

Landscape Design Process of Lakewood Nava Park BSD City Based on Smart Growth Concept

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Abstract. A comfortable and green housing area in a city is a must for the people live in a city. The rapid development in a city caused greater need for land. This problem happens simultaneously with environmental problem globally such as growing number of people, pollution, excessive exploitation of resource, and decreasing in ethic of land uses. The design of Lakewood Nava Park BSD City prioritizes on pedestrian and walkable environment to apprehend those problems. Lakewood Nava Park is a landscape design project conducted by landscape consultant company, Sheils Flynn Asia. The concept of Smart Growth used as a recommendation for Lakewood Nava Park design. Smart Growth is a city planning and transportation theory which expand a city into a walkable city. The method used on this research is a comparison between landscape design process and Booth theory, also analyze ten principle concept of Smart Growth at the project. Generally, the comparison between design process and Booth theory resulted a slight difference in term and separate phase. The analysis result from Smart Growth concept is around 70% has been applied, and the rest 30% applied after the design has been built. By using Smart Growth principle, the purpose of Lakewood Nava Park design can be applied well.

1. Introduction

The development of cities in Indonesia is growing rapidly caused by infrastructure development, especially in property. The rapid rate of a city needs bigger land to build, meanwhile the area and land potential were static. This kind of development happen in time with environmental problem globally such as pollution, excessive use of resource and ethic decrease on land use [1]. The limitation of land and environmental problem will become serious problem for city development if every landscape architect didn't know about this.

The continuous development in a city caused a city can't afford more people anymore. The problem solving for these problem is a city must distract their development into suburban are, with serious concern in environmental issue. The uses of Smart Growth concept are a solution to optimize land use and environmental problem. Smart growth is a theory of city planning and transportation which expand a city into walkable city. The purpose of the theory is creating place uniqueness, expand transportation, business district, and housing network, preserve nature being, and public health [4].

The concept applied into Lakewood Nava Park design. Lakewood Nava Park is a residential area from Nava Park project in suburban area, BSD City. In design process, PT



Sheils Flynn Asia is involved on Lakewood Nava Park Project in BSD City for optimizing green expansion of land. PT SFA is an international landscape architecture consultant, branch from central office in Norfolk, United Kingdom. For environmentally friendly design, it need professional work for whole design process begin with preparation, analysis, concept, concept development, and build phase. The purpose of the research is analyzing the design process on Lakewood Nava Park conducted by PT SFA, and make recommendation on Lakewood Nava Park based on Smart Growth.

2. Methodology

2.1. Location

PT Sheils Flynn Asia located on Ir. H. Juanda No 13, Bogor National Park. The Lakewood Nava Park located on BSD Boulevard, Nava Park BSD City (Bumi Serpong Damai), Pagedangan, Tangerang District, Banten Province. The map location shown in Figure 1.

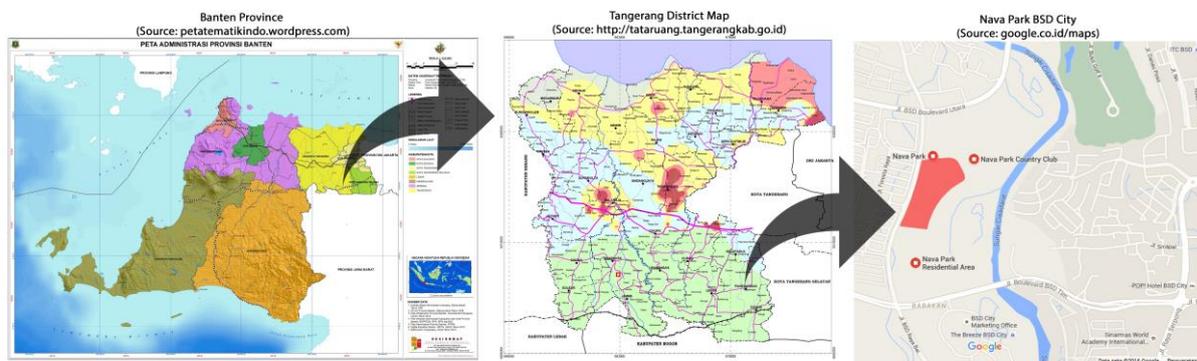


Figure 1. Project location

2.2. Method

The method used in this research is analyze design process in Lakewood Nava Park in BSD City conducted by PT SFA with Booth Theory, consist of:

- Project Acceptance.
- Research and Analysis.
- Design.
- Construction Drawings.

