



## Preferred iconography in developing garden identity for Malaysia

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### ABSTRACT

Malaysia has always been proud of her unique natural environment and cultural heritages, but still is searching for an exclusive identity of its own gardens. There is a great potential for development of a garden identity for the country, based on her rich legacy in traditions, cultures and beliefs, through which she could identify herself. The nation has a complex population composed of Malay, Chinese and Indian races. Hence, the icon, form, quality and appearance that are going to be introduced for Malaysian gardens should be appreciated, valued and respected by the Malaysian publics with diverse culture and preferences. This paper aims to propose a preferred iconography as a basic approach to create and develop a garden identity for Malaysia. Conducting photo surveys and testing public opinion of garden iconographies, including different garden scenes, reveals the preferred qualities for the image of Malaysian gardens. The result is expected to contribute towards the basic knowledge of Malaysian garden iconography as well as essential findings for landscape architects and garden enthusiasts to design and build garden with Malaysia identity acceptable by the Malaysian public. Moreover, this approach can propose a working model to identify preferred garden iconographies for new developing gardens and can be generalized to international scale.

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### Introduction

Malaysia, as a developing country, has undergone a rapid development since its independence in 1957. The country with its unique natural and cultural heritage has a great potential for the development of gardens and landscapes. Accordingly, a clear objective for developing its landscapes and gardens has been recognized (Bunnell, 2004; Osman & Suhardi, 2007). It is noteworthy that Malaysia is a multiracial, multicultural, multilingual and multi religious country. These different races have different religious backgrounds predominantly Islam, Buddhism, Hinduism, and Christianity (Jamil, 2002; Bunnell, 2004; Richmond, Cambon, & Harper, 2004; DiPiazza, 2006). In fact, people's opinion about Malaysian garden iconography is not yet clear, and the development of Malaysian gardens should obviously be in such a form, quality and appearance that it can be acceptable by the Malaysian public of these diverse cultural backgrounds.

The attention of this research is paid to the visual appearance of garden and identifies garden iconography and the images that particular gardens present. Accordingly, the iconographies of four selected gardens of the world including Persian, English, Chinese and Japanese gardens are presented via their representative images. Then, employing photo survey as a method collects preferences of Malaysian ethnic groups for selected gardens iconographies. Consequently, a preferred garden iconography for Malaysian gardens is proposed by the present work.

### Garden as an Artistic Work

The history of garden design makes clear that aesthetic considerations assist the development of all garden types (Miller, 1993). Moreover, gardens reflect different moods and images, specific meaning and symbolic message, as do the other artistic works (Hunt, 2000; Helmreich, 2002; McIntosh, 2005).

Gardens stand at the crossroads of nature and culture; they expose both, natural form and the human art (Nakagawara, 2004). Gilbert (2005) claims that gardens are made to exhibit both the aesthetic and the material in landscape.

The aesthetic qualities of garden and considers garden as an aspect of human art. Moreover, garden is recognized as an artistic-natural phenomenon (Thacker, 1979; Miller, 1993; Ross, 1998; Brace, 1999; Nakagawara, 2004; Connell, 2005; Turner, 2005; McIntosh, 2005; Clayton, 2007; Gross & Lane, 2007). Tschumi (2005) mentions that garden as an artistic phenomenon reflecting specific place and time. Above all, Albers (1991), Ross (1998) and Waymark (2003) suggest studying garden as a work of art because of its symbolic significance and the close association of its design with the arts of paintings, poetry, architecture, and calligraphy. Based on literatures, it can be concluded that the garden is a work of art with a highly symbolic and cultural value. In fact, garden is the artistic, physical and visual representation of the culture.

### Iconography of a Garden

An iconography expresses particular idea in visual images, and could be defined as a visual expression of an idea (Wages, 1999). Princeton University (2006) defines iconography as images and symbolic representations that are traditionally associated with a person or a subject. In fact, iconography is seeking to understand the underlay meaning of a work of art by studying on its historical context (Daniels & Cosgrove, 2007). Straten (1994) argued about concept of iconography or "image reading," as a practice, which is a creative method of historical analysis of the artistic works. As concluded, gardens are artistic works with cultural values. In the same vein, Daniels and Cosgrove (2007) considered gardens as cultural images and pictorial way of representing, structuring or symbolizing the environment. According to Wages (1999), iconographies

expressed the variety of ideas associated with gardens in historical paintings or images. Hence, garden iconography must include garden images due to its scenic manifestation of certain icons, figures and symbolic objects. Accordingly, garden iconography can be defined as a tool, which is associated with art, history and philosophy. It includes collection of garden images, representing specific icons, which project the garden identity. As such, it contributes to the formation and creation of an international visual language artistically employed to express various ideas about gardens.

