How to improve the comfort of Kesawan Heritage Corridor, Medan City

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Abstract. Comfort is indispensable to make a friendly neighborhood or city. Especially the comfort of the infrastructure in the corridor. People must be able to feel comfortable to act rationally in their physical environment. Existing infrastructure must able to support Kesawan as a historic district. Kesawan is an area that is filled with so many unique buildings. Without comfort, how good the existing buildings’ architecture cannot be enjoyed. It will also affect the identity of a region or city. The aim of this research is to re-design the public facilities from Kesawan corridor’s comfort aspect: orientation, traffic calming, vegetation, signage, public facilities (toilet, seating place, bus station, bins), information center, parking and pedestrian path. It will translate the design concept in the form of design criteria. This research uses qualitative methods. Some facilities in this corridor are unsuitable even some of them are not available. So, we need some improvements and additions to the existing facilities. It is expected that by upgrading the existing facilities, visitors who come to Kesawan will be able to enjoy more and able to make Medan city more friendly.

Keywords: comfort, Kesawan, facilities

1. Introduction

Good infrastructure conditions will also affect the comfort in this area. If there is a public facility that was damaged then people will have difficulty to use them and people will feel uncomfortable. Kesawan is the starting point for the development of Medan city. In this area, there are many historical Dutch colonial heritage buildings. For the present condition, there are many shortcomings of public facilities from the comfort aspect. For example, on some roads, the shop owner put his wares on the sidewalk. As a result, the pedestrian path becomes unusable, thus reducing the comfort of visitors who come. Without the comfort, visitors who come will not feel at ease in this area. Eventually, they will have a bad reputation of this area. After that, the area will eventually abandon. Having good facilities and infrastructure will attract more tourists to visit this region. As an example of a town called Bradford in the UK who underwent great changes after the modified image of the city [1]. Bradford City is a pre-industrial city that has a bad reputation. With some improvements such as infrastructure, the image changed into a tourist town. When an area is considered a tourist area, then the image of a place can influence perceptions, choice and attitudes of the residents, investors and visitors. The new design of Kesawan corridor will make a good image of this place.

2. Comfort

A place that provides comfort for visitors will create a good impression as well for people who come [1-3]. Especially the comfort of the climate, air pollution, noise and infrastructure. People’s feeling of
Ease in an environment is the same as the ability of a person to be able to move well in a region or neighborhood [4]. One should feel comfortable and safe so they can feel confident and be able to enjoy the beauty of a building [5]. Aspects of comfort can form through orientation, colour, traffic calming, vegetation, bins, signage, public toilet, seating place, information center, parking, pedestrian path and public transportation [4-13].

The orientation of the street will have an effect on the course of the wind in the area. There was some function of traffic calming, that is to reduce the smoke of the vehicle and improve conditions for the pedestrian. One way to reduce noise is to make an area of separation between the source and listener. Vegetation affects the surface temperature, wind speed and also can serve as shading. Good signage design can help directing traffic and pedestrians to immediate and more distance destination. Information center also helps the tourists to decide which way they will go. Accessibility of transportation modes such nice facilities will support the image of an area. Public facilities such as toilet, seating place, pedestrian path, bins and decent parking facilities are needed to ensure the visitor’s comfort in this area.

3. Method

3.1. Research area

Area of research is at Jalan Ahmad Yani Kesawan, Medan. Kesawan is the name of an area in the district of Medan Barat, Medan, Indonesia. This region is full of historic buildings and Jalan Ahmad Yani is one of the oldest street in Medan (figure 1).

3.2. The method

The research method is qualitative research methods. There are two types of data, namely qualitative in the form of primary and secondary data. As for the form of primary data, obtained by direct observation of the field. The analysis was done by interpreting data (orientation, traffic calming, buffering, vegetation, signage, public toilet, seating place, bins, information center, parking and pedestrian path) with the theory of comfort to produce concept design of redesign the public facilities of Kesawan Region. After that, it will be translated into design criteria. In addition, qualitative data in the form of secondary data about the history of the region are from the official documents.
4. Results and Discussion

4.1. Street orientation and traffic calming

Street’s orientation can give an impact on solar radiation and wind direction [6]. Kesawan corridor is at East-West orientation, so the temperature will be high in daylight. It is suggested to place high-rise buildings placed in the back area of this region to help lead the wind in this region (figure 2). It also can function as a shadow system from the sunlight. Due to the mass of the shop building during the past that has only two-story, only the area behind the region which allowed higher. It should be done so as not to damage the visual connectivity of existing buildings.

![Figure 2. Building orientation and massa effect on wind (a) and sunlight (b).](image)

People’s comfort to move from one place to another place must also be considered because Kesawan is a tourist area. Traffic calming can help to ensure people’s comfort and safety. It is expected to reduce the vehicle speed, thereby reducing the level of noise, pollution and make the region more secure [6]. There is 4 location for the traffic calming that are suggested, and they are also used as a crossing area for pedestrians (figure 3).

![Figure 3. Location of traffic calming.](image)

4.2. Vegetation, trash bin and seating place

Vegetation is one of the important aspects to improve the comfort in this corridor. It affects the surface temperature, wind speed and can serve as shading [6]. It can also serves as a barrier or as a buffering system for the region. Many vegetation in this region is not designed so well that cause a lot of damage and interfere with pedestrians. The new one will not use of trees or potted plants like now anymore. Besides damaging the existing pavement because the vase is too small, also the position of
the tree was being skewed because of the distance is too close to the walls. The new design uses plants that are hanging on lampposts (figure 4).

