Journal of Architectural Research and Education

Journal homepage:
https://ejournal.upi.edu/index.php/JARE/index

A Study on The Implementation of Inclusive Open Spaces: Case Study of Odah Bekesah Park Samarinda

Dzulfajrie Rahim [1], Asep Yudi Permana [2]*

[1, 2] Indonesian Education University
*Correspondence: E-mail: mars23_dzulfajrierahim@upi.edu

ABSTRACT

The built infrastructure that serves as a container for activities, both buildings and open spaces, must accommodate inclusive principles and implement universal design. City parks that are part of public green open spaces are very close to social life outside the building. All kinds of activities related to recreation, sports, and other social interactions can be felt when in the park. The purpose of this study is to examine and analyze the implementation of inclusive universal design principles in Odah Bekesah Park in Samarinda City using qualitative descriptive methods. The results obtained, it is known from the built infrastructure in 2 (two) segments of Odah Bekesah Park, have not fully implemented universal design.

ARTICLE INFO

Article History:
Submitted/Received 10 May 2024
First Revised 20 June 2024
Accepted 15 August 2024
First Available online 1 Nov 2024
Publication Date 1 Nov 2024

Keyword:
Universal design,
inclusive,
public open space

1. INTRODUCTION

Samarinda City is often associated with the origin of the word "sama-rendah" which means geographically, its topographic conditions consist of lowlands and hills that are evenly distributed from north to south. "sama-rendah" also has a philosophical value that shows that its people uphold the principle of equality and being on par with each other as residents living in Samarinda City. Based on the Human Development Index (HDI) taken from the average life expectancy, length of schooling, and expected length of schooling, Samarinda City is ranked highest in East Kalimantan, while the condition of maternal mortality rates and stunting issues are still in the process of being reduced which is supported by social and health programs, especially for vulnerable groups including parents/elderly, pregnant women, and children (Devina et al., 2023).

Samarinda City, which has the slogan of a city on the edge, also has a vision as a livable and resilient city of civilization. In terms of providing public open spaces, Samarinda City is also rushing to create spaces that have the potential as green open spaces (RTH) to be utilized as much as possible as multifunctional areas including recreational functions, educational functions, sports functions, as well as having a function as a friendly interaction forum for people with disabilities, children, the elderly, pregnant and breastfeeding mothers, and other vulnerable groups. Efforts to create an inclusive city require a planning approach and implementation of the implementation in a participatory manner to accommodate all groups who will later utilize the facilities and infrastructure with universal design principles.

1.1. Parks and Green Open Spaces

Green open space (RTH) based on ATR/BPN Regulation No. 44 of 2022 is an elongated/path and/or grouped area whose use is more open. RTH consists of Public RTH and Private RTH. The Public RTH that can be provided, utilized, and managed are those that have ecological, water absorption, economic, aesthetic, disaster management, and socio-cultural functions. One of the socio-cultural functions that is prioritized is a space for community interaction, recreation, productivity, and health support. The typology of RTH is determined based on the use of its space as regulated in the City RTRW and Planning Area RDTR. Based on PU Regulation No. 05 of 2007 concerning RTBL, a park can be a public open space whose physical characteristics are open, free, and easily accessible to the public because it does not belong to a particular party.

Land use based on land cover in Samarinda City is dominated by agricultural and plantation areas. For residential areas, both in urban and rural typologies, it is 108,203 Ha or 15.1% of the total administrative area of the region. Based on inventory data and management of green open space, of the total area of Samarinda City, only around 39.78 Ha or that managed by the Environmental Service, which is spread across 9 sub-districts. The data shows that public green open space is still very lacking in availability for use by the people of Samarinda City. Public green open space can be in the form of parks that are gender responsive and inclusive, so that they can be utilized optimally and form the character of a livable city. The availability of parks does not only look at the quantity, the main thing is that in terms of quality it can meet the criteria for good public green open space.

1.2. Accessibility and Achievement

In public green open spaces, accessibility is defined as access or access to, exit from, and use of all facilities in the environment by everyone (Kurniawan et al., 2017) in (Rahma,

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

2018). Access to a space indicates the access path used by each person and their method of approaching the space. This refers to the transition made by each person from the outside to the inside. Ching in Rahma (2018) explains that there are three types of access, namely:

1. Frontal Achievement
   Frontal or direct access is a type of access that leads directly to the door via a straight, axial path, parallel to the building axis, with a specific destination.
2. Disguised Achievement
   A disguised or indirect approach is one that focuses more on the perspective and view of the surrounding environment than the main entrance itself, allowing for better observation of the facade and architecture of the building or area.
3. Spiral Achievements
   Spiral or circular access is a type of access that prolongs the process of reaching an area and highlights the view of the three-dimensional shape of the area, as the individual must follow a path that circles around a central object.

1.3. Disability and Vulnerable Groups

Based on Law No. 08 of 2016, the term disability refers to a person's condition who has long-term physical, intellectual, mental, and/or sensory limitations, has obstacles in interacting with the environment, and causes limitations in carrying out daily tasks (Anugrah & Sukapti, 2022). In addition to people with disabilities, vulnerable groups who have limitations include low-income and extreme poverty, women (pregnant and lactating mothers), children, and the elderly. In the implementation guide for the New Urban Agenda from UN Habitat regarding the provision of access to basic services, a livable city is one that has inclusive and participatory principles, which involve all groups in society including vulnerable groups. Involvement is not only in terms of utilizing access, but also from planning and preparation (Sarosa, 2017).

1.4. Demographic Conditions and People with Disabilities in Samarinda City

Samarinda City is the capital city of East Kalimantan Province which has an area of 71,678.36 Ha, consisting of 10 sub-districts and 59 villages. Based on demographic data, the population of Samarinda City is 838,935 people. The largest population based on age group is those aged 10-14 years, while based on gender, the male population dominates at 426,799 people. Anugrah & Sukapti (2022) also explained, based on data collected from the Indonesian Disability Association (PPDI) Samarinda City Branch in 2022, it is known that the number of people with disabilities spread across Samarinda City is dominated by people with physical disabilities (paraplegia, cerebral palsy, and dwarfism), the rest consists of sensory, mental, intellectual disabilities, and multiple disabilities (deaf-mute and blind-deaf). The largest number of people with disabilities are in Samarinda Ulu and Sungai Pinang Districts.

