number of theories appear that explains perception of the landscape and aesthetics preference towards nature. Two categories of the perceptual theories emerge in the studies, namely, the evolution-based theories and the cultural preference theories. The theories propose different

perspectives on how people experience the natural environment and the outcomes derived from the experience. A plethora of studies suggest that most cultures, both present and past have observed that human behaviour reflects a fondness for the natural world (Kaplan, 1992; Tveit, Ode and Fry, 2006 and Grahn and Stigsdotter, 2010). Several perceptual theories concerning the relationships between people and the green environment have been proposed to explain this affiliation.

Evolution-based theories are theories that explain humans' responses are shaped by a human's common evolutionary history (Appleton, 1975; Orians, 1980; Kaplan and Kaplan, 1989). Thus, in line with this belief, there exists a typical set of landscape features recognised as having positive and negative values for all humans (Tveit et al., 2006 and Ode, Tveit and Fry, 2008). To understand humans' relationships with nature, the paper discusses two types of evolution-based theories, namely habitat-specific; e.g. the Savanna, Forest and Grassland-woodland Hypotheses (Orians, 1980; Blumenshine, 1986 and Andrews, 1989) and non-habitat specific theory; e.g. Prospect-refuge Theory (Appleton, 1975), Landscape Preference Theory (Kaplan and Kaplan, 1989) and the Biophilia Hypothesis (Wilson, 1984; Kellert and Wilson, 1993). In general, the theories suggest that people responded more positively towards natural settings than of urban or man-made settings. For example, in Biophilia Hypothesis, Wilson (1984) posits that people have a more general innate bond with nature, implying that certain kinds of contact with it may be directly beneficial to their health and well-being. Therefore, the innately emotional relationship to other living organisms (e.g. animals and greenery) suggests that humans' affiliation with nature is a fundamental part to build and sustain good health (Wilson, 1984; Heerwagen and Orians, 1993 and Frumkin, 2005).

The cultural preference theory argues a different view on perceptions of the natural world. It posits that the relationships between man and nature are principally dependent on the cultural background of people and their personal attributes. For example, the theory of Topophilia suggests that the personal attributes can include gender, academic background, their occupation, hobbies, and familiarity (Tuan, 1977). These attributes are important in shaping people's perception, preference and attachment for natural environment.

Approaches to the study of man-natural environment relationships have also accepted the notion that responses and preference for the natural world exist and shaped by both human genetic and cultural influences, suggesting that they are as innate and as learned (Bourassa, 1991; Hartig, 1993 and Tveit et al., 2006). This view postulates that human responses and preferences of the natural environment are innate as well as challenged and changed by cultural influences and experiences (Bourassa, 1991 and Low, Gleeson, Green and Radovic, 2007). As a result, the responses and preference of people for natural world are said to be a mixture of the forces of nature and culture (Tveit et al., 2006). The difference is that in some cultures it emerges as a central element, while in others, it is there but either suppressed or transformed (Low et al., 2007).

Evolution-based Theories

In the past forty years, researchers, particularly in environment-behaviour studies have explored the thought that there is an association between human evolution and aesthetics preference, for examples as posited by Appleton, 1975; Orians, 1980, Wilson, 1984; Kaplan and Kaplan, 1989 and Kellert and Wilson, 1993. This is because humans' responses to greenery are so powerful and consistent that some scholars proposed that humans have developed instinctive preference for a certain type of environment consisting of greenery and other natural features. As such, in environmental psychology field of study on environmental preference advocates that natural environment of a high quality can induce positive responses of people. On the other hand, low-quality natural environment can induce negative reactions to people (Zube, 1984). Hence, the evolution-based theories determine the extent to which human behavioural patterns in their natural environment have been moulded by human's long-term evolutionary history (Orians, 1986).

In brief, the evolutionary theories explain that people's perception and preference towards the natural environment are essentially being formed by distinctive evolutionary history. Hence, there exist a typical set of landscape features, which are perceived as positive and negative by people due to our evolutionary basis for assessing a landscape

(Appleton, 1975; Zube, 1984 and Orians, 1986). In other words, it is innate that people respond effectively to greenery and natural features in the landscape. In this approach, the responses of people towards the environment is seen as dimensions of human fitness and survival, whereby preference towards a particular landscape reflects qualities that satisfy human biological needs to survive and thrive (Tveit et al., 2006). The preference for the landscape, thereby infers positive effects from viewing the aesthetics quality of the environment.

