City personification as problem solving to strengthen the wholeness of the city: *study case in Serui city, Papua*

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Abstract. Serui City in Papua Province has many unique characters and must be maintained for the sake of the continuity of its identity. However, this city still lacks the facility and depend on other areas. Accordingly, it becomes vulnerable. The wholeness of the city is not just by having strong character but also having strength regarding vitality. The loss of it can affect the character and even eliminate it. Cities and people have many similarities regarding character and vitality. Therefore, there is a chance to solve the problems in the city using the similar approach to treat the human. We called city personification methods as problem-solving to the city. It means that we treat the city as a human being so that the problem can be solved as the human's treatment. The personification of this city is conducted because of the many treatments that have proven effective in humans and may also be powerful to manifest in city. The personification makes the design will only focus on the particular networks and not on the whole "body," remain in the hope for strengthening (maintain and improve) the quality of wholeness (character and vitality) city which in this case is Serui.

Keywords: *City personification, Wholeness, Vitality, Serui*

1. Introduction

Serui locates in South Yapen District, Regency of Yapen Islands Papua. It is a small city on the eastern tip of Indonesia where the existence of its harbor is not just a place for ship anchoring to load and unload passengers or to deliver goods (including the container filled with basic, secondary and tertiary goods). It is also a place where fishermen dock their ships and distribute their fish catch. The place where people socialize, have fun and recreate, either by fishing or sightseeing of ships arrived and departed. A harbor for this small town with the hills surrounding is not just the gate of the city but also the heart of one and the heart of surrounding areas in Yapen Islands Regency. It is because of the invariably low production of agriculture, so most of the basic needs fulfilling depend on the supply from other regions. The harbor for the port city is a center that serves the entire city areas. It is one of the factors that made port city different from other types of cities and had its uniqueness, a uniqueness that characterized the regions. However, most port cities in diverse parts of the world have lost these unique characteristics, and only

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a few of the cities still have them [1]. Not only port cities, Christopher Alexander (1987) in his book A New Theory of Urban Design illustrated that today almost all of modern cities had lost the character, unlike the old cities which always looked miraculous and whole [2]. In the old cities, every part of the city grew into an intact part of it, not only on a large scale but also on every detail, and it is the one that lost in the current cities: the wholeness. Alexander considered that it is the Urban Design which the most responsible in shaping the wholeness of a city over other fields.

We see that Serui has great potential to be a city which has unique characteristic only belongs to Serui itself; has wholeness. However, the direction of current development of Serui city (such as Serui coastal reclamation) is at high risk of eliminating the wholeness and removing its marine characteristics. Also, the direction of the government development does not address Serui city's problems: Vitality. Then, what kind of development of Serui city that can answer the problems in this city while on the other side does not damage the city character?

2. Vitality as city problem

"An environment is a divine habitat if it supports the health and biological well functioning of the individual and the survival of the species."(Kevin Lynch, 1981). The vitality of the city is the primary and the first dimension of good city form. It is related to vital functions of life, human biological needs and how to preserve the sustainability of human life and the environments. This issue is a nature issue of the spatial environment. It emerges from the universal characteristics of human biological feature which commonly similar on every human being, although they have a different culture from one to another [3]. This issue is related to the sufficient of air, water and food supplies, sewage system and safety from any kinds of hazards. If we imminently observe, we will find many problematic areas regarding this aspects; as well as the Serui city. Here are the results of our observations on the Serui city about its vitality:

First, the clean air supply of Serui is adequate since green hills and oceans which surround this small town take roles as natural green open space and blue open space. However, still, there are no specific rules for the green or blue space made in the city's area, either in public or private spaces. Currently, the green space within the city is still sufficient as the building mass are not massive while the number of vehicles is not significant to engender pollution. But over the time, the green spaces within the city are possible to vanish if there is no spatial arrangement contained specific regulations to oversee it, and with the more and more vehicles used can pollute the air.