Table 1 Data on People with Disabilities in Samarinda City

Subdistrict	Disability					Amount
	Physique	Sensory	Intellectual	Double	Mental	
The Palace	66	36	10	23	46	181
Loa Janan Ilir	10	22	2	2	1	37
Northern Samarinda	57	41	5	9	20	132
North Samarinda	36	32	1	17	10	96
Samarinda Across	28	20	2	8	0	58

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

Subdistrict	Disability					Amount
	Physique	Sensory	Intellectual	Double	Mental	
Samarinda City	32	14	18	6	6	76
Kunjang River	46	22	0	21	16	105
Welcome	17	14	6	10	8	55
Pinang River	53	46	7	6	20	132
Total						**872**

Source: Association of Indonesian Disabled People, Samarinda City 2021
(Anugrah & Sukapti, 2022)

1.5. Universal Design Principles

Universal design is an approach and reference to respond to the needs of various types of populations based on age, gender, attributes, and abilities with an inclusive mindset so that it is not limited by certain stigmas (Kurniawan et al., 2017). The built infrastructure that serves as a container for activities, both buildings and open spaces, must accommodate inclusive principles and apply universal design. Mace et al., (1996) from North Carolina University put forward the main principles of universal design, including:

1. *Equitable Use/*Can be used by everyone;
2. *Flexibility in Use/*Flexible in use;
3. *Simple and Intuitive Use/*Simple and easy to use;
4. *Perceptible Information/*There is adequate information;
5. *Tolerance for Error/*Fault tolerance;
6. *Low Physical Effort/*Low physical effort/effort; and
7. *Size and Space for Approach Use/*Size and space for approach and use.

The adaptation of the above approach through the Regulation of the Minister of PUPR No. 14 of 2017 concerning Building Ease Requirements in Article 5 paragraph 1 explains that the principles of universal design include:

1. Equality of Use of Space
   The design of buildings and environments must allow for equal use by all without discrimination.
2. Safety and Security for All
   Building and environmental design should reduce risks and negative impacts for everyone.
3. Ease of Access without Barriers
   The design of buildings and environments should ensure easy access and be free from barriers or obstacles, both physical and non-physical, and be easily understood by everyone, regardless of experience, knowledge, language ability or level of concentration.
4. Ease of Access to Information
   The design of buildings and environments must ensure that everyone caneasily access the information needed, without being affected by conditions or sensory abilities.
5. Independence of Use of Space
   Building and environmental design should take into account the varying abilities of users, allowing for independent use by each individual.
6. User Effort Efficiency
   The design of buildings and environments should support efficient and comfortable use with minimal effort from users.

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

7. Ergonomic Fit of Size and Space
   The design should provide appropriate size and space, which can be comfortably accessed and used, regardless of the user's body position, size, posture or mobility.

2. RESEARCH METHODS

2.1. Data collection technique

The research method is to use a qualitative descriptive approach by collecting primary data in the form of images and photos through direct observation of data sources and field surveys at the research location (Sugiyono, 2010). The limitations/scope of the substance are open spaces/parks with the category of city parks (Provisions of the ATR/BPN Regulation No. 44 of 2022) and are located in slum areas as stipulated through the Mayor's Decree concerning the Determination of Slum Housing Locations and Slum Settlements in Samarinda City. The physical limitations/scale of the space that is the object is the residential environment. The research location is located in Samarinda City, precisely the object of the case study, namely Odah Bekesah Park. Data collection is carried out in the following ways:

1. Literature study, with secondary data collection and information related to related laws and regulations, references on infrastructure that can be easily accessed by all (universal access), as well as several articles related to assessments of universal design implementation.
2. Field observation and survey, after knowing several sources of information and secondary data that are relevant to the topic of discussion in the research, in addition to conducting measurements on quantitative objects to find out which design criteria have or have not been met.

2.2. Research Location

The research location was conducted in Odah Bekesah Park which is a Park/RTH in Samarinda Ulu District, precisely in Dadimulya Village and Bandara Village. This park is separated by a river that divides the area into two, namely the Karang Mumus River which is a tributary of the Mahakam River which is the pulse and source of raw water needs in Samarinda City. This park is typologically included in the RTH park typology which functions as local protection, and is categorized as a Village Park (RTRW and RDTR). The area of the park is 4,250 m² with a flat contour condition. This park area is surrounded by houses and residential areas that are included in the Decree on Determination of Slum Locations in Samarinda City. The construction of Odah Bekesah Park began in October 2019 and was completed in January 2021.

3. RESULTS AND DISCUSSION

3.1. Physical Identification of the Environment

Odah Bekesah Park based on the spatial configuration is surrounded by a slum area which is quite strategically located in the city center. The ones that directly border the park are slum housing on the west and east sides, the river border area on the south side, and the bridge/vehicle lane on the north side.

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

Figure 1 Spatial Configuration and Orientation
(Source: Analysis, 2023)

Odah Bekesah Park can be divided into 2 (two) segments, namely the west segment and the east segment which stretch linearly along 450 m. The area of the park is 4,250 m². In the west segment, the existing elements analyzed consist of the entrance, pedestrian path, plaza area, amphitheater, stairs and ramps, public toilets, and parking area. In the east segment, the existing elements analyzed consist of the entrance, parking area, pedestrian path, plaza area, stairs and ramps, and integrated buildings (posyandu, reading park, and public toilets).

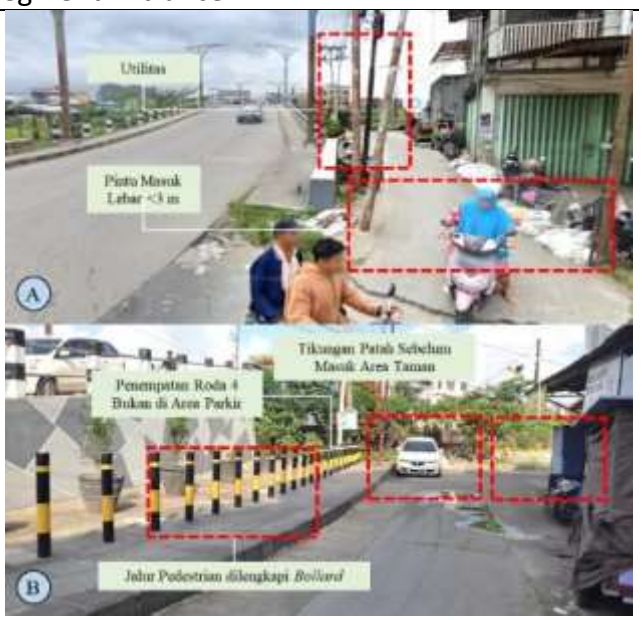
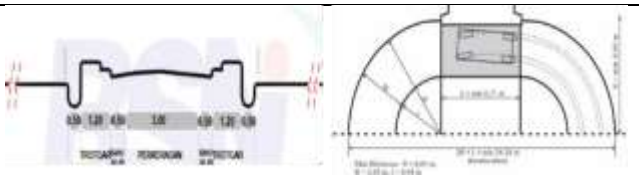
Figure 2 Existing Conditions
(Source: Analysis, 2023)

