

# Site Design of Public Space under the Jenggolo Sidoarjo Flyover, East Java is reviewed from the Location Characteristics

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**Abstract**— This public open space under the Sidoarjo jenggolo flyover is known to be not optimal in its operations, both from zoning arrangements, number of visitors, and types of activities. Based on the results of the analysis, the most prominent activity in this area is the central street vendors that are made as a substitute for street vendors who used to sell along the shoulder of the road. The existence of this center PKL from its operational time and sales has decreased by 50 percent compared to before, this is because the operational time of the center vendors is only effective at night. In addition, what affects the lack of optimism is that there is an empty space under the overpass that is not utilized. The space is left empty so that it gives the impression of slums, darkness, and crime-prone, so that with this empty space can cause a negative image on that location.

The analysis that will be carried out is by reviewing the negative and positive potential of the open space, as well as reviewing in terms of behavior and user needs based on location characteristics. The design method used is qualitative descriptive method. As for the analysis technique used using walkthrough analysis and SWOT techniques.

The final result of this study is the concept of developing an open space design under the overpass with a character approach from the local location. So that efforts to optimize existing activities can be achieved.

**Keywords**— public open space, flyover, street vendors, behavioral architecture.

## I. INTRODUCTION

The research that will be carried out here is to make an exploration of the design of public spaces and city parks under an overpass that is adapted from the results of surveys and literature studies from several examples of existing flyovers.

Based on the results of the survey at the bottom area of the Jenggolo Sidoarjo flyover, there were already arrangements for both PKL and RTH, but they were not optimal. This phenomenon can be seen from the lack of visitors, the decreasing operational time of street vendors,

there is still a lot of land that is not utilized, zoning between activities is not clear, and there is no integration with existing activities around the site. In the background because of the lack of optimal functioning of existing activities, it is necessary to overcome this problem by developing the area according to the potential of the site and the behavior of the park's users. The purpose of developing the park area is as an effort to restructure and improve the quality of the design of the park and its surroundings.

## II. LITERATURE STUDY

### Behavioral Architecture

Behavioral architecture is an architecture that in its application always includes behavioral considerations in the design of behavioral linkages with architectural design (as a physical environment) namely that architectural design can be a facilitator of behavior or vice versa as a barrier to behavior (JB Watson, 1878-1958).

### Public Space

The definition of public space is a public place where people perform routine and functional activities that bind a community, both in normal routines of daily life, and in periodic celebrations (Carr, 1992).

In designing the public space must be in accordance with the context, because every design of public space is a good expression in culture, behavior, habits, needs, history, and psychology of the surrounding community.

### Street Vendor

The term PKL appeared during the Raffles era, which at that time referred to the 5 feet space, which was precisely located on the shoulder of the road along the pedestrian. And in the area, it is finally used by small traders to sell. From this phenomenon finally traders who sell on the roadside are not formally referred to as street vendors. Meanwhile, according to Mc. Gee and Yeung (1977: 25) in Susilo, Agus; 2011 characteristics of street vendors, namely:

1. There is an accumulation of people doing activities together at the same time, throughout the day

2. Located in certain areas which are centers of urban economic activities and urban non-economic centers, but often visited in large numbers.

3. Having the ease of occurring relationships between street vendors with buyers, even though it is done in a relatively narrow space

4. Does not require the availability of public service facilities and utilities.

#### **Flyover under area**

The space at the bottom of the overpass / bridge is the space created by the overpass / bridge. In accordance with government regulations, the space under flyovers / bridges is generally included in the RTNH (Non Green Open Space) category, especially in locations with hardened surfaces or not covered with plants. Even though the space under the overpass / bridge is included in the RTNH, however, specifically for this type of RTNH, the amount of provision is not regulated in government regulations.

The space below the overpass or bridge generally has a surface made of pavement, so it is included in the RTNH category. Although including RTNH, many cases of space under bridges / bridges are not used for activities. This is related to efforts to maintain security and order in urban areas. Space under flyovers / bridges is mainly used for certain ecological support areas. In accordance with the Guidelines for Provision and Utilization of Green Open Space, the space created under flyovers / bridges is ideally equipped with certain vegetation elements that can live with limited sunlight, using pots or tanks that can also be RTNH. The aim is to increase the beauty of the area under the overpass / bridge in question.

### **III. METHOD**

#### **Research Method**

The research used in this study uses qualitative descriptive methods (Groat and Wang, 2002). The aim is to make a systematic, factual and accurate description, description or painting of the facts, traits and relationships between the phenomena under study.