The method used on Smart Growth analysis is adjusting the ten Smart Growth principal which can be seen on smartgrowth.org website, consist of:

- Mix Land Uses.
- Take Advantage of Compact Building Design.
- Create a Range of Housing Opportunities and Choices.
- Create Walkable Neighbourhoods.
- Foster Distinctive, Attractive Communities with a Strong Sense of Place.
- Preserve Open Space, Farmland, Natural Beauty and Critical Environmental Areas.
- Strengthen and Direct Development Towards Existing Communities.
- Provide a Variety of Transportation Choices.
- Make Development Decisions Predictable, Fair and Cost Effective.
- Encourage Community and Stakeholder Collaboration in Development Decisions.

3. Results

3.1. Company Profile

PT Sheils Flynn Asia (SFA) is an International landscape architecture consultant. Established from 2001, SFA is a branch office from Sheils Flynn LTD (SF) located on Norfolk, United Kingdom (UK). SFA worked on various scale of project from landscape design and planning, landscape conservation, feasibility study, landscape restoration, and design and its implementation.

3.2. Lakewood Nava Park BSD City Design Project Description

Lakewood Nava Park is landscape design work in Nava Park, BSD City. Nava park is a new premium city area on 68 ha land in Serpong with lifestyle water community resort concept. Nava Park BSD City is a mixed-use project of a residential, apartment, and commercial area from trusted developer Sinarmas Land and Hong Kong Land from PT Bumi Parama Wisesa (BPW). Nava Park BSD City consist of several areas such as commercial, mixed use residential, low rise residential (Lancewood, Lakewood), Medium Rise Residential, High Rise Residential, Public Amenity, Internal Open Space, and Spring Water. The project worked by PT SFA is a landscape design in Low Rise Residential called Lakewood Nava Park. Master Plan Nava Park shown in Figure 2. Lakewood Nava Park consist of 110 house with 2 type (44 type 12 house, 86 type 10 house) with side park in each house, North Garden, Central Park, Linear Park, West Garden, and Connecting Park. The building of Lakewood Nava Park obtained by PT SFA as a result of landscape design proposal invitation by PT BPW for Nava Park. The project build started from January until July 2016.



Figure 2. Master Plan Lakewood Nava Park

3.3. Design Purpose

The design purpose from Lakewood Nava Park is to create functional and aesthetic landscape applied with various theme and organic design. This design creates comfortable landscape space. Design principle from this project is create walkable environment. The design principles applied through pedestrian priority connection, with a purpose to create integrated and connected Nava Park BSD City and comfortable environment for its users.

3.4. Lakewood Nava Park BSD City Landscape Process Design

The process conducted by PT SFA started from preparation, research and analysis, design concept, design development, and construction document.

- Inception. This phase consist of initial thought, is a preliminary presentation of proposal to client. The content of the proposal is general condition, analysis, design concept, site

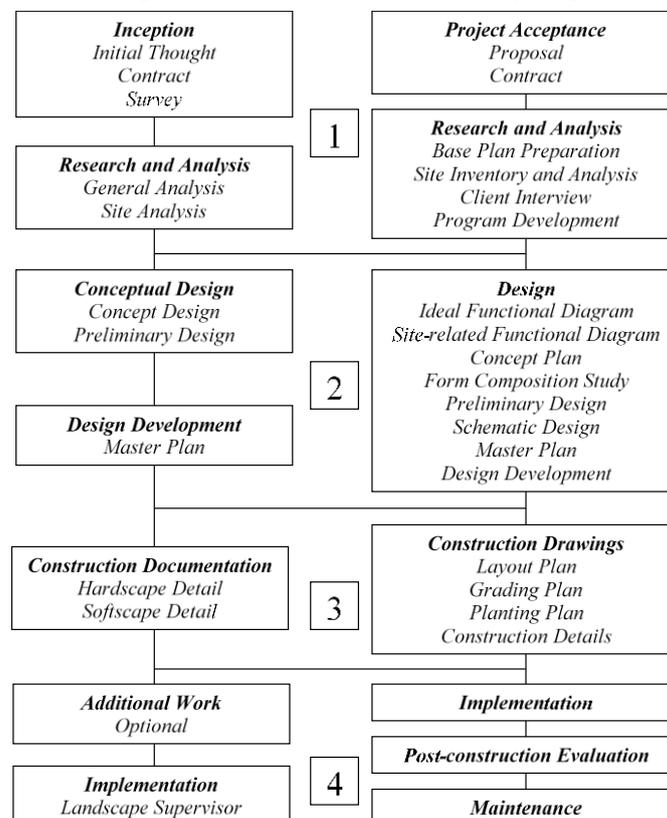
plan, and reference image as a support. Then contract phase conducted when both sides has an agreement between both sides about duration, amount of salary, reception ethic, and project phase. The next activity is survey to get accurate design and neglect error in design and build later.

