

Spatial Morphology of Margorukun Village Surabaya as a Region of Local Wisdom

Heru Hendri Iswanto^{1*}, Lisa Dwi Wulandari³, Sri Utami²

¹Student of Environmental Architecture Department, Faculty of Engineering, University of Brawijaya, Indonesia

²Lecturer of Architecture Department, Faculty of Engineering, University of Brawijaya, Indonesia

³Lecturer of Architecture Department, Faculty of Engineering, University of Brawijaya, Indonesia

Corresponding Author: heruhendri.hh@gmail.com

Abstract

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Spatial morphology was formed from the land use that was realized from various activities performed in that area. Next, the building pattern, function, circulation pattern, or road network pattern connected between regions would also influence regional or spatial morphology. Margorukun Village was one of the villages to be proud of in Surabaya. Margorukun Village has gotten an award as the winner of the Green and Clean Village competition program. Moreover, the spatial morphology of Margorukun Village has its own uniqueness. Part of the village was divided into two with different morphology. The uniqueness appeared from the local wisdom of the villagers. This research aimed to identify how a village's local wisdom could affect the spatial morphology of the village. The research method in this research was descriptive qualitative. The study was conducted by performing field observation activity in the form of the environmental spatial element through the blueprint, layout plan, and existing image or direct observation of the research object and interview. The research result referred to the spatial morphology of Margorukun Village and the villager's activity to build local cultural wisdom in Margorukun Village.

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1. Introduction

A dynamic urban development generates increasing spatial demand, especially the need for residential land (Soetomo, 2009). The increasingly crowded city cannot accommodate that need, so it expands to the surrounding regions of the city, named as urban fringe (Kusumantoro, 2007). The suburbs area is a region located outside of the city's administrative limit with characteristics of regional transition between cities and villages (Pontoh & Kustiwan, 2009). The suburban area overcomes the need for land, especially the

demand for the residential area (Dwiyanto & Sariffuddin, 2013). The minimum land in the city affects the suburbs to keep developing dynamically in the context of area physical change, particularly the change in land use (Pratama & Ariastita, 2016).

The recent problem in Surabaya is the number of slum areas in many locations. This squatter settlement resulted in many bad impacts on the environment. For example, the environment is not well-maintained, and littering and irregularity in slum areas. Thus, those impacts will worsen the beauty and physical condition of Surabaya City. Specifically, the village area located in the suburbs of Surabaya has a bad image in the eyes of the community, such as slum condition, the center of criminality, scattered trash everywhere, group community with a low educational degree, settlement area with a group community with low-income level, illegal settlement, and many other. In fact, the community solely underestimates the village itself. The lack of attention to a village area makes this area even more distant from development, like a village is trapped in the city.

The area is called a village because of its location in the suburbs of Surabaya, even far from the city's center. This area got the title of a tourism area named Margorukun. It is the village area that is able to change the physical appearance, so it is interesting to be visited. The village area has added value from many aspects such as a high level of participation to clean life behavior, maintenance of environmental order or neatness, innovation enthusiasm to create waste processing system, the pattern of community empowerment, and so on. The villagers of Margorukun Village have succeeded in gaining good cooperation and building a solid social system to create this climate.

Margorukun is also called a tourism village, one of the reasons that the government or other institutions frequently visit this area. Their presence is due to the achievements of Margorukun villagers that are regarded as something to be proud of and worth to become a model for other villages in terms of clean life behavior. It is a new fact that we can find in the villagers in Surabaya. All village communities and local government also feel this pride of achievement of the villagers of Margorukun Village for empowering the community to take care of the environment.

Margorukun Village has a pretty good potential. This village is known as a haunted region. The haunted element is not because of the haunted area but because this village has a bad memory and a history of a high crime rate in the past. The hospitality of the local community is compatible with the beautiful scenery delivered by the environment of Margorukun Village. The villagers of Margorukun Village have a peaceful life, conflict activity that almost never happened in the last few years. The community living in Margorukun Village is highly concerned about the environment. The concrete evidence is many green plants that we can find when entering the area of this tourist village.

Margorukun Village also has other achievements to be proud of. Margorukun Village has its own uniqueness if it is compared to the other villages in Surabaya. The greatest award is received because this village has been chosen as the green and clean village program winner. Since its participation in the green and clean village program in 2005 until now, the environment in Margorukun Village is still well-maintained. All this time, the internalization is dominated by the environmental agents' role in the Margorukun Village community, especially the married residents. Besides the responsibility to the cleanliness of house environment, they have a duty of joint task division to maintain the condition of public facilities.

