

The Important of Park to Residential Property Buyers

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Abstract

Park and landscape have now become a prominent feature in the planning of residential area. The preservation of parks and other open spaces are now vitally considered to attract house buyers. This study attempts to evaluate the extent to which park give impact to residential property buyers in Bukit Jelutong Residential Area, Shah Alam, Selangor, Malaysia. The study is designed to achieve three (3) main objectives which are to determine park related factors and non-park related factors that affect value of houses, to identify the importance of park to house buyers and to analyze the impacts of park related factors on value of houses. This research employed a multi-method approach included interviews with developer, Geographic Information Systems (GIS) technique, a survey of residence and development of a hedonic pricing method. This research is useful to decision-makers, local authorities, urban planners, developers, and corporate bodies for their development planning.

Keywords: park, geographic information system, survey of residence

Background and Objectives

The planning of residential area, park and landscape have now become prominent as a feature. The importance of preserving parks and other open space lands has been major concern in recent years. Governments, environmentalists and many others have recognized the value of parks and open spaces. These values can be categorized in terms of environmental, economic, social and public health. They contribute to the protection of biodiversity and ecological services such as flood, drought reduction, wind controlling and moderating temperatures. In addition, the value of parks can enhance aesthetics values, increasing benefits of education and nature study. It also provides residence an opportunity for social contact and creating sense of place (Sportza, 2006). Previous studies have found that many communities are designed with variety types of parks, primarily to enhance the recreational opportunities for the residents engaging in active or passive recreation activities (Fakhruddin, 2004; Cho, et al., 2006).

According to Dehring and Dunse (2006), providing and maintaining park is important because there are economic benefits as revealed through house prices. The value of a property is related to the number of factors such as the characteristics of the house, the characteristics of the residential environment and the location of the house. A recent study by Visser and Dam (2006) found that the sales price of a house is the sum of the value of its different attributes or characteristics. The influence of these attributes is important on house prices. They all have a positive effect on house prices and account for a premium depending on the way characteristics have been measured. Given that different attributes or characteristics will result in differences in property values, parks may have a positive impact on housing sales prices.

The argument that parks and open spaces have a positive impact on property values derives from the observation that people frequently are willing to pay a larger amount of money for a home located close to these types of areas, than they are for a comparable home further away. Crompton (2001) concludes that effects on property values reflect people's willingness to pay. Thus, real estate dealers have always drawn attention to green space near their properties for sale or rent and show that recreational features contribute to increased valuations for property near parks.

Bukit Jelutong Residential Area is chosen as the research area and located in Shah Alam, Selangor, Malaysia (See Figure 1). Bukit Jelutong Residential Area has been selected as the research area because of strategically known as 'sub-city' to Shah Alam, Selangor, Malaysia. The development has started in 1995 is covering about 2,205 acres of area. The design has been awarded the '*Best Town Planning Award*' in 1997, '*Best Neighborhood Landscape in Selangor Award*' in 2001 and '*Corporate Social Responsibility Award*' in 2004. By considering the awards achieved, the research area confirm with the Nicholls (2002) study which states that a well-designed and well-managed open space such as parks may not only improve resident's quality of life, but also enhance outsiders' perceptions. In fact, the award-winning Bukit Jelutong Residential Area has introduced the emphasis of preserving and conserving the natural environment and enhancing infrastructure facilities, including advanced telecommunication services, and extensive road networks. Every single unit of houses in Bukit Jelutong home is elegantly designed to provide comfort and convenience to homeowners in harmony with nature.



Figure 1: Map Showing Research Area

As mentioned earlier, Bukit Jelutong Residential Area is a low-density and self-contained planned community. Bukit Jelutong Residential Area contains a variety of open spaces such as park, playgrounds and many large open green lungs. The park serves as the largest park to the community which offers wetlands, water features,

pergolas, other facilities such as reflexology paths, exercise stations, timber decks, gazebos and also rich with variety of palms, trees, shrubs and groundcovers.

Nowadays, in the property sector, market demand for property is growing higher for the interest of quality of life. Current buyers seem more selective in choosing their residential property such as reasonable prices instead of looking on current factors on their property (e.g. location, concept, security, and etc.). Therefore, current developers that noticed this kind of demands tend to improve the value of their property by introducing aesthetic elements such as natural, green spaces and parks allocation and also a sense of peace of mind to their design.

