Journal of Aesthetics, Creativity and Art Management
Volume 4 Issue 2 Year 2025 Pages 159-172
DOI: https://doi.org/ 10.59997/jacam.v4i2.6087.
URL: https://jurnal2.isi-dps.ac.id/index.php/jacam

A Biophilic Design Approach Resort in the Pari Island of Kepulauan Seribu, Jakarta Province

Muhammad Nur Fais[1], Yuke Ardhiati[2]
[1,2,]*Universitas Pancasila, Indonesia*
*__Corresponding author__: *fais080601@gmail.com*

Abstract: One of the Jakarta City islands is the Pulau Pari (Pari Island). Even though small, it has the natural beauty includes white sandy beaches, coral reefs, and a unique marine ecosystem. Unfortunately, the remarkable tourism potential of Pari Island has not been matched with adequate facilities. The lack of proper accommodations and poorly organized tourist areas are some of the main issues. Therefore, this study in qualitative methodaims to design a resort hotel using a biophilic approach, which integrates natural elements into architectural design. The biophilic concept was chosen to respond to the tropical island climate of Pari Island by offering architectural solutions that connect the built environment with nature. by employee the metaphoric in architecture form. Based on literature studies, the biophilic design approach contritbuted to built environments fostering a strong connection between humans and nature. By accomadated the biophilic design approach is implemented through natural lighting, incorporation of water elements, and the integration of vegetation.

Keywords: nature hotel, biophilic, resort hotel, tourism, Pari Island

History Article: Submitted 19 March 2025 | Revised 8 June 2025 | Accepted 7 July 2025

How to Cite: Fauzi, M. D., Ardhiati, Y. (2025). A Biophilic Design Approach Resort in the Pari Island of Kepulauan Seribu, Jakarta Province. Journal of Aesthetics, Creativity and Art Management, 4(2), 159-172. https://doi.org/ 10.59997/jacam.v4i2.6087.

Introduction

Indonesia has 10 national tourist destinations designated as Special Economic Zones (SEZ). (Indonesia ZEIZ, 2018). Meanwhile, the Special Region of Jakarta also has a prime destination located in the Thousand Islands, which the Jakarta City Government has targeted for strategic tourism development. Cumulatively, tourist visits to the Thousand Islands have increased annually. This increase in annual tourist arrivals is projected to make Jakarta a global city, according to data from September 2023 to June 2024. Pari Island boasts natural beauty, including white sand, coral reefs, and a unique marine ecosystem. These advantages make Pari Island a popular tourist destination, as seen in the following graph.

To support tourists visiting Pari Island, homestays are available, but insufficient capacity and inadequate accommodation facilities present obstacles for visitors. This lack of capacity and accommodation facilities can serve as a basis for a study on the design needs of a resort hotel on Pari Island. The presence of a resort hotel on Pari Island could attract tourists to Pari Island.

According to Law No. 10 of 2009 concerning Tourism, a hotel is defined as a type of accommodation business offering various types of accommodation along with other tourism activities (Disparekraf DKI Jakarta, 2023). According to Nyoman S. Pendit, in his book "Ilmu Pariwisata," a resort hotel should have land related to

tourist attractions. Therefore, resort hotels should be located on hills, mountains, valleys, and even on the coast (Amelia, 2017).

Based on various definitions of hotels, it can be concluded that the definition of a hotel is a public facility that is managed commercially in the form of a business or company that functions to provide accommodation, food and beverage services and other services for the general public.

According to the Director General of Tourism in 1988, a resort is a temporary residence for someone outside their hometown, with the goal of refreshing their body and soul, as well as a desire to learn more. It can also be associated with interests related to specific activities such as sports, health, conventions, religious activities, and other business purposes (Neksidin, Fahrudin, and Krisanti, 2021).

According to Murdhanti in Saputra (2023), a resort is an accommodation located quite far from the crowds and close to tourist attractions. A resort is a lodging built in a location with beautiful natural views, such as the beach or mountains (Ramdhan and Anggraini, 2024).

From the definitions of hotels and resorts above, it can be concluded that resort hotels are generally located far from urban areas or located in the mountains or waters, providing facilities for vacations, recreation, and sports. Resort hotels are the result of accommodation in several tourist areas developed as a place for recreation, physical refreshment, and various forms of tourism activities with complete accommodations to support tourists and hotel visitors. According to Sumarno (1999), a temporary lodging place that utilizes the natural potential and physical culture that are characteristic of the local area. Therefore, in general, what is sold by resort hotels is Scene (Natural Potential), namely the physical potential of the resort area and Culture that is characteristic of the local area. One prominent resort is The Mandalika of Lombok. (Ardhiati, Tia Begin, Begin, Hari Prasetyo, 2021).