- **Research and Analysis.** Consist of data collection of primary data from survey, and secondary data from client, then analyze it by adjusting with design purpose.
- **Conceptual Design.** This phase is an idea and concept creation which developed into site from basic concept to design concept. The concept uses by PT SFA preferably using a functional concept structurally and visually. This phase resulting conceptual plan and preliminary design.
- **Design Development.** Expandable design process focused on element design from its softscape, and hardscape. The result of this phase is master plan.
- **Construction Documentation.** This phase is a further detailing of drawing work and construction from hardscape and softscape element. This phase consists of planting plant (plant specification, amount and type of plant used), material plan (material specification and type used), construction detail and surfacing. The result of this phase used by contractor to build the project.

3.5. Lakewood Nava Park Analysis Process

3.5.1. Design Analysis Process.

Design process in SFA has certain standard in designing landscape project. The design process structured well until resulting a product. Generally, the design process is same with Booth design process. Started from proposal until implementation, there are some difference in uses of term and phase. The phase can be seen in the analysis process.



3.5.2. *Smart Growth Analysis in Lakewood Nava Park Design Project.*

There are a ten Smart Growth concept principle based on smartgrowth.org, which is.

- **Mix Land Uses.** Smart growth supports mixed land uses as a critical component of achieving better places to live. By putting residential, commercial and recreational uses in close proximity to one another, alternatives to driving, such as walking or biking, become viable. Mixed land uses also provide a more diverse and sizable population and commercial base for supporting viable public transit. Mixed land uses can contribute economic benefits. For example, siting commercial areas close to residential areas can raise property values, helping increase local tax receipts [5]. Nava Park is an area of mixed use, so that this principle can support the application of the concept of Smart Growth. Lakewood Nava Park is one part of a mixed-use area Nava Park as a residential area. The design of the Lakewood prioritizes areas of pedestrian in order to connect between areas on Nava Park.
- **Take Advantage of Compact Building Design.** Smart growth provides a means for communities to incorporate more-compact building design as an alternative to conventional, land-consumptive development. Compact building design suggests that communities be laid out in a way that preserves more open space, and that individual buildings make more efficient use of land and resources. For example, by encouraging buildings to grow vertically rather than horizontally, and by incorporating structured rather than surface parking, communities can reduce the footprint of new construction, and preserve more greenspace. This not only uses land efficiently, but it also protects more open land to absorb and filter rain water, reduce flooding and storm water drainage needs, and lower the amount of pollution washing into our streams, rivers and lakes. Increasing numbers of developments are successfully integrating compact design into community building efforts [5]. This principle has been used by Nava Park, where Lakewood as part of the design of the area. Its application is dominated by development performed vertically (house of three floors), as well as maximizing the use of open space. Comparison of percentage of green open spaces than spaces is awakened: 74%: 26% on the area of Lakewood Nava Park.
- **Create a Range of Housing Opportunities and Choices.** Providing quality housing for people of all income levels is an integral component in any smart growth strategy. Housing is a critical part of the way communities grow, because it constitutes a significant share of new construction and development. By using smart growth approaches to create a wider range of housing choices, communities can mitigate the environmental costs of auto-dependent development, use their infrastructure resources more efficiently, ensure a better jobs-housing balance, and generate a strong foundation of support for neighbourhood transit stops, commercial centers, and other services. No single type of housing can serve the varied needs of today's diverse households. Smart growth represents an opportunity for local communities to increase housing choice not only by modifying land-use patterns on newly developed land, but also by increasing housing supply in existing neighbourhoods and on land served by existing infrastructure. Most importantly, providing a range of housing choices allows all households to find their niche in a smart growth community – whether it is a garden apartment, a rowhouse, or a traditional single-family home [5]. Nava Park provides a wide choice of places to stay, ranging from apartments, hotels, and homes with different types of buildings. Lakewood Nava Park has two types of homes, namely house type 10 and type 12. Based on the analysis in terms of economics, these choices are reserved for among middle

income and above. Analysis in terms of the community grow, Lakewood area provides landscape facilities for a range of ages and facilities of home grown for occupants.