Unfortunately, most developers tend to provide a basic guideline approval in developing open spaces. They try to preserve the minimum space of green areas to save costs especially when it comes to environmental issue regarding green areas and parks. However, the situations will change if they noticed the economic value of green areas and parks (Naofumi, 2007). Fortunately, there are some developers who are still willing to allocate an extra cost for environmental issue in their development and willing to invest to a maximum cost for optimum results of parks. Various concepts have been introduced from other countries just because of their sensitivity on current trend and demand. According to Lee (2007), S P Setia Berhad is one of the local property developers that is committed to use the green theme in their development and have preserve the environment. Till now, they have proven their investment of worth and benefits to residents and as a result for their serious commitment regarding environmental issue, they are now working out a growing number of international property projects.

Over the years, developers tend to develop their property by fulfilling the minimal local authority requirement for approval. However, the situations changed by the demand from a growing a well-educated society. Consumers' expectations have forced developers to address the issue seriously. Now, landscape is one of the most important selling points and has become a tool for developers to entice prospective buyers. Developers are not selling houses, but a planned community, house with an environment (Shariff, 2005).

According to Ng (2005), developers would emphasize on a greater need for security, luxury and greenery based on research on trends, doing by their own team. The author reported that Gamuda Land developer has created an eco-friendly environment up to fourty percent (40%) of land which is dedicated to green features and open spaces in different housing projects. Therefore, the questions arise on the percentage of increment of the total property values once the environment aspect is taken into consideration.

The aim of this research is to evaluate to evaluate the extent to which park give impact to residential property buyers in Bukit Jelutong Residential Area. (Currently, researcher have achieved the first and second objectives, and just moving to the third). The objectives include the following:

- 1) To determine park related and non-park factors that affect value of houses.
- 2) To identify the importance of parks to house buyers.
- 3) To analyze the impacts of park related factors on value of houses.

The finding of the research could provide a guideline on provision of parks to developers for their long-term business planning. The finding may encourage them to develop more parks and green areas within their real estate projects and developments. To the publics, the investigation of current demands will be a very good guideline to plan for a new property. Most important is the finding of research can create an opportunity for researchers, students and corporate bodies to integrate new knowledge to sustain the nature values.

In order to answer the aim and objectives of the study, the research questions were developed as follows:

- i) What are the determining factors that affect the value of houses?
- ii) Does park contributes as an important factor in increasing property values?
- iii) Is there any positive impacts of parks on property values to house buyers?
- iv) What kind of parks elements preferred by respondents in a residential area?
- v) Is there any significant relationship between park-related as independent variables and house price as a dependent variable?
- vi) How much is the increment in term of percentage of the total property values when park is included in the housing project?

Methodology

The study employed a multi-method approach. The main elements of this research included:

1. Interviews with head of three departments of developer Bukit Jelutong Residential Area.
2. Geographic Information Systems (GIS) technique.
3. A survey of house buyers and residents living in proximity to the park (within 600m radius).
4. A hedonic pricing analysis.

Interviews with head of three departments of developer Bukit Jelutong Residential Area

Interviews were conducted with three departments of Property Development, Sales and Marketing, Environmental Management or Landscaping of Sime Darby Berhad. These departments are responsible for the development of the research study area and very familiar to the site. The interview was started in June 2008 with a face-to-face basis utilized an interview guide (questionnaire) and completed in one month period. The interviews were conducted in average 1 to 3 hours. The interviews were aims to obtain their perceptions on the impact of park on property values.

Use of Geographic Information Systems (GIS) technique

In this research, the Geographic Information Systems (GIS) will be used to create the area and distance range in variety of houses. The area of 600 metres or 1,500 feet was decided to be used as the buffer zone and the distance range will be divided into two radiuses of areas which are 600 metre and 300 metre from the park (see Figure 2).