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

3.2. West Segment Discussion

1. Entrance

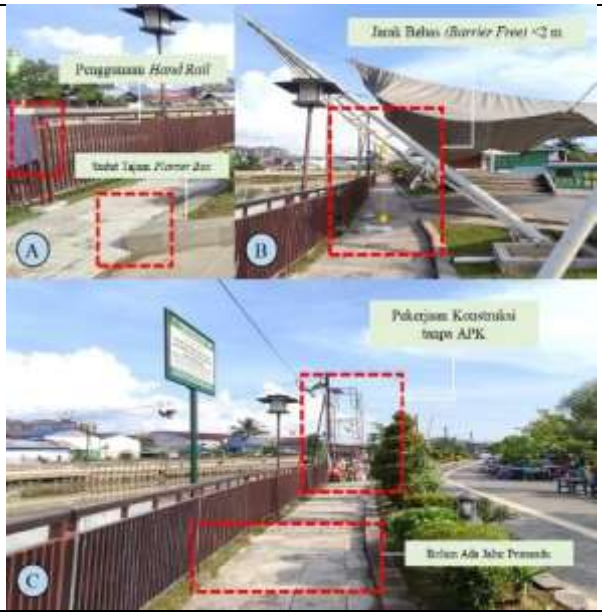
Table 2 West Segment Entrance

The existing condition of the entrance to the western segment is faced with the problem of land provision. Hard material elements are rigid concrete roads for 2 and 4-wheeled vehicles, and closed drainage that flows into the river bank. Problems found in photo (A): the entrance road width is only 2.4 m with a turning radius at the entrance area attached to the side of the pedestrian bridge abutment so that 4-wheeled users must take turns to enter the park area. Utility poles (electricity & telephone) hinder the provision of pedestrian access. In photo (B) after passing through the narrowed entrance there is a 1.2 m wide pedestrian path, but there is no guide path as a guide for the disabled. The bollards that are placed are quite good, aiming to prevent the area from becoming a parking lot, but result in the placement of vehicles on the side of the road which disturbs road users. At the end of the road towards the park, the corner of the bend is broken without any radius minimum For maneuvervehicle roda4.	
According to the technical provisions of SNI 03-1733-2004, the minimum road width in residential areas/secondary local roads III is 3 m (2 and 4 wheels), the shoulder of the road for emergency parking is 0.5 m, and pedestrians are 1.2 m. Meanwhile, the radius of turning obstacles according to the provisions of PUPR Regulation No. 14 of 2017, for roads with wide 3 m that is 8.84 m (BodyStandard National,2004).	

(Source: Analysis, 2023)

2. Pedestrian Path

Table 3 West Segment Pedestrian Path

The pedestrian path consists of hard material/pavement in the form of non-slip terrazzo tiles. There is a 90 cm high handrail with square hollow material on the left side. On the right side there is a planter box containing shrub vegetation and groundcover in the form of grass as a soft material element that limits the pedestrian area with other open areas. Furnishing elements along this path that are found are garden lights and signs prohibiting throwing objects into the river. The width of the pedestrian path is 120 cm. Problems found in photo (A): the handrail is used as a drying area by the surrounding community and there is a planter box shape with sharp corners. In photo (B): the iron/supporting poles of the membrane roof in the amphitheater area are sloping, the height is not significant (±1.75 - 1.80 cm right on the axis of the pedestrian path). In photo (C): there is no guide path, no directional signs and evacuation routes and construction/repair work was found Which No equipped APK(Tool Occupational Safety and Health) as standard in construction K3.	

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

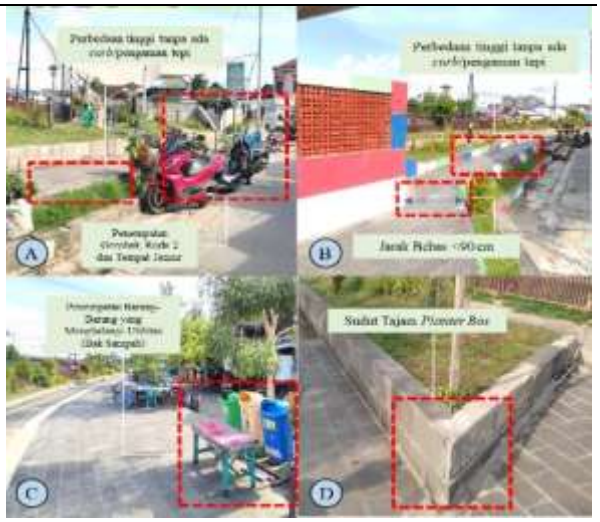
In accordance with the technical provisions in PUPR Ministerial Regulation No. 14 of 2017, there must be a guideway (direction and warning) for people with disabilities. The minimum barrier-free height is 200 cm. In addition, signs and markings are needed to indicate directions and evacuation routes. For the safety of users of public facilities, in construction work according to PUPR Regulation No. 10 of 2021, K3 APK instruments must be equipped such as safety fences/project area boundaries.

(Source: Analysis, 2023)

3. Plaza Area

Table 4 West Segment Plaza Area

The plaza area consists of hard material/pavement in the form of non-slippery burnt andesite natural stone and planter boxes containing shrub vegetation and groundcover in the form of grass as soft material elements. Furnishing elements in this area that are found are park benches, park lights, and 3R trash bins. The area of the plaza varies and there are guide paths. Problems found in photo (A): the difference in height/level between the park pavement area and the planter area without being limited by curbs/curbstones. In addition, because the park is close to a slum area, people are not orderly in placing vehicles, carts, and places to dry clothes. In photo (B): the difference in height/level between the park pavement area and the planter area without being limited by curbs/curbstones. There is also a free access distance of less than 90 cm so that it cannot be passed by wheelchair users. In photo (C): the placement of community belongings that are not in their place, blocking the trash bin environment. On Photo (D): there is form*planter box* Which the cornersharp.