![Figure 4: Design of vegetation before (a-b) and after (c-d).](image)

Trash Bin is a public facility that is important for a tourist area. There isn’t a proper trash bin facility before in Kesawan Region. The only one that is available is not enough so people would just throw it away in the street. The Trash bin is needed to support the cleanliness of the pedestrian path or the environment so that pedestrians feel comfortable [11]. It is recommended to be located outside the free space pedestrian path by the distance between the trash that is 20 meters. Dimensions of this trash bin is 0.4 x 0.5 x 0.9 meters (figure 5)

![Figure 5: Trash bin design before (a-b) and after (c-d).](image)

After a while of walking and sightseeing, people need a place to rest. There isn’t a seating place available before in Kesawan Region, so it must be provided. Seat furniture is used to anticipate pedestrians wish to rest and to achieve good pedestrian environment [12]. Outside the free space pedestrian path, it will be put, with the distance between them is 10 meters. The seat is made with a width dimension of 0.4-0.5 meters, height of 0.75m and a length of 1.5 meters (figure 6)

![Figure 6: Design of seating place.](image)
4.3. Signage and public toilet

Signage is used to display information for tourist or pedestrian in this area. Good signage design can help directing traffic and pedestrians to immediate and more distance destination [11]. Placement of signage in this area now is very irregular and it is blocking the view. The new design signage in this area consists of three types, that is traffic signs, billboard/brand and advertising (figure 7). First, the traffic signs, the use of them are also varied, starting from a bus stop sign, a sign to reduce speed, pedestrian signs, traffic lights and etc. Second, to facilitate visitors who come there is also some directions that were put to facilitate wayfinding. Third, the name plate, it is designed with black and white text so people can see it clearly. For the last one, the media ads, placed at the trash bin.

![Figure 7. New design of signage design before (a-c) and after (d-h).](image)

Public toilet is needed to improve the comfort of Kesawan’s corridor. It should be seen as a core component of environmental design, adding to a city’s quality and viability [13]. For now, there isn’t a public toilet facility before in Kesawan region. The public toilets will be placed in one of the units of shophouses, more precisely the area of the first floor. The new second floor used as a commercial function as usual (figure 8). There are total 2 units of public toilet facilities in this area.

![Figure 8. Public toilet design.](image)
4.4. Information center, public transport and parking

Information center also helps the tourists to decide which way they will go and give physical comfort [12]. For Kesawan area itself already has information centers, namely the Office of Tourism and North Sumatra Province. The office locates on Jalan Ahmad Yani No. 107 Kesawan Area, District of Medan Barat. There will be some addition to support its function as an information center. The tourist information center will consists of three areas: city galleries, information area and the visual communication room (figure 9).

![Figure 9. Information center.](image)

Public transport is needed for visitors to reach this area. Good connectivity with it is needed to support the comfort of an environment [8]. This corridor has no bus station at all. There are two points of the bus stop that are recommended, which is, in front of the building Tjong A Fie Mansion and in front of the Harian Kantor Analisa. The station at Tjong A Fie is devoted for a tour bus. At the outer part, there is a fence for the safety of the pedestrians and is made of cast concrete (figure 10).

![Figure 10. Design of bus stop.](image)

Parking is important for the planning of tourist area because it is connected with traffic and accessibility. Parking control is a traffic management tool which is used to increase traffic performance in the region [7]. For now, parking is allowed in every corner of the street. Not only that, there is often found that car was parking at the pedestrian path because there isn’t enough space. So in order to cope with the number of parking needs, it is suggested to make the parking building to accommodate the number of cars that come (figure 11). For the small street, it is only allowed to park in the same direction and one line with an angle of 90 degrees, only the size of a wide one that allows 2 lines (figure 11). For the main street, Jalan Ahmad Yani is not allowed to park anymore and a parking area should have sufficient lighting at night.

![Figure 11. Recommended location of street parking and parking building](image)
4.5. Pedestrian path
A Pedestrian path is important to maintain a walkable environment, it is needed for a pedestrian to be able to enjoy the heritage building. Connectivity and accessibility are important aspects in the design of pedestrian [8]. The pedestrian path now is much damaged and used as a parking lot. New pedestrian path design will actually made up of several layers. The first one is building’s front line, a space between the walls of buildings and pedestrian paths, with a least distance of 0.75 meters from the building. Second, the path used for pedestrians on the arterial road is 1.5 meters. Third, street furnishings line serves as a place to put the various elements of the street (figure 12). If street furnishings line used as a green line that planted with trees and ornamental plants, the minimum width is 1.00 meters.

![Figure 12. Pedestrian path before (a) and after (b).](image)

5. Conclusions
The comfort aspect in this region receives a bad assessment because of the bad quality of the public facilities, some are damaged, and the rest are not provided. For public facilities like toilet, seat, bus station and bins are not provided. For signage and pedestrian path, they need to be fixed and redesign. Besides that, information center, parking, orientation, traffic calming and vegetation are quite good enough but need to be improved. The temperature in this area is high in daylight, so it is suggested to use high-rise buildings to help lead the winds. Also by adding traffic calming system, it is expected to reduce the level of noise, pollution, and danger. The trees and other vegetation have made a casual damage to the wall and floor of the building. It is suggested to design a new one that will make no more use of trees/plotted plants like now. There isn’t available public facilities like the trash bin, seat furniture, bus station and public toilet, so it must be provided.

Placement of signage in this area is very irregular, and it is blocking the view. It must be redesign, so people that come to the area will have a better orientation. This region already has an information center, but it needs improvement to make tourist easier to get information and make it more attractive. The available parking area has made a traffic jam and blocking the view, so it is suggested to build parking building to cope with the needs of space. The pedestrian path now is much damaged and used as a parking lot; it needs to be improved to maintain the quality, connectivity and accessibility. This research provides the new design of the public facilities in this corridor to improve the people’s comfort. It is the key aspect to achieve good quality environment. For further research, it is recommended to study the comfort aspect in another corridor or city.

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