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Utilization of Sambau Coastal Area Space as Recreation in Preserving Local Culture

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Abstract

Coastal areas have great potential to be developed as recreational spaces that not only attract tourists but also preserve local culture. Sambau Beach in Nongsa, Batam, faces challenges from rapid development that threatens the identity of Kampung Tua, environmental sustainability, and socio-cultural continuity. This study aims to explore how the Sambau coastal area can be utilized as a recreational space that integrates cultural values and sustainable principles. A qualitative descriptive method with a Research-Based Design (RBD) approach was used, combining literature studies, field observations, and contextual analysis. Findings show that local cultural activities, such as the Tepuk Tepung Tawar ceremony, traditional music performances, and exhibitions of local crafts, play a significant role in attracting tourists while maintaining local identity. Based on these findings, design strategies were developed by incorporating culture into spatial planning, including spaces for cultural performances and communal activities. These spaces are designed to resemble traditional balai adat, functioning as cultural landmarks and community hubs. The resulting design concept emphasizes sustainable development based on local wisdom and aims to enhance tourism potential, support environmental conservation, and reinforce cultural identity. These strategies are visualized through conceptual sketches, spatial diagrams, and 3D models.

Keywords:

Coastal Space, Recreation, Cultural Identity, Sustainable Waterfront Development

Introduction

Coastal areas play a strategic role in the development of recreational spaces that support social and economic well-being, as well as the preservation of local culture. As transitional zones between terrestrial and marine ecosystems, coastal spaces are dynamic areas that reflect physical, social, economic, and cultural interactions (Ditjen Penataan Ruang, 2004). Given this potential, the development of recreational spaces in coastal areas presents an opportunity to support cultural preservation while maintaining environmental balance.

Sambau Beach in Nongsa, Batam, is an example of a coastal area with great potential to be developed as a recreational space based on local culture. The presence of the Kampung Tua (Old Village) around the beach reflects the historical and cultural richness of the coastal community. However, there is still a gap in the development of recreational spaces that are rooted in local culture and sustainable principles in Batam's coastal areas. Rapid development in the region has brought challenges such as environmental degradation, including coastal erosion, seawater pollution, and the decline of mangrove vegetation. Uncontrolled modernization also threatens the cultural identity of Kampung Tua Sambau, with the diminishing presence of traditional architecture and a shift in the lifestyle of the local community. In addition, limited recreational infrastructure and land conversion into commercial areas further reduce public spaces that should be part of cultural preservation efforts.

The development of coastal areas as recreational spaces is considered a potential solution to improve community welfare while also supporting the preservation of local culture (Suryani, 2023). This effort requires strategies rooted in local wisdom, with attention to environmental sustainability and long-term benefits for the community (Ade & Mutaqin, 2020). A study on the Jeddah City Waterfront (Al-Ghamdi & Al-Harigi, 2020) shows that coastal area development that prioritizes cultural and ecological preservation can create attractive and sustainable public spaces. This concept could inspire Sambau Beach's development by utilizing local potential and applying sustainability principles.

This study aims to explore design strategies for utilizing the coastal area of Sambau Beach as a recreational space that is visually appealing and preserves local cultural values. Despite the growing interest in coastal tourism, there is a noticeable gap in research regarding the integration of local culture and tourism development in Sambau Beach. By applying sustainability principles, this area is expected to serve as a model for coastal tourism development that balances environmental, economic, and socio-cultural aspects. The research contributes to the fields of landscape architecture and coastal planning, particularly in integrating local cultural values into public space design. It may also serve as a reference for developing design theories based on local wisdom and sustainability, applicable across various coastal areas in Indonesia. This study offers a tangible contribution by formulating design strategies that can be implemented by local governments, designers, and other stakeholders to develop recreational spaces that are functional, aesthetic, and serve as a medium for cultural preservation and coastal environmental protection, with the ultimate goal of enhancing community welfare, environmental sustainability, and the continuity of local cultural identity. The scope of this research includes the analysis of the area's potential, identification of environmental and cultural issues, and the formulation of design strategies for recreational spaces based on local culture and sustainability principles. This study does not cover the technical aspects of detailed construction; instead, it emphasizes a conceptual approach and spatial planning as the foundation for area development.