The research stages are as follows:

- Identify potential sites both physically and non-physically. This process includes site surveys, observations, interviews, and sorting of existing data.

- Formulate design criteria as a reference in the design development. In formulating the criteria here, walkthrough analysis analysis is used which is used to find out all the potential and activities that are visually visible, and then proceed with a SWOT analysis to find out the advantages, weaknesses, opportunities and threats.
- Formulate the concept of Arrangement design and Design of thematic park area. Planning strategies that have been obtained from the SWOT results can be used as criteria that will later be drawn from the design concept..

### **IV. RESULT AND DISCUSSION**

#### **Location Characteristics**

When viewed from the location, the open space area is created because it is under the overpass and is limited by a turning road under the overpass. Whereas for this type of area is an area that is indeed possible for a public activity, because the transportation on the turntable has a low intensity, in other words the area is not too dense and the average speed of the vehicle is around 20km/ hour so in terms of accessibility, this area has the potential to be used as a public space. In addition to being viewed from accessibility, there are several other potentials that can make this area optimal, including the existence of street vendors, parks and spaces that are under the overpass, as well as buildings or activities around the site. For detailed discussion will be discussed as follows:

- **Street Vendor**  
From the results of the analysis that has been carried out, there are known problems and potential that can later be used as design development. In the aspect of street vendors, there is a lack of optimism in its operations, this can be seen from the decrease in the number of visitors by 50% compared to the previous when it was still a wild street vendor, this happened because the location of street vendors was less visible, there was no supporting activity that could invite visitors to come, location adjacent to the empty space under the overpass, so the location seems dark and gloomy, there is no clear zoning between street vendors and other open spaces.



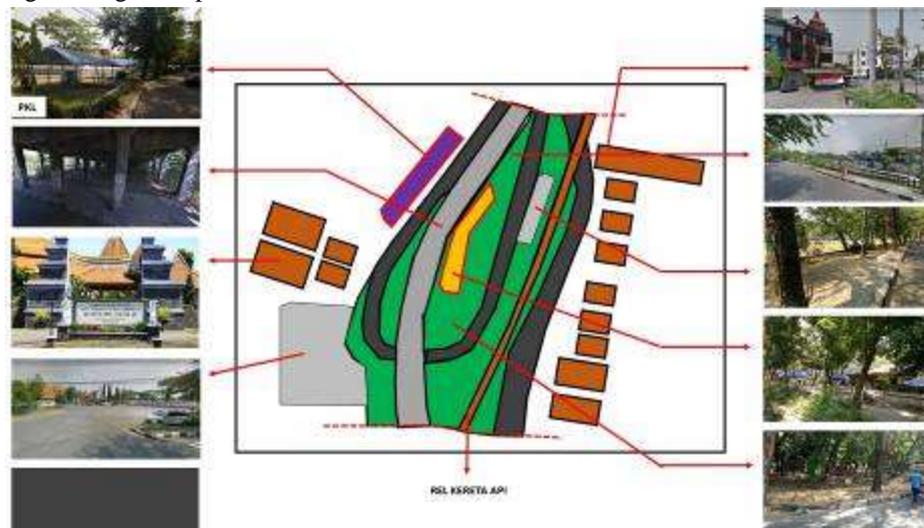
Picture 1. PKL activities before and after curbing  
 ( Private Source Data, 2018)

Whereas the existing potential, namely the existence of empty space under the overpass can be used as a central PKL development, the location adjacent to the museum and shophouse is a potential for the operation of the center PKL.

- RTH and RTNH

For RTH in this location there are two categories, the first is the green open space, and there is an unregulated green space, the ratio is

around 1: 3. With the large number of unregulated green space areas, it makes a negative impression on this area. Besides that, the existing open green space is passive, there is only pedestrian in the park but there are no supporting facilities to be able to invite more visitors. When viewed by plants that grow, this large green space is covered by large trees as shade.



Picture 2. Existing site design  
 ( Private Source Data, 2018)

The existence of these large trees does provide maximum imagery in the green space, but this condition gives a slight negative impression because the imagery gives a dark and gloomy effect on the location.

Whereas the existing RTNH conditions also give a negative impression on the location, this is because the area under the overpass is not utilized so that what appears is a dark, shabby and crime-prone impression. In addition to the

area below the flyover there are many large columns whose function is to support the bridge. The dark impression on the RTNH area besides being influenced by large trees, this location is dark because of the many columns that make it seem dark.

