

SPATIAL ANALYSIS OF URBAN DENSE AREA IN DEVELOPING CRITERIA DESIGN BASED ON PEOPLE PARTICIPATION: CASE STUDY OF KEMBANG JEPUN, SURABAYA

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ABSTRACT:

Sustainable urban development is the result of a process and people participation is the key factor in the sustainable development and the process of design and implementation. In developing a dense urban area, the participations of stakeholders are very important in creating design solutions. One of the goals of sustainable urban landscapes is contribution to the development of healthy communities through the benefit of the economic, social and environmental values. The approach of sustainable urban landscape is especially needed in developing dense old city in Surabaya such as *Kembang Jepun*, which is facing many issues such as limited urban landscape elements. People participation in this study is accommodated by a focus group discussion involving architects, researchers, planners, local residents, media and government as well as students. By accommodating people participation, the design solutions will develop healthy communities and the equity of economic, social and, environmental aspects. The design highlights as follows: visually appealing and suitable design to the condition of the area, lot of open spaces for various activities for different group and promote social interaction, cost effective and easy to maintain. From this research, community involvement is a key factor in creating and developing urban dense area.

Key-words: *Dense Old City, Kembang Jepun, People Participation, Sustainable Urban Landscapes.*

1. INTRODUCTION

The *Kembang Jepun* Area is a dense urban district in Surabaya City (**Fig. 1**). It is located in the old town and is facing some issues especially in the form of limited urban landscape elements such as land, water landscaping, as well as streetscape arrangement. Sustainable urban development is the result of a process and people participation is a key factor in it. People participations are important and are highly regarded aspect in the design and implementation process, which is the type and techniques of participation should be considered (Moughtin, 2003). Sustainable landscapes are responsive to the environment, regenerative, and can actively contribute to the development of healthy communities and support value through the economic, social and environmental benefits. Specifically, the role of the sustainable urban landscape elements in dense old city in Surabaya such as *Kembang Jepun* is not only to support the environment but also to develop healthy communities and the equity of economic, social and, environmental aspects.

Urban transformation process on **Fig.2** shows the development of *Kembang Jepun* area which indicates solid as building density. The density and its position close to the

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riverbank create specific typology and unique characteristics which spatially can be divided into three zones: riverbanks area; business area; and residential area. The three zones have distinctive spatial characteristics (scale, mass and buildings as well as streetscape). In the scope of sustainable development, the problems and potentials of the area can be divided into three dimensions: environmental, social, and economic.

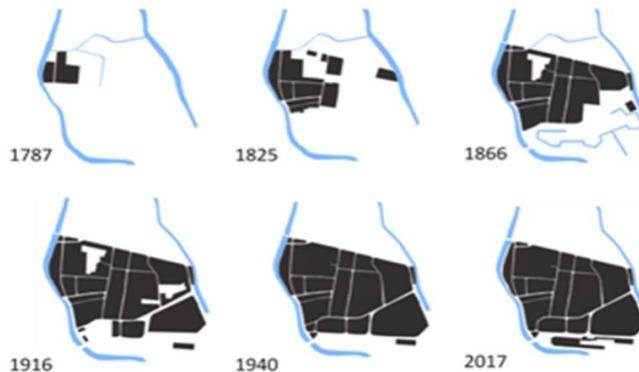


Fig. 1. The Development of Kembang Jepun Area from 1787 until 2017 (Source: Maps 1787).