Literature Review

2.1. Coastal Space

Coastal area spaces are transitional zones between land and sea that possess dynamic and complex characteristics. These areas play a vital role in maintaining the ecological balance of coastal environments, such as preventing erosion, serving as natural water infiltration zones, and providing habitats for coastal flora and fauna (Ditjen Penataan Ruang, 2004). From a social and cultural perspective, coastal areas serve as public spaces, reinforcing local identity through traditional activities such as fishing, seafood trade, and cultural celebrations. Therefore, the development of coastal spaces that integrate cultural preservation and sustainability principles is crucial to maintaining a balance between development and environmental conservation. The waterfront concept serves as a key element in the development of public spaces in coastal areas. A waterfront functions not only as a tourist destination but also as a social space that supports the cultural activities of the local community (Gehl, 2011). Thus, waterfront development based on local wisdom and sustainability principles can create public spaces that harmoniously balance tourism needs, cultural preservation, and ecosystem sustainability.

2.2. Recreation

Recreation is an activity with distinct characteristics; it is not merely a pastime, but also reflects certain attitudes or lifestyle perspectives. As one of humanity's fundamental needs, recreation allows individuals to encounter, experience, and enjoy the happiness of life (Haryono, 1978). In the context of coastal areas, recreational spaces serve not only as entertainment venues but also as platforms for education and the preservation of local culture. Therefore, the development of recreational spaces along the coast presents a significant opportunity to integrate tourism functions with cultural preservation and environmental conservation. Recreation spaces rooted in local culture can enhance community welfare while ensuring the continuity of cultural heritage amid ongoing modernization (Suryani, 2023).

2.3. Cultural Identity

Cultural Identity refers to values that have become an integral part of a community's traditions and are embedded in the character of a specific region. This identity emerges from prolonged interaction with the local environment and is passed down through generations, eventually developing into norms, habits, traditions, and cultures that are collectively agreed upon and practiced (Istiqqa, 2023). In the context of coastal areas, cultural identity is often manifested in the form of knowledge and practices that are closely related to environmental conservation and the sustainable use of natural resources.

The application of local wisdom in the design of public spaces in coastal areas is a crucial element in preserving the cultural identity of local communities. Culturally-based placemaking is an effective approach to creating spaces that not only serve as recreational destinations but also strengthen the emotional connection between people and their environment. Public spaces designed with attention to local cultural aspects can create more inclusive environments and foster a stronger sense of community (Montgomery, 1998). Furthermore, the development of public spaces based on cultural identity in coastal regions must also consider environmental sustainability and long-term benefits for the community. The potential of cultural identity should be managed with sustainable principles, including nature conservation, environmental protection, and the reinforcement of cultural identity (Ade and Mutaqin, 2020). Thus, coastal public spaces designed with cultural identity can serve as visually attractive recreational areas that also support environmental conservation and strengthen the socio-cultural identity of coastal communities.

The role of Malay customs in shaping cultural identity is highly significant, as these customs are a key element that reflects and defines Malay culture (Warni et al., 2019; 2020). The Malay language is an inseparable part of this cultural identity, passed down through generations and preserved as a distinctive means of communication within the community. The value of gotong royong (cooperation) also represents a form of social wisdom that reinforces solidarity and ensures the sustainability of communal life. In addition, local religious traditions that blend religious teachings with local culture give rise to unique practices that enrich the identity of the Sambau community. The continuity of local wisdom is reflected in the values upheld by specific community groups, which often become inseparable parts of daily life and can be observed in their attitudes and behaviors (Hasbullah, H, 2012).