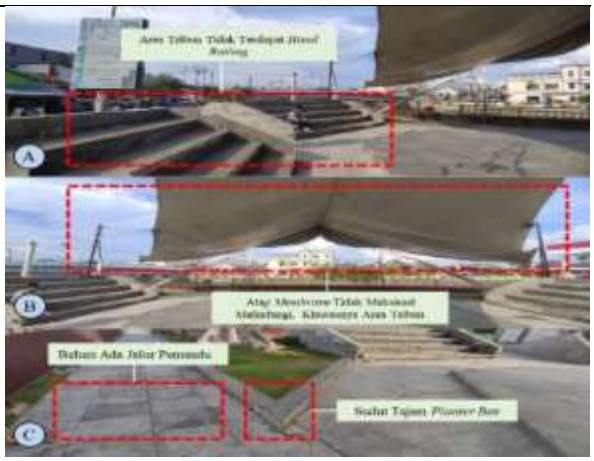
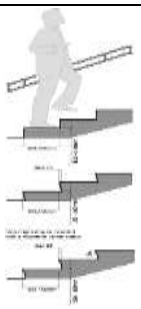
In accordance with the technical provisions in PUPR Ministerial Regulation No. 14 of 2017, the minimum distance between pedestrian and wheelchair paths is 150 cm. In addition, signs and markings are required to indicate directions and evacuation routes as well as muster points for the plaza area. The installation of curbs serves as markers and edge guards between circulation/access areas and other functions such as planter boxes/parking areas/descents that are quite high. Based on the NDA reference, the maximum height of the trash bin is 130 cm with a contrasting color ("Building for Everyone: A Universal Design Approach, Center for Excellence in Universal Design," 2012).

(Source: Analysis, 2023)

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

4. *Amphitheatre*

Table 5 West Segment Amphitheater

Area *amphitheater* consists of on *material*/pavement in the form of burnt andesite natural stonenon-slippery, planter boxes containing shrub vegetation and groundcover in the form of grass as soft material elements, and membrane roof structures that protect from heat and rain in the grandstand area. Problems found in photo (A): in the grandstand area, there is no standard hand railing. The height of the grandstand area is 280 cm from the ground floor, so there needs to be a safety fence. In photo (B): the membrane roof does not completely cover the grandstand area, so it is less than optimal in providing shade for grandstand area users. In photo (C): there are	
Apart from that, there is a planter box shape that has sharp corners And No friendly to user child-child/disabled person disability.	
In accordance with the technical provisions in PUPR Ministerial Regulation No. 14 of 2017, there needs to be a guide path (direction and warning) for people with disabilities, as well as safety fences in areas that are quite high. In addition, signs and markings are needed to indicate directions and evacuation routes. This area is also suitable if used as a muster point because it is quite large. Based on reference NDA, more Good If Step nosing was added to the grandstand stairs area, so that it doesn't slip/be slippery when stepping.	 

(Source: Analysis, 2023)

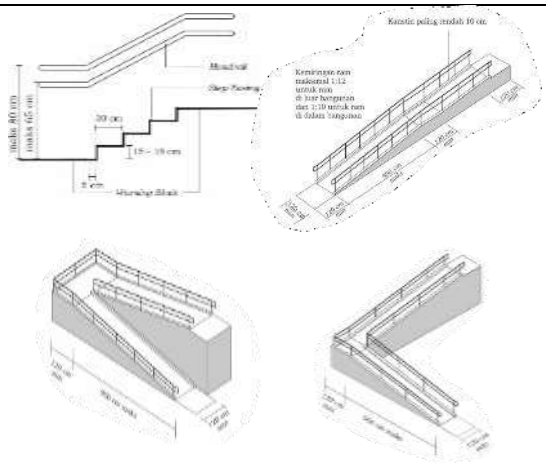
5. Ladder and Ram

Table 6 West Segment Stairs and Ramps

Stairs and ramps are vertical circulation elements for moving between floor levels. In this western segment, there are 10 stair accesses with varying number of steps from 2 to 3 steps. Then there are 4 ramp accesses for wheelchair users. The stair and ramp elements use andesite stone pavement or non-slippery terrazzo tiles, and some of the ramps are equipped with guide paths. The problems found in photos (A) and (B): the height (optride) of the steps is more than 18 cm which is the recommended size. The width (antride) of the steps varies between 25-30 cm, without step nosing. In photo (C): a ramp with terrazzo tile pavement is 130 cm wide, not equipped with a guide path, the slope is >5° and is not equipped with a safety edge/curb. There is an uncovered hole (drainage) next to the ramp. In photos (D) and (E): a 130 cm wide ramp with a guide path and warning tiles, a slope of <5°, not equipped with hand railing. In photo (F): 130 cm wide ramp without guideway and warning tiles, slope <5°, No equipped with hand *railing.*	

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

According to the technical provisions in PUPR Regulation No. 14 of 2017, for the recommended stairs, the ideal height is 15-18 cm, while the width is at least 30 cm with the addition of step nosing and additional lighting on each step. As for the ramp, the recommended one is with a maximum slope of 1:12 (5°) on the outside of the building, and 1:10 (6°)inside the building. The ideal width is minimum
120 cm for wheelchair paths and equipped with guide paths and warning tiles. Every 900 cm between points, a landing must be added and a safety edge/curb must be added with a minimum height of 10 cm. Both stairs and ramps must be equipped with hand railings as safety fences and also as aids for users. Based on the NDA reference, gaps/holes on the surface road/drainage minimum 1 cm so as not to endangerusers.

