

Designing a Coastal and Mangrove Resort at Kurnia Beach Kota Pari Village


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ABSTRACT

The development of a coastal and mangrove resort at Pantai Kurnia in Desa Kota Pari presents a unique opportunity to leverage local natural resources and promote sustainable tourism. This article explores the design principles of the resort, emphasizing the integration of eco-friendly architecture, conservation of mangrove ecosystems, and community involvement. By adopting a participatory approach, the project aims to enhance local economic development while preserving the environment. The findings suggest that sustainable design can yield both ecological and economic benefits for the community.

Keyword : Coastal Resort; Mangrove Ecosystem; Sustainable Tourism; Eco-friendly Architecture;

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1. INTRODUCTION

The development of a coastal and mangrove resort at Pantai Kurnia in Desa Kota Pari represents a significant opportunity to foster sustainable tourism while simultaneously preserving vital ecosystems. Coastal tourism is increasingly recognized for its potential to enhance local economies, yet it often poses risks of environmental degradation if not managed responsibly. In this context, the integration of eco-friendly architecture and community involvement becomes crucial for achieving a balance between economic development and ecological conservation.

Mangrove ecosystems are essential for coastal protection, biodiversity, and carbon sequestration. However, they face numerous threats from urbanization and unsustainable tourism practices. As highlighted by Kristiana (2019), sustainable tourism development must prioritize environmental conservation alongside economic growth. Previous studies, such as those by Andriana et al. (2022) and Andriana et al. (2023), emphasize the importance of integrating historical and cultural elements in tourism planning, suggesting that local heritage can enhance the attractiveness of tourist destinations.

Despite existing research, there remains a gap in the literature regarding specific design strategies that effectively harmonize tourism development with mangrove conservation in the context of coastal resorts. This research aims to fill this gap by proposing a participatory design approach that actively involves local communities, ensuring that their traditional knowledge and resources are utilized in the planning and implementation phases of the resort.

The innovative aspect of this study lies in its focus on developing a resort model that incorporates principles of green architecture and community engagement, which has not been extensively explored in prior research. By leveraging eco-friendly design principles, the resort can serve as a catalyst for local economic development while promoting environmental stewardship.

This study's significance extends beyond the immediate context of Pantai Kurnia. It aims to provide a framework for sustainable tourism development that can be adapted to similar coastal regions, offering insights into best practices for balancing economic and environmental objectives. Through this research, we seek to demonstrate that sustainable design can create a harmonious relationship between local communities and their natural environments, ultimately benefiting both the economy and the ecosystem.

2. MATERIAL AND METHOD

This study employs a qualitative research design that incorporates architectural design methodologies to create a comprehensive plan for a coastal and mangrove resort at Kurnia Beach, Kota Pari Village. The research aims to integrate eco-friendly architectural practices with community engagement, emphasizing sustainability and environmental conservation.

A. Tools and Software

The following tools were utilized in the design process:

1. Blender: An open-source 3D modeling software used for creating detailed architectural visualizations and simulations. Blender allows for the modeling of complex structures and environments, enabling the visualization of the proposed resort within its natural context.
2. SketchUp: A user-friendly 3D modeling tool that facilitates the quick design and modification of architectural elements. SketchUp is particularly useful for creating initial design concepts and layouts, allowing for real-time collaboration and adjustments based on community feedback.

B. Data Collection

1. Field Observations were conducted at Kurnia Beach to assess the existing landscape, mangrove ecosystems, and community infrastructure. This involved:
 - Identifying key environmental features and potential site constraints.
 - Observing local vegetation, wildlife, and the condition of mangrove areas.
 - Noting community facilities and cultural landmarks that could be integrated into the resort design.
2. Community Engagement, A participatory approach was adopted to involve local residents in the design process. This included:
 - Conducting focus group discussions and interviews with community members to gather insights on their needs, preferences, and traditional knowledge related to the use of coastal and mangrove resources.
 - Organizing workshops to present preliminary design concepts and solicit feedback from the community, ensuring that the final design reflects local values and aspirations.

C. Design Process

1. Concept Development, Using the information gathered from field observations and community engagement, initial design concepts were developed in SketchUp. These concepts focused on:
 - Layout and zoning of the resort, including accommodation, recreational areas, and educational facilities.
 - Integration of eco-friendly architectural features, such as natural ventilation, rainwater harvesting systems, and the use of local materials.
2. 3D Modeling Once the initial concepts were refined, detailed 3D models were created using Blender. This phase included:
 - Developing realistic visualizations of the resort in its coastal and mangrove context.
 - Simulating environmental impacts, such as viewshed analysis and shadow studies, to assess how the resort design interacts with the surrounding ecosystem.