2.4. Sustainable Waterfront Development

The sustainable development of coastal or waterfront areas must take into account various aspects, ranging from ecological balance and community participation to the integration of social and economic functions. Several key principles in the sustainable development of waterfronts include:

- a. Environmental Conservation, where development in coastal areas must consider ecosystem sustainability, including the conservation of mangrove forests, coral reef rehabilitation, and effective waste management to prevent marine pollution (Beatley, 2014).
- b. Community Participation. A study by Salama & Wiedmann (2013) shows that the success of waterfront management heavily depends on the involvement of local communities in its planning and governance. A community-based model can ensure that waterfront development is not solely focused on economic gain, but also takes into account the social and cultural interests of the local population.
- c. Integration of Social and Economic Functions. A well-designed waterfront should accommodate various community activities, such as recreation, commerce, and cultural preservation (Brown et al., 2016). A holistically developed coastal area can provide long-term benefits for the local population while also enhancing the region's tourism appeal.

As one example of waterfront development in Indonesia, Losari Beach in Makassar demonstrates how coastal areas can be utilized as public spaces that accommodate recreational, tourism, and socio-economic activities of the community. The development of this area focuses on enhancing its appeal through the concept of urban tourism, by integrating a specific theme that connects various tourist spots along the beach (Prasetyo, 2018). In addition, Losari Beach adopts the Green Corridor Walkability concept, which improves pedestrian comfort by considering sustainability, accessibility, and safety (Nurhidayat et al., 2021). Despite these advancements, challenges such as the environmental impact of land reclamation and the socio-economic effects on surrounding communities persist (Amri et al., 2019). Furthermore, the presence of street vendors contributes to the informal economy but requires careful management to avoid compromising visitor comfort (Rahman, 2020). This case highlights the importance of

incorporating sustainability and cultural context in waterfront development, offering valuable insights for similar projects like Sambau Beach in Batam.

Research Methods

3.1. Method

This study uses a descriptive qualitative method with a Research-Based Design (RBD) approach to develop strategies for transforming Sambau Beach into a recreational space that balances visual appeal with the preservation of local cultural values. RBD integrates systematic research with the design process, including literature review, case study analysis, observation, and design experimentation (Groat & Wang, 2013). This approach fosters an iterative process, ensuring designs that are contextual, sustainable, and responsive to social and environmental needs.

The stages in this methodology are as follows:

3.1.1. Data Collection

- a. Observation: Direct on-site observation to understand the physical characteristics, environmental conditions, and existing spatial usage.
- b. Interview: Gathering information from stakeholders and the local community regarding their cultural values, needs, and expectations.
- c. Literature study: Reviewing relevant theories on coastal area development, sustainable architecture, and the preservation of local cultural heritage.

3.1.2. Contextual Analysis

Contextual analysis is necessary to understand the conditions and potential of the site's surrounding environment. This study includes three main aspects that serve as the foundation for comprehensive site planning: physical, socio-cultural, and functional.

- a. Physical aspect: Includes analysis of topography, climate, accessibility, and the visual potential of the area, including visual elements, landscape integration, and view orientation.
- b. Socio-cultural aspect: Understanding local traditions, cultural activities, and community interaction patterns, as well as representations of traditional architecture, local activities, and cultural symbols.
- c. Functional aspect: Identifying the need for recreational and cultural activities that can be facilitated, as well as spatial zoning that supports these various activities.

This comparative study is then developed into a design framework that considers the three main aspects above as the primary foundation for site development.

3.1.3. Design Concept

- a. Conceptual sketches: Initial visualizations of design ideas based on the results of the analysis.
- b. Zoning and spatial functions: Defining activity zones that take into account physical, cultural, and functional aspects of the space.
- c. Design principles: Formulating principles that emphasize sustainability, cultural preservation, and user comfort

3.1.4. Design Development

- a. Space diagram: Shows the relationship between zones and the circulation flow of users.
- b. 3D model: A three-dimensional visualization to test the building's scale, mass, and spatial experience quality.