Biophilic and bioclimatic design are related but distinct architectural concepts for sustainable buildings. Both, are often combined to create buildings that are both environmentally responsible and occupant-friendly. Bioclimatic design focuses on using local climate to ensure thermal comfort and energy efficiency through passive strategies. Biophilic design focuses on incorporating nature into buildings to improve human well-being and health by creating a connection between people and the natural environment. Biophilic design need to improve the physical and mental health of building occupants by fostering a connection with nature by integrates natural elements and patterns into the built environment to stimulate the senses. This can include: Directly bringing in nature (plants, water features).

Biophilic design comes from the word "biophilia," a combination of two Greek words: "bios," meaning life, and "philia," meaning love. The term "biophilia" refers to the love of living things, parts of life, and the love of nature, the place where life exists. It expresses this love through appreciation for nature and other life forms (Putra and Elviana, 2024).

Biophilic design can be implemented through an emotional or psychological approach and utilizes a combination of methods to create a more natural effect. According to a study published by Terrapin Bright Green, a strategic planning and environmental consulting firm (Justice, 2021), there are fourteen patterns of biophilic design, divided into three categories based on their connection to nature: (1) nature in space, consisting of seven patterns; (2) similarity to nature, consisting of three patterns; and (3) the natural nature of space, consisting of four patterns (Zhonget al., 2022).

Incorporating nature indoors includes: visual connections with nature, non-visual connections with nature, non-rhythmic sensory stimulation, temperature and airflow variability, the presence of water, dynamic and diffused light, and connections with natural systems: resembling nature in space, including: Biomorphic forms and patterns, material connections with nature, complexity and order; and Natural characteristics of space: prospect, sanctuary, mystery, risk, and danger. In an effort to apply a biophilic approach to design, a harmonious relationship between humans and nature is created through building design elements. The following is an example of the application of biophilic design in the design of the Pari Island resort hotel, including the use of plants, natural light, and natural ventilation.

Biophilic-based architectural design became popular after architect Ken Yeang applied it in his work titled "Bedrtaju" (The Unconventional Approach to High-Rise Buildings) (Mbiti, 2025). Subsequently, the application of biophilic concepts in architecture became a choice in architectural design. (Justice, 2021) and (Putra &Elviana, 2024).

Geographically, Pari Island is located in the Java Sea, in the Seribu Islands District, Jakarta Province, Indonesia. It can be reached by boat from Muara Angke or Mariana Ancol ports. The island is relatively small, at 3.61 square kilometers. It has flat land with some elevated areas and is surrounded by white sand and coral reefs. The vegetation on Pari Island consists of tropical trees, including coconut palms, shrubs, and mangrove forests. The wind is always blowing on Pari Island, feeling hot during the day and cool in the evening.

Figure 1. Pari Island

Pari Island itself is named after the island's shape, which resembles a stingray. The Bintang Beach and Rengge Beach resemble the tips of the stingray's wings, and the pier resembles its tail. This is why locals believe the island is named Pari Island.

Pari Island is renowned for its natural beauty, white sandy beaches, and tranquil atmosphere, making it a popular urban tourist destination close to downtown Jakarta. Pari Island also offers numerous water activities such as snorkeling, diving, and exploring the marine ecosystem. The community relies on tourism and fishing as their primary sources of livelihood.

The architectural form and design theme refer to the architectural metaphor (Youssef, 2016). Its main strength lies in the narrative (Monmi Sarma, 2024). Garden Island was chosen as the theme for this resort hotel, combining entertainment with nature to provide a natural space experience for visitors, focusing on plants, air circulation, and light.

Several principles for each biophilic element were derived through precedent studies of the Alila Seminyak Resort Hotel by architect Gaurang Khemka of UBNarc. This hotel is located in Bali, Indonesia (2015). The Putri Duyung Ancol, located in North Jakarta, and the Hotel Jakarta, by SeARCH Architects, located in Amsterdam, the Netherlands, in 2018.

The author's conclusions from the three precedent studies are as follows. The first precedent study employed a biophilic concept, a building approach to nature, represented by an indoor garden. The use of natural materials and energy-efficient systems can be applied to the design of the Pari Island resort hotel. The placement and site of the building in the second precedent study are very interesting. The site's location is similar to the Pari Island site, allowing the building's form to mimic that of the Pari Island site. The building's shape and circulation within the hotel and resort will make the Pari Island resort hotel a comfortable place to visit. The spatial program implemented in the third precedent study can be applied to the design of this resort hotel on Pari Island, with the placement of private, semi-private, and public spaces appropriate to its scope. With proper boundaries, it will enhance the comfort of vacationers. The private value of a hotel and the public value of a resort complement and reinforce each other.