Evolution-based theories may also be divided into habitat specific and non-habitat specific (Orian and Heerwagen, 1992). The habitat specific hypotheses include (i) the Savanna Hypothesis (Jolly, 1970; Orians, 1986 and Bobe and Behrensmeyer, 2004), (ii) the Forest Hypothesis (Andrews, 1989 and Han, 2007), and (iii) the Grassland-woodland Hypothesis (Blumenschine, 1986). Habitat specific hypotheses propose that human evolutionary history started in a specific place, for example, a tropical forest. On the other hand, theories that are non-habitat specific discuss the evolutionary history based on the characteristics of the environment preferable for human to thrive. The evolution-based theories that are not confined to any specific habitat are the Prospect-refuge Theory by Jay Appleton (1975) and Landscape Preference Theory by Kaplan and Kaplan (1989).

Savanna, Forest and Grassland-woodland Hypotheses

Savanna, Forest and Grassland-woodland Hypotheses are the approaches to environmental preference that focus on human responses to specific natural environment (Han, 2007). The most known evolutionary theory among the three is the long-held Savanna Hypothesis put forward by Orians (1980). The author posits that humans have similar evolutionary basis for assessing the landscape environment. It is suggested that people take pleasure in being in the savannah-like environment and it is predicted as probable site of human evolutionary origin. This is because the savanna-type environment that consists of scattered trees and copses of grassland induce highly preferred environment for people. The environment and its aesthetics experience can induce strong positive emotions and preference to people (Orians, 1986). Two of the most

widely known quoted theories related to the Savannah Hypothesis are the Prospect-refuge Theory (Appleton, 1975) and the Information Processing Theory (Kaplan and Kaplan, 1982, 1989). In contrast, the Forest Hypothesis claims that human's evolution actually happened in a closed forested setting (Andrews, 1989; and Han, 2007). Furthermore, there is another hypothesis, which is called Grassland-woodland Hypothesis whereby this theory suggests that the pattern of the grassland-woodland environment was actually an adaptive environment for early humans (Blumenschine, 1986).

Empirical researches on the three hypotheses mentioned above have yielded various findings. For example, a comparative study among tropical rainforest, coniferous forest, temperate deciduous forest, savanna and desert. It is found that the Savanna Hypothesis and the Forest Hypothesis are the most preferred settings for humans (Han, 2007). However, a study by Lyon (1983) appears to favour the Forest Hypothesis. This is because the savanna and forest environments may signify our most original image of *home*. Han (2007) considers that it is significant that humans developed in the forests and savannas. He suggests that, this is due to a majority of people's preference or the notion of "love the forest for what it aboriginally is". He associates that people like and visit the forest environment actually not to get away from it all, but to get back to it all. In that sense, it may be deduced that natural environment or even designed urban landscape with savanna or even forest-type environments may be favourable.

Prospect-refuge Theory

Evolution-based theory that is not confined to any specific habitat is Appleton's Prospect-refuge Theory (1975). The theory centres its attention on primordial origins of contemporary environmental perception and aesthetics preferences. It has been very influential in the development of understanding of landscape experience and has made the greatest impact in the field of landscape architecture. It was based from the idea of Savanna Hypothesis developed in the field of human biology (Jolly, 1970; Orians, 1986; Bobe and Behrensmeyer, 2004) and it was also derived from a phrase of "to see without being seen" (Appleton,

1975). Unlike the Savanna Hypothesis, the Prospect-refuge Theory is a non-habitat approach to landscape preference and aesthetics. It means that it discusses the characteristics of any place that is most preferable for humans to survive and thrive. In that sense, Appleton's (1975) ideas on the theory expands on the Savanna Hypothesis by giving the theory an aesthetics dimension. He posits that satisfaction experienced in the contemplation of a natural environment stems from impulsive perception of features of the environment (e.g. colour, spatial arrangement, and other visible attributes) that acts as sign stimuli indicative of environmental conditions that are favourable or unfavourable to survival. Therefore, the theory advocates that savanna-like setting affords people with various prospects and at the same time provides refuge to them. This is what Dee (2001) calls the opportunity for people to "see without being seen." This opportunity produces positive reactions to people. In other words, people prefer a landscape that offers both the prospect and refuge that provide a source of aesthetic pleasure. The preference leads to cognitive responses such as being comfortable and safe. As such, in urban design and planning, the landscapes that enable prospect while providing refuge are considered as pleasurable landscapes (Dee, 2001).

