



ICESD 2014: February 19-21, Singapore

The Impact of Landscape Design on House Prices and Values in Residential Development in Urban Areas

Mohd Ramzi Mohd Hussain^{*}, Izawati Tukiman, Ismawi Hj. Zen and Fitrynadia Mohd Shahli

Department of Landscape Architecture, Kulliyah of Architecture and Environmental Design, International Islamic University Malaysia (IIUM), 53100 Jln Gombak, Kuala Lumpur, MALAYSIA

Abstract

Focusing on a world class living environment, a good quality residential area can be highlighted as an important issue in creating a sustainable living environment. However, limited green spaces within the proximity of residential properties are not supporting the landscape space and are not conducive to living space. The aim of the paper is to investigate the impact of landscape design on house prices and values in residential development particularly in urban areas. The paper employed quantitative approaches which include i) a questionnaire survey; and ii) an observation. This empirical study is based on the findings of case studies conducted in several residential areas in Klang Valley. The findings show that the residents have very clear ideas on how much green space is really important in residential areas in order to create a sustainable residential environment. Despite the absence of public actions in terms of providing information, encouraging participations in the survey and promoting awareness of those interviewed have shown considerable interest in promoting landscape design to be applied in residential development. The perceptions of the quality and quantity of landscape designs in residential areas especially in Klang Valley can be further researched for future study.

© 2014 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and peer review under responsibility of Asia-Pacific Chemical, Biological & Environmental Engineering Society

Keywords: Sustainable living environment, landscape design, house prices and values, residential development, quality of landscape design

1. Introduction

^{*} Corresponding author. Tel.: 006-03-61964000 ext 6286; fax: 006-03-61964864
E-mail address: ramzie97@hotmail.com.

Landscape, which includes topography, vegetation and associated plants and soil, water bodies, and their spatial configuration, is one of the most visual needs of people [1]. They add that human-nature interactions lead human beings to have contrasting preference on the surrounding landscape and environment because a pleasing landscape can bring mental and physical benefits to people. The understanding and preference by people on their surrounding landscape provide a challenge for policy-making and implementation in residential property. Landscape design is an importance element to housing development since it can create genius loci (sense of place) to the housing area. This will determine the level of comfort for the residents and the residential areas. Good design should contribute positively to making places better for people.

2. Landscape Design as an Added Value for Residential Development

There are many factors of landscape design that can influence house value and price [2]. Luttik [3] states that the largest increase in house prices due to environmental factors and analysis revealed the house price varies by type of landscape that have in house. According to Kadish and Nutesil [4] the property high structure vegetation has positive and significant coefficient to the sale price of the property of the house. Besides that, house price and value are influenced by factor of natural sources that have in house such as open spaces and water bodies. According to Wolf [5] yard, street trees, forest, open spaces and parks in development growth area can add a value to the property. Niemiera [6] studies that a different type of plant sizes; types and level of sophistication of landscape can add value to house property. In that study, design sophistication was the factor that most added to a house's value. Ng [7] adds that park and open space is one of the most important of selling a point and it becomes a tool for the developer to attract prospect buyers.

Although there have been a few exceptions, houses with softscape elements are generally preferred compared to houses without softscape elements. According to Henry [8] plants includes trees, grass and others Softscape features may affect the price of the house. It's also supported by Niemiera [6] and Des Rosiers et al., [9] states that a sophisticated landscape design includes varying sizes, types and color of plants can become factors that most added to a house value and price. Niemera [6] adds that landscape design sophistication can increase 42% value of the house rather than the size of the plant (36%) and diversity type of plant material (22%). Thus, large softscape and hardscape expenditure on the residential development can increase house value and will result in a higher selling price.

3. Methodology

This study employed quantitative approaches which include a questionnaire survey and observation. In total, 1000 respondents were used as representatives for the whole population in Klang Valley. After obtaining the target response rate, the collected data were further analyses using the Statistical Package for the Social Science (SPSS) Version 20.0 software. The types of data used were nominal, ordinal and categorical. These types of data and the objectives of the study determined the type of statistical analysis employed.