- Comunal Space

In site conditions, it is seen that there are public activities both in the park area and in the street

vendors area, but the presence of visitors especially in the street vendors is very lacking. Compared to before 2017, in this area, especially in the area of the highway, the number of visitors in many categories. It is known in the location that there is no special room that is used as a communal space, only pedestrians are available, and often there are many visitors who sit on the pedestrian, making it a bit disturbing when there are other visitors walking on the pedestrian.

- Neighborhood Building Functions  
 At this location there are several building functions around this site, among others, the Mpu Tantular Museum, Shops, High Schools, and Vocational High Schools. So that if it is categorized in a building function, there are functions of educational buildings and also functions of commercial buildings.



Picture 3. Neighborhood Building Functions  
 ( Private Source Data, 2018)

Of the several buildings that are located around the open space area, this open space area must have an integration of activities in the surrounding buildings. In the existing condition, the existing open space seems to have only been used to move the street vendors who used to be on the shoulder of the road to move to an area in a green open space. So that the condition of this open space still looks shabby and prone to crime at night due to the lack of lighting conditions in the area.

and learning activities and not as a residual space.

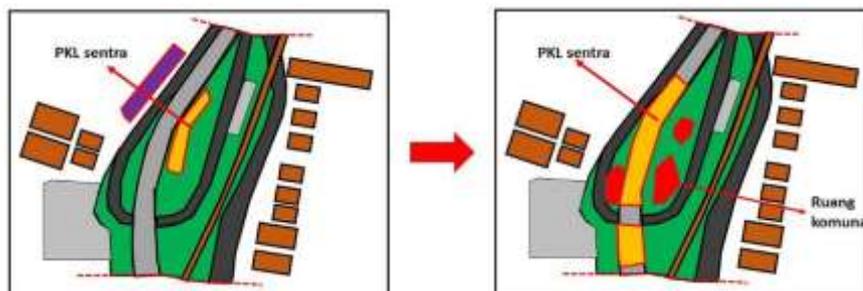
- Educational Building Function  
 There are two schools that are located around this open space, where the existence of the school has an influence on this open space, not a positive influence but a negative influence, this can be seen by the use of open space as a parking space for students. From this phenomenon it can be seen that the use of open space is not right on target, where the open space is planned to be a space that can support the activities of teaching

- Commercial Building Function  
 For commercial buildings in this area there is no effect on the physical open space, because each shop has its own parking lot corridor. However, another influence that can be seen is that the existence of this shop can trigger many visitors in this area..

## V. DEVELOPMENT OF SITE ZONING MODELS

### Street Vendor

From the analysis and SWOT that has been done, the proposal is that first, to optimize the existence of street vendors there must be complementary activities in the form of communal and playground spaces. Secondly, RTNH that are under the overpass can be used as street vendors. Third, provide advertising space on several walls as a sponsor of the sustainability of the center PKL, so that the central street vendors can later be optimized in the design and arrangement.

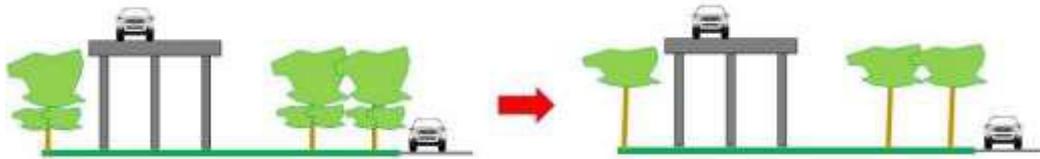


Picture 4. Site zoning  
 ( Private Source Data, 2018)

**RTH and RTNH**

The results of the analysis and SWOT on RTH and RTNH obtained the proposal that is first, changing the green open space design from passive design to active. Second, designing communal spaces for the surrounding

community. Third, designing green open spaces and communal spaces that are educational, given the dominant area around many buildings with educational nuances. Fourth, to make this area more visible, the branches of large trees must be tidied up.

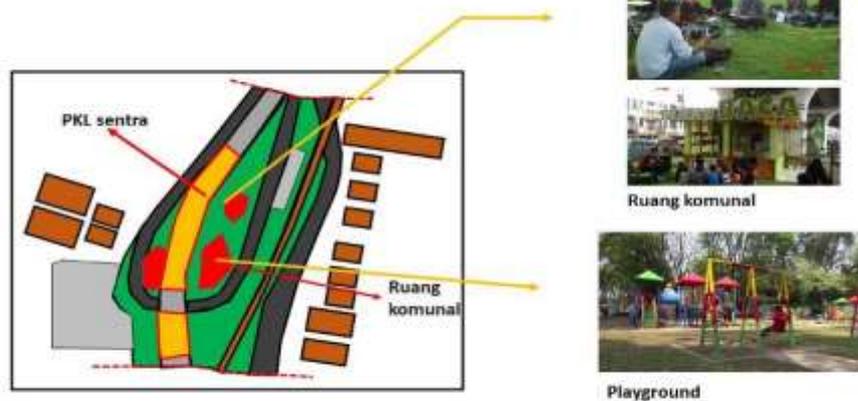


Picture 5. Vegetation around site  
 ( Private Source Data, 2018)