3.2. Research Location

The research is situated in the coastal area of Sambau, Nongsa District, Batam City, Riau Islands, Indonesia.



Figure 1. Location of Sambau, Nongsa (Source: Google Maps, 2025)

Sambau is part of the Kampung Tua area, known for its historical significance and enduring coastal traditions. Located near major tourist zones and facing directly towards Singapore, Sambau holds considerable potential for development as a public space that integrates recreation with cultural preservation.

3.3. Scope of Research

The design of the recreational space in the Sambau Beach area targets multiple user groups:

- Local community, particularly residents of Kampung Tua Sambau, as a space for social interaction, cultural preservation, and traditional performances or activities.
- Tourists, both domestic and international, as part of a strategy to promote culturally rich, educational, and attractive tourism experiences.
- Stakeholders, including local government, tourism operators, and urban planners, as a pilot model for a public space that balances social, cultural, economic, and ecological aspects.

Results and Discussion

4.1. Contextual Analysis

Contextual analysis is conducted to identify various aspects that influence the character of the area, encompassing physical, socio-cultural, and functional dimensions.

4.1.1. Physical Aspects

Ecologically, this area is experiencing significant coastal abrasion, which threatens the sustainability of the shoreline and accelerates the degradation of coastal ecosystems. In addition, the mangrove vegetation which serves as a natural coastal protector has been damaged due to uncontrolled development that disregards environmental carrying capacity. This problem is exacerbated by the increasing volume of waste and marine debris, primarily due to the absence of adequate drainage and rainwater management systems, thus polluting the coastal area and disturbing ecological balance.

From a spatial and functional perspective, the coastal area also suffers from poor layout planning and a lack of iconic or culturally distinctive features that could enhance its identity. There is a notable absence of clearly defined zones and activity clusters, which results in disorganized space utilization. The lack of attractive public spots and communal nodes further reduces the area's recreational and social potential. Additionally, insufficient lighting around the site contributes to safety concerns and limits nighttime use, highlighting the urgent need for comprehensive and integrated spatial redevelopment that addresses both ecological and cultural sustainability.



Figure 2. Physical Aspect of Sambau Beach (Source: Authors, 2025)

4.1.2. Socio-Cultural Aspects

Cultural issues are contributing to the decline in the quality of local social life, as traditional activities such as artisanal fishing, handicraft making, and Malay cultural practices fade under the pressures of modernization and shifting economic priorities. Traditional architectural styles are being replaced by modern buildings that overlook the cultural and contextual values of the area. Additionally, public spaces that reflect cultural symbols and Malay identity are limited, reducing opportunities for cultural expression and community interaction, which are crucial elements of coastal social life. One such practice at risk is Tepuk Tepung Tawar, a traditional Malay ceremonial ritual with significant cultural and spiritual importance, often performed to bless individuals, mark important life events, and ensure harmony and prosperity (Amran, 2010). The ritual involves sprinkling a mixture of rice flour (tepung), flower-scented water, and other symbolic elements, with each carrying its own meaning; flour represents purity and abundance, while flower water symbolizes peace and blessings. More than just a ceremony, Tepuk Tepung Tawar strengthens social bonds and passes on traditional values (Aziz, 2007). Typically performed in open communal spaces such as courtyards, village squares, or beaches, the ritual underscores the collective nature of the practice and the connection between the community and nature.