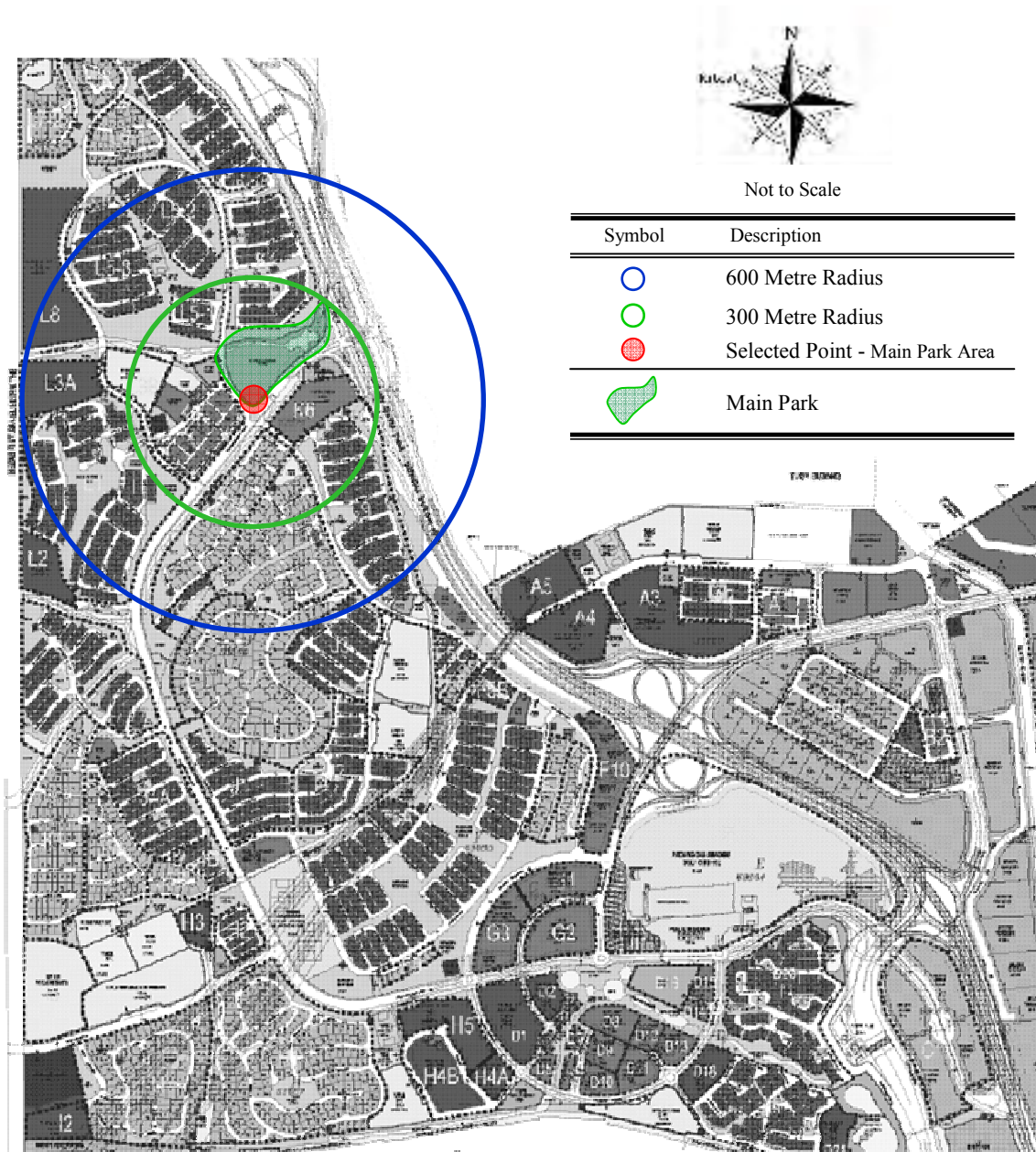


Figure 2:

Map of Bukit Jelutong Township Development showing the radiuses of 600 metre & 300 metre and the location of selected point of the park.

Survey of house buyers and residents living in proximity to the park

This survey was used to gauge the perceptions of residents to the importance of park to residential property buyers. The survey was conducted from July to September 2008 within 2 months. Those house buyers or residents whose are located within the 600 metre radius were chosen as respondents. A total of 458 respondents have been identified in this survey.

