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Towards Safe Cities & Resilient Communities

13 & 14 SEPTEMBER 2018
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**AN INTRODUCTION OF LANDSCAPE VISUALISATION AS
A TOOL TO PROPOSE THE FUTURE DESIGN OF HUMANE
OPEN-SPACES FOR EMPLOYEES AMONG TALL
BUILDINGS**

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Abstract - Tall buildings is one solution for urban areas where limited available land and high prices become a problem for investors. This causes the optimization of land less attention to the social impact of increasing the number of high buildings in city. The fact happens nowday is the unavailability of public open space for micro economic activities such as street vendors who are currently crowded around the edge of the highway surrounding tall buildings. Therefore, this study aims to make the planning of future design of humane open space for workers and office workers. One of the methods used is landscape visualisation to see the existing conditions. the example of selected area is karet pasar baru timur 5 street located between Sahid Sudirman complex and Apartement Pavilion. According to study of one photo captured on road condition, future design planning can be made by reducing the road sections of the road and expanding the sidewalk located in the middle that separates the traffic lane. Thus, the open space is more humane with the arrangement of parking areas and planning good sanitation and feasible course. This result is a draft proposal as the introduction of further research to be conducted with more interdisciplinary knowledge sectors review.

Keywords - Landscape visualisation, Tall buildings, Open spaces, Future design.

1 INTRODUCTION

Tall building as a building type is a technological innovation of the nineteenth century in response to the economic, industrial, and social changes. The tall building can accommodate many people on a smaller land than would be the case with low-rise building on the same land. Quality of life is improved by tall building that offers the opportunity to create open spaces such as plazas, parks and other community spaces by freeing up space at the ground level (Ali, et al., 2008). A review of high-rise literature will reveal that tall buildings generally grew as a building type out of necessity- that is not based on arbitrary willfulness (Beedle et al., 2007). The rapid economic development in Asian countries as followed by Indonesia has caused this building type become widely employed in big cities such as Jakarta, Yogyakarta, Surabaya, Medan etc. Currently, Jakarta is investing in urban developments and utilizing tall building for urban growth.

The outgrowth of business is increasing in demands compared to office attendants, employees and office complex. Thus, it requests public facilities for example supermarkets, restaurants, food court, coffe shops, place for worship, public open space and so on. The rising number of tall buildings make those amenities larger following the number of people as well. However, most developed tall building do not provide enough open space. As a result, the people use the existing open space around the building complex. Another problem arised is the need for affordable food for employees. Subsequently, it creates social impacts that generate appearance of street vendor on roadside. Thus, it decreases value and function of the previously open space to be not decent and comfortable.

If there is an additional one high-rise building put into an existing high-rise complex, it will have at least the same amount of employees as one existing tall building. It may cause street vendors staying by roadside around the tall buildings. Street vendors are often regarded as an 'element out of

place' against their location, activity, physical appearance, even structure and pattern of urban design (Widjajanti, 2016). Meanwhile street vendors' activities grow and develop in the urban space due to the influence of the main region activities where they are located (McGee and Yeung, 1977). However, if the activities and space arrangement are not regulated, they will always lead to conflict. Besides that street vendors' existence as activities in the urban space is regarded as a nuisance element or unplanned element or element out of place, and it often causes a lack of harmony in physical order and environmental visual aesthetics (Hough, 1990; Creswell, 1996; Yatmo, 2008). Their presence in the public space is one of the activities that can be categorized as "activity support", street vendors' activities together with other activities strengthen the function of urban public space (Shirvani, 1985).

Thus, this research aimed to find a method to do future design planning a humane open-space where both vendors street can provide hygienic food and employees can share public space while they surround the tall buildings. These street vendors can be seen as "in place element" by understanding the context of their presence in a location, and to consider the potential vendors as local identity, so it is important to recognize the context of their presence in urban planning, which can be a consideration in the determination of planning policies, demolition and eviction of street vendors (Yatmo, 2008). The future design is not only open space for employees and street vendors but also turning it into green open space as to reduce pollution and water absorption area. Furthermore, the space utilization is reviewed based on location, activities, accessibility and comfort.