Indeed, a garden iconography should include images with specific garden elements that reflect the garden identity. The identities of ancient gardens are already widely known and people can recognize them via their particular images. In fact, well-established gardens can be identified with specific images that present their identity. Hence, gardens with their representation images could be identified with their iconographies. Understanding of the components of garden iconography can be helpful for art historians to identify and explain the meaning of a particular garden. However, the iconography of new developing gardens is not yet clear, and there is not much information what should be the iconography of new developing gardens.

#### **Iconography Preferences and Development of a New Garden Identity**

Formation of gardens has been influenced by traditions and culture (Lehrman, 1980). Hunt (2000) mentions historical gardens as sites of iconography and philosophy and considers them as texts with deep meaning and importance. According to Carroll (2003), gardens shaped through the history by people and based on their needs and preferences. In summary, it has argued that gardens have been designed based on different people preferences, needs, purposes and activities (King, 1979; Hunt, 2000; Hobhouse, 2002; McIntosh, 2005; Clayton, 2007). Hence, new developing gardens have to be accepted, valued and appreciated by people who are active users of the gardens too.

According to previous studies by S. Kaplan and R. Kaplan (1989), cultural backgrounds have a great influence on people's preferences of natural settings and designed landscapes. In addition, based on Kaplans' (1989) theory, component and spatial qualities have an effect on people preferences. Hence, to create a new setting, the attention should be on people preferences for both garden components and spatial qualities. This is because people with different cultural backgrounds will have different preferences for garden elements and garden layouts. Consequently, to create a new garden identity, people's preferences of both garden elements and arrangements should be tested.

#### **Testing Preferences of Garden Iconographies**

Public participation and employ human preferences, needs and activities are important in decision-making and can secure the success of a research (Yuen, 2005; Laforteza, Corryb, Sanesia, & Brown, 2008). Accordingly, Kaplan (1985), S.Kaplan, and R.Kaplan (1989) employed visual preferences to determine preferences via photo questionnaires, surveys, or interviews. This approach is a reasonable and easy method, and has been used in many studies. As Strumse (1996) offered, classification of similarities in landscape preferences across groups can help the development of general guidelines for landscape design. In addition, visual quality is a communal experience depending on people, and people are vital to its assessment (Hulliv & Revel, 1989).

Pavlikakis and Tsihrintzis (2006) argue that this kind of study on preferences is very important for acquiring the social support and acceptance of a plan. Moreover, understanding visual preferences is remarkable in the design of landscape elements, and such preference studies have been widely used dealing with landscape decision makings (Laforteza, Corryb, Sanesia, & Brown, 2008).

Furthermore, previous studies exploring people preferences for natural environments have already used visual images to present different subjects in terms of social and environmental situation of that setting (Kyle, Graefe, Manning, & Bacon, 2004).

Kaplan (1985) proves that the use of photographic material is a useful method for developing perceptual categories. In addition, photographs in preference surveys are well-known replacements for real landscapes (e.g. Hull and Stewart, 1992; in Ode, Fry, Tveit, Messenger, & Miller, 2009). They can both represent current landscapes without any elaborate changes and provide visual simulations of landscape (Laforteza, Corryb, Sanesia, & Brown, 2008).

Above all, visual quality assessment, directly or indirectly, involves people. As it would be definitely impossible to take many people to landscapes for the purpose of landscape judgment, photographs of landscapes are often used as representatives of landscapes (Hulliv & Revel, 1989). Thus, preference study can be employed as an easy method for the development of general guidelines to establish garden identity for Malaysia. Accordingly, photo survey utilizing garden iconographies and portraying specific icons of gardens is used in this research aiming to identify Malaysian preferences of iconography.

#### **Preference Photo Survey**

The survey designed according to the Category Identifying Method of Kaplans (CIM). Therefore, respondents were asked to rate scenes in 5 likert scale answers, which indicate the lowest and highest values (1= least preferred and 5= most preferred). A number of preference studies have proved that color pictures do not influence judgments, and in some cases landscape photos are collected only from available websites (Kohsaka & Flitner, 2004; Rogge, Nevens, & Gulinck, 2007). Thus, the present study employed more than 400 color pictures of selected gardens (Persian, English, Japanese and Chinese gardens) collected from e-books and related websites.

