

# Concept of disability-friendly design in the plaza area of Kampung Ketupat towards sustainable tourism in Samarinda

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## Abstract

This research addresses the imperative of inclusive tourism development in Samarinda City's Kampung Ketupat, a potential vital support region as the National Capital undergoes a potential transition in 2024. Emphasizing the importance of tourism in this context, the study specifically focuses on Plaza Area design elements to identify and rectify infrastructural gaps hindering accessibility. The anomaly lies in the lack of consideration for people with disabilities, urging the integration of disability-friendly design for a more inclusive travel experience. A descriptive qualitative approach is employed, emphasizing comprehensive exploration of essential design factors. Data is gathered through structured interviews involving individuals with disabilities, stakeholders, and design experts within Kampung Ketupat. A literature review informs the study, placing it within a broader theoretical framework. The concept design method utilizes existing theories and analyses to formulate practical, inclusive design concepts. The Plaza Area's design concept prioritizes inclusivity, emphasizing accessibility for individuals with disabilities. Accessible pathways and ramps adhere to ADA standards, ensuring safety and ease of use. Aluminum materials contribute to durability and aesthetic appeal. Sensory elements, such as tactile paving and aromatic gardens, create a comfortable and accommodating atmosphere. Universal seating design, with strategically placed open spaces, promotes inclusivity and community participation. The restroom area adheres to international standards, incorporating accessible layouts and ramps. In conclusion, the Plaza Area in Kampung Ketupat benefits from meticulously designed infrastructure, ensuring inclusivity and accessibility. ADA-compliant pathways and ramps provide a safe experience, while sensory elements enhance the overall atmosphere. Universal seating design fosters inclusivity, and the restroom area adheres to international standards, representing a significant step forward in enhancing the overall tourism experience in Kampung Ketupat. The study offers a valuable model for sustainable and universally accessible tourism development, ensuring enjoyment for all visitors, regardless of physical abilities.

## Keywords

Disability-friendly, Design, Sustainable tourism

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## Introduction

The readiness of Samarinda City, as the hinterland of East Kalimantan Province, holds significant importance in anticipation of the potential transition of the National Capital to the region in 2024. This strategic position necessitates careful planning and implementation to fortify Samarinda's role as a crucial support region. Among the key sectors requiring comprehensive strategies, tourism emerges prominently. The city's tourism potential is underscored by its diverse attractions, encompassing natural, cultural, and artificial sites, including cultural villages like Kampung Ketupat [1]. As Samarinda's new tourist icon, it symbolizes transformation from a slum area to a vibrant community through voluntary efforts. The local community and tourists often gather in the Plaza area, situated in the heart of Kampung Ketupat. This vibrant space serves as a focal point for communal activities, offering a unique blend of cultural experiences for both residents and visitors.

Kampung Ketupat is located on Mangkupalas Street, Mesjid Village, Samarinda Seberang, precisely on the banks of the Mahakam River with a view of the Mahkota II bridge (Figure 1 and Figure 2). Embracing the concept of Community-Based Tourism (CBT), Kampung Ketupat exemplifies community empowerment in tourism development [2]. It has become a new tourist icon in the capital of East Kalimantan province. Kampung Ketupat was inaugurated by the city government of Samarinda on August 11, 2017. Disability is a broad and complex term. Persons with disabilities are defined as those people with intellectual, physical, sensory, and/or mental impairments that can hinder overall participation in society on an equal basis with other members of the population [3]. Most tourist attractions can only be accessed by ordinary people. They face numerous barriers and obstacles when traveling or at their destination [4]. Those who are excluded or neglected do not have the opportunity to access and visit tourist attractions, especially tourist attractions [5]. Therefore, the aim of this study is to advocate tourism development that carefully considers the specific needs of people with disabilities, with special emphasis on the innovative concept of sustainable tourism village design. Central to this paradigm is the integration of disability-friendly design, an important element that emphasizes the need to incorporate the needs of disabled people into the planning and construction of facilities in tourist destinations. Physical limitations should not be a barrier to their enjoyment of the travel experience.