Based on the author's observations on Pari Island, there are problems, namely a lack of accommodation capacity and inadequate regional planning on Pari Island. Based on the identified problems, the objective of this research is to design a resort hotel with a biophilic approach, taking into account local natural conditions, the influence of biophilic architecture, building regulations, and design. This is expected to address the problem of insufficient accommodation capacity and the lack of tourist area planning on Pari Island.

Methodology

In presenting this research, the author used qualitative methods (Ardhiati, 2018). The researcher collected data by observing the research subjects. The obtained data will then be analyzed by considering the accommodation needs of the research subjects. The research process can be summarized as follows: The first stage involves conducting a comprehensive evaluation of existing literature and formulating a research framework and methodology. The second stage involves searching for related data from several relevant sources. The third stage involves

reconstructing existing data with the collected data. The fourth stage involves analyzing the data by adapting the results obtained.

This research focuses on assessing the need for resort hotels, as influenced by biophilic studies. The research location is on Jalan Pari Utama, Pari Island, Seribu Islands District, Seribu Islands Regency, Jakarta. The research location was chosen because the large number of visitors has not been matched by sufficient accommodation capacity, thus providing a foundation for the construction of a resort hotel in the selected location.

Results and discussion

Location of Pari Island

The location is south of Virgin Beach and west of Rengge Beach. On the west side, the main road to Pari Island passes, providing access to Pari Island, accessible by motorbike and bicycle. The site is abundant with wild plants and fields managed by women from the Family Welfare Movement (PKK). The area is not flooded during the rainy season.

In selecting the location, the authors had several criteria for selecting a location for the resort hotel design (Ibrahim & Tatura, 2024).

These are: (a) Land conditions, which will be used for the design area. These conditions include soil conditions, land contours, and the soil's bearing capacity for the proposed design. (b) and Use: Buildings must comply with the applicable RTRW regulations in the area, ensuring that the land function and design type are appropriate. (c) Site potential in the surrounding area, such as views, tourist attractions, or infrastructure that can add value to the site. (d) Accessibility: the ease or difficulty of accessing the site for visitors. Factors influencing accessibility include roads, transportation, and the location's distance from existing public transportation. (e) Facilities and infrastructure, such as clean water utilities, waste disposal utilities, and electricity utilities. These facilities and infrastructure can support the design.

Potential of the Site and its Surroundings

The site location was chosen because it offers several advantages, including:(a) It is close to popular tourist attractions such as Pasir Perawan Beach and Rengge Beach. (b) Easy road access from the port through residential areas. (c) It offers two ocean views, one to the north and one to the south. (d) It has a flat contour, making construction relatively easy. (e) Several public facilities and utilities, such as bicycle rentals, electricity, and clean water, are already located near the site.

Problems with the Site and its Surrounding Area

The site location was chosen because it faces several problems, including: (a) Due to its proximity to the beach, noise from the beach can disrupt activities on the site. (b) The location is far from the port, requiring public transportation or bicycles. (c) The sandy soil prevents all plants from growing on the site. (d) There is a lot of seaweed along the beach, which requires frequent cleaning.

(Macro and Micro) Design Analysis

Pari Island is an island located in the Java Sea in the Thousand Islands District, Jakarta Province, Indonesia. This island has a relatively small area of 3.5 km^2. It has a flat land with some higher areas and is surrounded by white sand and coral reefs. The vegetation on Pari Island is tropical trees, namely coconut trees, shrubs and mangrove forests. The location is on Jl. Pari Utama, Pari Island, Seribu Islands District, Seribu Islands Administrative Regency, Jakarta. It has an area of 36,120 m2 or 3.61 Ha. The location is close to the Pari Island crossing pier, 500 m from the location to the pier.