The distribution was made by asking a permission and cooperation of a duty home guard to manually distribute the questionnaires from house to house. They were

asking to keep any self return of questionnaire by residents to them. The returned questionnaires will be collected by researcher every 2 weeks. The set of every distributed questionnaire compiled with a self-address stamped envelope and a letter explaining about the research project and asking their co-operation to complete a question given. This letter contained name and title of research study explaining the recipient why he or she had been selected and mentioned the need for their response and cooperation to completing the questionnaire. The letter also explained that confidentially was important and would be maintained, and invited the recipient to contact the researcher with any question or concern. A written step-by-step guide is also enclosed to ease respondent completing the questionnaire. The researcher has expected the questionnaire to be returned by post, by hand and self collecting to guardhouse. Thereafter, the second letter was sent to all respondents as a reminder for them to complete the questionnaire. Another reminder was sent again to thank those who had completed a survey, reminded those who hadn't completed the survey about the importance of their response, and informed them that they could call to obtain another copy of the survey or to discuss any question or concern.

Development of Hedonic Pricing Regression Analysis

Regression has been chosen to represent the best prediction of dependent variable from several independent variables. According to Lucey (2002), a model which incorporates several independent variables is known as hedonic pricing model. The hedonic pricing model is using to seek the marginal value or implicit prices of characteristics associated with proximity to a park within 600m radius.

A site analysis and physical inspection was made by researcher to collect information about the house characteristics even though the data was collected earlier from developer and private property valuer. The data contains prices and other building characteristics. (Currently, researcher just moving to this stage and will be running for regression analysis).

Results

Interview Results

Opinions from the head of department from Property Development, Environmental and Landscaping Management and Sales & Marketing of Sime Darby Berhad were fairly consistent regarding the impact that gives by the existence of park to Bukit Jelutong Residential Area. All of them agreed that park is one of the determine factors that normally affect the value of houses in that area. Sime Darby itself admitted that any of their houses located near to park will see a 10% increment. They already provided an additional percentage of green area to their development (normally 10% – guideline by local authority) purposely to increase the house value and to attract house buyer to their concept of green development. According to their Sales and Marketing Department, house located nearer to park is highly demand and fast in sale. However, more positive impact towards the value of houses can be seen if park is develops with a good design or concept and well-maintain. All of the representatives identified that the house values in the Bukit Jelutong neighbourhood was steadily

increasing in real estate market. Meanwhile, they also felt that location of the neighbourhood and the prestige of Bukit Jelutong play a role in contributing to current market price. Lastly, they indicated that when giving presentations to potential house buyers, they would include and highlight the park as one of the neighborhood attraction.

Survey Results

The total number of respondents who participated in this study is 458 respondents which are housebuyers of house unit within 600 metre radius of the main park. Of these, a total of 289 questionnaires were completed for a response rate of 63.1% (Table 1).

Table 1: Numbers of survey respondents - Answered and Non-answered house buyer

Description	Frequency	% response
Answered	289	63.1
Non-answered	169	36.9
Total house buyer (within 600m radius)	458	100%

- The Mean Results of Determining Park Related and Non-park Related Factors that Affect Value of Houses

This section will report the mean value of park variables, locational and neighbourhood variables, also building variables. This analysis is to achieve the first objective of the research that to determine park related and non-park factors that affect value of houses.

Mean Results of Park Variables

Table 2 shows the mean results of park variables. As shown in table below, conceptual/design of park (mean=4.42) and a good development of park elements (mean=4.42) were rated highest value of mean or very important by respondents. Meanwhile, existence of a view to an open spaces/green areas (mean=4.25) and parks (mean=4.12) were rated importance. Furthermore, they also rated important to own a house with facing park (mean=3.80), to have a passive area of park facing their houses (mean=3.72) and at least to be located near to park (mean=3.71). Follows by accessibility to park (mean=3.52), most respondents rated that variable also as important. However, house backing park (mean=3.21) and to have an active area of park facing their houses (mean=3.33), most respondents rated that variables as moderate. It was found that most respondents rated very important for having a proper conceptual/design of park and a good development of park elements.