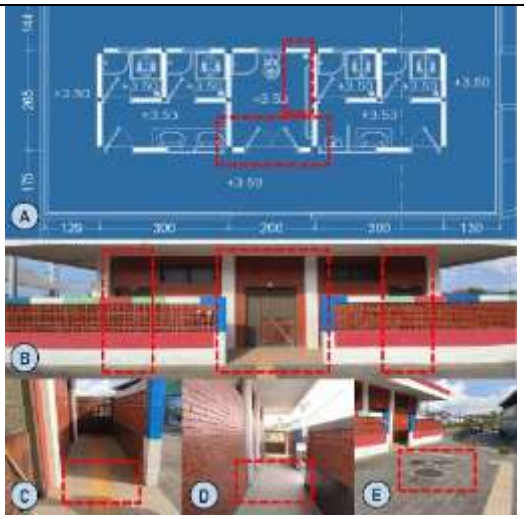


(Source: Analysis, 2023)

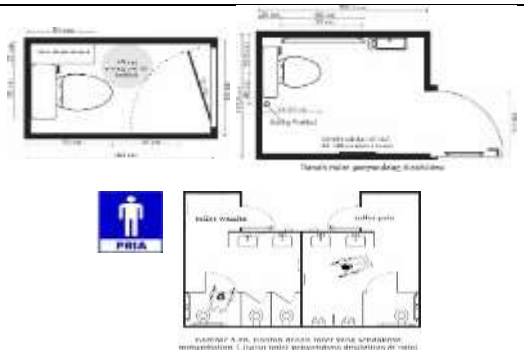
6. Public toilet

Table 7 West Segment Public Toilets

The available public toilets are toilets with a separation between male and female toilets and special toilets for the disabled. The total area of the toilet area including the corridor/circulation is 60 m². Based on the floor plan layout, the area of the toilets for men and women is 2 rooms each with a size of 1.5x1.325 m and a free space (washbasin) each is 1 room measuring 1.5x1.325 m. The area of the special toilet for the disabled is 2x2.65 m. The problem found in photo (A): the door opening of the special toilet for the disabled faces into the room, distance between *hand rail* in the toilet withcloset
>60 cm. In photo (B): based on observations, the toilet is not functioning and is locked because the management is not running well, so the existence of the toilet is not effective. The utility/direction signs and toilet type symbols are not visible/not large enough, and the door handle on the disabled toilet does not match the recommended horizontal shape extending as wide as the door leaf. In photos (C), (D), and (E): the guide path in the hallway does not continue to the front of the toilet door, and there are obstacles in the area outside toilet (pipe vent system processing waterwaste, manhole) Which No flat with surfacepavement.



According to the technical provisions in PUPR Regulation No. 14 of 2017, for the standard design of public toilets, the recommended area for public toilets is a minimum of 0.9x1.5 m with an opening width of 75 cm. The door opening can be inward or outward, with a toilet type marker/symbol clearly visible in the front area of the toilet. As for the standard design of special toilets for the disabled, a minimum of 1.525 x 2.275 m with a mandatory door opening to the outside of the room, as a preventive measure in the event of an emergency.

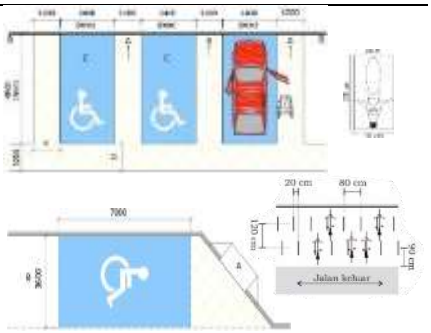


(Source: Analysis, 2023)

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

7. Parking Area

Table 8 West Segment Parking Area

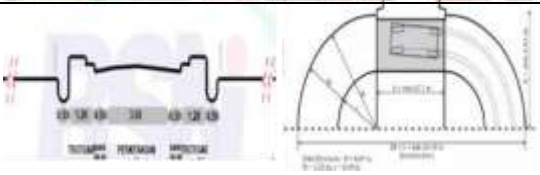
The parking area in the western segment is next to the plaza area with a parking area of 175 m². The parking available is for 4-wheeled and 2-wheeled vehicles, where the pavement in the parking area is concrete/rigid concrete. The problem found in photo (A): based on the marking line, the placement of 2-wheeled parking is filled by 4-wheeled vehicles. For 4-wheeled parking, it is more dominated by vehicle owners from the community who live around the park area, so that visitors do not get parking access. Then, there are no parking facilities for people with disabilities. As it should be, parking for the disabled is on the side that is close/next to/not far from the ramp access. There are no bicycle parking facilities equipped with bicycle racks. In photos (B), (C), and (D): vehicles from people who live around the park area that are parked, take up the width of the road only 3-4 m. So that circulation vehicle on road environment the disturbed And Nooptimal.	
According to the technical provisions in PUPR Regulation No. 14 of 2017 and NDA references, parking of 4 or 2-wheeled vehicles must facilitate the needs of the disabled. The standard for 4-wheeled parking is vertical/horizontal (not diagonal) with a width of 2.4-3.6 m and a length of 4.8-7 m. There is free space to maneuver a wheelchair with a minimum width of 120 cm. The number of disabled parking needs is adjusted to the number of disabled people identified in the sub-district/district area. Paving in the parking area, free from gaps/holes, with clear markings/contrasting colors. For 2-wheeled vehicles, the minimum parking area is 0.7x2 m. There is a bicycle parking area with parking dimensions of 0.8x1.2 m.	

(Source: Analysis, 2023)

3.3. Eastern Segment Discussion

1. Entrance

Table 9 East Segment Entrances

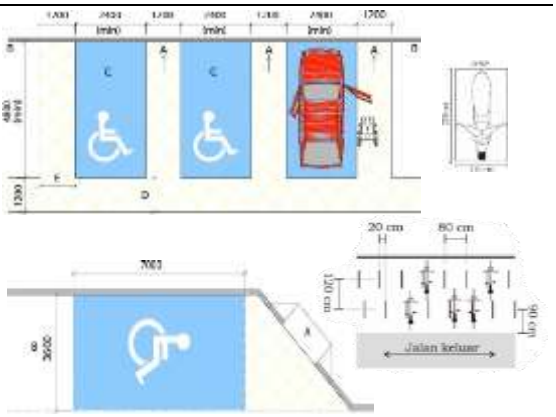
The existing condition of the entrance gate on the eastern segment is also faced with the problem of land provision. The hard material elements are rigid concrete roads for 2 and 4 wheeled vehicles, and closed drainage that flows into the river bank. The problems found in photo (A): the entrance gate is only 2.6 m wide with a turning radius at the entrance area attached to the side of the pedestrian bridge abutment so that 4 wheeled users must take turns so that can enter to area park. OnPhoto (B) After passing through the entrance, there is no pedestrian access. At the end of the road towards park, corner bend broken without There isr a d i u s minimum For maneuver vehicle wheel4.	
According to the technical provisions of SNI 03-1733-2004, the minimum road width in residential areas/secondary local roads III is 3 m (2 and 4 wheels), the road shoulder for emergency parking is 0.5 m, and pedestrians are 1.2 m. Meanwhile, for radius obstacle turn in accordancep r o v i s i o n PUPR Regulation No. 14 of 2017, for roads with a width of 3 m, namely 8.84 m.	