- **Create Walkable Neighbourhoods.** Walkable communities that are desirable places to live, work, learn, worship and play are a key component of smart growth. Their desirability comes from two factors. First, goods (such as housing, offices, and retail) and services (such as transportation, schools, libraries) are located within an easy and safe walk. Second, walkable communities make pedestrian activity possible, thus expanding transportation options, and creating a streetscape for a range of users – pedestrians, bicyclists, transit riders, and drivers. To foster walkability, communities must mix land uses and build compactly, as well as ensure safe and inviting pedestrian corridors. Land use and community design play a pivotal role in encouraging pedestrian environments. By building places with multiple destinations within close proximity, where the streets and sidewalks balance multiple forms of transportation, communities have the basic framework for walkability [5]. This principle is in accordance with the purpose of designing Lakewood Nava park, which is to create an environment that is walkable with pedestrian priority connection. Pedestrian facilities that are equipped with ramp for users of disabilities with a minimum width of 1.5 meters.
- **Foster Distinctive, Attractive Communities with a Strong Sense of Place.** Smart growth encourages communities to craft a vision and set standards for development that respect community values of architectural beauty and distinctiveness, as well as expand choices in housing and transportation. Smart growth seeks to create interesting, unique communities that reflect the values and cultures of the people who reside there, and foster physical environments that support a more cohesive community fabric. Smart growth ensures that the value of infill and greenfield development is determined as much by its accessibility (by car or other means) as its physical orientation to, and relationship with, other buildings and open space. By creating high-quality communities with architectural and natural elements that reflect the interests of all residents, there is a greater likelihood that buildings (and therefore entire neighbourhoods) will retain their economic vitality and value over time [5]. Lakewood Nava Park made to create a distinctive atmosphere through design with organic forms and water games in the open space. Selection of ornamental plants and forms typical embankment in Lakewood Nava Park. The design is accommodated so that the occupants can interact socially and share their culture.
- **Preserve Open Space, Farmland, Natural Beauty and Critical Environmental Areas.** “Open space” refers to natural areas that provide important community space, habitat for plants and animals, and recreational opportunities, as well as farm and ranch land (working lands), places of natural beauty, and critical environmental areas (e.g. wetlands). Open space preservation supports smart growth goals by bolstering local economies, preserving critical environmental areas, improving community quality of life, and guiding new growth into existing communities. Open space also provides significant environmental quality and health benefits. Open space protects animal and plant habitat, places of natural beauty, and working lands by removing development pressure and redirecting new growth to existing communities. Additionally, preservation of open space benefits the environment by combating air pollution, attenuating noise, controlling wind, providing erosion control, and moderating temperatures. Open space also protects surface- and ground-water resources by filtering trash, debris, and chemical pollutants before they enter a water system [5]. Preservation efforts conducted through Lakewood Nava Park design. Garden design created by minimizing pavement. At the park in the

North Garden and the West Garden electoral plant is functioning to invite insects and birds to the area. As well, the plant used for damping and noise pollution due to the location of the park adjacent to the main entrance Nava Park and adjacent to the Way BSD Boulevard.