Table 2: Mean Results of Park Variables

Park variables	Total mean
Accessibility to park	3.52
Near to park	3.71
Housing facing park	3.80
House backing park	3.21
View to park	4.12
View to open space/green	4.25
Concept/design of park	4.42
Development of park elements	4.42
Active area of park facing house	3.33
Passive area of park facing house	3.72

Notes:

Important rating scale is 1=extremely not important, 2=not important, 3=moderate, 4=important, 5=very important

The Mean Results of Locational and Neighborhood Variables

Table 3 shows the mean results of locational and neighborhood variables. As shown in table below, location of the house (mean=4.56) and locational topography (mean=4.52) were rated highest value of mean or very important by respondents. Accessibility to highways/major road (mean=4.49), security or safety of neighborhoods (mean=4.40), maintenance level and quality of neighborhoods (mean=4.39), privacy/zoning/gated neighborhoods (mean=4.35), the prestige of Bukit Jelutong (mean=4.27) were rated importance. Meanwhile, they also rated important to distance to central business district (mean=3.94), proximity to park (mean=3.93), proximity to petrol pump station (mean=3.91), proximity to public service (mean=3.88) and proximity to religious house (mean=3.64). It was found that all these variables were rated very important and important by the respondents.

Table 3: Mean Results Locational and Neighborhood Variables

Locational and Neighborhood Variables	Total mean
The prestige of Bukit Jelutong	4.27
Locational topography	4.52
Location of the house	4.56
Distance to Central Business District	3.94
Accessibility to highways/major road	4.49
Proximity to public service	3.88
Proximity to park	3.93
Proximity to petrol pump station	3.91
Proximity to religious house	3.64
Security or safety of neighborhoods	4.40
Privacy/zoning/gated neighborhoods	4.35
Maintenance level and quality of neighborhoods	4.39

Notes:

Important rating scale is 1=extremely not important, 2=not important, 3=moderate, 4=important, 5=very important

The Mean Results of Building Variables

Table 4 shows the mean results of building variables. As can be seen from the table below, the mean rating of house size (mean=4.55), lot size (mean=4.54), sale or rent price (mean=4.53), resale value/investment (mean=4.53) were rated the highest value and very important among respondents. Good design of house (mean=4.48), number of room (mean=4.48), number of bathroom (mean=4.45), house type (mean=4.43), state of repair (mean=4.43), house extension (mean=4.36), good exterior condition of house (mean=4.35), corner lot (mean=4.31), parking (mean=4.22), kitchen cabinet (mean=4.22), floor finishes (mean=4.18), kitchen extension (mean=4.10) and green area in house lot (mean=4.07) were rated high value of mean and important among respondents. Furthermore for fence (mean=3.83) and intermediate lot (mean=3.53) also were rated important. It is apparent from this table that all the mean rating was rated very important and important by the respondents.

Table 4: Mean Results of Building Variables

Building variables	Total mean
Sale or rent price	4.53
Resale value/investment	4.53
State of repair	4.43
House size	4.55
Lot size	4.54
Corner lot	4.31
Intermediate lot	3.53
Parking	4.22
House type	4.43
Good design of house (interior/exterior)	4.48
House extension	4.36
Kitchen extension	4.10
Kitchen cabinet	4.22
Number of room	4.48
Number of bathroom	4.45
Floor finishes	4.18
Fence	3.83
Good exterior condition of house	4.35
Green area in house lot	4.07

Notes:

Important rating scale is 1=extremely not important, 2=not important, 3=moderate, 4=important, 5=very important

- The Mean Results for the Elements of Park

This section will report the mean value of each elements of park. The mean value was gathered from the priority rating (lowest to highest) answered by the respondents in Section 3. This analysis is to achieve the second objective of the research i.e. “to identify the importance of park to house buyers”. In this sections, the elements of park are divided into three (3) which are softscapes, hardscapes and wildlives.