(Source: Analysis, 2023)

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

2. Parking Area

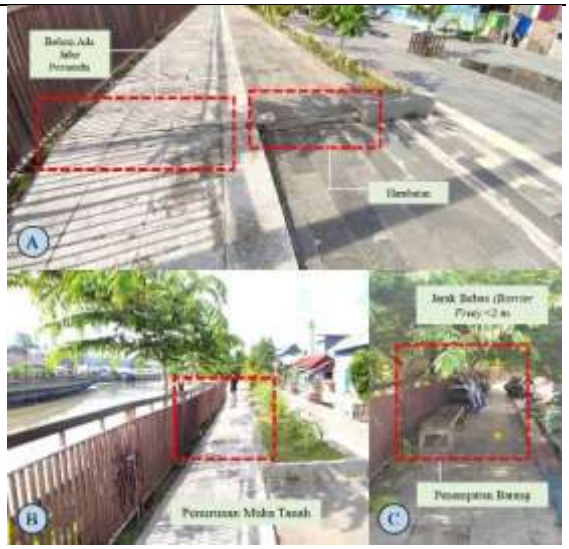
Table 10 East Segment Parking Area

The parking area in the eastern segment is next to the plaza area with a parking area of 234 m². Parking thatavailable for 4-wheeled and 2-wheeled vehicles, where the pavement in the parking area is concrete/rigid concrete. The problem found in photo (A): 4-wheeled and 2-wheeled parking is dominated by vehicle owners from the community living around the park area, so that visitors do not get parking access. Then, there are no parking facilities for people with disabilities. As it should be, parking for the disabled is on the side that is close/next to/not far from the ramp access.	
There are no bicycle parking facilities equipped with bicycle racks. In photo (B): household items (wooden racks, water tanks, used tires, etc.) and stalls (carts) owned by residents living around the park area are clearly visible, taking up the parking area. So that circulation on area parkingdisturbed, as well as No friendlydisabled.	
According to the technical provisions in PUPR Regulation No. 14 of 2017 and NDA references, parking of 4 or 2-wheeled vehicles must facilitate the needs of the disabled. The standard for 4-wheeled parking is vertical/horizontal (not diagonal) with a width of 2.4-3.6 m and a length of 4.8-7 m. There is free space to maneuver a wheelchair with a minimum width of 120 cm. The number of disabled parking needs is adjusted to the number of disabled people identified in the sub-district/district area. Paving in the parking area, free from gaps/holes, with clear markings/contrasting colors. For 2-wheeled vehicles, the minimum parking area is 0.7x2 m. There is a bicycle parking area with parking dimensions of 0.8x1.2 m.	

(Source: Analysis, 2023)

3. Pedestrian Path

Table 11 East Segment Pedestrian Path

The pedestrian path consists of hard material/pavement in the form of non-slip terrazzo tiles. There is a 90 cm high handrail with square hollow material on the left side. On the right side there is a planter box containing shrub vegetation and groundcover in the form of grass as a soft material element that limits the pedestrian area with other open areas. Furnishing elements along this path that are found are garden lights and flower/plant pots. The width of the pedestrian path is 120 cm. Problems found in photo (A): there is no guide path, there are no directional signs and evacuation routes, and there are obstacles in the form of different level steps. In photo (B): there is a decrease in the ground level on the pedestrian path, so there is a slope that makes it uncomfortable for road users. In photo (C): there are objects/goods (trader equipment) placed by the community around the park area that block the accessibility of the pedestrian path. Likewise, there are plants (trees) whose branches/twigs are not high enough from 2 m, so that Also bothert r a c k pedestrian.	

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

According to the technical provisions in PUPR Regulation No. 14 of 2017, there must be a guide path (direction and warning) for people with disabilities. The minimum barrier-free height is 200 cm from the floor. Besides It requires signs and markings indicating directions and evacuation routes, other signs related to assembly points/muster points.

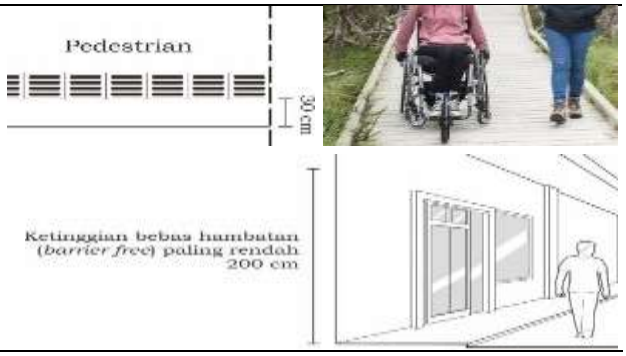
(Source: Analysis, 2023)

4. Plaza Area

Table 12 East Segment Plaza Area

The plaza area consists of hard material/pavement in the form of non-slippery burnt andesite natural stone and planter boxes containing shrub vegetation and groundcover in the form of grass as soft material elements. Furnishing elements in this area that are found are area signage, park benches, park lights, and 3R trash bins. The area of the plaza varies and there are guide paths, but evacuation route signs and muster points are not yet available. Problems found in photo (A): the guide path for the disabled is too close to the planter box so that users can be blocked by shady vegetation objects. In photo (B): the difference in height/level between the park pavement area and the planter area is not limited by curbs/curbstones. In photo (C): there is a decrease in the ground level on the pedestrian path, so that there is a slope that makes it less comfortable user road. On Photo(D): There is a planter box shape with sharp corners.

According to the technical provisions in PUPR Regulation No. 14 of 2017, signs and markings indicating directions and evacuation routes as well as muster points are required for the plaza area. The installation of curbs serves as markers and edge guards between circulation/access areas and other functions such as box planters/parking areas/descents with quite significant heights. The provisions also explain that the distance between the guideway tiles and side objects is at least 30 cm, and is free of obstacles.