Second, the primary water supply of Serui comes from mountain springs distributed directly by Regional Gov. Company (PDAM). The water quality is good, but the PDAMs will shut off the water flow during heavy rain since it will mix with mud. The number of rainy days in Serui is considerably high (278mm/year), so water flow is often turned off. Pumps well were only able to be used in certain areas due to Serui condition which closes to the sea, and several areas are swamps, potentially to cause brackish water.

Third, the food supply of Serui mostly comes from the city outside, such as Java island and the nearest one is Nabire Regency, which catered through the sea by ship. Currently, Serui is only able to produce its side dishes such as fish; vegetables such as taro leaves, cassava leaves, and water spinach. It derives carbohydrate sources from cassava and taro and imports other foodstuffs from the city outside. The absence of Pelni ship to Serui in 2011 resulted in food scarcity, especially rice, which is the staple food of most Serui residents.

Fourth, the energy supply of Serui is purely from PT. Pertamina. There is one gas station in Serui which serves the entire population needs, thus the hampering of supply from PT. Pertamina can lead to scarcity, a situation which occurs often. It is common when PT. Pertamina ships carrying fuel comes late. Since the city's electricity source (which derived from diesel power) highly depends on PT. Pertamina fuel supplies, its faltering supply can disrupt the services. Solar energy has started being used on the street lamps but still in limited amount and often being stealing objects by people to be sold.

Fifth, for the disposal of the waste, regarding household waste, there are only a few garbage cans for temporary accommodation of residents waste. The inadequate number and size often make it scattered and many residents prefer to dispose it into rivers. As for household liquid waste, it is channeled to septic tank owned by each household or directly channeled to nearby ditches or streams.
Sixth, the risk threatens Serui city are such as earthquake and flood in certain areas. Rampant crimes are mugging in the highway and delinquency committed by drunks. The disease that frequently infected residents is malaria due to the unclean spheres and considerable inundations. There is only one hospital operates in Serui city lead to the handling of casualties of hazards/crimes/diseases frequently hampered.
Seventh, there is plenty of space for sport activities such as playing football and volleyball in Serui city. Yet, the less secure and uncomfortable conditions of the street for pedestrians and the perceptions of vehicle-ride as a preferable lifestyle has set most of the residents to choose the motor vehicle for traveling, even for overly short distances. Whereas, the conditions allow Serui becoming a walkable city.

Based on the sevens point above, it is obvious that Serui city conceived problems in its vitality. Though, the aspect of resilience occupies a significant position within city space as a human living space, since the biological survivability underlies other values of humanity such as identity and human character. Likewise, the city identity and character, are possible to dissolve gradually if the city no longer has good vitality. Thus, we evaluate, its aspect is the foundation of spatial environment where human lives, including a city, which is the basis of other city elements. The handling of the issue is purely for public goodness and indiscriminate. Good city in its vitality means that it is capable of actualizing the biological health of the residents and well-functioned, and this is the purpose of this study. It expects with the achievement of the purpose, the strength of city foundation capable of sustaining character and identity owned by Serui city, strengthen the city wholeness.

3. Method

The city as well as the human need character and vitality. Both of them have many similarities. Hence, there is a chance that human problems are similar to city problems that can be solved through similar approach as human's treatment. Equalizing city and human, we named it 'City Personification.' Personification is the simulation (signifying) of inanimate objects as a person or human [4]. Through 'personification,' the inanimate objects made as if it lived and conceived human-like qualities. City personification is the city's figurative as a human, the similitude in its character, needs, structure or 'the body' system. It provides another point of view to perceive the city, its problems and its solutions. The scope is so broad that it needs limitations in this research. City personification emphasized on the principal issue of design that lies in the vitality aspect of the city. It is which determines what human nature will represent in the city. And since the urban design is physical, accordingly in this case what will represent in the city is the physical nature of human beings related to vitality, namely the supply system of water, food, and energy along with the exhaust system within the human body. The supply system of air, water, food, and energy along with the exhaust system within the human body is interconnected (figure 1). The most vital part of the system, as well as the one of human body, is the brain and heart, which both of dysfunction, can cause sudden death. The brain and the heart are the parts that will be explored and represented in the city which eventually becomes the object of the design. The canonicalized design area in this most vital parts is classified in the urban acupuncture principle [5], to wit using small-scale intervention to change the larger urban context. Acupuncture is a technique of human's treatment, a concept that we can imitate as a treatment technique within the city areas.