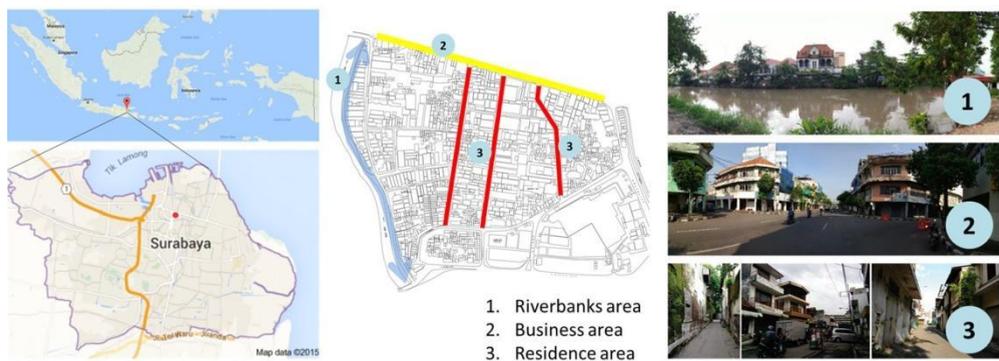


Fig. 2. The Kembang Jepun Area and its spatial characteristics.

The environmental problems are related to the lack of quality of the environmental aspects such as greenary, streetscape, storm water management, and the misuse of riverbank area. The environmental potentials are mainly limited to the existence of old buildings, trees, and the river as landscape assets. Socially, the area has a high value, unique identity and character that can be strengthened. However, the problems arise around the lack of social space and streetscape elements which is obstructing social interactions. Economic problems concern on the maintenance cost of old buildings and the limited land area while the potentials are the fact that the research area is located at the center of economic activity and it has big opportunity to take advantage from the existing landscape elements and buildings. The paper focuses on each spatial characteristic and proposes the design criteria to develop the concept of designs based on people participation. By accommodating people participation in the process of developing Kembang Jepun area, it is hoped that the result will be able to support the sustainability of the area.

2. MATERIALS AND METHODS

Brandon and Lombardi (2005) wrote that a new holistic approach integrates all problems of urban system in the field of planning and design to achieve sustainable development. This approach needs the evaluation frameworks as follows:

- i) A technical assessment of the construction under development regarding dimension, space function, accessibility etc.
- ii) An ecologically oriented assessment of the project illustrating the environmental compatibility of this development within the existing context.
- iii) An understanding of the historical and cultural significance of the planning asset and its social desirability.
- iv) An analysis of the financial and economic feasibility.
- v) A check of the visual appeal of this new (re)development and of its flexibility or adaptability which may allow it to meet some future user needs.
- vi) An assessment of the institutional sustainability of the project, based on analysis of the juridical and procedural issues.
- vii) An understanding of what interest or concern in the local agenda of the city and its strategic plan.

This research uses some theories about sustainable planning and design and discussed its development by involving communities to develop design criteria. Sustainable landscape should consider important issues such as aesthetic, functional and environmental issues. Aesthetically, although the sustainable landscape looks less polished and more natural, it must still be visually appealing. The landscape must meet healthy and safety criteria, as well as other functional aspects including cost effectiveness and maintenance capabilities. Environmental issues focus on improving biodiversity; microclimate and maximizing resource reuse (Beatley, 2011).

Regarding healthy environment and society as criteria to achieve sustainable urban landscape, five factors must be determined (Amin, 2012). First, a healthy place improves the quality of air, water and soil. Second, a healthy place helps promote a healthy lifestyle. Third, a healthy place improves social interaction and makes people feel comfortable. Fourth, a healthy place gives the opportunity to work, learn, and improve mental emotional development. Fifth, a healthy place can cure the condition of physical and mental health. Otherwise, key factors in the implementation of sustainable urban development also consider community participation, let alone sustainable urban development as a result of a process. It is important to include specific descriptions of the types of participation and techniques at the stage of the process (Memluk, 2012). Community based approach concerns on the conservation, prosperity and local's wellbeing (Ernawati et al., 2018).