The study aims to advocate for inclusive tourism development that considers the specific needs of people with disabilities, emphasizing sustainable tourism village design. The integration of disability-friendly design, ensuring facilities' adaptability, becomes pivotal to eliminate physical limitations in travel experiences. This research seeks to scrutinize the Plaza area's design elements, identifying challenges such as physical barriers, signage deficiencies, and inadequate amenities that impede accessibility. Addressing these issues is paramount to fostering inclusivity and ensuring the sustained growth and enduring appeal of Kampung Ketupat as a cultural

destination. The broad term "disability" encompasses intellectual, physical, sensory, and/or mental impairments hindering equal participation in society. Ordinary people often face barriers when accessing tourist attractions, excluding those with disabilities from these experiences. This study aims to bridge this gap by promoting tourism development that incorporates the specific needs of people with disabilities, aligning with the innovative concept of sustainable tourism village design.

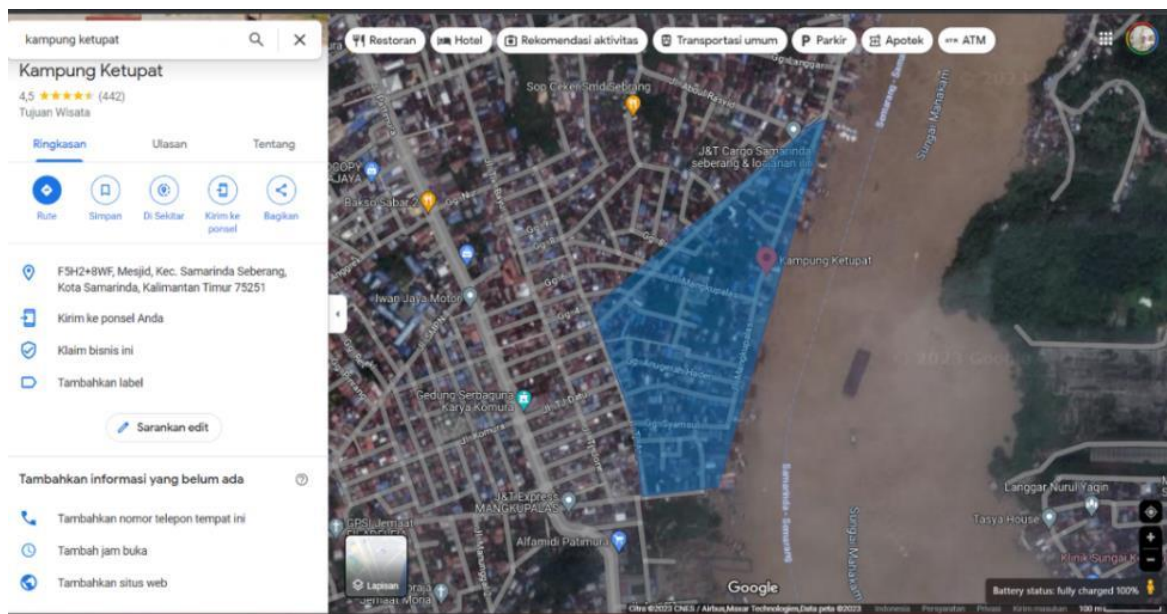


Figure 1. Location Kampung Ketupat (Author's Documentation, 2023)



Figure 2. Plaza Area of Kampung Ketupat (Author's Documentation, 2023)

In summary, this research addresses the anomaly of inclusive tourism development in Kampung Ketupat, clarifying the problematic infrastructural gaps. The formulation of the problem emphasizes the need to integrate disability-friendly design elements. The aim is to analyze and enhance the Plaza area's design for seamless accessibility, ensuring a culturally rich and inclusive travel experience.

## Method

The method use is descriptive qualitative approach to comprehensively explore and understand the essential design factors for creating disability-friendly plaza areas in the

Kampung Ketupat Tourism Area in Samarinda. The chosen research methodology involves several key components. First, research method.

1. Identity : The research method is a descriptive qualitative approach, emphasizing a thorough exploration of essential design factors in the specific context of disability-friendly plaza areas [6].
2. Sample/Data Source: The study involves individuals with disabilities, relevant stakeholders, and experts in the field of inclusive design within the Kampung Ketupat Tourism Area.
3. Data Collection Technique: Structured interviews are conducted to gather insights, experiences, and perspectives. The interviews provide qualitative data crucial for understanding the challenges and recommendations for enhancing disability-friendly features.
4. Secondary Data Collection Technique: A comprehensive literature review is undertaken to identify existing theories, principles, and best practices related to disability-friendly design in tourism areas. This secondary data aids in informing the study and placing it within the broader theoretical framework.