Figure 3. Tepuk Tepung Tawar Ceremony (Source: Detik.com)

In the context of spatial design, particularly in culturally rich coastal areas like Sambau Beach, this tradition provides a valuable framework for integrating cultural identity into public space planning. Tepuk Tepung Tawar, which is commonly held in communal outdoor spaces, highlights the need for traditional gathering areas that reflect local customs and spiritual values. Therefore, the design of public areas that resemble traditional balai adat becomes essential—not only to accommodate such cultural expressions but also to preserve spatial typologies rooted in Malay heritage. By creating designated cultural nodes, incorporating native landscaping, and designing open areas that support traditional performances and rituals, planners can honor local heritage while promoting environmental sustainability and community participation. Thus, Tepuk Tepung Tawar is not only a cultural practice but also a design inspiration that reflects the values of unity, spirituality, and respect for nature inherent in Malay culture (Yusof, 2015).

4.1.3. Functional Aspects

The area has not yet fully accommodated the community's and visitors' needs for inclusive and multifunctional recreational spaces. Existing public facilities are still limited and poorly integrated, failing to support recreational activities such as beach sports, family tourism, community events, or cultural preservation effectively. The lack of well-designed green open spaces also limits the area's potential to serve as a hub for environmental education or strengthening local identity through cultural activities. This gap highlights the need for a design approach that not only considers aesthetic and ecological aspects but is also responsive to the dynamic spatial needs of coastal communities.

These issues form the foundation for developing a design strategy for a public recreational area based on local wisdom and environmental sustainability principles, aiming to restore the area's identity while improving the quality of life for its residents.

4.2. Space Utilization Strategy for Recreation Based on Local Wisdom

4.2.1. Activity Zoning Implementation

The first strategy is the implementation of activity zoning, divided into four main zones.

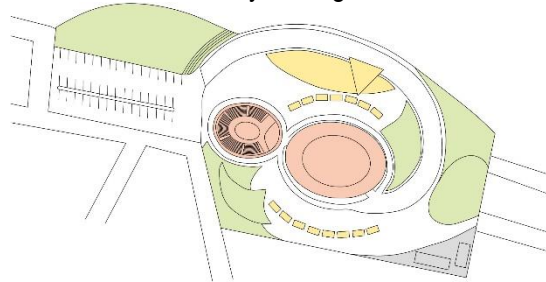


Figure 4. Activity Zoning (Source: Authors, 2025)

In the zoning diagram, the Sambau coastal public recreation area is divided into several main zones based on their dominant functions. The red zone indicates a cultural education area focused on the preservation and learning of local culture. The yellow zone represents the MSME (Micro, Small, and Medium Enterprises) and culinary area, which supports the local economy and introduces the richness of traditional Malay cuisine. The green zone designates a relaxation area functioning as an open natural recreation space for visitors. Meanwhile, the grey zone shows the service area that supports the site's operations.

4.2.2. Cultural Placemaking Approach

The second strategy adopts a cultural placemaking approach by actively involving the local community in the design and management process of the area. This approach is implemented through the use of Malay carving motifs on public furniture elements, holding weekly cultural-themed events such as pantun competitions, traditional games, and traditional music performances, as well as using the Malay language for naming spatial elements and signage. This participatory approach not only strengthens the cultural identity of the area but also fosters a sense of ownership among the local community (Eraku et al., 2023).

4.2.3. Implementation of Sustainable Design Principles

The third strategy is the application of sustainable design principles. The use of local and eco-friendly materials such as bamboo, wood, and natural stone is prioritized in physical development. Rainwater management systems are designed using biopores and natural drainage to support natural water infiltration. Additionally, local vegetation such as ketapang and mangrove trees are integrated into the landscape design to prevent erosion and enhance the visual character of the coastal area.