#### **Collect and Selecting Garden Scenes to Present Garden Iconographies**

According to Kaplan (1985), correct selection of scenes is one of the important stages of this method, and preference measurement depends on key elements that appear in scenes. In addition, previous researches have proved that the content of the scene has influence on the preferences of all groups of respondents. In fact, selected scenes should reflect specific qualities of the landscape, cultural features and vegetation (Kaplan, 1985; Hulliv & Revel, 1989; Herzog & Bosley, 1992; Strumse, 1996; Rogge, Nevens, & Gulinck, 2007; Ode, Fry, Tveit, Messenger, & Miller, 2009).

Selected scenes have to present environmental characteristics, and landscape elements and styles should be clear in scenes (Hulliv & Revel, 1989; Yang & Kaplan, 1990; Kaplan, Kaplan, & Ryan, 1998). Moreover, spatial quality, manmade structures, maintenance, and scenes contents such as water and rock are mentioned as predictors that strongly affect visual preferences (R.Kaplan, S.Kaplan, 1989; Yang & Kaplan,

1990; Dramstad, Tveit, & Fjellstad, 2006; Rogge, Nevens, & Gulinck, 2007; Ivarssona & Hagerhall, 2008).

Based on the above-mentioned arguments, in present research, scenes including specific garden elements and garden layouts need to be selected. In a study by Hulliv and Revel (1989), and further study by Yang and Kaplan (1990), scenes were selected at several stages with the cooperation and collaboration of landscape experts and professionals. Selected scenes were included specific landscape layout, elements, water and vegetation.

Accordingly, equal numbers of scenes from each garden type were shown to three experts in the field of landscape architecture separately. The experts were asked to classify them based on garden types. At the first stage, 100 photos, not correctly identified, were eliminated from the collection for their tested lack of legibility. At the next stage, the experts were asked to omit the scenes they recognized as inappropriate. Consequently, 150 scenes remained after they were accepted by experts in their being qualified for garden's iconographies. Then, photos had to be picked up randomly to be included in garden iconographies.

According to the reviewed literatures and the definition already proposed for garden iconography, the scenes had to be recognizable for all people including non expert ones. Hence, the remained garden scenes were mixed again and 10 randomly selected students in UPM library were asked to classify gardens based on the types. They were majoring in different fields of study such as languages, computer science and medicine. They were briefed about the study subject and different types of gardens they were supposed to identify.

Totally, 30 scenes were identified correct by all students. Later 20 of these scenes were randomly picked up to establish selected gardens iconographies. Each garden iconography includes 5 scenes, reflecting the specific elements and layout of that type of garden.

#### **Survey's Respondents**

Previous studies have proved that education in environmental fields leads to a more complicated understanding of landscape views. Moreover, people with higher level of education have higher interest for nature because they are more familiar with and knowledgeable about it (Kaplan & Herbert, 1986; Kaplan, Kaplan, & Ryan, 1998; Strumse, 1996; Regan & Horn, 2005; Dramstad, Tveit, & Fjellstad, 2006; Ivarssona & Hagerhall, 2008). According to Yu (1995), general education level instead of landscape expertise and environmental experience can considerably influence landscape preference. In addition, it is important to select a group of respondents who are more aware of the subject when it has a great influence on landscape policy (Rogge, Nevens, & Gulinck, 2007). Kaplan and Herbert (1986) selected students as their respondents in preferences studies. Another study by Ivarssona and Hagerhall (2008) proved that landscape architecture students are more conscious about detecting visual differences in environments. However, ordinary people perceive the landscape as a whole and are attracted by specific features; they do not narrow down to the qualities of the scene (Hulliv & Revel, 1989; Strumse, 1996; Rogge, Nevens, & Gulinck, 2007).

Accordingly, respondents in this research were included 400 bachelor students of University Putra Malaysia (UPM), studying in related fields of study (landscape architecture, architecture, industrial design, forestry, agriculture and environmental studies) and from three dominant races of Malaysian population.

As the study focuses on ethnicity, the respondents were asked about their ethnic backgrounds to recognize cultural differences in the preferences of the ethnic groups. Corresponding with the population of Malaysia, 62.3% of respondents were Malay, 23.1% Chinese and 14.6% Indian.

#### **Survey Performance**

Previous studies demonstrate that slideshow can be a device for landscape preference ratings. A study by Rogge, Nevens, & Gulinck (2007) claims first slides affect preferences because respondents are not familiar with presented scenes, yet. Accordingly, garden scenes including 20 scenes of garden iconographies, 5 randomly selected scenes from different landscapes in Malaysia, in addition to 6 extra scenes from Malaysia and selected gardens were presented in slideshow (these 6 extra scenes didn't consider in analysis and they were presented to help respondents to be familiar with the survey procedure). Totally, 31 randomly arranged scenes were presented in slideshow using Microsoft PowerPoint 2007.