Second, concept design method.

1. Approach: The study incorporates a concept design method to formulate practical design concepts based on the gathered insights, literature review findings, and theoretical principles.
2. Theoretical Framework: The concept design is informed by existing theories and analyses related to disability-friendly design in tourism areas. This framework guides the creation of inclusive and accessible design concepts.

By employing this mixed-methods approach, including qualitative exploration, literature review, interviews, and concept design, the study aims to provide a comprehensive understanding of intricate design elements crucial for enhancing accessibility and inclusivity in the Plaza area of the Kampung Ketupat Tourism Area.

## Results and discussion

The design concept aims to transform the Plaza Area in the Kampung Ketupat Tourism Area into an inclusive and welcoming space, providing practical guidance for tourism destination developers and planners. The goal is to create an environment that enhances the overall visitor experience, ensuring enjoyment for everyone, irrespective of physical limitations. In realizing this concept, several key elements will be prioritized to ensure accessibility and inclusivity, with a specific focus on individuals with disabilities.

### *Accessible pathways and ramps*

The design carefully considered the implementation of accessible pathways and ramps, ensuring that individuals with mobility challenges, such as wheelchair users, can navigate the Plaza Area with ease. These pathways are strategically designed to



accommodate a variety of mobility aids, thus ensuring a smooth and barrier-free experience for all visitors. Implementing Accessible Pathways, in compliance with Americans with Disabilities Act (ADA) guidelines, involves ensuring that pathways have a smooth and level surface, appropriate width, non-slip material, and a clear path. A smooth and even surface is essential to facilitate movement, while maintaining an appropriate width to meet the spatial requirements of various mobility aids. Anti-slip material is incorporated to increase safety, especially in wet conditions. Additionally, maintaining clear, unimpeded pathways, in line with ADA standards, ensures unimpeded access for individuals with disabilities.

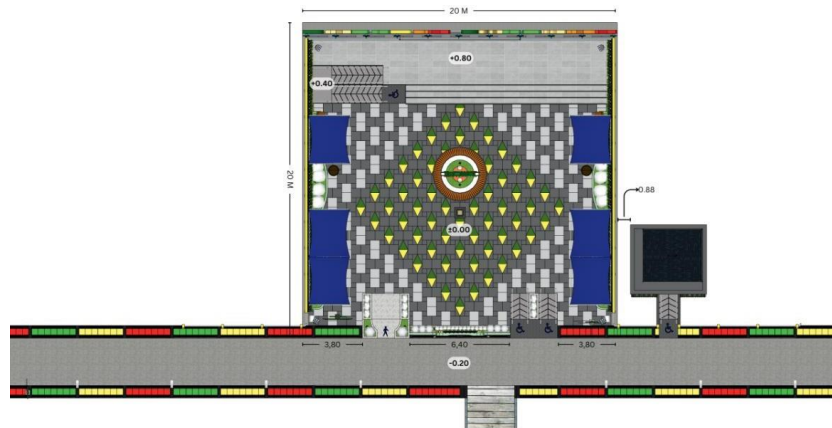


Figure 3. Design Plaza Area of Kampung Ketupat Tourism (Source: Author's Analysis, 2023)