Based on Moughtin (2003), the central of the study of urban design regarding the man, his values, aspirations and power or ability to achieve them. Therefore, the method of this research based of the people in solving the problem of dense old city namely people's spiritual and physical culture. According to the RIBA practice and management handbook divides the design process into four phases as follows:

- i) first phase: assimilation (the accumulation of general information and information specially related to the problem).
- ii) second phase: general Study (the investigation of the nature of the problem: the investigation of possible solutions).
- iii) third phase: development (the development of one or more solutions).
- iv) fourth phase: communication (the communication of the chosen solutions to the client).

In addition, Maier (2009) said accordance can be used as a conceptual framework to understand the relationship between built environments and humans over time, especially with respect to the form, function, and meaning of architectural elements. Regarding architectural design, the concept of accordance allows for a common theoretical basis to improve the design process by ordering a shared language among those involved in a design project, particularly architects and engineers. Regarding architectural practice, that accordance are used as an evaluation tool to explore the connection between the initial intentions or objectives of the design with how the artifact is actually used, leading to archived knowledge for use in future projects, and the potential for avoiding an array of common design failures.

Adriaens (2005) writes that sustainable urban design is urban design that lasts for a long time, continuing to meet the requirements of the day. Sustainable urban design must be flexible and fit in with societal changes; otherwise no one will want it. Purnomohadi (2006) writes that green open spaces as main aspect of spatial planning and the urban open space has a task in maintaining and conserving the equality of urban ecosystem, such as environment, social and culture so the green open space could act as identity of the city, filter of particle from the air, conserving the ground water and improving esthetic of the city.

In developing urban area, the participation of stakeholders such as landscape architects, planners, architects, engineers, horticulturalists, and others work in interdisciplinary teams are very important. One of the tools in urban design and planning is Focus Group Discussion (FGD) by involving public in the decision-making process and it can be used to disseminate information. Focus Group Discussion is done by gathering the different local stakeholders in one event and each of them give their opinion to the issue based on their knowledge.

For a good sustainable development strategic plan, periodically discussed with stakeholder need to be gathered to make a good design based on the perspective of the stakeholder. Each of these is a specific source of information for the preparation of the proposal section of a good strategic plan for sustainable development. Setting up a formalized working group at the regional level is a good way of involving stakeholder and major group representatives in the entire process of developing a strategic plan. Representatives of these groups should be involved continuously in the design process (Hrebik, 2006).

According to the local Agenda 21 Planning Guide (ICLEI, 1996) Focus Group Discussion is generally conducted with small groups of four to twelve selected participants who represents particular communities and community who has similar interest in certain topic. The session is held from two hours to two days, participants are presented with idea or proposals, after which professional facilitators solicit people's reactions to what they have heard. The aim is to clarify values, feelings, concerns and understandings of the representative groups.

Moreover, the advantage of FGD according to Nagle and Williams (2013) are:

- i) Exploration: finding out about an issue of importance from the target population.
- ii) Program development: asking members of the target population what types of activities they would enjoy.
- iii) Systematic research: collecting in-depth data on specific research questions.
- iv) Evaluation: collecting in-depth data on specific evaluation questions to determine program success or progress.

This research applies explorative and descriptive qualitative method with consideration of people participation in developing and deciding the design. Primary data have been collected through observation and focus group discussion (FGD) among stakeholders. The stakeholders participating in the FGD are coming from different background yet similar in topic of interest. They are including government, expert, academia, students as well as residents (local inhabitants). The FGD is organized twice, the first FGD aims to gather information and issue from people’s perception, and the second FGD disseminates the recommendation by author.

3. RESULTS

Kembang Jepun area is the economic center that still exist in Surabaya. But its current existence is not maintained due to the heavy traffic and lacking in urban landscape elements as well as the declining cultural heritage buildings along the corridor. On the other hand, the condition of *Kembang Jepun* as an old district in Surabaya is very quiet at night, making this area like a deserted city.

Table 1. General Potential Identification of the spatial zone based on People Participation in a Focus Group Discussion (FGD).