Data collection consisted of 14 surveys in UPM to collect the preferences of students as previously identified. The surveys were conducted in similar conditions, and during the surveys 31 garden scenes, as described above, were presented in slideshow. Respondents were asked to rate for the most preferred garden scenes and elements that they like to see as parts of Malaysian gardens.

#### **Preferred Iconography for Malaysian Gardens**

According to the definition of garden iconography, it was necessary to present a collection of preferred garden scenes to suggest a preferred iconography for Malaysian gardens. Hence, preferred garden elements and images of this stage assist the suggested guideline for the preferred garden iconography for Malaysia.

#### **Preferences of Garden Scenes**

As table 1 reveals, in the classification of the ethnic groups, the most preferred garden scenes for the Malays were scenes 5, 9, 18, 8 and 20. They received the mean preference scores from 3.83 to 4.27. The five least preferred scenes for this race were scenes 7, 12, 22, 10 and 4 with mean preferences scores from 2.91 to 3.52. The most preferred garden scenes for the Chinese were scenes 9, 5, 17, 27 and 24 with mean preference scores from 3.93 to 4.32. The least preferred garden scenes for the Chinese were scenes; 25, 26, 4, 15 and 12 with mean preference scores from 3.10 to 3.56. To the Indians, the most preferred scenes were scenes number 18, 9, 8, 5 and 27 with mean preference scores from 3.67 to 4.10. The least preferred scenes for Malaysian garden for this group were scenes number 15, 10, 4, 12 and 16, with mean preference scores from 3 to 3.19.

When mean values do not share common superscript letters, they are significantly different ( $P < 0.05$ ).

Kaplan and Talbot (1988) argue about differences of ethnic groups in environmental preferences. Moreover, Kaplan and Herbert (1986), Kaplan and Kaplan (1989), Yang and Kaplan (1990), Yu (1995), Stamps and Nasar (1997), and Schroeder (2007) support the argument and suggest culture as an effective factor in environmental preferences. Furthermore, Zube (1981) claims that people from similar cultural background show a higher rate of agreement in preferences.

These cultural differences between ethnic groups of Malaysia have already been mentioned as the biggest challenges in the development of a unique identity (Watson & Bentley, 2007). Hence, this study focuses on common preferences to identify an iconography appreciated by all the three ethnic

groups of study. The overall respondents preferred scenes 5, 8, 9, 18 and 14 as the most preferred scenes they like to view in Malaysian gardens as well. Consequently, scenes 4, 10, 12, 15 and 22 were identified as the least preferred scenes for Malaysian gardens.

#### **Preferences of Garden Elements**

Respondents were asked to rate their preferred elements for Malaysian gardens. Table 2 presents the result based on garden types and the mean average of preference ratings. As the table reveals, water features (mean=32.648), plants (mean=32.588) and architectural features (mean=26.228) were the most preferred elements for Malaysian gardens. However, sand (mean=5.5296) is the least preferred element to be in Malaysian gardens.

#### **The Analysis of the Most Preferred Scenes in Terms of Content and Spatial Organization**

It was important to analysis the most and least preferred garden scenes to recognize the preferred qualities for iconography of Malaysian gardens. In terms of their contents, the presence of water and plant recognized in the most preferred scenes. In addition, water in both forms of lake and geometrical basins has preferred for Malaysian gardens. Moreover, the most preferred scenes included clear and clean water with soft water edges, in which combination of water and plants provides tranquility and relaxation for the scenes. In addition, the most preferred scenes consist of features that provide specific symbolism and sense of spirituality. The order and balance was the common qualities in content of the most preferred scenes. Hence, it can be concluded that the most preferred scenes were large amount of water, mainly presented in the form of a lake. They also contained crowded plants in combination with architectural features. However, the least preferred scenes were consisted of dense architectural features and rocks.

In terms of spatial organizations, the most preferred scenes are the scenes with a sense of curiosity and mysteriousness. In addition, the sense of legibility is the common quality of the most preferred scenes with a sense of relaxation. However, the least preferred scenes create a sense of fear and are complex in their organizations. In summary, the most preferred scenes for Malaysian gardens were the scenes comprising mystery and legibility. They should provide a sense of curiosity avoiding fear and complexity. In fact, Malaysians prefer well-organized settings that are legible while encouraging a curiosity with their mysteriousness.