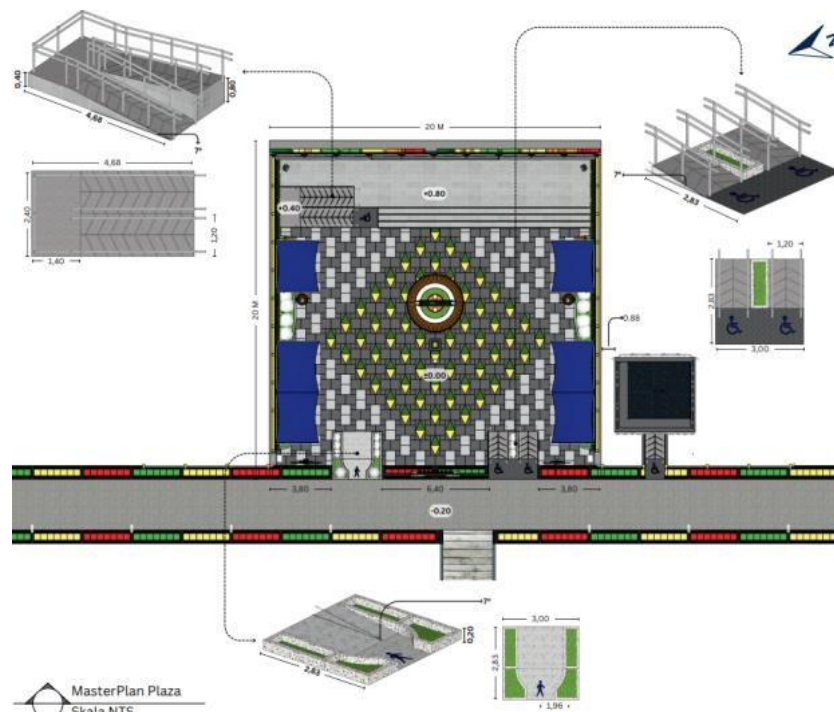


Figure 4. Detail Design Plaza Area of Kampung Ketupat Tourism (Source: Author's Analysis, 2023)

According to ADA standards, these ramps must follow a specific grade—no steeper than a 1:12 ratio or a maximum of  $7^\circ$ —ensuring a gradual grade that increases safety and ease of use. The design of the ramps in the Plaza Area of Kampung Ketupat Tourism carefully aligns with this standard, with a gentle slope of  $7^\circ$ . This thoughtful approach not only meets regulatory requirements but also prioritizes the comfort and accessibility

of individuals with varying mobility needs, providing a smooth and safe passage within the dynamic and inclusive environment of the Kampung Ketupat Tourism Area (Figure 3 to Figure 5).

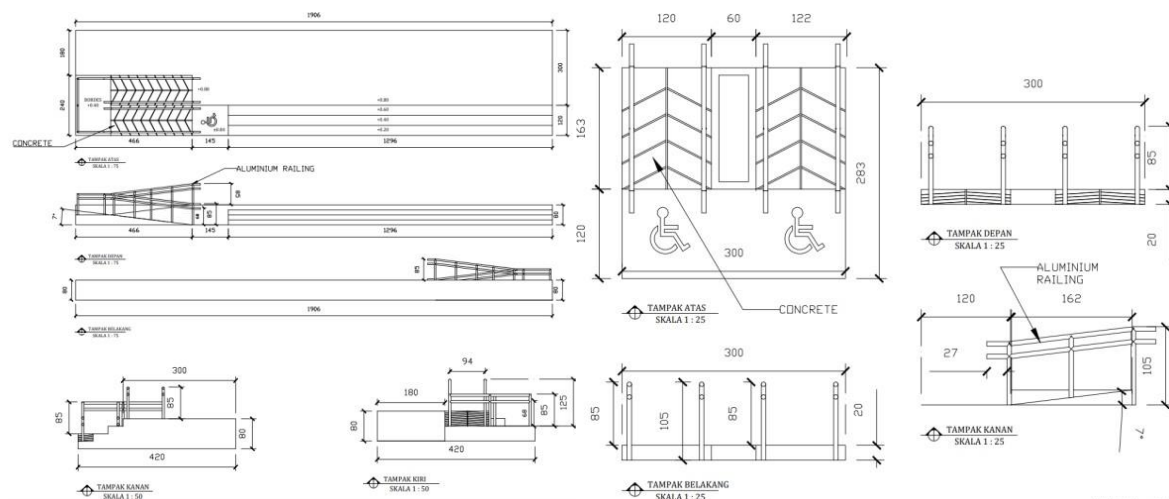


Figure 5. Detail Design Ramp Plaza Area Tourism (Source: Author's Analysis, 2023)

The slope and incline of the ramps in the Plaza Area of Kampung Ketupat are meticulously crafted, aligning with ADA recommendations for a running ramp slope between 1:16 and 1:20. This design choice ensures a more manageable incline, particularly beneficial for individuals with disabilities navigating the vibrant surroundings. Additionally, the ramps in this area feature strategically positioned landings at the top, bottom, and at intervals not exceeding 30 feet, providing essential resting points. The thoughtful inclusion of level landings contributes to a user-friendly experience, allowing individuals to traverse the gently sloping terrain comfortably. Handrails play a crucial role as integral safety features along the ramps, especially when there are height changes exceeding 6 inches. In the Kampung Ketupat Plaza, these handrails, placed on both sides, are meticulously positioned at a height ranging from 34 to 38 inches. This design choice ensures that individuals utilizing the ramp receive essential support and stability, emphasizing the commitment to safety and accessibility.