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Previous research (Paramitha et al., 2014) found site spatial morphology, which required land use, mass layout, and circulation assessment. (Sunarto et al., 2016) has found about spatial morphology of housing complex, interrelation and influence to the land use, mass layout, plot arrangement, and circulation system. Similar research was done by (Putri et al., 2017), which aimed to know the form of physical morphology of residential areas that needed to be examined its land use, road network pattern, and buildings (pattern and solidity).

Recently in Margorukun Village, there has been a change in the function of village dwellings in Margorukun Village from a criminal function to a clean, clean function that is well-maintained. The change of function affects the change of building character, environment, and building in the surrounding area, including education, trade, service, and office complex. Further, the improvement of open or outdoor space in the Margorukun Village area can affect balance and harmony of the city's physical environment. The urgency to research the spatial morphology of Margorukun Village is to identify the spatial morphology of this village and community activities that may affect the local wisdom. Many activities that have been performed in the village become local wisdom that will create a spatial morphology in Margorukun Village.

2. Methods

This research location was in Margorukun Village, Surabaya. It was the village which has physical or cultural spatial changes. Thus, it needed to describe the form of village change in Surabaya, so the region's development could be viewed from a geographical and social point of view. Therefore, it required spatial morphology to find the level of program success held by the Department of Agriculture, Surabaya.



Figure 1. Map of Margorukun Village

This research was descriptive qualitative research. Descriptive qualitative research was one of the research types in qualitative research design. The general research method used in this research was descriptive qualitative, through field observation activity in forms of observation on the spatial elements of building and environment. The observation activity consisted of previewing building elements through the blueprint, layout plan, and

existing image or direct observation of the research object and interview with the building owner and several respondents.

The research variable was exerted based on a certain area's spatial and functional morphology. The sufficiently large area scale would be divided into sub-areas according to the local neighborhood or community association. The research variables were determined according to the result of adjustment between previous theory and studies and the actual condition of the field and the problems in this research, so the variables could help deal with the issues. The research variables were explained in the following table:

Table 1. Research Variable

Research Object	Variable	Sub-Variable
Spatial Morphology	Land Use (Shirvani, 1985); (Paramitha et al., 2014); (Sunarto et al., 2016); (Lai et al., 2018); (Irani et al., 2015)	- Residential function: commercial - Zoning: alley 1, alley 2
	Circulation System (Shirvani, 1985); (Paramitha et al., 2014); (Sunarto et al., 2016); (Lai et al., 2018); (Irani et al., 2015)	- Road Structure: paving, concrete, and asphalt - Number of crossroads - Pattern of the road network: irregular, radial, right angle/ grid
	Activities (Shirvani, 1985)	- Social: Waste processing, planting, and environmental care - Religious activities

3. Results

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According to Hermanislamet (1981) (Budihardjo, 1983), spatial was referred to space and mass layout in certain areas. The benchmark of the layout was about the suitability for function, area, location, and accessibility among spaces or rooms. (Ching, 2008) stated that a section in the building was separated or delimited by a wall or partition of similar spaces.

(Ronald, 2005) has said that spatial was a term relating to the environment. It was limited by land surface as the base field and air as the cavity inside. The spatial element has three constituent components: floor, wall, and roof (Hakim, 2012). (Ulfa & Antariksa, 2011) has asserted that the change in a spatial element in a particular environment or building could be affected by either physical or non-physical factors. According to (Mu'awanah et al., 2013), the change that affected spatial elements was divided into human and environmental factors.

The form of meso morphology in this research was the area of Margorukun Village Neighborhood Association 07, Community Association 10. The physical morphology of an area was caused by many factors from a lot of elements. According to (Shirvani, 1985), the physical elements of the area that built the morphology of the region or city were land use, building shape and mass, circulation and parking, outdoor area, pedestrian way, supporting activity, signage, and preservation. This previous research finding was also supported by other research that has argued that a similar or different component could

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appear within the identification of physical elements of regional morphology. However, several theories have only identified morphology in the urban area.

Meanwhile, the area in this recent research was referred to as the village area in Surabaya. One of the preliminary researches has stated that the morphological element in village areas whose residents have independent business could be identified through land use, building mass layout, road structure, parking, and marker around the area (Irani et al., 2015). Since the marker and parking became community needs related to each business's visitors.