2 QUALITY OF SPACE AS FUTURE DESIGN

The quality of life in an urban environment has physical, economic, and social aspects. The public open space is the part of the urban environment; therefore, when the public space is satisfactory, it has a direct impact on the quality of life. The perception of the community of public open space is related to the quality of life such as health, recreation, and environment (Nasution et al, 2014). Consequently the quality of space is defined as area where people are satisfied to spend time there and where the place is worthy to be a place to do activities and socializing.

As mentioned before, the Citizenship behaviors may also result from work engagement (e.g., Alfes et al., 2013; Babcock-Roberson and Strickland, 2010; Rich et al., 2010). As posited earlier, work engagement implies that employees are physically, cognitively and affectively connected with their workplace. The quality of the physical features of the open space has been seen as an important aspect that improves people's satisfaction and quality of life (Beck, 2009), promotes better use of public spaces (Gehl, 1987) and enhances the social, environmental and economic values of cities (Beck, 2009).

The future design is a creation that provides look of the future. It is an opportunity to enhance the quality of space available such as open space or as a way to provide a new one as green open space as solution for informal economic and vendors street around tall building complex. A basic need of a cities is open spaces that have economic value, social value, and environment value. Those value should be included in future design planning.

2.1 Area of study

In this research, the future design is narrowed to the space that is used by vendors street at Sahid Sudirman complex in Jakarta, Indonesia. This site was chosen randomly based on tall buildings density at Karet Pasar Baru Timur 5 street because the new tall building which was newly launched a couple of months earlier and it is located next to Apartemen Istana Sahid (see Figure 1). It only has traffic lanes inside for drop off and parking area for motorcycle.

Based on site condition, the issue of informal economic dominates traffic lanes between Sahid Sudirman complex and Apartemen Pavilion. The phenomena shows most vendors street put their carts in the middle of traffic lanes where there is small sidewalk for trees. It provides seats for consumers to eat behind the carts under the shaded trees and plastic tent to avoid the sun and rainfall. Most of these consumers are office boy and employees of tall buildings. It changes the image of

roadside which functions as traffic lanes to public open space. The vendors street, drivers and riders of online transportation, employees and office boy frequent the street vendor. As a result the lane along the edge of road is crowded. Its lane are connected amongs tall buildings for instance Sahid Sudirman Complex, citywalk mall and pavilion apartment. The consumer increases because the Sahid center that operates and it is the fourth highest building in Jakarta, where more than hundred employees work there.

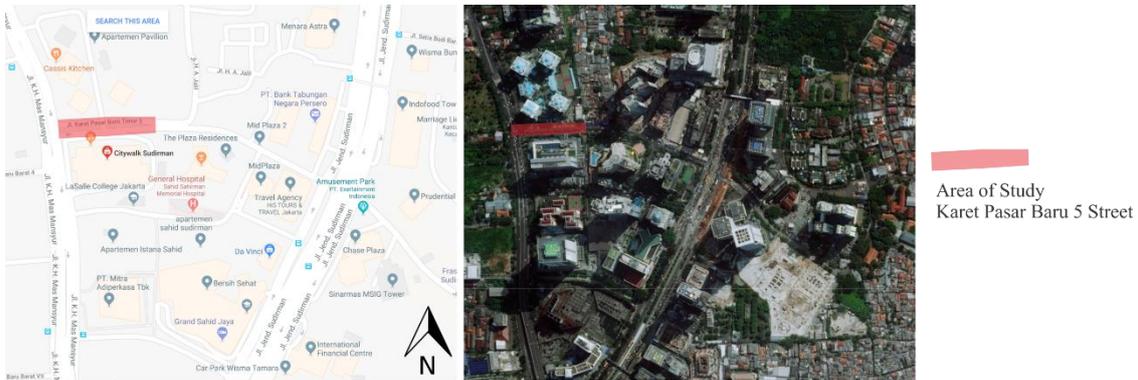


Figure 1 Location of area of study

The government through the Regulation of the Minister of Public Works No. 05 / PRT / M / 2008 in the Guidance Book and the Use of open green spaces stated for office grounds, shops and business places the open green spaces are generally in the form of sidewalks and open parking areas. As for urban areas, green open space is a city park that can be used by residents to perform various social activities in one city or part of the city. Based on the regulation, there is no specific provision that regulates public open space around high buildings. However, the unavailability of this public open space causes pedestrian paths, highway edges and secondary roads to be shoveled by pedestrian which, on the other hand, provides affordable food sales services for employees and office workers working on high-rise buildings. In addition, indirect impacts on traffic are congested on the main traffic lane at K.H. Mas Mansur road.