Landscape Preference Theory/Information Processing Theory

Landscape Preference Theory (or also called Information Processing Theory) is another non-habitat specific theory which is also based from the idea of Savanna Hypothesis. The theory states that humans need to explore their surroundings in order to gain information and thus to understand and interpret that information quickly (Kaplan and Kaplan, 1982, 1989). Thus, the environment that people can understand tends to be favoured and approached by them. Sometimes, the setting can have restorative potential, or otherwise they are disliked and avoided. The preference for natural scenery such as in the open savannah-like setting is because the environment can offer people with the easiest information, so that they can quickly extract the information needed for them to function in this world (Ulrich, 1983 and Kaplan and Kaplan, 1989). As such, most humans seem to prefer copses of widely scattered

trees, greenery that is open at eye level, overhead canopy and a uniformly textured groundcover. Additionally, humans are more likely to prefer a setting in which they can function effectively. For example, a setting which is spatially defined and in an open forest are far easier to judge by people because these settings enable them to explore safely. In other words, they know what to expect of the environment, thus making it to be a highly preferred setting for all.

Biophilia Hypothesis

The concept of relationships with nature originates from the love of nature theory which is called the Biophilia Hypothesis posited by Wilson (1984). It postulates that people have an innate tendency to centre themselves on life and life-like processes. As such, the needs for contact with nature are something that we inherit. Therefore, we act instinctively without realising or appreciating the underlying evolutionary reasons behind this feeling. As such, Wilson (1984) posits that people have more general innate bond with nature, implying that certain kinds of contact with it may be directly beneficial to well-being. It is laid down in this hypothesis that experiential connection with nature is essential to personal fulfillment and psychological well-being. The innately emotional affiliation of people to other living organisms suggests that humans' relationships with natural environment are essential for building and sustaining good health and well-being (Heerwagen and Orians, 1993 and Frumkin, 2005). The theory suggests that the natural instinct is actually associated with humans' genetic condition and competitive advantage. This feeling therefore, contributes in increasing mental development, personal fulfillment and overall well-being. Thus, this rationale actually underlines the reasons of ethical consideration and care towards nature. Thus, this feeling underpins the reason of the growing importance of conservation efforts made towards caring for the natural environment.

As the environment has evolved over time, humans' current habitat is unrecognisable since its transformation by human ingenuity. However, our basic needs do not differ from our original ancestors (Pretty, Peacock, Sellens and Griffin, 2005). The natural environment is therefore a key resource, dominant in influencing human health and well-being. Many

studies that put the theories to testing confirm that greenery and natural features in the landscape have significant potentials for improving the health and well-being of people (e.g. Maas, Spreeuwenberg, Verheij and Herzog et al., 2002). Therefore, according to Zube (1984), people's preferences for different types of landscapes has consistently demonstrated that most people of different ages, socio-economic class, education, cultural background prefer natural environments, such as treed parks, over built-up urban environments.

Cultural Preference Theories

Cultural preference theories, on the other hand, argue that perception and preference of landscape are primarily dependent on the cultural background and personal attributes of a person (Tveit et al., 2006). Unlike the evolution-based theories, Bell (1999) describes that cultural preference theories concentrate on preference at a level beyond the immediate and affective response of people whereby they explore more on perceived functions. The main cultural preference theory that is explored in this chapter is Topophilia (Tuan, 1977).

Topophilia is the affective bond between people and place or the environmental setting (Tuan, 1977). The bond is assumed to be a vivid and a personal experience. Research is limited that explore the dimensions of individual preferences and on the potential health benefits derived from such experiences (Ogunseitan, 2005). The theory explores personal attributes of people, which include age, gender, occupation, academic background, hobbies, and familiarity. These attributes are important in structuring the landscape preference of people. According to Ogunseitan (2005), specific domains underlying topophilia include cognitive challenge (e.g. complexity and coherence), synesthetic tendency (e.g. colours and sounds), eco-diversity (e.g. water bodies and trees), and familiarity (e.g. identifiability and privacy). A few studies concerning this theory include studies by Oguz (2000), Crow, Brown and DeYoung, (2006) and Oku and Fukamachi (2006) show that people of different ages, gender, and socio-economic status differ greatly in how they use natural urban landscapes. As such, findings from the studies suggest that preference for the natural world is based on the influence of the characteristics. Many

of these differences are also shared across diverse humans' cultures. For examples, Dökmeci and Berköz (2000), Balram and Dragićević (2005) and Crow et al. (2006) findings have demonstrated that people of higher socio-economic status use or value then natural environment to a greater degree than those of lower means.