The potential identification of the spatial zone based on FGD		
Riverbanks area	Business area	Residence area
i) Riverbank has a very beautiful view with old town scenery as an object. ii) The landscape of riverbanks has a potential to be repaired and developed while maintaining its local characteristic. iii) The river as high value water element that should be well maintained.	i) Buildings in the business area have a significant social value for the citizen, this old town area have lots of old buildings that can serve as a focal point. ii) The area is widely known as <i>Chinese</i> district which can be used to strengthen its identity. iii) The use of arcades as linkage for connecting the visual, activity and economic value iv) The area is not only the centre of economic activity in the scale of district, but also economic support in the city and provincial scale.	i) The optimally use of the existing urban landscape elements in order to achieve cost effectiveness. ii) Existing trees in residence area can be kept and maintained. Pocket parks are created on vacant lands.

The stakeholders seem enthusiastic in sharing their opinion regarding the potentials and problems identification. All the free opinions will be gathered and divided into three different aspects. The potentials lie on the old buildings and riverbank area. The problems gathered from this session shows mainly regarding the unsafe condition in the night, less vegetations and misuse of the riverbanks as well as the unclear status of the old buildings.

Table 2. Problems Identification of the spatial zone based on People Participation in a Focus Group Discussion (FGD).

The problems identification of the spatial zone as gathered in FGD		
Riverbanks area	Business Area	Residence Area
i) Less soft scape along the riverbank as well as lacking in function of riverbanks. Most of the areas are covered by hardscape.	i) Lack in informal contribution cause the failure of revitalizing area <i>Kembang Jepun</i> . Many old buildings have unclear status, unoccupied and difficult to trace.	i. Unliveable: lacking in places for communities and pedestrian ways which are affect social interaction
ii) Less control from the government's role makes the people use that area as illegal settlement.	ii) The image of <i>Kembang Jepun</i> as Chinese district area is not yet developed.	ii. The transformation of land use area into warehouses which create environmental problems.
iii) Misuse of riverbank area for only parking lots.	iii) Lack of optimal use of limited land area and the quality of streetscape.	iii. Less soft scape and greenery in residence area
iv) <i>Kalimas</i> river is lacking in oxygen, narrow and dirty environment.	iv) Street surfaces are not functioning optimally as water storm management.	iv. The changing of land use from residential area into shops and ware houses making the street area of <i>Kembang Jepun</i> unoccupied in the night and unsafety making quite frightened.
	v) Lack of streetscape arrangement which is preventing the formation of social space	

4. DISCUSSIONS

The concept of the development based on the limited landscape elements in terms of social, economic and ecological aspects should make this area not only able to maintain the existing cultural heritage buildings, but also possess good ecological quality and able to attract tourists to visit this area and become a livable corridor in Surabaya as well. The participation of community in form of Focus Group Discussion are part of important aspects in developing the area to be a livable corridor by making it safer and more secure day and night.

Kembang Jepun has a unique character in buildings, view of the riverbanks, located near *Kampung Arab* and *Kampung Cina* (Chinatown) and has a rich history in the form of old buildings which are potential to attract local and foreign visitors. *Kembang Jepun* can be developed not only as a trade and service area but also as a tourism destination to increase the local and government's revenues while also increasing the value of the area. The development of economic aspects in *Kembang Jepun* and its surrounding area caused the changing of settlements into shop houses and decreasing the limited urban landscape elements such as land, green open spaces and vegetation. The above conflict should be considered because through the economic, social and environmental benefits, the sustainable landscape elements can contribute to the development of healthy communities and support its values. Therefore, the role of participation in developing the sustainable urban landscapes elements in dense old city in Surabaya such as *Kembang Jepun* is not only to support the environment but also to develop healthy communities and to equity of economic, social and environmental aspects. From the general information and identification of problems from FGD such criteria of planning and design in developing the riverbanks area as one of the important landscape elements are as follows (**Table 3**).