(Source: Analysis, 2023)

5. Ladder and Ram

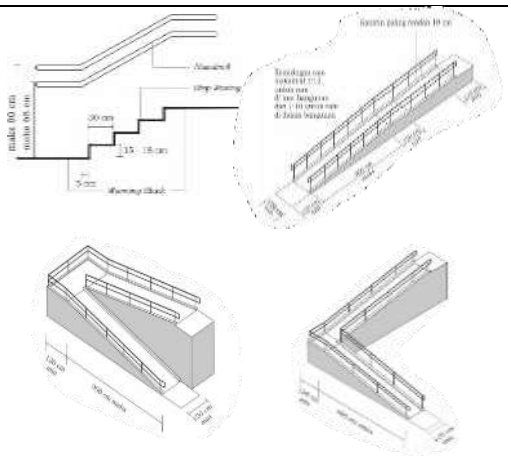
Table 13 East Segment Stairs and Ramps

In this eastern segment there are 5 stair accesses with varying number of steps from 2 to 3 steps. Then there are 4 ramp accesses for wheelchair users. The stair and ramp elements use pavement.andesite stone or terrazzo tiles that are not slippery in texture, and some of the ramps are equipped with guide paths. Problems found in photos (A) and (B): the height (optride) of the steps is more than 18 cm which is the recommended size. The width (antride) of the steps is quite varied between 25-30 cm, without step nosing. In photo (C): a ramp with terrazzo tile paving is 130 cm wide, not equipped with guide paths and hand railings, the slope is around <5° and is equipped with a safety edge/curb. In photos (D) and (F): a 130 cm wide ramp with guide paths and warning tiles, the slope is around <5°, not equipped with hand railings, there is no curb at the end of the ramp. In photo (E): a 130 cm wide ramp with guide paths and warning tiles, the slope

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

around <5°, not equipped with hand railing, there is no curb at the end of the ram and there are obstacles make it difficult movement chairwheel.

According to the technical provisions in PUPR Regulation No. 14 of 2017, the recommended height for steps is ideally 15-18 cm, whereas width mostA little 30 cm with added step nosing and additional lighting on each step. As for the ram, the recommended one is with a maximum slope of 1:12 (5°) outside the building, and 1:10 (6°) inside the building. The ideal width is at least 120 cm for wheelchair paths and is equipped with guide paths and warning tiles. Every 900 cm between points, a landing must be added and a safety edge/curb must be added at least 10 cm high. Both stairs and ramps need to be added with hand railings as safety fences and also as an aid for users. Based on reference NDA, gap/holeon road surface/drainage of at least 1 cm so as not to endanger users.



(Source: Analysis, 2023)

6. Integrated Building (Posyandu, Reading Park, and Public Toilet)

Table 14 Integrated Buildings East Segment

The building above is an integrated integrated health post building equipped with public and disabled toilets, as well as a library. The total area of the entire area including the corridor/circulation is 147 m². Based on the floor plan layout, the area of the toilet for men and women is 2 rooms each with a size of 1.5x1.5 m and a free space (washbasin/sink) each is 1 room measuring 1.5x3 m. The area of the special toilet for the disabled is 2x2.65m. Problems found in photo (A): the placement of the disabled toilet is far from access to the health post, and requires winding maneuvers through a 1.2-1.5 m wide corridor. In photo (B): based on observations, toilets are not routinely used and are locked due to security factors (sanitary theft etc.). Utility/direction signs and toilet type symbols are not visible/not large enough, and the distance between the door and the stairs is small.

only 60 cm. The door handle on the disabled toilet does not match the recommended horizontal shape extending as wide as the door leaf. In photo (C): a 2-wheeled vehicle is parked in the wrong place. In photo (D): the disabled toilet is locked and not functioning, there are items blocking the path to the toilet. In photo (E): the guide path in the back area hallway, there are obstacles in the form of items that are placed incorrectly. In photos (F) and (G): inside

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

the posyandu room based on the layout, the layout has followed the general standards for posyandu buildings which are also equipped with a treatment room that also functions as a lactation room.
According to the technical provisions in PUPR Regulation No. 14 of 2017, for stairs the recommended ideal height is 15-18 cm, while the width is at least 30 cm with the addition of step nosing and additional lighting on each step. As for the ramp, the recommended one is with a maximum slope of 1:12 (5°) outside the building, and 1:10 (6°) inside the building. The ideal width is at least 120 cm for wheelchair paths and is equipped with guide paths and warning tiles. Every 900 cm of distance between points, a landing must be added and a safety edge/curb must also be added with a minimum height of 10 cm. Both stairs and ramps need to be added with hand railings as safety fences and also tools help for users. Based on reference NDA, gap/hole on surface road/drainage minimum 1 cm so as not to endanger users. ("Building for Everyone: A Universal Design Approach, Centre for Excellence in Universal Design," 2012).

(Source: Analysis, 2023)

3.4. Analysis Results

The initial analysis conducted was to determine the most important hierarchy of the 7 (seven) universal design principles based on the reference to PUPR Regulation No. 14 of 2017 using a multi-criteria analysis approach (Dean, 2022). The following are the weighting results of each of the universal design principles or criteria:

Table 15 Determining the Most Important Hierarchy

	Universal Design Principles	1 Equality UseRoom	2 Safety and Security for All	3 Convenience Access withoutObstacle	4 Convenience AccessInformation	5 Independence UseRoom	6 Efficiency EffortUsers	7 Ergonomic Fit of Size and Space	Amount	Weight	Ranking
1	Equality UseRoom		0	0	0	0	0	0	0	0.0%	7
2	Safety And SecurityFor All	1		1	1	1	1	1	6	28.6%	1
3	Ease of Access without Barriers	1	0		1	1	1	1	5	23.8%	2
4	Convenience AccessInformation	1	0	0		0	0	0	1	4.8%	6
5	Independence UseRoom	1	0	0	1		1	1	4	19.0%	3
6	Efficiency EffortUsers	1	0	0	1	0		1	3	14.3%	4
7	Ergonomic Fit of Size and Space	1	0	0	1	0	0		2	9.5%	5
										100.0%	

(Source: Analysis, 2023)

Based on the multi-criteria analysis table above, it is concluded that the principle of "safety and security for all" is the most important variable that must be met in every assessment of the implementation of universal design. The more the most important principles are met, the higher the assessment results obtained.

The assessment of each variable is based on the results of previous observations and discussions. It is known that in 2 (two) segments of Odah Bekesah Park, namely the western segment consists of 7 (seven) existing elements that are assessed, namely accessibility at the

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

entrance, pedestrian path, plaza area, amphitheater, stairs and ramps, public toilets, and parking area. While in the eastern segment consists of 6 (six) existing elements that are assessed including accessibility at the entrance, parking area, pedestrian path, plaza area, stairs and ramps, and integrated buildings (posyandu, reading park, and public toilets).

