

# The Accessibility of Disabled People in the Sports Arena of Semarang City

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**Abstract:** *Sports arena as the public facility should be able to be relished by the entire communities, including the disabled people who have a hobby in sports. The laws which regulate the public facility for this community have been considered as ineffective due to many public facilities that still unable to fulfill the standard required. The ease of access provided for disabled people aims to facilitate them who have the interest towards sports for accessing the sports arena by utilizing the technology aimed at disabled people access. It might be possible if the ease of access provided for disabled people will make them as great athletes that will compete in the special sports of disabled people at international level. In this research, the method used is a descriptive method by observing the research object and comparing the standard for disabled people that has been regulated in Indonesian National Standard (SNI). The result expected from this research is the implementation of disabled-friendly access for disabled people on public facility designing especially sports arena.*

**Keywords:** Disabled, Access, Sports Arena, Semarang

## 1. Introduction

Sports arena as the public facility should be able to be relished by the entire communities, including the disabled people who have a hobby in sports (Fischer, J. & Philipp Meuser, 2009). Disabled people sometimes are being ignored in the process of public facility designing. The laws which regulate the public facility for this community have been considered as ineffective due to many public facilities that still unable to fulfill the standard required for disabled people access (K. E. Boyce, T. J. Shields & G. W. H. Silcock, 1999).

The availability of comfortable access for disabled people will provide equal rights from them in accessing the sports arena independently which indeed designed for the public without an exception. Through the availability of access for disabled people in the sports arena, it might be possible, if the ease of access provided for disabled people will make them as great athletes that will bring Indonesia pride by competing in the special sports of disabled people at an international level through Paralympics.

## 2. Research Aims

The aims of this research regarding the accessibility of disabled people in sports arena are as follows:

- Analyze the implementation of circulation/regulation for disabled people in sports arena of Semarang City
- Solve the issue of minimum access for disabled people in the sports arena facility.
- Discover the technology that can be implemented in public facility to facilitate the access for disabled people
- As the reference for design development of public space in the form of disabled-friendly sports arena

## 3. Research Method

This research was using survey method to acquired data in the observation location, namely the investigation used to acquired fact and data. The sports arena of Tri Lomba Juang Semarang located in Tri Lomba Juang Street, Mugassari, South Semarang of Semarang City, Central Java province was determined as the research object. The material discussed is regarding the access for disabled people that should be established by a sports arena. The latest technology development is an answer of how the sports arena should own a disabled-friendly access. The analysis method used was descriptive approach which conducted through the steps as follows:

- Literature study was conducted by studying the books and journals of related research.
- Direct observation was conducted by observing and recording the real condition of building as the object that will be discussed in the research.
- Data reduction was conducted through summarizing and filtering the data acquired thus it would point out the research topic.
- Data display was conducted by arranging the data in a proper order thus it would be easy to read and communicative as well.
- Verification was conducted by taking conclusions and recommendations.

## 4. Literature Study

According to The Regulation of Ministry of Public Work (Peraturan Meteri Pekerjaan Umum, 2006) regarding Technical Guidelines for Facility and Accessibility in Building and Environment for Disabled People, there are several standards determined which should be fulfilled in the parts of the building, such as:

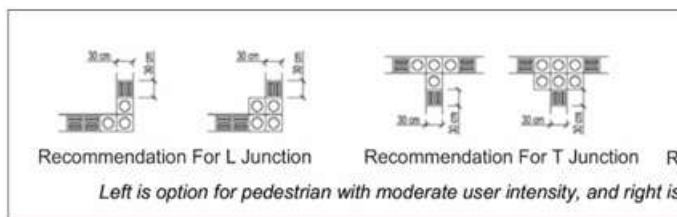
**a) Pedestrian Path**

The pedestrian path should have stable surface cover, weather-resistant, soft-textured but not slippery. If the path is on the slope, it should have 1:8 maximum ratios and in every 900 m should be provided with 120 flat surfaces. The seats used for rest should be available. The safety edge or kansteen is made with 10 cm height and 15 cm width in minimum along the pedestrian path. The minimum width is 120 for a one-way path and 160 for a two-way path, it has to be free from trees, signs, drainage and the others barriers (Kementrian Kesehatan Republik Indonesia, 2014).

**b) Guiding line**

The texture of line motive indicates the path for a walk and point/dot texture indicates the path for stop or warning (Linda M. M.I & Amy Buchele-Ash, 2000). The guiding line should consider the existing pedestrian, thus it would not emerge a confusion. In order to provide different colors between guiding tile and the other tiles, the guiding tile should be colored yellow or orange for the low vision people in differentiating the colors.