#### **Preferred Garden Elements for Malaysian Gardens**

The preferences of the three ethnic groups for garden elements did not reveal significant differences. The overall respondents identified water features, plants and architectural features as the most preferred garden elements for Malaysian gardens. Based on garden types, water features from Persian and English gardens were the most preferred water features. The plants of Japanese gardens and Malaysian landscapes are the most preferred plants for the respondents. As to architectural features, those of Chinese gardens rate as the most preferred ones (Table 2).

#### **Water Features**

The most preferred element for Malaysian garden is water feature. Moreover, water features presented in English and Persian gardens are mostly preferred. While water is presented in the form of a big lake in English gardens, Persian gardens feature water in geometrical pools and basins. It can be concluded that water features in both forms of lake and

geometrical basins are preferred and, water feature is identified as the most preferred element for Malaysian gardens.

#### **Plants**

In addition to the local plants of Malaysia, plants presented in Japanese gardens are preferred for Malaysian gardens. Jamil (2002) refers to Malaysian local plants as a representative of a specific symbolism. Moreover, the role of specific plants for their symbolic significance and food and herb provision is confirmed through literatures (MARDI, 2005). Accordingly, local plants gain importance in providing identity, symbolism, food and herbs for Malaysian gardens and they are helpful for identifying garden identities.

Moreover, the combination of plant with water and architectural features is one of the common qualities of the most preferred scenes as it provides a sense of relaxation and tranquility. Thus, it can be concluded that Malaysian garden should include many plants with specific symbolism, following in the footsteps of Japanese gardens. Moreover, plants have to be combined with architectural features and water features.

#### **Architectural features**

In terms of architectural features, those of Chinese gardens are among the most preferred ones, even though overall respondents consider Chinese garden as the least preferred garden type. It can be concluded that architectural features of Malaysian gardens should present the same quality as those of Chinese gardens. Obviously, architectural features of Chinese gardens have strong identity reflecting Chinese culture and philosophy. They present forms, materials and colors, hence specific identity of Chinese people. In this relation, architectural features of Malaysian gardens should provide strong identity with the inclusion of forms, materials and colors.

Jamil (2002) refers to specific architectural features in Malaysian tradition and culture. In addition, Watson and Bentley (2007) suggest that designers in Malaysia have to work with complex traditions. They argue that elements can be formed based on old patterns and traditions. Consequently, they identify Malay historical buildings with their unique architecture corresponding with climate and local material, as the best pattern and source of inspiration for new designers. They mention two main groups of historical buildings as the best patterns for creating identity in terms of architecture of Malaysia: "traditional rural timber framed houses, built on stilts with very characteristic roofs, and on the other, urban design traditions developed in the large urban centers such as Kuala Lumpur, Malacca and Georgetown." (Watson & Bentley, 2007)

In summary, architectural features of Malaysian gardens must be legible enough and should reflect Malaysian culture and traditions. They have to be designed based on traditional patterns and employ specific motifs of Malaysia. In addition, they have to employ local materials and patterns.

#### **Conclusion**

The survey explored Malaysian preferences of the garden scenes and elements seemingly most favorable for Malaysian gardens. The most preferred garden scenes than Malaysians prefer to see in iconography of their own gardens include large area of water and plant. Clear, clean and reflective water presented by both lake and geometrical basins are the most preferred types of water scenes. In addition, local plants in combination with water and architectural features are preferable for Malaysian gardens. Architectural features reflecting identity and combined with nature are preferred too. In terms of spatial organizations, the most preferred scenes portray a sense of

mystery and legibility, and combination of plants and water features seem to reinforce tranquility and relaxation. It was also revealed that the scenes including dense architectural features and few plants and water features are not much preferred. These findings could suggest a conceptual framework for the iconography of Malaysian gardens. Consequently, the qualities of this preferable iconography could be employed in design and creation of Malaysian gardens with unique identity and acceptable by Malaysian public.