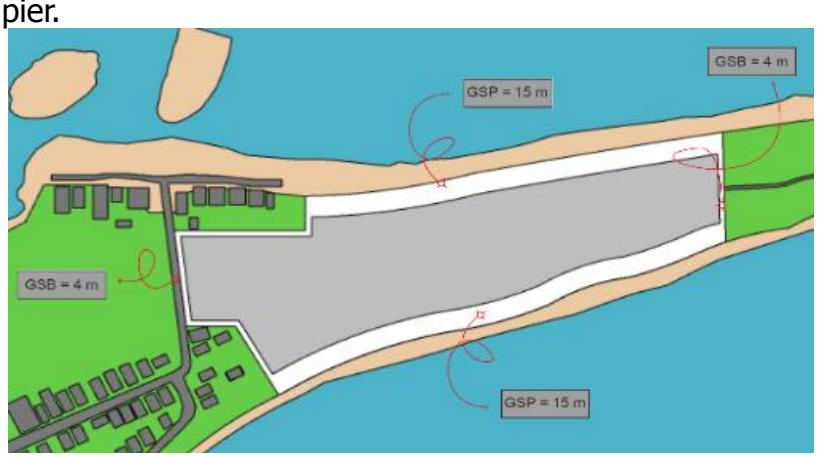

Figure 2. Site location

Luas Tapak	36.120 m^2	RTH	= 30 % x 36.120 m^2 = 10.836 m^2
Peruntukan Lahan	Hotel & Resort	KDB	= 30 % x 36.120 m^2 = 10.836 m^2
		KLB	= 1,2 x 10.836 m^2 = 13.003,2 m^2
Ketinggian Bangunan	3 Lantai	KDH	= (36.120 - 10.836) x 20% = 5.056,8 m^2
Lebar Jalan	Jl. Utama Pulau Pari : 8 m	GSB	= 1/2 x Lebar Jalan = 1/2 x 8 = 4 m
Batas Jalan	Utara : Pantai Pasir Perawan Selatan : Pantai Pasir Timur : Pantai Rengge Barat : Jl. Utama Pulau Pari	GSP	15 Meter dari Pasang tertinggi air laut (Sumber : Peraturan Gubernur DKI Jakarta Nomor 20 tahun 2024)

Table 1. RTRW regulations

The sun's rays are not too strong in the morning and afternoon, but they become hot during the day. Winds blowing from the north and south are hot, while those from the east and west are cool. Noise from the tourist and residential areas can disturb the area, while the sound of the waves adds to the natural feel of the site. The best views are to the north and south of the site, so the building will face north and south.

Site Intensity and Concept

The Resort Hotel building was constructed taking into account the Road Equivalent Line (GSJ), the Coastal Equivalent Line (GSP), and accommodation needs. The Resort Hotel building was constructed on vacant land designated as a tourism area. The Resort Hotel design allows for reforestation of the island by planting plants around the building and transforming the area from a grassland into buildings and gardens that can be used by visitors.

Figure 3. Location before planning

In designing the hotel resort, the approach taken is a biophilic approach. This approach focuses on bringing nature into the room. In designing the hotel resort area, there are several forms of nature that are used as ideas in designing the hotel resort area of Pulau Pari.

Using organic patterns to design the garden and swimming pool creates a natural feel, adds a unique touch, and brings harmony to the surrounding environment.

Figure 4. Building mass

The building mass concept consists of several buildings less than four stories tall. It is divided into three sections: commercial and hotel resorts, restaurants, and supporting buildings. The building massing is adjusted to meet visitor needs.

Circulation within the site is accessible by bicycle and public transportation. The site has one two-lane road and a town square to facilitate vehicle circulation. In addition to the road, a pedestrian path surrounds the entire area, accessible on foot.

Building Concept

Garden Island Hotel Resort is a resort hotel theme that combines a hotel with a resort, combining entertainment and nature. This resort hotel provides a natural space experience for visitors. The Garden Island design focuses on bringing nature closer to the building's users, emphasizing plants, air circulation, and light.

Massing Analysis

The application of the idea of form refers to architectural metaphor (Youssef, 2016). Metaphoric architectural design can evoke emotion, enhance communication by conveying complex ideas through a single symbol, and create more memorable and meaningful spaces for occupants. It uses an analogy to relate one object or concept to another, allowing for abstract ways of thinking about design and creating a strong narrative or identity for a building. An emotional and imaginative impact was found by accommodating the metaphor. It can activate the imagination, conveying emotions and impressions to evoke a stronger, more memorable experience for the user (Faraj & Shaban, 2025).

The design was implemented using a marine animal, the multi-legged octopus. The idea of octopus legs was chosen because of its unique and dynamic shape, known for its high suction power. To maximize the space's usefulness, the tentacles were transformed into rectangular shapes. The lower tentacles above them provide a balcony space.

The idea for the starfish shape was taken from a breeding ground around the island. The star shape is stretched to create volume within it. The ends are curved, while the bottom is pulled upwards, creating a hollow space underneath.