4. Analysis and Findings

4.1. Criteria of Landscape Design for Residential Areas

In order to identify the needs of the users in terms of landscape design, respondents were asked the type of criteria considered to be significant for the landscape design in their residential areas. The tables present the frequency distribution of respondents' answers.

Table 1. Landscape design criteria included for residential areas

Landscape design criteria	0	1	2	3	4	5	M	SD
a. Comfort	1.0	1.4	3.1	9.3	32.4	52.8	4.33	0.877
b. Feeling of safety and security	1.0	1.5	3.3	11.4	32.0	50.8	4.29	0.904
c. Privacy	1.0	2.0	5.8	22.2	41.8	27.2	3.87	0.949
d. Sense of belonging	1.0	1.8	4.6	17.6	43.0	32.0	4.00	0.923
e. Space to socialize	1.1	1.9	4.2	20.3	50.7	21.8	3.87	0.868
f. Courtyard	1.3	.8	3.8	20.5	50.7	22.9	3.92	0.813
g. Recreation	1.5	.6	4.5	15.7	49.3	28.4	4.02	0.828
h. Sport	1.1	1.7	6.9	16.6	46.7	27.0	3.91	0.932
i. Cultural	1.5	1.8	7.8	25.5	44.8	18.6	3.72	0.922
j. Community	1.3	1.5	5.1	22.2	46.5	23.4	3.86	0.887
k. Therapeutic garden	1.5	2.9	9.9	28.8	41.0	15.9	3.58	0.972
l. Herbs Garden	1.8	4.0	14.4	26.8	38.5	14.5	3.46	1.040
m. Others	34.2	3.7	4.4	17.2	26.8	13.7	3.64	1.058
Total							3.88	0.921

As shown in Table 1, the highest criteria selected by respondents are comfortable ($M = 4.33$) and feeling of safety ($M = 4.29$). The lowest criterion selected is the herb garden ($M = 3.46$). This result shows that the aspect of safety and comfort are important to create a better living environment and the uses of landscape design hopefully can provide a sense of security for users. Thus, based on the preferences on comfort and safety, the implication of landscape design, such as fences and buffers, can create a sense of security and safety for the residential environment. The safety and security can lead to the comfortable environment for the user.

4.2. Preferences on Landscape Elements

In addition, the questions on the needs for landscape elements in the house compound were also asked to the respondents. The landscape elements consist of fountains, gazebos, plants, benches, pergolas, trellis, planter boxes, rock gardens, lawn areas and others. Table 2 shows that 69.9% ($M = 3.88$) of the respondents agreed with the needs of plants, 67.7% of lawn gardens, 63.3% for benches, 49.3% for gazebos, 43.1% of planter boxes, 42.8% for rock gardens, 40.3% for fountains, 39.1% for pergolas, 31.4% for trellis and 23.7 for others. This shows that the needs of plants have become the highest priority for respondents for their house compounds. The function of plants for residential areas can be identified for street plantings, buffers, shading elements for pedestrians, creating aesthetic values that can create an identity for the residential areas and forming a cooling environment for the surrounding neighborhood.

Table 2. Landscape elements in house compounds

Landscape elements in house compounds	0	1	2	3	4	5	M	SD
a. Fountains	2.7	21.8	16.4	18.8	26.5	13.8	2.94	1.379
b. Gazebos	2.9	16.4	12.1	19.3	33.2	16.1	3.21	1.328
c. Plants	2.4	4.9	3.3	19.5	41.2	28.7	3.88	1.033
d. Benches	2.5	7.3	6.6	20.3	44.5	18.8	3.62	1.098
e. Pergolas	3.7	15.4	14.5	27.3	30.6	8.5	3.08	2.065
f. Trellis	3.8	15.5	18.4	30.9	24.4	7.0	2.89	1.170
g. Planter boxes	3.2	11.8	16.1	25.8	32.5	10.6	3.14	1.187
h. Rock gardens	3.0	13.7	15.4	25.1	30.1	12.7	3.13	1.242
i. Lawn areas	3.3	5.4	5.6	18.0	41.4	26.3	3.80	1.074
j. Others	55.4	3.8	3.0	14.1	16.4	7.3	3.46	1.106
Total							3.31	1.268

4.3. Landscape Design Influences the House Prices and Values

There are many factors to be considered in respondents' decisions to buy or rent a house. The importance of landscape design in influencing this decision is needed to be proven (Table 3).