#### References

- Albers, L. H. (1991). The Perception of Gardening as Art. *Garden History*, 19 (2), 163-174.
- Brace, C. (1999). Gardenesque imagery in the representation of regional and national identity: the Cotswold garden of stone. *Journal of Rural Studies*, 15 (4), 365-376.
- Bunnell, T. (2004). Malaysia, modernity and the multimedia super corridor: a critical geography of intelligent landscapes. London: RoutledgeCurzon.
- Carroll, M. (2003). Earthly paradises; ancient gardens in history and archaeology. London: The British Museum Press.
- Clayton, S. (2007). Domesticated nature: Motivations for gardening and perceptions of environmental impact. *Journal of Environmental Psychology*, 27, 215-224.
- Connell, J. (2005). Managing gardens for visitors in Great Britain: a story of continuity and change. *Tourism Management*, 26, 185-201.
- Daniels, S., & Cosgrove, D. (2007). Iconography and landscape. In D. Cosgrove, & S. Daniels, *The iconography of landscape* (pp. 1-10). Cambridge: Cambridge University Press.
- DiPiazza, F. (2006). *Malaysia in Pictures*. Minneapolis: Twenty-First Century Books.
- Dramstad, W. E., Tveit, S. M., & Fjellstad, W. J. (2006). Relationships between visual landscape preferences and map-based indicators of landscape structure. *Landscape and Urban Planning*, 78, 465-474.
- Gilbert, D. (2005). Fertile Ground: The Art of the Garden. *Journal of Historical Geography*, 31, 338-347.
- Gross, H., & Lane, N. (2007). Landscapes of the lifespan: Exploring accounts of own gardens and gardening. *Journal of Environmental Psychology*, 27, 225-241.
- Helmreich, A. (2002). English garden and national identity: the competing styles of garden design. Cambridge: Cambridge University press.
- Herzog, T. R., & Bosley, P. J. (1992). Tranquility and preference as affective qualities of natural environments. *Journal of Environmental Psychology*, 12 (2), 115-127.
- Hobhouse, P. (2002). *Garden Style*. London, United Kingdom: Frances Lincoln.
- Hulliv, R. B., & Revel, G. R. (1989). Issues in Sampling Landscapes for Visual Quality Assessments. *Landscape and Urban Planning*, 17, 323-330.
- Hunt, J. D. (2000). *Greater Perfections: the practice of garden theory*. Philadelphia, Pennsylvania: University of Pennsylvania Press.
- Ivarsson, C. T., & Hagerhall, C. M. (2008). The perceived restorativeness of gardens – Assessing the restorativeness of mixed built and natural scene type. *Urban Forestry & Urban Greening*, 7, 107-118.
- Jamil, A. B. (2002). *A design guide of public parks in Malaysia*. Johor: University Technology Malaysia.
- Kaplan, R. (1985). The analysis of perception via preference: a strategy for studying how the environment is experienced. *Landscape Planning*, 12, 161-176.
- Kaplan, R., & Herbert, E. J. (1986). Cultural and sub-cultural comparisons in preferences for natural settings. *Landscape and Urban Planning*, 14, 281-293.
- Kaplan, R., & Kaplan, S. (1989). *The Experience Of Nature: A psychological perspective*. New York: Cambridge University Press.
- Kaplan, R., & Talbot, J. F. (1988). Ethnicity and Preference for Natural Settings: A Review and Recent Findings. *Landscape and Urban Planning*, 15, 107-117.
- Kaplan, R., Kaplan, S., & Ryan, R. L. (1998). *With people in mind: Design and management of everyday nature*. Washington, D.C.: Island Press.
- King, R. (1979). *The Quest for Paradise; a history of the world gardens*. New York: Mayflower Books.
- Kohsaka, R., & Flitner, M. (2004). Exploring forest aesthetics using forestry photo contests: case studies examining Japanese and German public preferences. *Forest Policy and Economics*, 6 (3-4), 289-299.
- Kyle, A., Graefe, R., Manning, J., & Bacon. (2004). Effects of place attachment on users' perceptions of social and environmental conditions in a natural setting. *Journal of Environmental Psychology*, 24, 213-225.
- Laforteza, R., Corryb, R. C., Sanesia, G., & Brown, R. D. (2008). Visual preference and ecological assessments for designed alternative. *Journal of Environmental Management*, 89, 257-269.
- Lehrman, J. (1980). *Earthly paradise; garden and courtyard in Islam*. Hampshire: BAS Printers.
- MARDI. (2005). *Landscape gardens of Malaysia*. Kuala Lumpur: Malaysian Agricultural Research and Development Institute.
- McIntosh, C. (2005). *Gardens of the Gods: Myth, Magic and Meaning*. London: I.B. Tauris & Co Ltd.
- Miller, M. (1993). *The Garden as an Art*. Albany: State of University of new york press.
- Nakagawara, C. (2004). The Japanese Garden for the Mind: The 'Bliss' of Paradise Transcended. *SJEAA*, 4 (2), 83-102.
- Ode, A., Fry, G., Tveit, M. S., Messenger, P., & Miller, D. (2009). Indicators of perceived naturalness as drivers of landscape preference. *Journal of Environmental Management*, 90, 375e383.
- Osman, M. T., & Suhardi, M. (2007). Sustaining Malaysia Garden Nation Development through Improved Urban Landscape Management System. IFLA 2007. Kuala Lumpur.
- Pavlikakis, G. E., & Tsihrintzis, V. A. (2006). Perceptions and preferences of the local population in Eastern Macedonia and Thrace National Park in Greece. *Landscape and Urban Planning*, 77, 1-16.
- Regan, C. L., & Horn, S. A. (2005). To nature or not to nature: Associations between environmental preferences, mood states and demographic factors. *Journal of Environmental Psychology*, 25, 57-66.
- Richmond, S., Cambon, M., & Harper, D. (2004). *Malaysia, Singapore & Brunei*. Melbourne: Lonely Planet.
- Rogge, E., Nevens, F., & Gulinck, H. (2007). Perception of rural landscapes in Flanders: Looking beyond aesthetics. *Landscape and Urban Planning*, 89, 159-174.
- Ross, S. (1998). *What Gardens Mean*. University of Chicago Press.