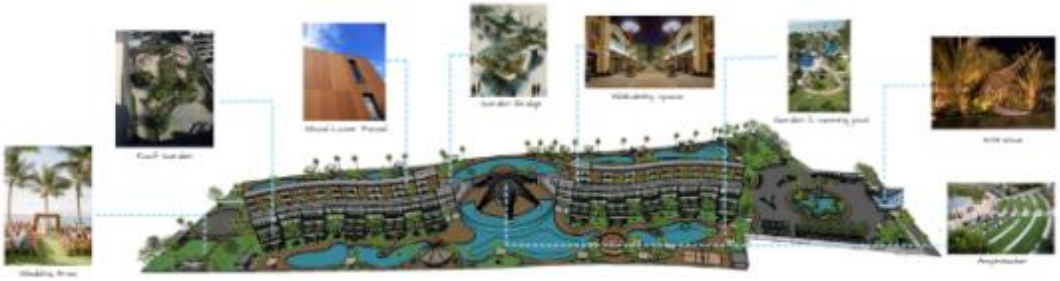

Figure 5. Architectural concept

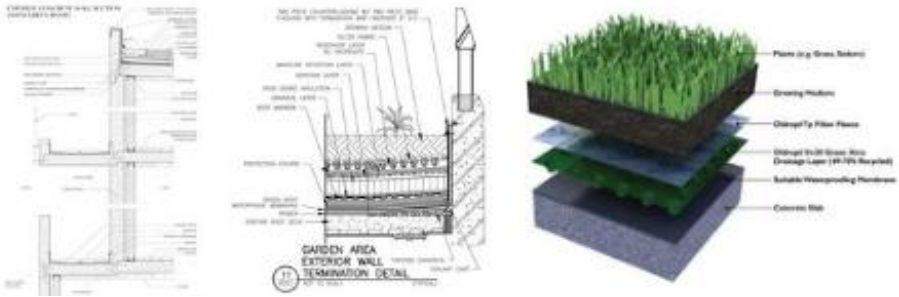

Figure 6. Roof structure

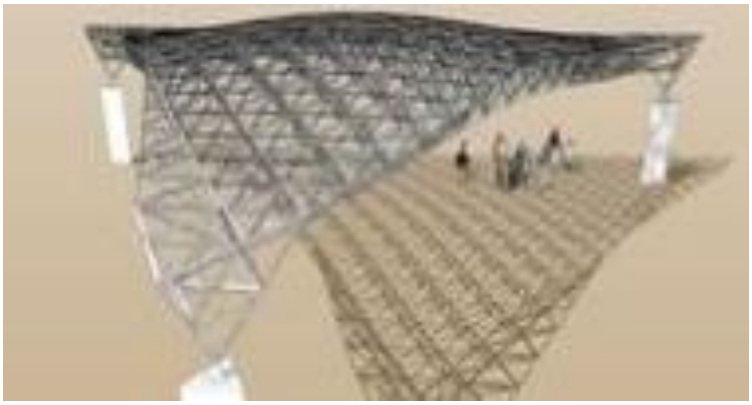

Figure 7. Semi-outdoor roof structure

The roof structure uses a space frame with an Aluminum Composite Panel roof covering. The space frame structure is supported by columns at each corner.

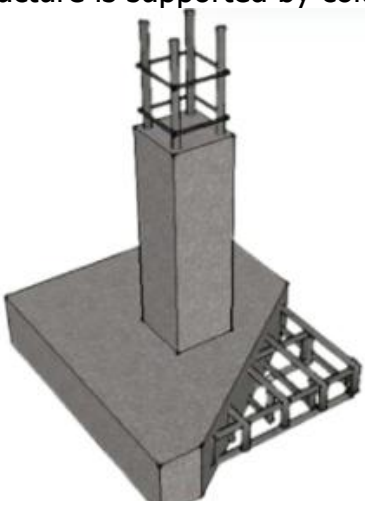

Figure 8. Substructure

The footplate foundation was chosen because it is easy to construct, the building is not high, and the building is not located in a swamp.

Figure 9. Bridge structure

The bridge structure is made with a glass roof using concrete supports.

Figure 10. Amphitheater frame structure

The amphitheater structure uses a stepped system to maximize the stairwell area for several functions, such as a conversation area and a garden for green space around the building.

Buildings use reinforced concrete column and beam structures because they are easier to construct and less expensive.

The building's clean water utilities come from PDAM water, which is pumped into the building's rooftop storage tank and distributed throughout the building. Hot water is first distributed to the water heater.