The riverbank area should be transformed into an open space that can be used as a social and aesthetic function. Social function is to maximize existing open space by adding public space to the assembled areas and interacting areas. While the aesthetic function is to make attractive riverbank area in some spots so that the area that was originally shabby and unkempt can attract people to visit the riverbank area. Several buildings that are located directly opposite can also be one of the visuals highlighted on the riverbank area.

Table 3. Spatial Design Criteria Based on People Participation.

Riverbanks	Business Area	Residence Area
<ul style="list-style-type: none"> i) The open spaces must be used for various activities for different groups of people. ii) The design should possess the local identity and sense of place and should be able to serve the needs of different groups in the community iii) The design should promote healthy lifestyle, make people comfortable and improve social interaction as well as give opportunities for living, working, learning and mental emotional development. iv) The design should be able to accommodate various activities for different group of people and utilize building as background for activities in riverbanks area. v) The design of public space should consider its local content and involve local communities. 	<ul style="list-style-type: none"> i) The design must complement cost effectiveness and should be easy to maintain. ii) Traffic flow and street furniture should be able to improve the performance of streetscape and the design should be visually appealing to improve the atmosphere and visual quality of the area. iii) The design should pay attention to landmarks and spirit of place to strengthen the identity of Kembang Jepun area. iv) The design should be able to accommodate various activities for different group of people and utilize building as background for activities and the design of public space should consider its local content and involve local communities. v) The design should be visually appealing to improve the atmosphere and visual quality of the area and be able to maximize economic opportunity based on contemporary needs, district image management. vi) The design of the linkage around the area should be able to connect spaces, generate activities, and provide fun and exciting links. 	<ul style="list-style-type: none"> i) Soft scape and hard scape must be appropriate and suitable for conditions of the site. ii) The design should be visually appealing and has to fulfil healthy and safety criteria and increase biodiversity, enhance micro-climate, and maximize the reuse of resources as well as able to keep the functions of the elements of water and soil quality. iii) The design elements should be suitable and appropriate for local climate. iv) The design of public space should consider its local content and involve local communities. v) The design should be to maximize economic opportunity based on contemporary needs, district image management.

This Focus Group Discussion has advantages as an important tool in planning and designing sustainable development. Based on the theory and references human is really as center of development and the important sharing session shows how to plan and design with the people (not just for the people) in a small group of selected participants and shows how the people suggest an idea to keep the historical places and riverbank areas as well as corridor in developing the *Kembang Jepun* area. The participation of stakeholders play an important role by the presence of interdisciplinary teams including planner, landscape architect, architect, post graduate students, mass media and local community. The disadvantages just lie on the selection of people that have sufficient capability in representing this area. By accommodating people participation, the design solutions expected to be developed in equity of economic, social and, environmental aspects and enhancing the quality of health environments.

5. CONCLUSION

The three spatial zones in *Kembang Jepun*'s dense area consist of riverbanks, business and residence areas. The participation of the community through Forum Group Discussion has been set, so that people get involved in the design process from the beginning. From this research and design activity, it is apparent that community involvement or public participation is indeed a key factor in creating an innovative and sustainable landscape design criteria for the city. The design criteria in these three different spatial zones resulted by this process highlight several points. The design should be visually appealing and suitable to the condition of the area, lot of open spaces for various activities for different group and promote social interaction, cost effective and easy to maintain. *Kembang Jepun* area as the economic center of Surabaya should be survived now. The existence of the concept of sustainable urban landscape aspect regarding social, economic and ecological making this area not just to be able to keep maintaining the existing cultural heritage buildings, but also enhance better environmental quality and able to attract tourists the whole day. Finally, FGD as a tool of planning and designing sustainable urban landscape has its best effectiveness in identifying and formulating the problems because the community possess better experiences regarding their own area. Besides, the FGD performance could be enhanced by carefully selecting the stakeholders and organized in two steps, the first step is to gather information and issue from people's perception, and the second step FGD disseminates the recommendation by author.

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