The assessment method for each element is by giving a score based on a qualitative assessment, scored 1 (one) if lacking, scored (2) if sufficient, and scored (3) if good. In the end, the predicate that will be given to the object being analyzed is with the assessment results "adequate" if the assessment results are met between 80%-100%, "insufficient" if the assessment results are between 60%-79.99%, and "not yet adequate" if the assessment results are between 0%-59.99%. The following is a table of assessment results:

Table 16 Results of Analysis of the West Segment of Odah Bekesah Park

No.	Object of Assessment	Universal Design Principles						
		Equivalence Score Use of Space	Safety and Security Score For All	Ease Score Unhindered Access	Ease of Access to Information Score	Independence Score Use of Space	User Effort Efficiency Score	Suitability Score Ergonomic Size and Space
	Weight Based on Hierarchy Most important	0%	29%	24%	5%	19%	14%	10%
A	**West Segment**							
1	Entrance	3	1	1	1	2	2	1
2	Pedestrian Path	3	2	2	1	2	2	3
3	Plaza Area	3	1	2	2	2	2	3
4	*Amphitheatre*	1	1	2	2	1	1	2
5	Ladder and Ram	1	1	1	1	1	1	1
6	Public toilet	2	2	1	2	1	1	3
7	Parking area	1	1	2	2	2	2	3
	Total Score	14	9	11	11	11	11	16
	Maximum Score	21	21	21	21	21	21	21
	Percentage Value	0.00%	12.24%	12.47%	2.49%	9.98%	7.48%	7.26%
	Total Value	51.93%						
	Conclusion	Not Enough						

(Source: Analysis, 2023)

Table 17 Results of East Segment Analysis of Taman Odah Bekesah

No.	Object of Assessment	Universal Design Principles						
		Equivalence Score Use of Space	Safety and Security Score For All	Ease Score Unhindered Access	Ease of Access to Information Score	Independence ScoreUse of Space	User Effort Efficiency Score	Suitability Score Size and Space Ergonomically
	Weight Based on Hierarchy Most important	0%	29%	24%	5%	19%	14%	10%
B	**Eastern Segment**							
1	Entrance	3	1	1	1	2	2	1
2	Parking area	3	2	2	1	2	2	3
3	Pedestrian Path	3	1	2	2	2	2	3
4	Plaza Area	1	1	2	2	1	1	2
5	Ladder and Ram	1	1	1	1	1	1	1
6	Integrated Building	2	2	1	2	1	1	3

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

	Universal Design Principles						
Total Score	13	8	10	8	11	10	13
Maximum Score	18	18	18	18	18	18	18
Percentage Value	0.00%	12.70%	13.23%	2.12%	11.64%	7.94%	6.88%
Total Value	54.50%						
Conclusion	Not Enough						

(Source: Analysis, 2023)

4. CONCLUSION

From the results of research on the study object of Odah Bekesah Park in Samarinda City regarding inclusive open spaces using descriptive analysis, several things can be concluded as follows:

1. Odah Bekesah Park is a city park where the facilities and supporting infrastructure are known to have used several universal design principles to meet the criteria for open space in Samarinda City as a form of fulfilling the goals and vision of a livable and inclusive city.
2. Of the 7 (seven) universal design principles based on PUPR Ministerial Regulation No. 14 of 2017 concerning Building Construction Ease Requirements which are in line with The 7 (seven) principles of universal design according to Mace et al., (1996) need to be translated into an assessment form using a predicate scale that makes it easier to analyze the results of findings and field observations in fulfilling the implementation of universal design.
3. Based on the multi-criteria analysis, it is concluded that the principle of "safety and security for all" is the most important variable that must be met in every assessment of the implementation of universal design, but this certainly does not mean that the other six principles are ignored.
4. The existing elements that do not fully meet the universal design criteria in the western and eastern segments of Odah Bekesah Park are the stairs and ramp access.
5. The existing elements that almost meet the universal design criteria in both the western and eastern segments of Odah Bekesah Park are the plaza and parking areas.
6. Cumulatively, the assessment results show that the western segment of Odah Bekesah Park is inadequate in terms of providing inclusive open space with an assessment result of 51.93%.
7. Cumulatively, the assessment results show that the eastern segment of Odah Bekesah Park is inadequate in terms of providing inclusive open space with an assessment result of 54.50%.

REFERENCE

Anugrah, G. F., & Sukapti. (2022). Peran Persatuan Penyandang Disabilitas Indonesia (PPDI DPC Samarinda) Dalam Pemberdayaan Penyandang Disabilitas Di Kota Samarinda. *EJournal Pembangunan Sosial*, *10*(4), 181–194.

Badan Standar Nasional. (2004). Tata Cara Perencanaan Lingkungan Perumahan di Perkotaan. *SNI 03-1733-2004*.

Building for Everyone: A Universal Design Approach, Centre for Excellence in Universal Design. (2012). *The National Disability Authority*.

Dean, M. (2022). A Practical Guide to Multi-Criteria Analysis A Practical Guide to Multi-Criteria Analysis. *Bartlett School of Planning, University College London*, *January*.

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279

https://doi.org/10.13140/RG.2.2.15007.02722

Devina, A. C., Sari, P., Darmawan, R. F., & Husada, P. Y. (2023). Kota Samarinda Dalam Angka (Samarinda Municipality in Figures) 2023. *Kota Samarinda Dalam Angka*.

Kurniawan, H., Ikaputra, & Forestyana, S. (2017). Perancangan Aksesibilitas Untuk Fasilitas Publik. *Gadjah Mada Univerity Press*, 195.

Mace, R. L., Hardie, G. J., & Place, J. P. (1996). Accessible Environments: Toward Universal Design. Raleigh, NC: North Carolina State University. *The Center for Universal Design*.

Rahma, A. D. (2018). Aksesibilitas Fisik Bagi Penyandang Disabilitas Pada Taman Pesut Tepian Mahakam Kota Samarinda. *Tugas Akhir Sarjana Arsitektur, Universitas Brawijaya*.

Sarosa, W. (2017). *New Urban Agenda: Agenda Baru tentang Pengembangan Permukiman dan Penanganan Kumuh Perkotaan*.

Sugiyono, D. (2010). Metode Penelitian Kuantitatif Kualitatif dan R&D. In *Penerbit Alfabeta*.

DOI: https://doi.org/10.17509/jare.v6i2.69361
p- ISSN 2776-9909 e- ISSN 2580-1279