Wastewater utilities will flow to a control tank, after which it will flow to a holding channel, which will treat the wastewater. Once the wastewater meets the requirements for discharge, the treated water will be discharged into the sea. Wastewater utilities will flow to a septic tank. The septic tank has a catchment area with a filter so that the wastewater does not flow into the ground, potentially contaminating clean water sources. After reaching the septic tank, the wastewater will be further treated in a wastewater treatment system that filters the wastewater, so that the treated water can be discharged into the sea.

To save on air conditioning costs, a split AC system will be used. Resort hotels aren't always occupied by guests every day, so using a split AC unit can save energy when some rooms are unoccupied.

Swimming pool water installations must include filters and clean water and wastewater drainage channels. A dedicated maintenance area must be provided for all pool filters.

DOI: https://doi.org/ 10.59997/jacam.v4i2.6087.
URL: https://jurnal2.isi-dps.ac.id/index.php/jacam

Space Program

Figure 11. Space requirements

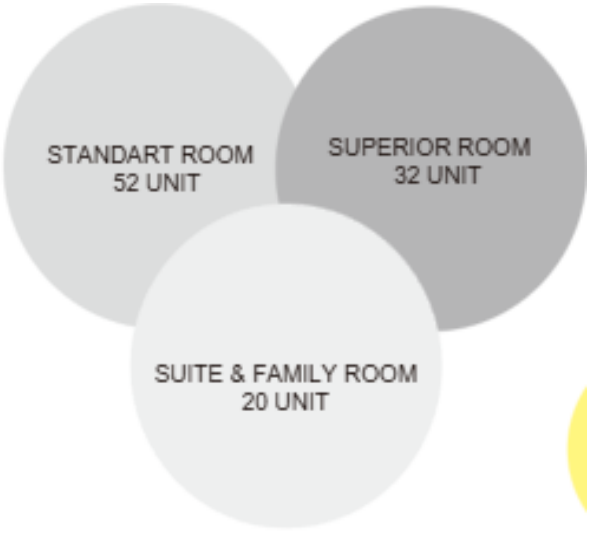

Figure 12. Guest room requirements

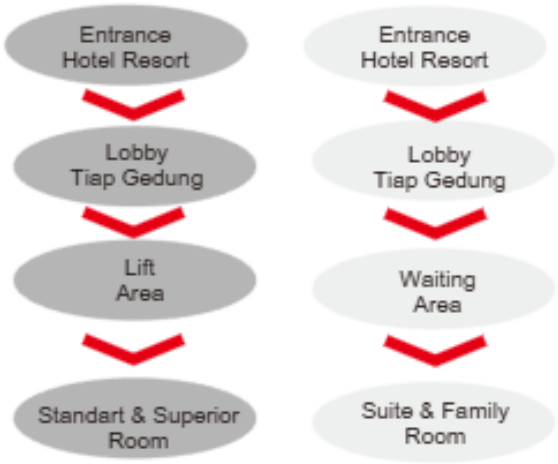

Figure 13. Guest room accessibility

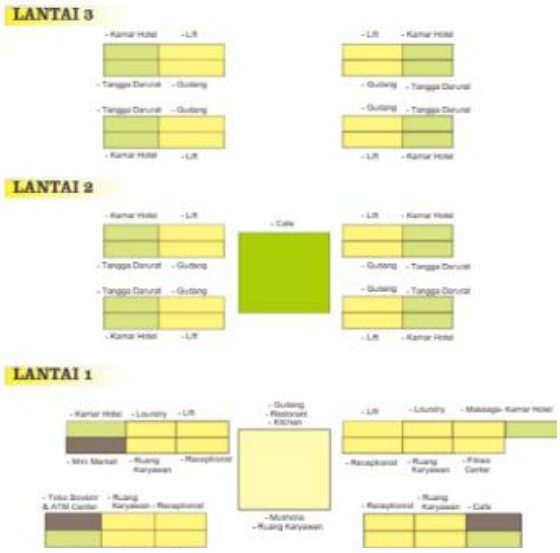

Figure 14. Building space division

Design Drawing

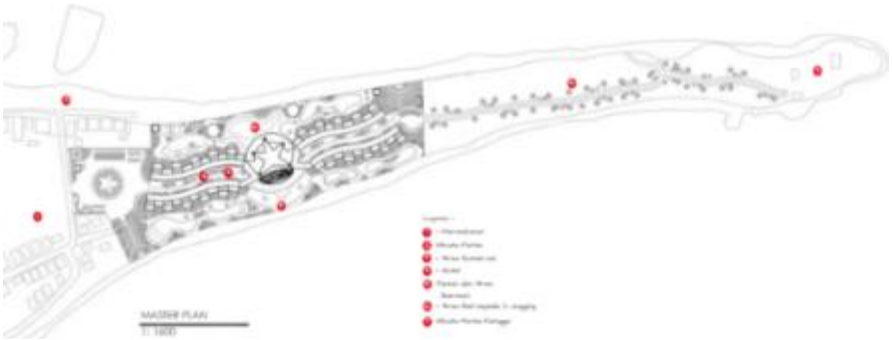

Figure 15. Master plan of Pari Island Resort Hotel

Figure 16. Site plan of Pari Island Resort Hotel

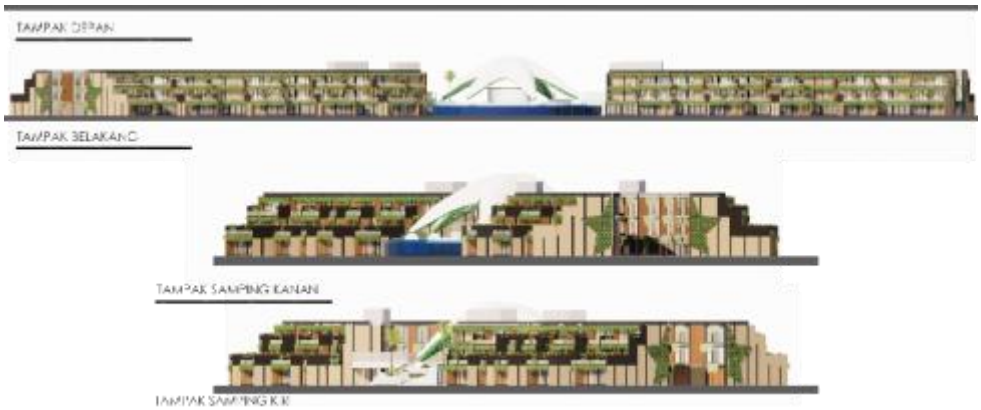