In terms of sensory considerations, the ADA guidelines are implemented with precision. Visual contrast, applied to the ends of the ramps and curbs, assists those with visual impairments in effective navigation. Simultaneously, the inclusion of tactile contrasts, such as detectable warning surfaces, contributes to an inclusive environment by providing tactile cues for individuals with vision and mobility impairments. The safety measures adopted in the Plaza Area of Kampung Ketupat also extend to the provision of adequate lighting along the ramps and surrounding areas. Furthermore, the design emphasizes the importance of maintaining clear and hazard-free pathways, aligning with ADA principles and fostering a universally accessible and safe environment. The incorporation of aluminum materials for the ramps, borders, and handrails adds a durable and aesthetically pleasing aspect to the overall design, enhancing both functionality and visual appeal.

### Sensory elements

Sensory elements in the context of accessibility refer to design features that appeal to and satisfy the different senses of people, including people with disabilities. These factors are especially important for people with sensory disorders or sensitivities. To accommodate those with sensory sensitivities, the design incorporates sensory elements that enhance the overall atmosphere of the plaza area. Considerations include the use of tactile materials, visual contrast, and acoustic features to create a sensory-rich environment that is comfortable and accommodating for individuals with different sensory needs [7].

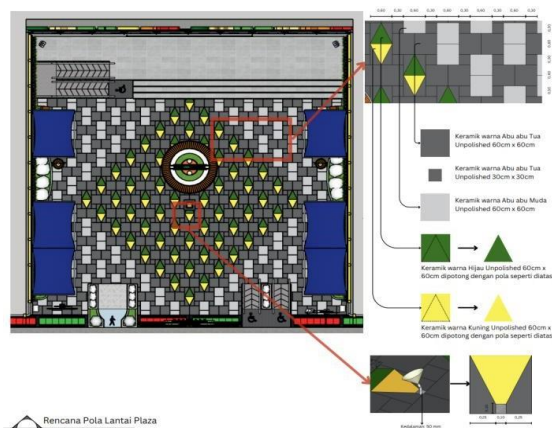


Figure 6. Floor Design in The Plaza Area (Source: Author's Analysis, 2023)



Figure 7. Lighting Design in The Plaza Area (Source: Author's Analysis, 2023)

The research findings pertaining to the floor pattern in the Plaza Area of Kampung Ketupat reveal a deliberate design choice, where the floor motif resembles the shape of a ketupat (Figure 6). This distinctive floor motif is crafted using unpolished ceramic tiles in a palette that combines shades of dark gray, light gray, green, and yellow. Strategically placed, unobtrusive spotlight fixtures illuminate specific points on the

floor, providing adequate lighting during nighttime hours. This consideration for lighting also extends to the use of Solar Flood Lights, LED Strip Lights (220V), and Waterproof Flexible Lights as the primary sources of illumination (Figure 7). This intricate flooring design, coupled with the sophisticated lighting system, not only serves an aesthetic purpose but also contributes to enhancing the overall ambiance of the Plaza Area.

The integration of sensory elements in the design goes beyond the floor pattern. Tactile paving or textured ground surfaces have been incorporated into signal pathways, crossings, or changes in the environment, facilitating navigation, particularly for individuals with visual impairments. Additionally, the incorporation of aromatic gardens with fragrant flowers or herbs contributes to creating a pleasant and distinctive atmosphere, appealing to the olfactory senses. Visual contrasts play a pivotal role in creating an environment that is visually accessible [7]. High-contrast colors are employed in signage, and there is a deliberate use of contrasting colors between walls and floors to ensure clear visibility. These visual cues aid individuals with various visual needs in navigating the space effectively.

Tactile wayfinding elements have been strategically placed to assist individuals with visual impairments through touch, providing essential information about their surroundings. This tactile approach to wayfinding enhances the overall accessibility of the Plaza Area. Furthermore, adaptive lighting practices have been employed, including the use of adjustable lighting levels and the incorporation of natural lighting wherever possible. This approach creates a comfortable and adaptive visual environment, accommodating varying lighting preferences and sensitivities. The incorporation of these sensory elements in the Plaza Area's design is a testament to the commitment to inclusivity and a recognition of the diverse sensory experiences of individuals, including those with disabilities. These thoughtful design elements not only ensure accessibility but also contribute to a more enriching and enjoyable experience for all users.