- **Strengthen and Direct Development Towards Existing Communities.** Smart growth directs development towards existing communities already served by infrastructure, seeking to utilize the resources that existing neighbourhoods offer, and conserve open space and irreplaceable natural resources on the urban fringe. Development in existing neighbourhoods also represents an approach to growth that can be more cost-effective, and improves quality of life. Nevertheless, developers and communities are recognizing the opportunities presented by infill development, as suggested not only by demographic shifts, but also a growing awareness of the fiscal, environmental, and social costs of urban fringe development [5]. This principle has not been applied to the design of Lakewood Nava Park because there are no people in the Nava Park area.
- **Provide a Variety of Transportation Choices.** Providing people with more choices in housing, shopping, communities, and transportation is a key aim of smart growth. Communities are seeking a wider range of transportation options in an effort to improve beleaguered current systems. In response, communities are beginning to implement new approaches to transportation planning, such as better coordinating land use and transportation; increasing the availability of high-quality transit service; creating redundancy, resiliency and connectivity within their road networks; and ensuring connectivity between pedestrian, bike, transit, and road facilities. In short, they are coupling a multi-modal approach to transportation with supportive development patterns, to create a variety of transportation options [5]. Variations of transportation options have not been found in the Nava Park area, a mode of transportation that allows is by walk or drive by private vehicle.
- **Make Development Decisions Predictable, Fair and Cost Effective.** For a community to be successful in implementing smart growth, the concept must be embraced by the private sector. Only private capital markets can supply the large amounts of money needed to meet the growing demand for smart growth developments. If investors, bankers, developers, builders and others do not earn a profit, few smart growth projects will be built. Fortunately, government can help make smart growth more profitable for private investors and developers. Despite regulatory and financial barriers, developers have created successful examples of smart growth. In many cases, doing so has required them to spend time and money getting variances to the codes. y creating a supportive environment for development of innovative, pedestrian-oriented, mixed-use projects, government can provide smart growth leadership for the private sector [5]. This principle has been applied to the Nava Park, owner of the Nava Park area is renowned developers from the private sector, namely Sinarmas and Hong Kong Land. Effective development has been done through the master plan Nava Park.
- **Encourage Community and Stakeholder Collaboration in Development Decisions.** Growth can create great places to live, work and play—if it responds to a community's own sense of how and where it wants to grow. Communities have different needs and will emphasize some smart growth principles over others: those with robust economic growth may need to improve housing choices; others that have suffered from disinvestment may emphasize infill development; newer communities with separated

uses may be looking for the sense of place provided by mixed-use town centers; and still others with poor air quality may seek relief by offering transportation choices. Key actions in encouraging collaboration include developing an inclusionary process and a common understanding among diverse stakeholders, using effective and appropriate communication techniques, and working with local authorities [5]. The absence of people in the Nava Park area make this principle cannot yet applied to the site.

3.6. Design Recommendation in Lakewood Nava Park BSD City based on Smart Growth.

3.6.1. Design Process Recommendation.

Design process conducted by SFA is well structured, but to improve the effectiveness and efficiency, it is recommended to SFA to uses ideal functional diagram and site related functional diagram from Booth design process in conceptual design phase. The ideal function diagram is tools to look into design whether it is function or not based on the purpose. Site-related functional diagram used to learn and maximize the site potency which designed by connecting the main design and space connection to resulting best design solution. SFA process unintentionally also applied this tools, but this research conducted in same mainframe when design concept being analyze on preliminary design. It is recommended to create own phase to learn about ideal function diagram and site-related functional diagram before starting in any kind of design process. It is recommended to minimize error and the have bad design result.

3.6.2. Smart Growth Concept Recommendation on Design Process.

The application of the rest principle from smart growth concept, which is strengthening and direct-development into society, provide variation between transportation, and pushing stakeholder and people to collaborate and involved in development decision. The principle can be applied after the design has been built. It needs some effort to build a character in the people which applied by adjusting with the facility there. The second principle can be applied through the planning and designing of transportation in Nava park area to become more integrated with various area around it like BSD, Tangerang, DKI Jakarta. The other option for more environmentally friendly transportation are by using bicycle or walking for short distance. It is already built with a cycle way and pedestrian. The involvement of society and stakeholder can be applied when the society has been formed in there. This principal is the key for the other nine principles, because the developer and users need to collaborate in further expansion.

4. Conclusion

The phase uses in design process used by SFA generally is parallel with the design theory proposed by Booth starting from the proposal until the implementation. The difference was just term it uses and separated phase. The SFA phase are inception, research and analysis, conceptual design, design development, construction documentation, additional work and implementation. Meanwhile according to Booth, the design process are project acceptance, research and analysis, design, construction drawings, implementation, post-construction evaluation, and maintenance. The purpose of Lakewood Nava Park design is prioritizing the pedestrian and create walkable environment which is combined with Smart growth concept. There are ten smart growth principals, in Lakewood Nava park design these principals were 70% applied while the rest 30% still can't be achieved. The uses of smart growth principle can support the purpose of building Lakewood Nava Park.

5. References

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