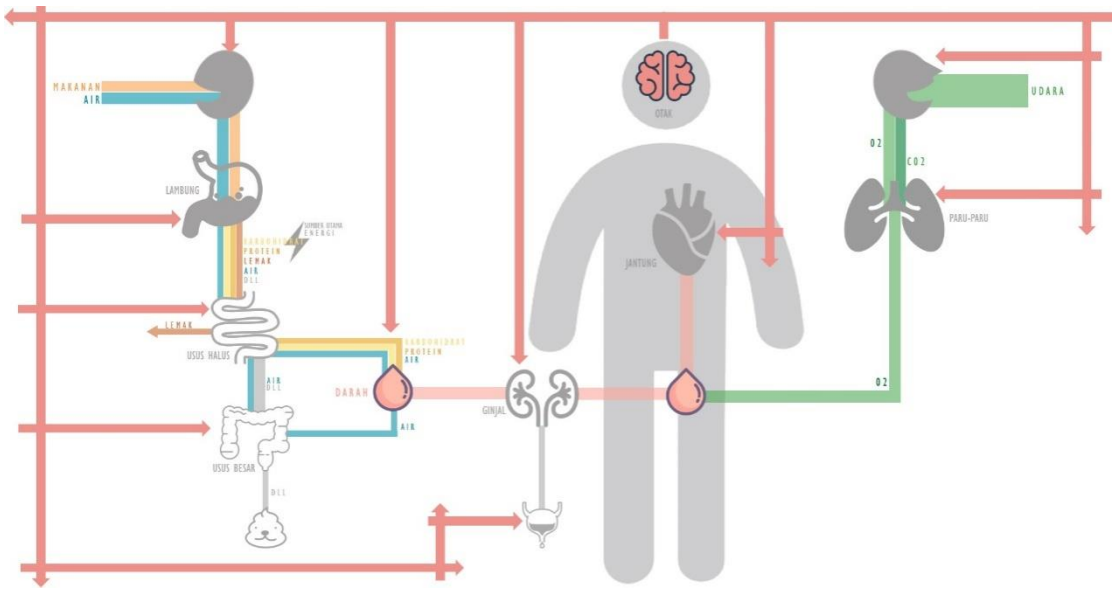


Figure 1. Vitality System of human body
Source: Personal preparations from various sources 2017

4. Brain and heart in human, city, and Serui

Human brain functions as the central body control, it controls conscious movement and responsible for the mind, feeling and the human basic perceptions. The brain which has received stimulation from receptor through the nerves will give orders on what receptor have to do (also through nerves). This brain functions and working mode if represent in a city, it will reflect brain as a central government, the residents as nerves, while receptor is the city region itself, and the stimuli are the city problems. The connection between government and citizen needs a particular space to mediate information and solution of city problems. The mediating space can be virtual space or real space.

Human heart functions as a blood pump to the entire body and blood carry oxygen and nutrition through the blood vessel. Though it is not the determinant, heart contributes to the human mind, feeling, memories and basic human perceptions indirectly. The heart has two streams, the minor and the large; the minor goes to the lungs, while the large goes to the whole body. The heart has two compartments; the right side which is rich in oxygen and the left side which mendicant of oxygen. If this function reflects in a city, a heart represents the area functioning as the center of basic needs distribution. This area receives, storages and distributes it to the entire city. The way to distribute these basic needs is representing the blood vessel. As the blood carries nutrition (basic needs) and oxygen, thus the way/street as the blood vessel not only deliver the basic needs but also supply oxygen by providing green space in the street areas. Moreover, representing parts of it, the heart of a city has these three parts: the first, the part existed in the center area of primary need supplies; the second is in the waste processing, and the third is the green/blue open space as the air filter area.