### *Universal seating furniture*

The findings in the Kampung Ketupat Plaza area highlight the importance of universal seating to accommodate people with different needs, including people with disabilities. The ultimate goal is to create a seating environment that is inclusive and supportive of everyone, regardless of ability. In particular, the use of open space in seating arrangements was identified as an important factor for accessibility for wheelchair users. This includes designing seating arrangements with strategically placed open spaces to facilitate maneuverability for people using wheelchairs and other mobility devices. By incorporating these features, Area Plaza not only promotes inclusivity, but also aims to ensure that all visitors feel comfortable participating in community activities, promoting a sense of belonging and accessibility for all (Figure 8).





Figure 8. Design Landscape in the Plaza Area (Source: Author's Analysis, 2023)

### Restroom area

In response to the initial lack of restroom facilities for tourists in Kampung Ketupat, a crucial development has taken place with the design of a toilet facility located adjacent to the plaza area (Figure 9). Recognizing the fundamental role toilets play in tourism amenities, the design prioritizes accessibility and inclusivity [8]. The creation of accessible toilet facilities adheres to international standards, such as ISO 21542, ensuring that the design meets stringent criteria for inclusivity. Following these international standards involves implementing an accessible layout and ramp to facilitate easy entry for all visitors, especially those with disabilities. ISO 21542 guidelines are integrated to provide ample space within the toilet, allowing for the necessary turning radius of a wheelchair. Clear pathways to and from the toilet area are meticulously planned to enhance maneuverability.



Figure 9. Concept Design Restroom Area of Disability Friendly (Source: Author's Analysis, 2023)

Moreover, the design incorporates dimensions, clearances, and features mandated by accessibility standards. This includes the installation of grab bars, ensuring the toilet seat height is compliant with regulations, and creating clear floor space within the facility. The careful consideration of these elements not only aligns with international standards but also emphasizes the commitment to providing an inclusive and welcoming environment for all individuals, regardless of their physical abilities. The addition of this accessible toilet facility represents a significant step forward in enhancing the overall tourism experience in Kampung Ketupat.

This study presents a comprehensive design concept for the Plaza Area in the Kampung Ketupat Tourism Area, prioritizing inclusivity and accessibility. The research contributes significantly by addressing infrastructural gaps, particularly focusing on individuals with disabilities. Key findings encompass inclusive design elements such as accessible pathways, ramps, sensory features, universal seating, and an inclusive restroom area,

aligning with international standards. These contributions not only enhance the Plaza Area but also provide a valuable model for sustainable and universally accessible tourism development, ensuring an inclusive and enjoyable experience for all visitors, regardless of physical abilities.

## Conclusion

The Plaza Area in Kampung Ketupat Tourism benefits from a meticulously designed infrastructure that prioritizes inclusivity and accessibility. The accessible pathways and ramps, crafted in compliance with ADA standards, ensure a smooth and safe experience for visitors with mobility challenges. The use of aluminum materials adds both durability and aesthetic appeal to the overall design, contributing to a universally accessible and visually pleasing environment.

Sensory elements, including tactile paving, aromatic gardens, and visual contrasts, enhance the overall atmosphere. The deliberate floor pattern and sophisticated lighting systems not only serve aesthetic purposes but also contribute to a sensory-rich environment. Tactile wayfinding elements and adaptive lighting practices further enhance accessibility, providing essential information and accommodating varying sensory preferences.

The universal seating furniture design promotes inclusivity by incorporating open spaces for maneuverability, especially for wheelchair users. This approach fosters community participation and enhances the overall sense of inclusivity in the Plaza Area.

The restroom area design adheres to international standards, ensuring accessibility for all visitors, including those with disabilities. The inclusion of accessible layouts, ramps, grab bars, and compliant dimensions prioritizes ease of use and maneuverability, emphasizing a commitment to providing an inclusive environment for individuals of all physical abilities. The addition of an accessible toilet facility represents a significant step forward in enhancing the overall tourism experience in Kampung Ketupat.

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