The parts that have to be installed with guiding block is in the front of vehicular traffic, then in the front of the entrance door or exit door and towards the stair, the entrance or exit doors of public transportation station and on the pedestrian path.



**Figure 1:** Guiding Line Pattern  
(Kementrian Kesehatan Republik Indonesia, 2014)

**c) Ramp**

The angle of a ramp in the building should not be more than  $7^\circ$ , with the ratio between the height and slope is 1:8, while the angle of a ramp on the outside of the building is  $6^\circ$  in max, while the ratio between the height and slope is 1:10. The ramp should be built in 95 cm width without safety edge/kansteen, and 120 cm with safety edge. The bordes on the outset or the end of a ramp has to be free and flat thus it allows the possibility of turning the wheelchair with 160 cm minimum size (Lu Yan & Han Song, 2007). The flat surface of the outset or the end of a ramp has to own non-slippery texture, thus it would not harm the users during the rain period. The handrail has to be easy to grasp with 65-80 cm height.

**d) Stair/ladder**

The ladder should have the same size of footing and incline. There should be no perforated incline that could harm the ladder users. Handrail has to be easy to grasp

with 65-80 cm height of the floor, free from any kinds of disturbing construction. For the ladder that located outside the building, it has to be designed for preventing the inundation of the rain on the floor to avoid the users slipped or fell (Kementrian Kesehatan Republik Indonesia, 2014).

**e) Stairlift**

The difference toleration between the building floor surfaces with the seats of stairlift is 60 cm max. The width of seat is 40 cm minimum and depending on the width condition of disabled people figures. The button should be easily seen and reachable. The button is established on one of the hand grips, either left or right, equipped with Braille letter panel. The dimension of stairlift is adjusted with the applied technical specification. Then the angle of the mounting/hanging rail should be following the stair angle and the mounting/hanging rail has to be strong and fulfilling the technical requirement (Kementrian Kesehatan Republik Indonesia, 2014).

**f) Toilet**

The room width is 160 cm minimum for free space. The door width should be 90 cm minimum and opened inward. The height of closet is 45-50 cm. The spreading size is 85 cm (Kementrian Kesehatan Republik Indonesia, 2014).

**g) Sink**

The sink has to be built in order thus the height of the surface and the front width can be used properly by the people in the wheelchair. Sufficient free space has to be provided in front of the sink. The under part of the sink has to provide enough moving space thus it would not block the knees and legs of wheelchair users. The mirror has to be arranged in reference to the height of the wheelchair users. The faucet should be available with a lever system (Peraturan Meteri Pekerjaan Umum, 2006).

**h) Parking**

Disabled parking has to be located on the closest route to the building / the intended facility, with a maximum distance of 60 meters, has free space around it so wheelchair users can easily enter and exit from his vehicle, disabled special parking area marked with disable symbol (Peraturan Meteri Pekerjaan Umum, 2006).

**5. Discussion**

The sports building of Tri Lomba Juang Mugas (Figure 2) is a public facility which established for sports activities of Semarang City people. This building which was inaugurated on 14 October 1972 has gone through renovation stages. Until present, the renovations have established a new face for Tri Lomba Juang sports building thus its able to attract a lot of visitors through its new fresh look



**Figure 2:** Tri Lomba Juang Sports Arena

#### a) Pedestrian Path

The pedestrian path (Figure 3) is located at the front side of the sports arena/building which made from the materials combination of non-slippery soft tile and rough-textured andesite rock. The sidewalk surface is flat and has no slope angle. However, the pedestrian is covered by street vendors that use this path as the selling area thus it would not be accessible.

The pedestrian paths have different height that did not finish with the design which accessible for disabled people (Natalia M.A., et. al., 2010). This height difference is surely difficult to be accessed by disabled people who are using the wheelchair. The pedestrian that constructed with 1.43 meter of total width has not yet met the requirement of minimum width standard which is 1.6 meter (two-ways). These conditions are not yet added to the problem of a concrete seat that reduces the width of the pedestrian. The pedestrian already has kansteen with the size of 20 x 13 cm that could be determined as less standard which should be own 15 cm minimum of size.