4.3. Integration of Local Cultural Values in Design

Public spaces in the Sambau Beach area are designed by integrating Malay cultural values, particularly those from Kampung Tua, using a spatial activation approach through cultural attractions. These spaces are designed to resemble traditional community halls (balai adat), functioning as gathering points for the community and places for cultural expression. The architectural form of these structures features distinctive rooflines, wooden ornamentation, and open communal layouts. Local materials such as wood, bamboo, and shingles are used to create a natural impression and foster a strong connection to the surrounding coastal environment. Additionally, Malay carvings are applied to public elements including fences, signage, lighting, and park benches. The use of culturally meaningful colors; red for strength and spirit, yellow for nobility and honor, and green for fertility and spirituality (Jamil N, 2005) which further enhances the cultural atmosphere. These design elements not only offer an authentic ambiance that reflects local heritage and attracts tourists, but also strengthen community identity. Traditional and social activities

such as gambus and kompang music performances, exhibitions of local crafts like songket, tudung manto, and tikar pandan, as well as ceremonies like tepung tawar and major Malay celebrations



Figure 5. Kalok Pakis Pattern (Source: Budaya-indonesia.org)

The Kalok Pakis pattern, also known as Kaluk Pakis, is inspired by the shape of a young, spiraling fern. It is more than just a decorative element. In Malay culture, the motif carries philosophical values representing growth, harmony, and continuity with nature (Zulkifli, 2013; Indrawati, 2015). Applying this motif to building elements such as windows, doors, or massing patterns reflects an effort to integrate local values into architectural design (Rahim, 2019). The circular pattern adopted in the building design serves as an architectural interpretation of those values.

4.4. Spatial Concept and Design Outcomes of the Area

4.4.1. Conceptual Design

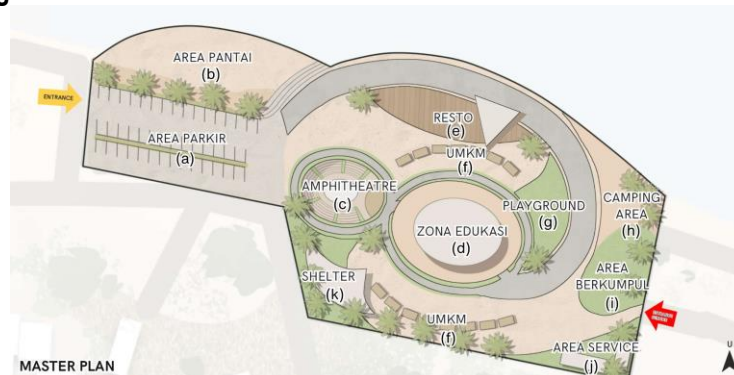


Figure 6. Conceptual Masterplan (Source: Authors, 2025)

To clarify the spatial and visual application of the design strategies, a series of conceptual sketches were developed to illustrate the core ideas and design vision for the Sambau public recreational area.

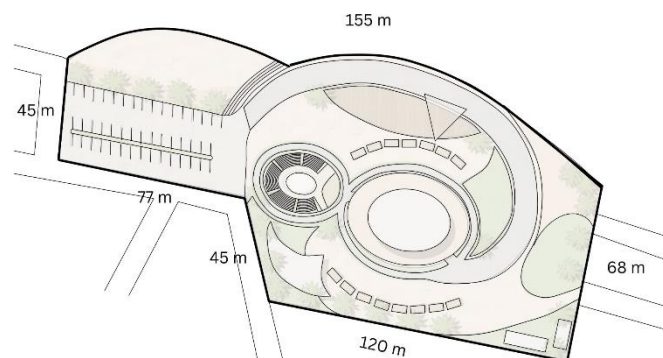


Figure 7. Site Boundaries (Source: Authors, 2025)

The site boundaries follow the existing land area, so the design adapts to the natural shape of the site without major alterations to the current physical conditions. With an area of approximately 11,000 m² and a gently sloping contour, the site supports the development of a dispersed zoning concept that remains functionally and visually integrated.