In Serui city, the heart area is the coastal area of Serui city where various ships carry various goods docked along. As well the main harbor of Yapen Island Regency and Inpres market as the central market of the entire Yapen Islands Regency is located in this coastal area. The Serui coast area is the center area of goods and basic needs distribution not only for the city itself but also for Yapen Island Regency and several small regencies around. Furthermore, we design the coastal area as a heart for the city that has three functions parts. The brain of Serui city is the central government and representatives of indigenous people. Unlike Bandung city whose government-citizen communication conducting virtually i.e. social

media, the limited internet connectivity in Serui demands the existence of real area as a mediating space. The real space can be in the form of public space. Space can be made by unused land, the outworn of an airport which located near the government offices. It can be used by the government to educate citizens on solutions of the people and city problems principally related to vitality.

The offered intervention to the city of Serui is in line with the urban acupuncture approach. In a small-scale, it is being used to change the bigger urban context. With this kind of one, we hope that it capable to be the eminent trigger to fix the Serui's vitality. Here's an explanation of the solutions to the seven issues described earlier.

First: air problem. In public spaces where the intervention proceeds, green open space will be provided (especially in 'heart' area). For emphasizing the importance of green open space, there will be an area that is going to be designed for education in the 'brain' mediating space (such as a park equipped with education posters).
Second: water problem. To deal with it, water tower can be placed in the 'brain' mediating space to retain the rainwater as the symbol of recycling and reusing rainwater. This water tower can have an additional function as sightseeing tower. A sample house also can be built in the same area. The house has a simple rainwater storage system that citizen can make the same thing in theirs. The using of rainwater is hoped to be another source of clean water.
Third: food problem. We can use 'brain' mediating space in the center of Serui as a training field and urban farming model. Training can function in particular events that taking place in a specific area in this public space. The urban farming that the citizen conduct independently is hoped to help fulfilling daily supplies. It is also a form of effort to maintain the citizen to survive in the food crisis.
Fourth: energy problem. The energy problem is a very complex issue. There is a limited effort that can be done in public space. One thing that can work in this space is to change people's habits in using energy. Energy savings is an effort to maintain it. We can put ergonomic pedestrian spaces in Serui's 'heart' and 'brain' mediating areas. Since they are the most vital parts of the city, citizen frequently visited them. The access that connects them can be vital and often used by the citizen. Access such as an ergonomic pedestrian (bike path is additional) is expected to encourage the citizen not to use motor vehicles when going to nearby places. It is beneficial for a healthy life and reduces their need for fuel. If this access succeeds, hopefully, this is not only connecting those two areas but also the whole area in the city.
Sixth: danger problem. The main point of this issue is that the intervention in this public place has to give safety from hazards/crimes/diseases. Moreover, in the 'brain' mediating area, education can be delivered in a creative form to encourage the citizen to maintain the safety of the environment from hazards/crimes/diseases together.
Seventh: walkable city. This one is in line with the fourth point. Education space in the 'brain' mediating area may include an education about the benefits of taking a walk for health and the sustainability of the city. It must be designed as catchy as possible so that the citizen is motivated to walk by foot. Sport and recreation facilities may equip this public space to encourage public interest to visit this place. From now on, it expects that the citizen as the 'nerves' will return respectively to their inhabitation in the entire body of the city to implement the knowledge that they have obtained from the public space. This approach has the same principle of the city as a whole [5]: "When we say that something to grows as a whole, we mean that its own wholeness is birthplace, the origin, and the continuous creator of its ongoing growth." (Christopher Alexander, 1987).

5. Conclusions

Intervention in the heart and brain parts of Serui city is expected to be the acupuncture spot of the city to heal the city problems: the lack of vitality. And the output of this design must fulfill the design criteria to support the city vitality, namely clean, safe and well-functioning. We suggest, this kind of approach can resolve the city's problems without changing its character as the acupuncture medication in human that doesn't change the human's character, so that the city is kept as a whole.

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