Schroeder, H. W. (2007). Place experience, gestalt, and the human–nature relationship. *Journal of Environmental Psychology*, 27, 293–309.

Stamps, A. E., & Nasar, J. L. (1997). Design Review and Public Preferences: Effects of Geographical Location, Public Consensus, Sensation seeking, and Architectural Styles. *Journal of Environmental Psychology*, 17 (1), 11-32.

Straten, R. V. (1994). *An Introduction to Iconography*. (P. d. Man, Trans.) Yverdon, Switzerland: Gordon and Breach Science Publishers.

Strumse, E. (1996). Demographic Differences in the Visual Preferences for Agrarian Landscapes in Western Norway. *Journal of Environmental Psychology* (16), 17-31.

Thacker, C. (1979). *The history of gardens*. London: Croom Helm.

Turner, T. (2005). *Garden history*. New York: Spon Press.

Wages, S. M. (1999). *changing views: the origins and iconology of garden images in seventeenth century*.

Watson, G. B., & Bentley, I. (2007). *Identity by Design*. Oxford: Elsevier Ltd.

Waymark, J. (2003) *modern garden design, innovation since 1900*. London: Thames & Hudson Ltd.

Yang, B. E., & Kaplan, R. (1990). The perception of landscape style: a cross-cultural comparison. *landscape and urban planning* (19), 251-262.

Yu, K. (1995). Cultural variations in landscape preference: comparisons among Chinese sub-groups and Western design experts. *Landscape and Urban Planning*, 32, 107-126.

Yuen, B. (2005). Searching for place identity in Singapore. *Habitat International*, 29, 197–214.

Zube, E. H. (1981). Cross-cultural perceptions of scenic and heritage landscapes. *Landscape Planning*, 8, 69-87.

**Table 2: Preferred garden elements for Malaysian gardens**

Garden element Garden type	Water feature %	Rock and stone %	Sand %	Pathway %	Plants %	Architectural feature %	Decorative feature %
English	38.9	15.54	0.028	13.98	37.74	26.64	23.98
Japanese	27.38	30.18	12.24	16.96	38.12	18.52	17.80
Persian	47.84	19.44	4.12	19.62	20.52	27.90	21.20
Chinese	20.34	35.26	5.88	10.04	29.46	32.16	21.78
Other	28.78	13.86	5.38	16.80	37.10	25.92	21.10
Average %	32.648	22.856	5.5296	15.48	32.588	26.228	21.172