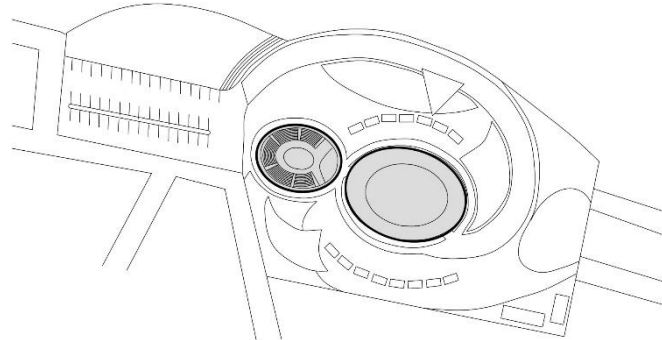


Figure 8. Main Building Placement (Source: Authors, 2025)

As shown in Figure 8, the main building (d), which functions as a cultural gallery and exhibition space for local crafts, is placed at the center of the site to serve as the focal point and orientation landmark for visitors. On the east side, the amphitheater and performance stage (c) are designed to support periodic traditional art activities, positioning the area as a space for cultural appreciation. Open spaces and walkways are predominantly curved and circular in form, creating an organic circulation pattern that blends with the landscape. Meanwhile, triangular shapes are used for architectural elements such as the restaurant (e), shelters (k), and other features, reflecting values of stability and harmony that align with Malay philosophy on maintaining balance between humans and nature (Pandiangan, 2021).

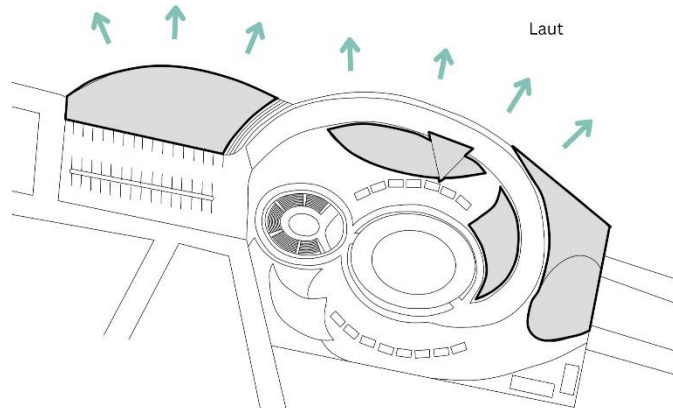


Figure 9. Supporting Area Placement (Source: Authors, 2025)

Relaxation areas are positioned along the site's edge adjacent to the sea to optimize spatial experiences that are integrated with the coastal landscape. The restaurant (e) faces the ocean view and incorporates waterfront elements such as wooden decks and curved natural stone seating. The camping area (h) and lounging zone (i) are placed in shaded spots with native vegetation such as ketapang and coconut trees, creating a comfortable and private atmosphere without isolating users from the activity core. All these spaces are designed to encircle the main building, supporting recreational activities and social interaction, with a backdrop of a vast and natural seascape. Open spaces are planned with minimal massive partitions to maintain visual connections to the sea and to strengthen the overall integration between space and landscape.

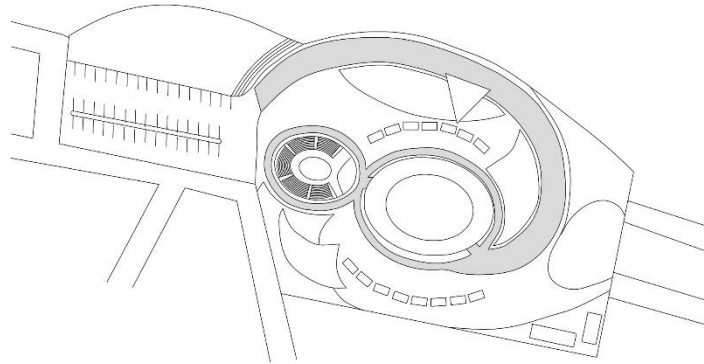


Figure 10. Pedestrian Circulation (Source: Authors, 2025)

Circulation within the site is designed with a dynamic and non-linear pattern to encourage users to actively explore all areas. Pedestrian paths made of textured natural stone and wood are organically laid out to follow the site's contours, creating a natural and visually engaging rhythm.