Mean Results of Softcapes Elements

Table 5 presents the mean result of softcapes elements. It can see that the highest value of mean rated by the respondents was shade tree (mean=4.64). The table also indicates that foliage shrub (mean=4.35), grasses or turf (mean=4.35), flowering shrub (mean=4.27), groundcover (mean=3.85) and single trunk (mean=3.76) were rated high value of mean. Climbers (mean=2.91), aquatic plant (mean=2.88) and multiple trunk (mean=2.50) were rated moderate. Only Creepers (mean=2.05), annual plant (mean=1.84) and fruit tree (mean=1.57) were rated lower by the respondents. It was found that majority of respondents rated the highest value for shade tree.

Table 5: Mean Result of Softcapes Elements

Softcapes Elements	Total mean
Shade tree	4.64
Fruit tree	1.57
Single trunk	3.76
Multiple trunk	2.50
Flowering shrub	4.27
Foliage shrub	4.35
Creepers	2.05
Climbers	2.91
Grasses or turf	4.35
Groundcover	3.85
Aquatic plant	2.88
Annual plant	1.84

Notes:

Priority rating scale is 1=lowest, 2=lower, 3=moderate, 4=higher, 5=highest

Mean Results of Hardscapes Elements

Table 6 below shows the mean results of hardscapes. As shown, lighting (mean=4.76), dustbin (mean=4.71), children playground (mean=4.70), bench (mean=4.69), jogging path (mean=4.68), exercise station (mean=4.66), gazebo (mean=4.66), entrance signage (mean=4.63), instruction signage (mean=4.58), walkway (mean=4.55), directional signage (mean=4.50) were rated the highest value by the respondents. Pergola (mean=4.44), retaining wall (mean=4.38), reflexology path (mean=4.33), parking (mean=4.18), water with fountain (mean=4.16), warning alarm (mean=4.01), railing (mean=3.99), public toilet (mean=3.94), guardhouse (mean=3.66), steps (mean=3.65), water without fountain (mean=3.50) were rated high value of mean. Only multipurpose court (mean=2.92) and skate park (1.73) were rated moderate.

Table 6: Mean Result of Hardscapes Elements

Hardscapes Elements	Total mean
Bench	4.69
Dustbin	4.71
Gazebo	4.66
Pergola	4.44
Entrance signage	4.63
Directional signage	4.50
Instruction signage	4.58
Lighting	4.76
Public toilet	3.94
Guardhouse	3.66
Parking	4.18
Bus stop	3.13
Railing	3.99
Steps	3.65
Warning alarm	4.01
Children playground	4.70
Exercise station	4.66
Jogging path	4.68
Reflexology path	4.33
Skate park	1.73
Multipurpose court	2.92
Water with Fountain	4.16
Water without fountain	3.50
Retaining wall	4.38
Walkway	4.55

Notes:

Priority rating scale is 1=lowest, 2=lower, 3=moderate, 4=higher, 5=highest

Mean Results of Wildlifes

Table 7 shows the mean results of wildlifes. It was reported that butterfly (mean=4.17), birds (mean=3.91) and firefly (mean=3.74) were rated higher by the respondents while dragonfly (mean=3.44) and ladybird (mean=3.18) were rated moderate. Only fish (mean=2.44), squirrel (mean=1.86) and beetle (mean=1.84) rated lower value. It was found that many respondents rated higher priority for butterfly, birds and firefly in wildlifes category.

Table 7: Mean Result of Wildlifes

Wildlifes	Mean (n=289)
Birds	3.91
Squirrel	1.86
Butterfly	4.17
Firefly	3.74
Dragonfly	3.44
Ladybird	3.18
Fish	2.44
Beetle	1.84

Notes:

Priority rating scale is 1=lowest, 2=lower, 3=moderate, 4=higher, 5=highest

Discussions and Conclusions

Determining Factors That Affect Value of Houses

- Park Related Factors

For park related factors, proper conceptual or design of park and good development of park elements were rated as very important by respondents in influencing or determining their decision to purchase house. These findings of the current study are consistent with Noah (1999) who found that park with a good character has a positive impact on people's perceptions. This findings also is in agreement with Garvin (1999) findings which showed that the impacts were not likely to be positive when a park was not well-designed, not well-maintained, were in the wrong place, were the wrong size and shape, hardscape are not well-developed, not produce attractive landscape and did not include facilities to attract nearby residents. Therefore, the best design of park should consists a size, shape, connections, appearance and etc. to meet needs and people interests (Paul, 2006) and to ensure that park users have a safe and protection (Richard, 2008). This is also confirmed by Clare (2008) that a good park must be properly sized and designed, provides a variety of activities, should be easy to get to, accessible to everyone and connected to the surrounding community.