2.2 Landscape Visualisation

The potential of landscape visualisations and their role of conveying information for planning decisions is concisely described by Sheppard (2001, p. 194) as “specifically to provide the means for both an emotional (affective) response to proposed future environments and an analytical assessment of expected aesthetic changes”. Landscape visualisation techniques take a variety of forms. Traditionally they included models, drawings and paintings. Since the 1960s photographs and photomontages have been widely used (e.g. Sheppard, 1989; Al-Kodmany, 1999) and from the 1990s the improved capabilities to link CAD, GIS and landscape visualisation software have substantially enhanced the possibilities for digital representation (Lovetta et al, 2015).

Three-dimensional digital visualisation of landscapes offers many advantages over conventional methods of representation, particularly when communicating complex spatial arrangements to non-designers (Bishop, 2005; Kwartler, 2005). At the present time a common approach is to compile information for a study area in a CAD or GIS database and then generate three main types of 3D outputs. These can be summarized as rendered still images (or scrolling panoramas) from defined viewpoints, animated sequences (showing fly-throughs along specified paths or changes over time) and real-time models (or virtual worlds) where the user has the ability to freely navigate a landscape (Appleton et al., 2002).

3 METHOD

Generally, methods for the assessment of existing landscapes and proposed futures using landscape visualisations (see e.g. Daniel, 2001; Lange & Legwaila, 2012; Ribe, Armstrong, & Gobster, 2002; Zube, Sell, & Taylor, 1982) can be grouped into quantitative perceptual (asking people about ‘judgments’), qualitative perceptual (asking people to describe differences between the presented stimuli), quantitative analytical (developing metrics to estimate the degree of differences e.g. in before/after images) and qualitative analytical (describing objective differences between images) approaches (Downes et al., 2015). In this research, qualitative analytical method applied as introduction for landscape visualisation for designing future plan of roadside around Sahid Sudirman complex where the traffic lanes also serve as open public space because of vendors street.

In this case, the image analysis based on basic needs of city which are economic, social and environmental (ecology). The economic aspect is visible to the existence of vendors street on sidewalk. On the other hand, social part reflects on activities and trades along sidewalk among riders, drivers, employee and vendors street. Furthermore, there are trees with medium size lined up on roadside that may be included as environment even though it is not included in ecology principle. Therefore, this area literally should be identified as open space.