**Table 1: Mean preferences and comparison of garden scenes for Malaysian gardens**

Garden Scene Respondents	Mean	Std. Deviation	Std. Error	
4	Malay	2.91 <sup>a</sup>	1.158	.079
	Chinese	3.46 <sup>b</sup>	1.085	.121
	Indian	3.08 <sup>ab</sup>	1.202	.167
	Overall	3.06	1.167	.063
5	Malay	4.27 <sup>a</sup>	.929	.064
	Chinese	4.30 <sup>a</sup>	.827	.091
	Indian	3.69 <sup>b</sup>	1.292	.179
	Overall	4.19	.989	.053
6	Malay	3.55	1.066	.072
	Chinese	3.59	1.080	.122
	Indian	3.38	1.301	.180
	Overall	3.54	1.106	.059
7	Malay	3.52 <sup>a</sup>	1.005	.068
	Chinese	3.91 <sup>b</sup>	.932	.103
	Indian	3.31 <sup>a</sup>	1.229	.170
	Overall	3.58	1.041	.056
8	Malay	3.85	.991	.067
	Chinese	3.85	.877	.097
	Indian	3.77	1.215	.168
	Overall	3.84	1.000	.053
9	Malay	4.07 <sup>a</sup>	.848	.057
	Chinese	4.32 <sup>b</sup>	.784	.087
	Indian	3.96 <sup>a</sup>	1.171	.162
	Overall	4.11	.894	.048
10	Malay	3.27 <sup>a</sup>	1.278	.087
	Chinese	3.82 <sup>b</sup>	1.156	.129
	Indian	3.15 <sup>a</sup>	1.460	.203
	Overall	3.38	1.300	.070
11	Malay	3.71	.958	.064
	Chinese	3.62	1.026	.113
	Indian	3.50	1.180	.164
	Overall	3.66	1.009	.054
12	Malay	3.49 <sup>a</sup>	1.092	.074
	Chinese	3.10 <sup>b</sup>	1.032	.115
	Indian	3.08 <sup>b</sup>	1.007	.140
	Overall	3.34	1.081	.058
13	Malay	3.57	1.308	.088
	Chinese	3.79	.939	.104
	Indian	3.46	1.275	.177
	Overall	3.61	1.229	.065
14	Malay	3.82	1.182	.080
	Chinese	3.88	1.082	.119
	Indian	3.65	1.426	.198
	Overall	3.81	1.198	.064

15	Malay	3.57 <sup>a</sup>	1.104	.075
	Chinese	3.16 <sup>b</sup>	1.271	.140
	Indian	3.19 <sup>b</sup>	1.299	.180
	Overall	3.42	1.187	.063
16	Malay	3.62 <sup>a</sup>	1.141	.078
	Chinese	3.80 <sup>a</sup>	1.024	.113
	Indian	3.00 <sup>b</sup>	1.358	.188
	Overall	3.57	1.174	.063
17	Malay	3.62 <sup>a</sup>	1.210	.081
	Chinese	3.98 <sup>b</sup>	.902	.100
	Indian	3.56 <sup>a</sup>	1.320	.183
	Overall	3.69	1.171	.062
18	Malay	4.05 <sup>a</sup>	1.143	.077
	Chinese	3.74 <sup>b</sup>	1.225	.135
	Indian	4.10 <sup>ab</sup>	1.089	.151
	Overall	3.98	1.159	.062
19	Malay	3.64 <sup>ab</sup>	1.059	.071
	Chinese	3.89 <sup>a</sup>	1.006	.111
	Indian	3.38 <sup>b</sup>	1.286	.178
	Overall	3.66	1.091	.058
20	Malay	3.83	1.055	.071
	Chinese	3.87	.857	.095
	Indian	3.54	1.196	.166
	Overall	3.80	1.038	.055
21	Malay	3.56 <sup>a</sup>	1.211	.081
	Chinese	3.89 <sup>b</sup>	.916	.101
	Indian	3.48 <sup>a</sup>	1.365	.189
	Overall	3.63	1.180	.063
22	Malay	3.33 <sup>a</sup>	1.219	.082
	Chinese	3.73 <sup>b</sup>	.982	.108
	Indian	3.51 <sup>ab</sup>	1.206	.169
	Overall	3.45	1.175	.062
23	Malay	3.63	1.109	.075
	Chinese	3.56	1.187	.131
	Indian	3.50	1.229	.170
	Overall	3.60	1.143	.061
24	Malay	3.56 <sup>a</sup>	1.058	.071
	Chinese	3.93 <sup>b</sup>	.858	.095
	Indian	3.63 <sup>ab</sup>	1.166	.163
	Overall	3.66	1.040	.055
25	Malay	3.73	1.016	.068
	Chinese	3.56	1.055	.117
	Indian	3.56	1.305	.181
	Overall	3.67	1.072	.057
26	Malay	3.76	1.085	.073
	Chinese	3.55	1.146	.127
	Indian	3.54	1.290	.179
	Overall	3.68	1.132	.060
27	Malay	3.70	1.213	.082
	Chinese	3.95	.901	.100
	Indian	3.67	1.264	.175
	Overall	3.75	1.158	.062
28	Malay	3.78	1.103	.074
	Chinese	3.59	1.054	.116
	Indian	3.58	1.258	.174
	Overall	3.71	1.117	.059