- Non-Park Related Factors

For locational and neighbourhood factors, the respondents rated very important to the location of the house and locational topography. According to Tom Kauko (2003), location and locational topography usually influence property value and it first highlights from property investors. This view is supported by Emrath (2002) who stressed that location of the house and geographic areas is related to explain house price. Nevertheless, locational variables contribute as a prime determinant of values. Many housing market experts believe those characteristics are generally chosen by consumers and potentially important (Chandler et al., 1993).

For building factors, respondents choose house size, lot size, sale price and resale value or investment as very important factors that affect value of houses. The present findings seem to be consistent with other research which found that the benefits of the developments projects were significantly influenced by the size and shape of the lots. The author added that the lots with poor shape and size can get less or no benefits in developments projects (Gao and Asami, 2007). This finding was similar to the study on real estate market produced by Paul et al. (1996) found that many different factors enter into determination of real estate value. Property price, size and lot size of property were identified to be as equally important by housing demand. In addition, a buyer now generally more interest in real estate to make an investment.

Identified elements of park that important to house buyers

- Softscapes Elements

For softscape elements, respondents rated shade tree as their highest priority that create many functional aspects. This findings support previous research done by Dombrow et al. (2000) that shade trees and mature trees are useful to increasing human comfort and reflected in residential real estate. According to them, proximity of trees can adds approximately 2% to the value of houses. This finding further support the explanation of the roles played by the trees. The shade tree can work as shading tool that provides shelter from the sun and rain for people. That is why many people always prefer for shade trees (Said et al., 2004). The impact of shade trees can help reduce the temperature during the day. Thus, if park areas have a shade trees, it will be a cooler because the canopy of trees reflects back into the sky more of the incoming solar radiation and then reduces the temperature level underneath the trees (Walker, 1990).

- Hardscapes Elements

The other element that is important in this research is hardscape. According to the respondents, lighting, dustbin, children playground, bench, jogging path, exercise station, gazebo, entrance signage, instruction signage, walkway and directional signage were found to be highest priority. These findings are related to a research done by Eng and Outi (2005) where the frequent users are more concerned with the services and facilities provided by parks. It seems that these attributes include good facility, clear signage, range of facilities and better lighting are basic essentials that users expect from parks. Irvine and John (1994) added that elements of hardscapes at park can have an effect on park users. For example, clear signage and other facilities help in making the users comfortable in that environment. Lighting also is a key factor to improve safety and reduce people's fear of crime. There are two main uses of lighting in the landscape are functional (to help people to see at night and to promote safety) and decorative as features in their own right or to illuminate other points of interest such as building facades, fountains or trees. Cobham (1990) explained that landscape structures such as playgrounds and play-equipment, benches, litter bins, lighting, pergolas and gazebo are the main structures and services in open space types provided for public enjoyment. Good concepts that contain more features need to apply in most park design to attract more users (Michelle, 2000). Andrew et al. (2008) also agreed that park with more landscapes features were more likely to be used for variety of activities.

- Wildlifes Elements

For wildlifes, respondents rated the butterfly, birds and firefly to create natural environment at park. As stated by Place (2004), the place with nature environment was memorable because it helps freedom for discovery, use of all the sense and a sense of belonging. The experiences can stimulate and memorable noting the sights, sounds, smells and tastes of the nature environment. According to Scott (1996), the quality of human life is enriched when there is daily contact with nature. It is proven accepted that cities or towns that lack parks and other green spaces are incomplete in relation to public needs. The presence of wildlife especially bird, firefly and others in urban areas can improve the areas by bringing an added dimension of complex movement, colour and sound. Said et al. (2004) noted that insects and birds help pollinate the flowers and get rewards including nectar and pollen. According to them, being close with nature settings bring people close to the nature where people can hear the sound of animals, feel the effect of winds, smell the fragrance of flowers and feel the sense of nature.

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