Conclusion

Different perspectives in the theories discussed above explain how people experience and relate to the natural world. The understanding derived from evolution-based theories such as i) Savanna Hypothesis, ii) Prospect-refuge Theory and iii) Landscape Preference Theory. The theories posit that humans have an innate tendency for the habitats where they grow. As such, preference for natural environment reflects the preferred attributes in the landscape that can satisfy human biological needs. However, based on cultural preference theory, such as topophilia, human psychological needs and perception of the environment actually differ according to a multitude of variables including age, social class, cultural background, past experience, motives and daily routines of an individual (Laurie, 1986).

Nonetheless, there is a third view on this relationship. For example, the contrasting belief in evolution-based and cultural preference theories is justified by Hartig (1993). He posits that people's experience with nature actually has a transactional character, in ways that there are various aspects in the people-environmental system that act to define each other. Therefore, he suggests that there is a need for a synthesis of the evolutionary and cultural perspectives. The synthesis will be the most appropriate approach to study humans' aesthetics preference for the natural world. Accordingly, based on the evolution-based and cultural preference theories, there exist suggestions and acceptance towards a mix of both theories on assessing landscape perception and preference (e.g. Hartig, 1993; Bell, 1999; and Tveit et al., 2006). Therefore, current studies have now accepted that landscape preference actually is influence by human genetic make-up and culture, suggesting that it is both innate and learned. In other words, due to evolutionary history, a typical set of landscape features are found to be preferable by people across cultures

and individual differences. The preferences are then challenged and changed by cultural influences and people's experiences. Thus, this circumstance results in the preference being a mix of strength between nature and culture (Tveit et al., 2006). Only, in some cultures it emerges as a central element, while in others, it is there but either suppressed or transformed (Low et al., 2007).

Translating this third view on experience of the natural environment, there probably exist a common set of attributes in the landscape that are evaluated as positive or negative given the notion of a similar evolutionary basis. The needs for natural environment are not mere coincidence, but rather a reflection of an innate, survival-based dependence on nature. Hence, it appears that the attributes in the natural landscape may satisfy basic survival needs of people. This is because it is suggested by Ulrich (1983) that people carry a kind of predisposition that mandates awareness of the potential of any landscape to nourish and shelter. However, characteristics of people including age, gender, length of residency and familiarity are also important that shaped aesthetics preference for the natural settings.

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AESTHETICS
in Built Environment
Reconciling Culture, Sustainability and Ecology

Culture, ***sustainability*** and ***ecology*** are among the important issues that the contributors of this book thought worthwhile to explore. In the discipline of built environment, the reconciling of the issues observed to implicate aesthetics visually and philosophically. Perhaps, among the laymen, aesthetics is not a popular word used to describe beauty of an object. Usually the term beautiful is more preferred and may be this is due to the simplicity or less technical of wording. On the other hand, aesthetics is most preferred among the professionals and practitioners in the built environment, where the word is commonly used to describe beauty in nature, artwork, lifestyle, man-made structures and etc. In this book, the value of aesthetics can be philosophically, technically and scientifically examined through the chapters provided. The ideas suggested here, can be considered pragmatic, since the contents of the chapters have concerned for good cultural, sustainability and ecological practice in the scenario of built environment.

JAMILAH OTHMAN did her Bachelor degree in Architecture (Bachelor of Architecture) and her Master degree in Landscape Architecture (Master of Landscape Architecture). She obtained her Bachelor of Architecture from Texas Tech University at Lubbock, Texas, U.S.A., while Master of Landscape Architecture from Universiti Putra Malaysia. Besides that, she also obtained a Diploma in Education from the University of Technology Malaysia with the specialisations in Architecture and Engineering. She has a Doctor of Philosophy, specialised in landscape management/assessment on scenic beauty. Her research interest has concentrated on the management and assessment of scenic beauty with nature based landscapes.

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IIUM Press
International Islamic University Malaysia
P.O. Box 10, 50728 Kuala Lumpur, Malaysia
Tel: +603-6196 5014
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E-mail: rescentre@iium.edu.my
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