Fifth, in the RTNH room it is better to use it as a center PKL development, with the hope that the location will not become slum. Sixth, manipulate the supporting columns of the overpass to make it look neater.

**Comunal Space**

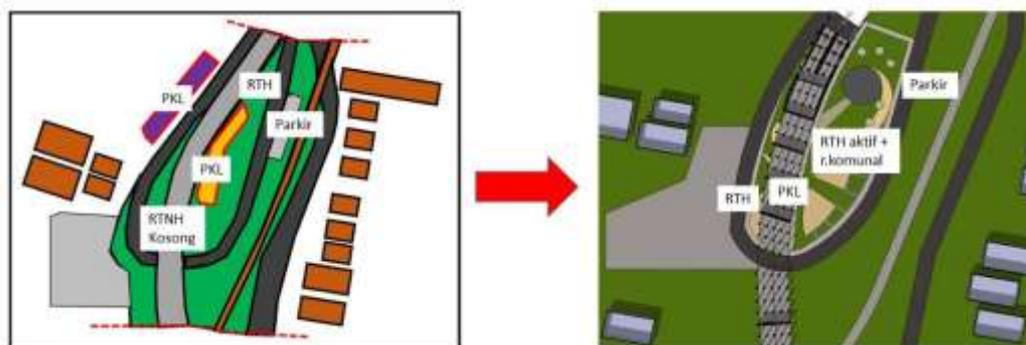
The results of the analysis and SWOT on communal space obtained the proposal that is first, because there is public activity in the location, it is necessary to have a forum to accommodate the communal space.



Picture 6. Cmunal space Concept  
 ( Private Source Data, 2018)

Second, because the location around many buildings has educational nuances, there is more communal space to accommodate teaching and learning activities.

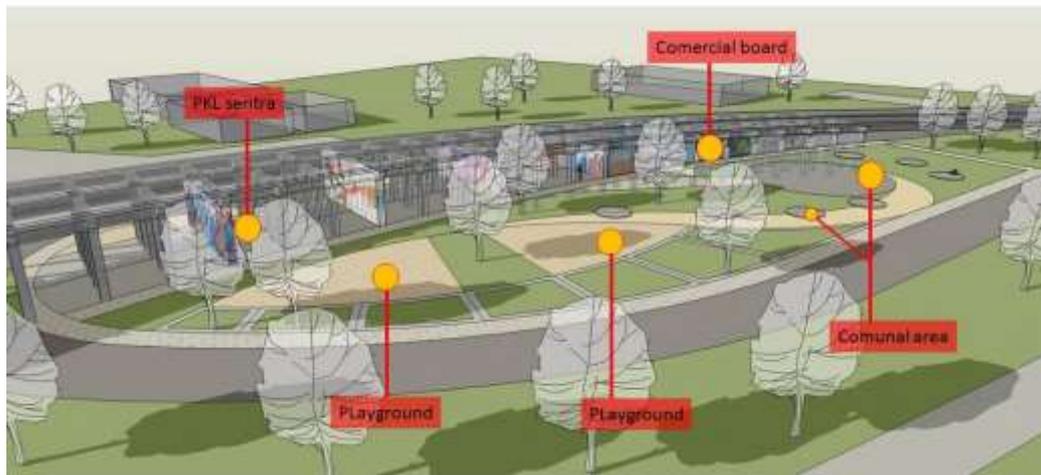
**KESIMPULAN**



Picture 7. Site Zoning Changes  
 ( Private Source Data, 2018)

From the results of the analysis and SWOT, it was concluded that the site design as above, where green space is maximized as active activities and communal spaces such as discussion rooms, open stands, and

playgrounds. In addition to maximizing central PKL, the PKL area was moved to the RTNH area with a more communicative design.



Picture 8. Site Design  
( Private Source Data, 2018)

With the creation of a new zoning design and site layout as shown above, it is hoped that later it can be used as a reference in the development of detailed designs and can provide an overview of the design design variants of open spaces under the overpass.

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