Figure 17. Building View

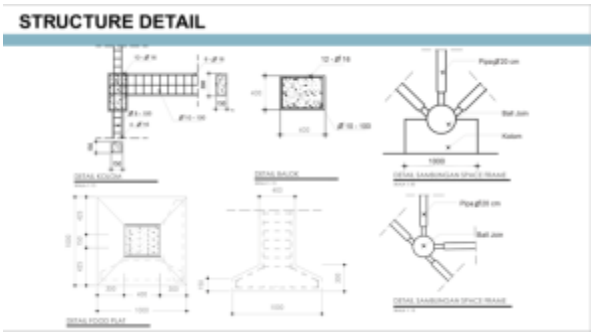

Figure 18. Structural details

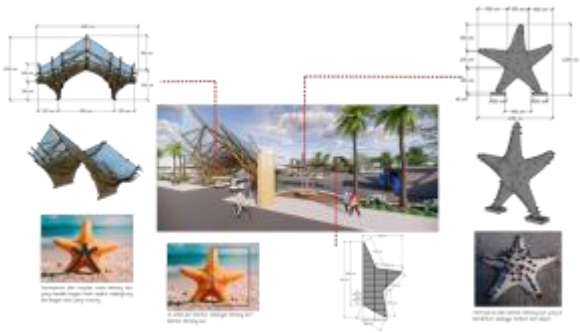

Figure 19. Architectural details

Figure 20. Exterior perspective

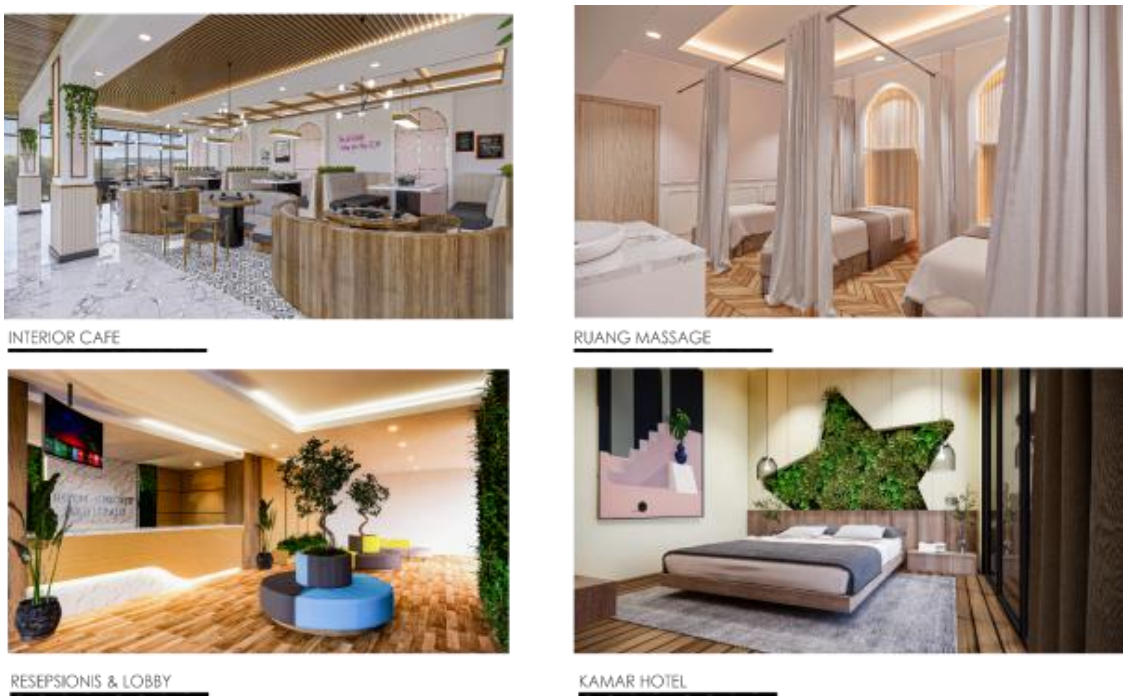

Figure 21. Interior perspective

Conclusion

This study designed a resort hotel on Pari Island using a biophilic approach by incorporating biophilic elements into the architectural design. The biophilic approach was used to create a harmonious atmosphere with the Pari Island environment. Natural elements included lighting, vegetation, and air conditioning, which were utilized to support tourist comfort. Biophilic design not only considers the building's function as a lodging facility but also strengthens the relationship between humans and nature, appropriate to the location and climate of Pari Island. The resulting biophilic design elements can add green open spaces between private and public spaces and enhance visual and functional connections with nature, enhancing the visitor experience by providing a unique experience that supports environmental awareness. The biophilic approach also impacts tourism and sustainable design on Pari Island by increasing tourist appeal, extending tourist stays, preserving the environment, raising awareness of the importance of environmental protection, and enhancing the value of tourism on Pari Island.

References

Amelia, C. (2017). Pengaruh Kualitas Pelayanan dan Kualitas Produk Terhadap Kepuasan Pelanggan Cafe Batavia Jakarta. Jurnal Ilmiah Manajemen dan Bisnis, 16(2), 74.