4.4.2. 3D Model

To clarify the spatial and visual aspects of the design concept, a three-dimensional (3D) representation of the Sambau Beach public recreation area has been developed.



Figure 11. Final 3D Model Design (Source: Authors, 2025)



Figure 12. Aerial Site View (Source: Authors, 2025)

This image presents an aerial perspective of the entire design of the Sambau Beach public recreational area, clearly illustrating the zoning structure, circulation flow, and interrelationships between functional elements within the site. The spatial composition reflects an integrated design approach that balances aesthetics, functionality, and local cultural values.



Figure 13. Main Building (Source: Authors, 2025)

The main building adopts a coastal tropical architectural style with a thatched roof inspired by traditional Malay structures. Its circular form enhances openness and community interaction, while natural materials like bamboo and wood support environmental sustainability. Positioned near the shoreline, the semi-open layout allows sea breezes to flow through, offering comfort and ocean views. Serving as a multipurpose space, it hosts cultural events and communal activities, becoming the focal point of the recreational area.



Figure 14. Restaurant (Source: Authors, 2025)

The restaurant design reflects a coastal tropical architectural concept that harmonizes with the surrounding nature by using natural wood materials and semi-open structures. Located along the waterfront, it provides an open-air dining experience with ocean views and refreshing sea breezes. The design addresses three key aspects: environmental sustainability, cultural identity through traditional tropical architecture, and functional flexibility and comfort by optimizing sea views and natural ventilation.



Figure 15. Amphitheatre (Source: Authors, 2025)

This amphitheatre prioritizes openness and community gathering, adopting a symmetrical circular form that reflects Malay cultural philosophy. Built with natural stone and wood materials, the structure blends seamlessly with the surrounding environment. It provides a versatile open space for cultural and social events, encouraging community participation and fostering inclusive social and cultural bonds.



Figure 16. UMKM Area (Source: Authors, 2025)

The MSME (Micro, Small, and Medium Enterprises) or UMKM (Usaha Mikro, Kecil, dan Menengah) area is designed to support local economic activity while preserving the aesthetics and openness of the coastal space. Utilizing eco-friendly materials like wood and bamboo, the area maintains a harmonious connection with nature. Strategically located between the restaurant and the main public building, this space serves as a meeting point for visitors to enjoy local cuisine and cultural products, enhancing socio-cultural dynamics and reinforcing community identity.



Figure 17. Relaxation Area (Source: Authors, 2025)

The relaxation area offers visitors a comfortable coastal retreat with a natural ambiance. Made from natural materials like wood and bamboo and furnished with ergonomic seating, the space blends seamlessly into the landscape. Strategically located with a sea view, it provides a refreshing and immersive relaxation experience. This inclusive and sustainable space supports local identity through tropical design and Malay cultural elements.



Figure 18. Pedestrian Pathways (Source: Authors, 2025)

The pedestrian pathways are designed with an emphasis on universal accessibility, local aesthetics, and tropical comfort. Built from natural materials such as stone and wood, these paths are not only functional but also visually integrated with the coastal setting. Serving as the main arteries that connect different functional zones, the paths enhance visitor mobility and ensure a continuous, harmonious experience across all areas of the recreational site.

Conclusions

This study proposes the sustainable development of Sambau Beach, Nongsa, Batam, through a Research-Based Design (RBD) approach that addresses environmental, socio-cultural, and spatial challenges. Integrating local traditions such as the Tepuk Tepung Tawar ceremony and cultural performances into the design inspired the creation of balai adat as inclusive communal hubs. These spaces reinforce the identity of Kampung Tua while supporting eco-friendly, multifunctional zoning. The study recommends that spatial planning policies reflect local cultural values to ensure long-term sustainability. It also provides a contextual framework for incorporating intangible heritage into spatial design in coastal development.

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