Figure 2. Theoretical Frameworks of Meso Spatial Morphology Elements

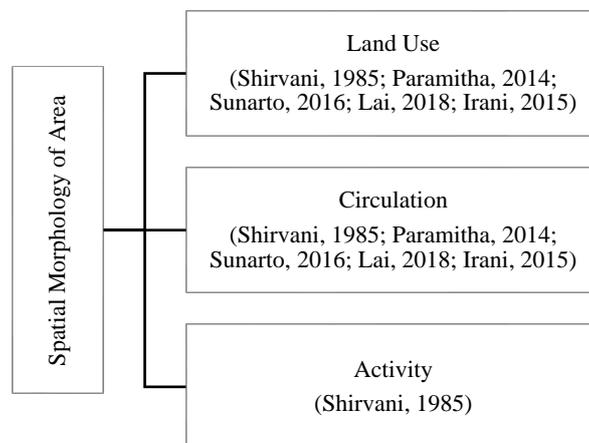


Figure 3. Elaboration of Theory of Spatial Morphology of Area

Social activity as a local wisdom

Land Use

The region of Margorukun Village tended to be the disoriented area in the slum residential area. The change of land use was due to the change of commercial function that appeared in the region with aesthetic function and RTH. The region with aesthetic function and RTH. The change of region that occurred in 2005 has still oriented to the area designated as a residential function which was in accordance with the setting regulation of Surabaya City as A Green and Clean Village. In 2013, the area of Margorukun Village developed some functions because of the improvement in green open space that encouraged this open space as an activity space. Next, in 2018, the change of function in this area was because Surabaya is one of the most crowded tourism destinations. Therefore, it needed to improve the needs in the accommodation field. In 2016, the improvement of RTH became the factor of function and activity change in this area.



Figure 4. Land Use in Margorukun Village as an Activity Space

Mass Layout

The change of mass layout in the area was affected by the change in building mass. Geometrically, the mass of each building was dominated by a rectangle and rectangular shape that underwent addition or subtraction. The mass layout was affected by indicators of orientation, size, and mass shape. The mass layout in 2005 has an orientation with the direction of the main road and open space in order to raise the regional character and regional configuration shape as a planned residential area. In 2013, the area's building orientation and shape configuration did not change at all, except for the changes in KDB, KLB, and TLB according to the housing function. In 2015, the changes were related to KDB, KLB, and TLB needs because of the need for commercial operations such as parking. Thus, the setback became the parking area for visitors. In 2021, the space of each mass was not too dense, while the setback was varied because each alley has a different dimension or open space. The setback, KDB, and KLB was reduced because the parking lot on the street has been optimized through additional parking in the area.



Figure 5. Road Use as Vehicle Parking

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Figure 6. River Area around Margorukun Village

The residential function in the area was dominated by private housing, with the main function of the area as the residential area. The block plots in the area have different shapes and dimensions based on the function of each building mass. According to (Ching, 2008), the rectangle of square shape was the most efficient and dynamic shape. This shape could be optimized with the addition of a building mass shape in each bloc lot.

In 2004, the building orientation in the area was directed to the main road and open space as an achievement alternative and to create area character. Therefore, the average lot shapes were rectangle or rectangular. In 2013, the orientation change tended to tilt because of the hook location and benefit of visitor attraction. The form of building plots has changed because of the addition of new functions and mass on plots. In 2018, the mass orientation did not change.

Moreover, the addition of building mass also affected the shape of the lot block and its dimension. In 2016, the average plot shape has dissimilar shapes starting from rectangle or square, rectangular or letter "L." According to (Ching, 2008), the rectangle shape was the most efficient and dynamic shape.



Figure 7. Villager's Activity in Rectangular Paving Installation

Circulation System

There were two types of road patterns in Margorukun Village: grid or rectangular road pattern and irregular road pattern, while the systems of road network in Margorukun

Village: secondary road network system I, secondary road network system II, and secondary road network system III.



Figure 8. Types of Road Patterns in Margorukun Village



Figure 9. Systems of Road Network in Margorukun Village

The environmental morphological variable of the circulation system consists of circulation function, configuration, and size. The road network system was divided into secondary road network system I, secondary road network system II, and secondary road network system III. The secondary road network system I in the area has a road width of about 5-7 meters that was used by two-wheel vehicles. The secondary road network system II has a road width of about 4-6 meters. This road could be passed by either two-wheel vehicles or four-wheel vehicles. Last, the secondary road network system III was found in each plot of building that connected circulation into the main circulation and secondary circulation.

In 2013, the road in the area of Margorukun Village still had three road networks: secondary road network system I, secondary road network system II, and secondary road network system III. This year, the change appeared from secondary road network system I into secondary road network system II in the village road, due to traffic accidents in that road. The secondary road network system II in this village was benefitted as parking area for green open space and trading function. The linear pattern was formed due to the form of regional pattern with RTH that surrounded each building mass.