D. Evaluation and Refinement

After the 3D models were completed, the designs were presented back to the community for further evaluation. Feedback was collected regarding:

- Aesthetic preferences and functionality of the proposed spaces.
- Concerns related to environmental impact and conservation of mangrove areas.

3. RESULTS AND DISCUSSION

The design for the Coastal and Mangrove Resort at Kurnia Beach, Kota Pari Village, incorporates various elements that prioritize ecological preservation, sustainable infrastructure, and community

engagement. The following sections elaborate on the landscape design, facility and infrastructure design, and environmental management systems integrated into the resort.

A. Landscape Design

1. Conservation of Mangrove Ecosystems

The landscape design emphasizes the maintenance and preservation of existing mangrove ecosystems. By prioritizing biodiversity, the design ensures that the landscape features do not disrupt the delicate balance of the local ecosystem. This approach is vital for sustaining the ecological integrity of the area, as mangroves provide essential habitat for various species and contribute to coastal protection.

2. Utilization of Coastal Plant Species

The incorporation of coastal plant species that are resilient to harsh beach conditions is a fundamental aspect of the landscape design. Plants that stabilize the soil, such as beach grasses and native shrubs, are strategically selected to prevent erosion and enhance the visual appeal of the resort. Additionally, ornamental plants suitable for coastal environments are integrated to create aesthetically pleasing spaces that harmonize with the natural surroundings.

3. Creation of Open Areas

Open spaces, such as parks and recreational fields, are designed to connect the resort buildings with the surrounding natural environment. These areas serve as multifunctional spaces for recreation and relaxation, encouraging guests to engage with nature and promoting physical well-being. By providing open areas, the resort fosters an atmosphere of tranquility and connection to the ecosystem, enhancing the overall visitor experience.

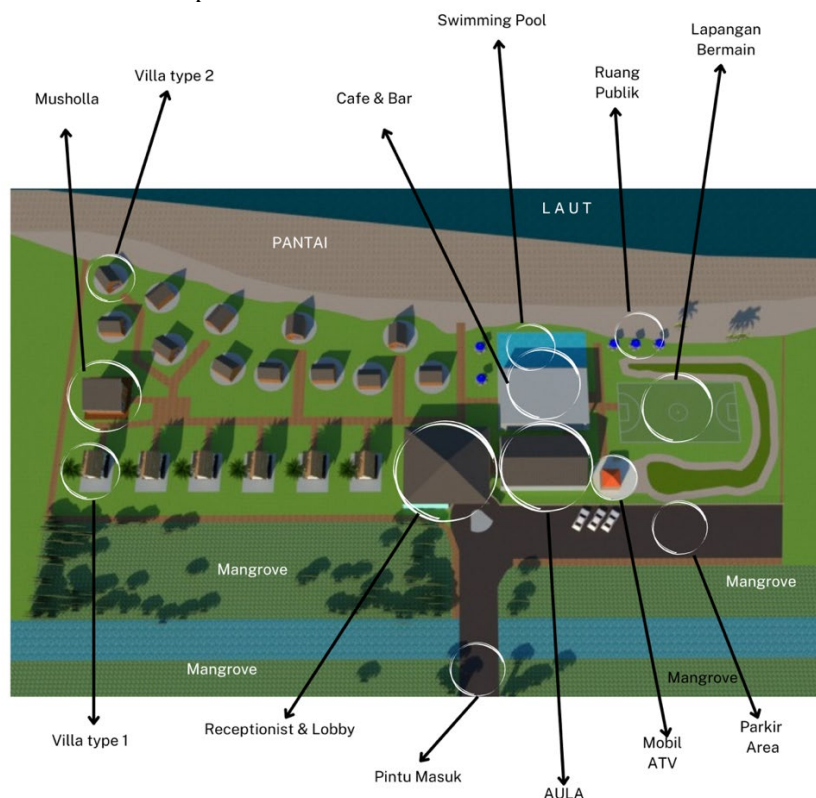


Figure 1. Landscape Design

4. CONCLUSION

The design of the Coastal and Mangrove Resort at Kurnia Beach, Kota Pari Village, represents a holistic approach to sustainable tourism that harmonizes ecological preservation, community engagement, and economic development. By prioritizing the conservation of mangrove ecosystems and integrating eco-

friendly architectural practices, the resort not only aims to minimize its environmental impact but also enhances the local biodiversity.

Through the implementation of sustainable infrastructure, including renewable energy sources and efficient water management systems, the resort sets a benchmark for responsible tourism development. The incorporation of recreational facilities and support amenities encourages visitors to engage with the natural environment, fostering a deeper appreciation for the unique coastal and mangrove ecosystems.

Moreover, the emphasis on community involvement ensures that local residents benefit from the resort's economic opportunities while actively participating in conservation efforts. Educational programs and conservation initiatives empower both visitors and locals to contribute to environmental stewardship, promoting a culture of sustainability.

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