Ardhiati, Y. (2018). Grounded Theory untuk Arsitektur, Seni dan Desain. Wastu Adicitta.

Ardhiati, Y., Begin, D. T., & Hariprasetyo, T. (2021). The Mandalika: Eco-cultural Tourism in Lombok. The International Journal of Architectonic, Spatial, and Environmental Design, 16(2), 61-73.

Faraj, I., & Shaban, H. (2025). The relationship between metaphors and architectural design. Journal of the Faculty of Arts and Media – Misurata University.

Ibrahim, U., Heriyati, Tatura, & Lidya, S. (tanpa tahun). Perancangan Hotel Resort Olele (Pendekatan Green Architecture). JBA, 2(1), 25–31.

Justice, J. (2021). Konsep Biophilic Dalam Perancangan Arsitektur.

Monmi Sarma, B. S. (2024). Storytelling- Pillar of Metaphoric Architecture. International Journal of Architecture (IJA), 10(1), 59-75.

Neksidin, A. F., &Krisanti, M. (2021). Keberlanjutan Pengelolaan Wisata Bahari di Pulau Pari, Kabupaten Kepulauan Seribu. Jurnal Ilmu Pertanian Indonesia, 26(2), 284–291.

Putra, A. P., & Elviana, E. (2024). Penerapan Arsitektur Biophilic pada Ulaman Resort.

Ramdhan, I., & Anggraini, R. (2024). Pengaruh Kualitas Pelayanan Pemandu Wisata Terhadap Kepuasan Peserta Kegiatan Pengenalan Destinasi Wisata Disparekraf DKI Jakarta. Media Bina Ilmiah, 18.

Wijaya. (2011). Ken Yeang:KajianTeori, Metode, dan Aplikasi. Jurnal Ruang, 3(2).

Youssef, M. (2016). Architecture and Metaphor. Beirut Arab University Press.

Zhong, W., Schröder, T., & Bekkering, J. (2022). Biophilic design in architecture and its contributions to health, well-being, and sustainability: A critical review.