**Figure 3:** Tri Lomba Juang Pedestrian Path

Source: Personal Documentation

#### b) Guiding Line

The guiding line is not found on the front pedestrian of the Tri Lomba Juang sports building/arena, see. This is a certain indication which shows that this building has not been disabled-friendly for blind people. However, the guiding line can be found in the area across from Tri Lomba Juang sports building/arena (Figure 4) which is a pedestrian from the office area across from Tri Lomba Juang sports building/arena. There is a texture management that has no purpose but considered as a marker of the crossing area. However, if its function as a crossing marker, there is no zebra cross on the highway leading to Tri Lomba Juang sports building/arena. In the area towards the tennis court, the guiding block that supports the accessibility of the blind people is not found, as well as in the downstairs area as the access after the

entrance which the guiding block for the blind people is also not found.



**Figure 4:** Guiding Line

Source : Personal Documentation

#### c) Ramp

There are 2 ramps that will be discussed, namely the ramp for vertical circulation and ramp on the pedestrian circulation. The first ramp to be discussed is the ramp for vertical circulation.

This type 1 ramp is an access from the first floor to the second floor that has a tribune function with tennis and badminton courts (Figure 5). This ramp has 220 width and 1,884 lengths. This ramp is categorized as the ramp in the building that has a 1:8 comparison ration of height and slope. According to that ratio, this ramp has not met the requirement of the determined standard. The ramp that has 220 cm width and 90 cm safety edge, has not met the applied standard which is 64-85 cm for the handrail height. This ramp is also not equipped with bordes that are used to turn a wheelchair with a minimum size of 160 cm. The ramp for this vertical circulation has non-slippery texture thus it would not be slippery when the ramp is exposed to rainwater.

This type 2 ramp is an access from the main entrance to the plaza that located under the badminton and tennis courts see (Figure 6). This ramp has 160 width and 407 lengths. This ramp is categorized as a ramp outside the building that has a 1:10 standard comparison of height and slope. According to that ratio, this ramp has not met the applied standard which should have 430 lengths. The width of the ramp with the size of 160 has met the minimum standard of 95 cm, without a safety instrument. The texture provided on this ramp is already suitable because it would not be slippery when it rains.



**Figure 5:** Ramp type 1

Source : Personal Documentation



**Figure 6:** Ramp Type 2

Source : Personal Documentation

#### d) Stair/Ladder

On this ladder (Figure 7) , the dimensions of the footing and incline are similar which the distance per staircase is 12 cm, and the footing is 30 cm, see. It also has no dangerous perforated incline. The ladder is equipped with two handrails and the size is not in accordance with the predefined standard (65 - 80 cm). And the end of the Handrail does not have a minimum extension of 30 cm as what required.



**Figure 7:** Tri Lomba Juang Stair

Source: Personal Documentation

#### e) Stairlift

In Tri Lomba Juang sports building/arena, there is no outdoor stair lift found. Therefore, even though there is a ramp as the access to the 2nd floor, disabled people are unable to access the tribune due to the stairs which not equipped with a ramp or stair lift.

#### f) Toilet

In Tri Lomba Juang sports building/arena, there are several toilet rooms but the special toilet for disabled people is unavailable. It's relatively small and narrow with a size of 201 x 130 cm (Figure 8) that makes these toilets are difficult to be accessed by the disabled people, especially those who use wheelchairs because they have a minimal size for wheelchair rotation when performing bathing, washing, and latrine activities.



**Figure 8:** Tri Lomba Juang Toilet

Source: Personal Documentation

#### g) Sink

The sink has not met the maximum height standard of 85 cm and should be able to reach by someone who is in a wheelchair (Figure 9). The sink has a free space and has a space for the knees and legs of the wheelchair users. The faucet used is a rotary system faucet, in contrast to the recommended lever system faucet.



**Figure 9:** Tri Lomba Juang Sink

Source: Personal Documentation

#### h) Parking

In the parking area Tri Lomba Juang sports building/arena, there is no special parking lot for disabled people, aside from that, the barrier of car or motorcycle parking area is not found and there is no clear line regarding the limit of parking for cars and motorcycles.

## 6. Conclusion

From the analyses that have been conducted, Tri Lomba Juang sports building/arena still not accommodates the accessibility for people with disability. Although there are some accessibility points in Tri Lomba Juang sports building/arena, however, according to the eight points which are being analyzed, the entire points are not meet the proper accessibility standards for disabled people.

According to this research, it is found that regulatory compliance still has to be repaired because the public facilities such as pedestrian path functions are still wrongly used by Semarang people. This condition will surely inhibit the continuity of activities that should occur in the pedestrian path.

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