Table 3. Results of owning a dream-house

Description		Frequency	Percentage %	
a.	Landscape design influences the decision to buy or rent a house	Missing	16	1.6
		Yes	682	68.2
		No	302	30.2
		Total	1000	100.0
b.	Providing good landscape increases the value of property	Missing	13	1.3
		Yes	904	90.4
		No	83	8.3
		Total	1000	100.0

The results show that there are 68.2% of the respondents agreed that landscape design can influence their decisions in buying or renting a house (Table 3). Meanwhile, a majority of the respondents agreed that landscape design can increase the value of a property (90.4%). Thus, these results support that landscape design is an important factor when making the decisions to buy or rent a house and it also increases the value of a property. The used of various types of plants can help to solve residential problems and give an opportunity in enhancing a quality of living for the residents (Fig.1).



Fig. 1. (a) *Peltophorum pterocarpum* (Yellow flame) is a big silara tree that can provide shade environment for the main avenue area; (b) *Mimusops elengi* (Bunga Tanjung) can direct pedestrians' movement; (c) *Mangifera indica* (Mango Tree) are planted at the front of houses for its fruits.

Besides that, the function of landscape design such as street planting and railing act as a buffer zone and safety barrier to segregate public and private spaces of residential areas. The importance of safety and security become a priority for every residence in order to make their surrounding safe from any danger and harm. It will help in increasing social values of the society.

5. Conclusion

It can be concluded that landscape design influence the house prices and values in residential development. Most of the respondents support the importance of landscape design positively in their residential areas. However, there are still many constraints and limitations in terms of planning and guidelines in order to utilize this landscape design especially in house compounds. Equally, an approach to residential development which works within the constraints and opportunities provided by the landscape will not only minimize adverse effects but will also offer environmental, social and economic benefits. The housing built today will not only

help to shape the environment in the immediate future, but it will also be a legacy in determining the environmental quality of many areas.

Acknowledgements

The authors would like to thank to the International Islamic University Malaysia for supporting this research under the Research Acculturation Grant Scheme (RAGS) and also to the National Real Estate Research Coordinator (NAPREC), National Institute of Valuation (INSPEN), Valuation and Property Services Department, Ministry of Finance Malaysia.

References

- [1] Zheng, B., Zhang, Y., And Chen, J. (2011). Preference to home landscape: wildness or neatness? *Landscape and Urban Planning*, 99: 1-8.
- [2] Berger, C. (2007). Determining market value: Reconciling the three approaches to real estate valuation for Ad Valorem Taxes. *Journal of State Taxation*, 25 (4): 31.
- [3] Luttki, J. (2000). The Value of Trees, Water and Open Space As Reflected By House Prices in Netherlands. *Landscape and Urban Planning*, 15: 161 -167.
- [4] Kadish, K., and Nutesil, N. R. (2012). Valuing Vegetation in Urban Watershed. *Landscape and Urban Planning*, 104: 59 – 65.
- [5] Wolf, K. L. (2007). City Trees and Property Values. *Arborist News*, 16 (4). p. 34-36.
- [6] Niemiera, A.X. (2009). The Effect of Landscape Plants on Perceived Home Value. *Virginia Cooperative Extension*, 426-087: 1-3.
- [7] Ng, A. (2005). Gamuda offers a vast expanse of green home buyers. *The Star*.
- [8] Henry, M. S. (1999). Landscape Quality and the Price of Single Family Houses: Further Evidence From Home Sales in Greenville, South Carolina. *Journal of Environmental Horticulture*, 17(1): 25-30.
- [9] Des Rosiers, F., Theriault, M., Kestens, Y., and Villeneuve, P. (2002). Landscaping and house values: an empirical investigation. *Journal of Real Estate Research*, 27(4): 371-407.