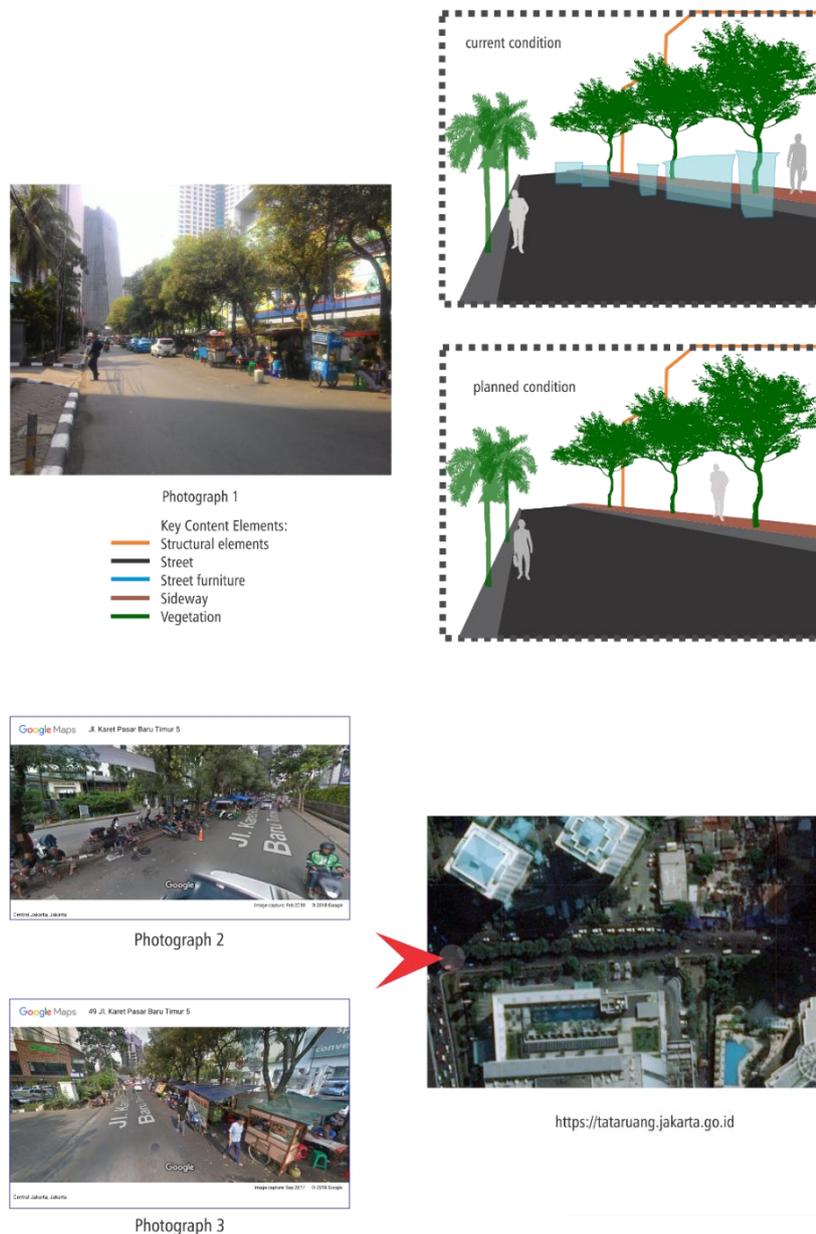


Figure 2 Analysis of Photograph 1

Image analysis made from one photograph captured by camera on July 2018. Two other images are street view image on September 2017 that used as data to complete the perceptual of current condition. The picture was analyzed to extract the key content elements:

- Structural elements: key existing and built structures which are dominant in the scene and/or do not match in scale or position.
- Street furniture: vendors street, taxis, motorcycles.
- Street: road connects buildings located between Citywalk Sudirman and Apartment Pavilion
- Sideway: existing sideway
- Vegetation: Street trees, herbaceous planting and mown grass.

As illustrated in Figure 2, the planned condition supposed to be vehicle traffic with two different lanes that have sidewalks in the center. However, currently on the left and right sides of the sidewalk has been filled with street vendors and used as a parking lot for two-wheeled vehicles and four wheels that no other space allotted for taxis and rental transportations online. According to this finding, the vehicle traffic lanes has been changed its function to public open spaces due to social impact of employee who works in highrise buildings. The needs for affordable food and the increase demand of online transportation riders and drivers has caused vendors street to be high in demand than before. Thus, the space is crowded by traders and irregular vehicle parking.

Consequently, this open space is not feasible to be used as a place to eat, rest and traffic. The need for sustainable planning is one way to anticipate the current inhumanity. In using this simple method, it is expected to make simple planning in maintaining the current functions. The image analysis shows tangible key contents namely trees, traffics, parkings, people, trading activities at present. The result shows that those elements should be maintained for future planning design. Through this landscape visualisationvisualisation, we could sort out main elements for further open space planning in this area.

4 RESULT

From the results of image analysis made on photograph 1, changes in space function due to social impact can be seen. Not only that, this unhumanity space also affects employee's performance indirectly both from the psychological and productivity because the environment is not healthy even for activity to eat and drink. Therefore, future design planning which can be used as a proposal for that place in the future is an open space that has three main basic values based on the needs of city such as economic, social and environmental (ecology). So with this there is a decent and humane place for the workers to sit leisurely while their income is unable to afford food in the tall buildings.

From the results of image analysis and measurement conducted on the area of research reviews, the authors use the help of digital applications such as google maps, google earth, sketch up and autocad in making illustrations of proposals for humane open-spaces future design. From the illustration, the size of the existed sidewalk around 1 meter is enlarged by reducing the size of the vehicle path in both sides. In addition, given sufficient space for two-wheeled vehicles and four-wheeled parking temporary, especially for online vehicles and taxis to wait for passengers out of the building. Furthermore, sanitary pathways are made under sidewalk to facilitate vendors street dispose of wastewater and facilitate rainwater flowing.