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Figure 10. Use of On-street Parking Function



Figure 11. Use of On-street Trading Function

In 2018, circulation problems occurred mainly in determining the existence of one-way and two-way circulation. This problem appeared because of the absence of specific markers for road users, so it potentially tended to cause accidents in the area. In 2020, the type of road system was divided into secondary road network system I, secondary road network system II, and secondary road network system III. The area was more dominated by the secondary road network system II both in terms of dimension and distribution. Additionally, the site has an irregular grid road pattern system and linear path configuration with a network pattern combination. Based on the road type and dimension, it would affect the types of users and road.

Activity

The area in Margorukun Village did become not only a densely populated residential area but also the center of economic activity, such as Pasar Turi, as one of the shopping centers in Surabaya. Margorukun Village has participated in competitions in environmental cleanliness since 2007. Since then, Margorukun Village has gradually changed from a slum residential area into a green and clean one. The hard work of many environmental cadres, along with the villager's support, has succeeded in reversing the common public perception that Margorukun Village could be changed into a convenient dwelling area.



Figure 12. Economic Activities in Margorukun Village

The activities were efforts to change Margorukun Village into a green and clean environment, for example, buying decorative plants and pots that were then arranged in such a way that they looked green and neat, and water treatment for wastewater processing. This water treatment was placed at 27 points in Margorukun Village.



Figure 13. Activity of Decorative Plant and Pots

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Figure 14. Water Treatment for Waste Water Processing

The attempts designed to change the environmental condition of Margorukun Village initially got various responses from the communities. Some communities agreed to the implementation of environmental preservation program, but some of them rejected this program. But, since the hard work of environmental cadres showed a good result, none of the communities rejected the program. Hence, the participation of Margorukun villagers became more intense and various such as community service every three months, planting and plant care, waste sorting, trash chopper, use of aerobic compost, compost fertilizer, playground arrangement, social gathering among environmental cadres, and Family Welfare Program, yell team and waste bank procurement.



Figure 15. The activity of Plastic Waste Processing

A variety of activities appeared from the initiative of environmental cadres and showed achievement in innovation dissemination. Innovation dissemination was a process of distribution planned, directed, and managed. The whole activities appeared from villagers' and environmental cadres' ideas, which then served as a village program with direction from the environmental cadres. A set of activities performed by the villagers were started from their awareness of innovation until the program's implementation. All activities were carried out for a long time, and changes appeared every time.

The activities in the community would exist continually. As all activities carried out in Margorukun Village would be activities that lasted for a long time. The activities raised forms of interaction, for instance, community service, buying and selling activities in the

market, children playing, etc. The culture could be a daily activity performed continuously and could not be separated from the life around us. The activities in Margorukun Village could point local wisdom of the region.



Figure 16. Villagers' Activity as a Form of Interaction in Margorukun Village



Figure 17. Routine Activity Grows Interaction among Villagers

The local wisdom in the form of interactive activities in the villagers or communities could result in a sustainable benefit for the communities, environment, or even local government. The action that was carried out continually would result in a sustainable advantage and create an active environment. Sustainable cultural activity in the form of interaction among villagers would be typical of local wisdom in this area (Sari, 2019).

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Figure 18. Cultural Activity That Still Becomes a Routine Activity of Villagers in Margorukun Village



Figure 19. Interaction among Villagers Become a Culture and Local Wisdom of Margorukun Village

4. Conclusion

Margorukun Village was a village that has received achievements in the environmental field. Villagers' participation in many activities continuously could build positive value for their environment. The positive actions could change villagers' behavior and develop their awareness of maintaining the environment. The spatial morphology of Margorukun Village was divided into a grid of rectangular patterns and irregular patterns. The grid pattern was found in the Margorukun Village area far from the market, while the irregular pattern was located in the market area. The market area became a center of economic activity in 1960. Therefore, we could find old buildings with irregular building patterns. The land use in Margorukun Village was utilized for a residential and commercial function in the market area. The residential function in Margorukun Village has supported open space as the activity and interaction space among the villagers. Next, the mass layout and circulation system in Margorukun Village was also comprised of the grid and irregular patterns. The activity in Margorukun Village was intertwined among all villagers every day. The social-cultural activity performed every day referred to local wisdom in that region. Many social-cultural activities include buying and selling training at Pasar Turi, community cooperative activity in building houses, mutual help during a particular

community event, green village management, and maintenance and improvement of the SGC government program. All those activities occurred in the area of Margorukun Village. The formed spatial pattern was not separated from all community activities and events. The local wisdom from each activity was sustainable and continuous. Thus, it could build a special spatial morphology character in the Margorukun Village region. The spatial morphology could not be separated from all daily community activities and interactions.

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