In Figure 3 it is one of the possible suggestions to make the sidewalk that becomes an informal open space because it is filled with street vendors to be more humane. However, the result from this study cannot be generalised because it uses only one simple research method. Besides, future design planning for humane open spaces requires an integrated study and multidisciplinary review.

5 CONCLUSIONS

There are more methods similar to technology and software. However, this research is an introduction to planning the future design that may enhance the quality of the city and humanity in business center. We understand, one method is never enough to propose new solution for complicated problems in a city especially for central business district. Moreover, it is an initial step to influence government policy related to the holding of obligations for open spaces inside high-rise buildings complex. After all, this research is a preliminary research to investigate an open space to be planned for future design in city space which may provide solution to the problem. Further research will be done by integrating more aspects, regulations and software as mentioned in the method section.

We may be proud of having great city which has high-rise building skyline at night, but we still need to remember how's the life of ordinary people who work for well-to-do inside. The city should serve the community equally and not only based on economic level and business interests. Further research on this will be conducted so that a more detailed and relevant information can be made as suggestions or proposal for municipal government in Jakarta to organize green open space among high buildings. So that both have an equally beautiful portrait of a city between tall buildings adjacent to a public open space.

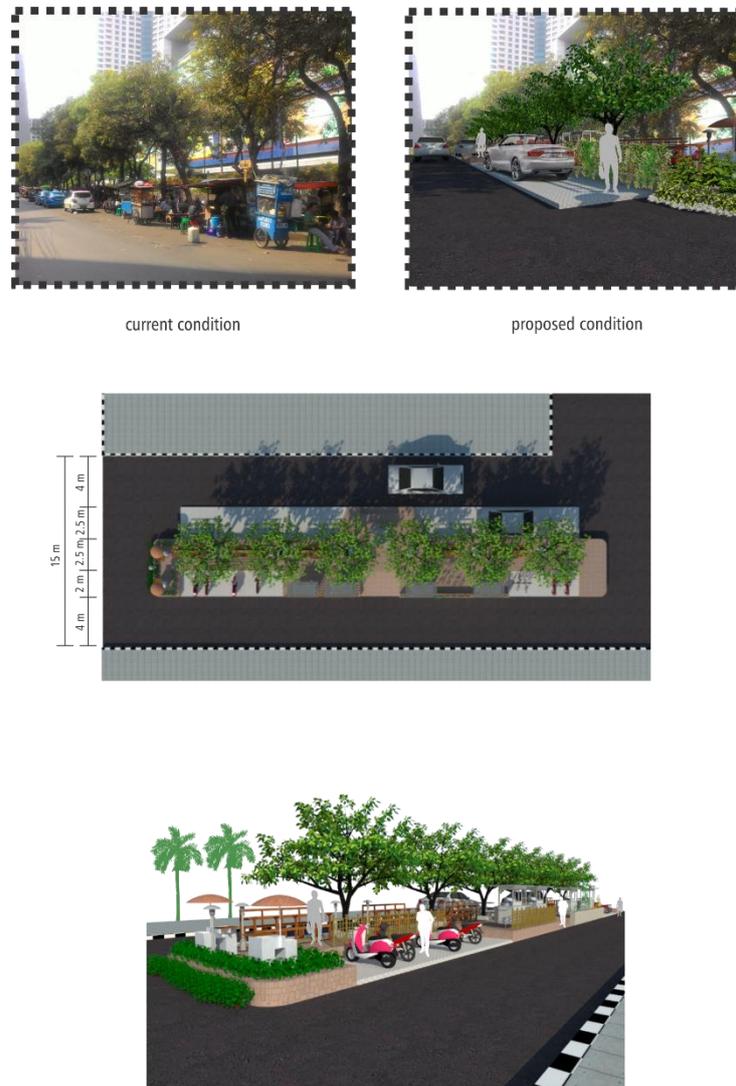


Figure 3 Proposal future design for humane open-space among tall buildings

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