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Designing a Floating Resort in Tongging Integrating Vernacular Architecture and Local Culture

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Abstract
This study designs a floating resort in Tongging, North Sumatra, with a vernacular architecture approach to preserve local culture through tourism development on the shores of Lake Toba. This resort design concept utilizes Lake Toba, which is a lake that can be reached from Tongging Village for the construction of a floating resort. This floating resort innovation has not previously been found around the design area. The design of the floating resort prioritizes local culture in the development of space by utilizing traditional materials and local architecture as well as the cultural values implied in it to build a space that can be enjoyed in the era of globalization without having to eliminate its regional cultural identity.

Introduction

Indonesia, an archipelago recognized for its rich natural resources, natural beauty, and extraordinary cultural diversity, has great potential in the tourism sector. Utilizing this potential with smart strategies can improve the national economy and create new jobs. Tongging Village, located in Merek District, Karo Regency, North Sumatra, is one location with tourism potential that has not been maximized. With a captivating natural backdrop, the village appeals to tourist and adventurous.

However, the main challenge that Tongging faces is how to preserve the uniqueness of its local culture amidst the rapid flow of modernization and globalization. Unlike some of the surrounding areas, such as Samosir, which has managed to maintain its cultural identity through traditional houses, Tongging is seeking for effective strategies to maintain and promote its local cultural heritage. One approach that is considered to have potential is resort development using the principles of vernacular architecture.

Vernacular architecture, rooted in local traditions and practices, carries the ethnic and philosophical values of the local community. This approach not only reflects the identity of a community but also provides solutions that are sustainable, efficient, and harmonious with the natural surroundings. Through the integration of traditional construction techniques with contemporary innovations, vernacular architecture offers a way to maintain a balance between the traditional and the contemporary.

Method

This research utilizes data collection, data analysis and concept exploration methods. (1) The data collection process involved site surveys, interviews with local stakeholders, and analysis of existing architectural practices to identify the challenges and opportunities in integrating vernacular architecture into the resort design. (2) Data Analysis Method, The data analysis method

is carried out by collecting SWOT (Strengths, Weaknesses, Opportunities, and Threats) data from the design location. SWOT analysis can be done by identifying internal factors that can support project design such as accessibility, natural resources, facilities to strategic locations. Identify aspects that can hinder the success of the project such as limited access, topography and environment, limited infrastructure, to social and economic issues. This is done by exploring opportunities that can support the success of the project such as technological development, market or social trends or new infrastructure development. Considering threats that can hinder the project process such as natural disasters, social and political problems and changes in regulations or policies. (3) Concept Exploration Method, this method explores the concept of building mass and form, explores the concept of building architecture and explores the concept of land use.

Result and Discussion

Floating Resort

A floating resort is a type of resort that is designed to float on water, usually in a lake, river, or ocean. The term "floating" means that the structure is not directly connected to the ground, but is located on a floating medium. Floating Resort is a commercial area built as a vacation accommodation facility with the concept of floating on water. This area is far from urban areas and utilizes the potential of the surrounding nature to support tourist activities.

Vernacular Architecture

Vernacular architecture is architecture which adapted from the local culture of a region. Vernacular architecture adapts to the environmental conditions of an area such as natural resources, topography, climatic conditions. Buildings with this theme are expected to adjust the shape, material, space program according to the local culture of the area. According to (Gutierrez: 2004) vernacular buildings are created by building methods passed down through generations of ancient tradition, both in terms of knowledge and methods (trial and error). Meanwhile, according to (Rapoport: 1969) an architectural anthropologist states that the characteristics of vernacular buildings are as follows: 1. The building is not supported by the correct building principles and theories
2. Adjust to the environment
3. In accordance with the capabilities of the community (technology and economy)
 4. Describe the culture of the community (as a marker, symbol, etc.)
5. Open to the natural resources around it and can always accept changes (trial and error) so that it can survive

Explorating Karo's Architecture by Designing a Floating Resort

In the design of this floating resort, the arrangement of the Karo ethnic village is a reference in the design process. The characteristics of ethnic villages can be seen as follows:
1. Building Mass Structure (Layout)
Karo traditional houses are known as houses that have a regular arrangement pattern. Karo traditional houses are usually arranged in groups. in Karo villages, they are usually arranged in a small community called kuta.

2. Open Space

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Karo traditional houses are generally multifunctional and airy. Karo people often utilize their yard as a place for social activities such as traditional ceremonies, deliberations and daily activities including farming around the house.

3. Philosophy of Open Space and Building Mass

Karo people embrace the values of community and mutual cooperation in their building mass. In general, Karo people live together with their families and the surrounding community.

4. Harmony with Nature

The use of stilt-shaped buildings is an interpretation of geographical considerations such as mountains and a cool climate.

Project Location

The floating resort is located in Tongging, Karo Regency, Merek District, North Sumatra. The project is on the shores of Lake Toba, on a hillside included in a priority tourism area with an area of 2.16 ha. The resort will be designed on contoured land and is an area that is not too far from the city. (Figure 1) shows the project location and proximity to Lake Toba.
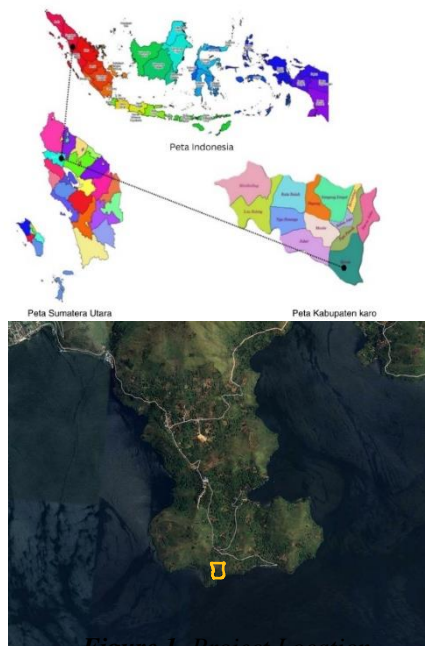

Figure 1. Project Location
Source: Google Earth

Region Boundaries

This location is adjacent to:

Table 1

Direction	Boundaries
North	Vacant Land
East	Residential Area
South	Toba Lake
West	Toba Lake

The boundaries of the area on the design site can be seen in (Figure 2)

North: Vacant Land

West: Toba Lake

East: Residential Area
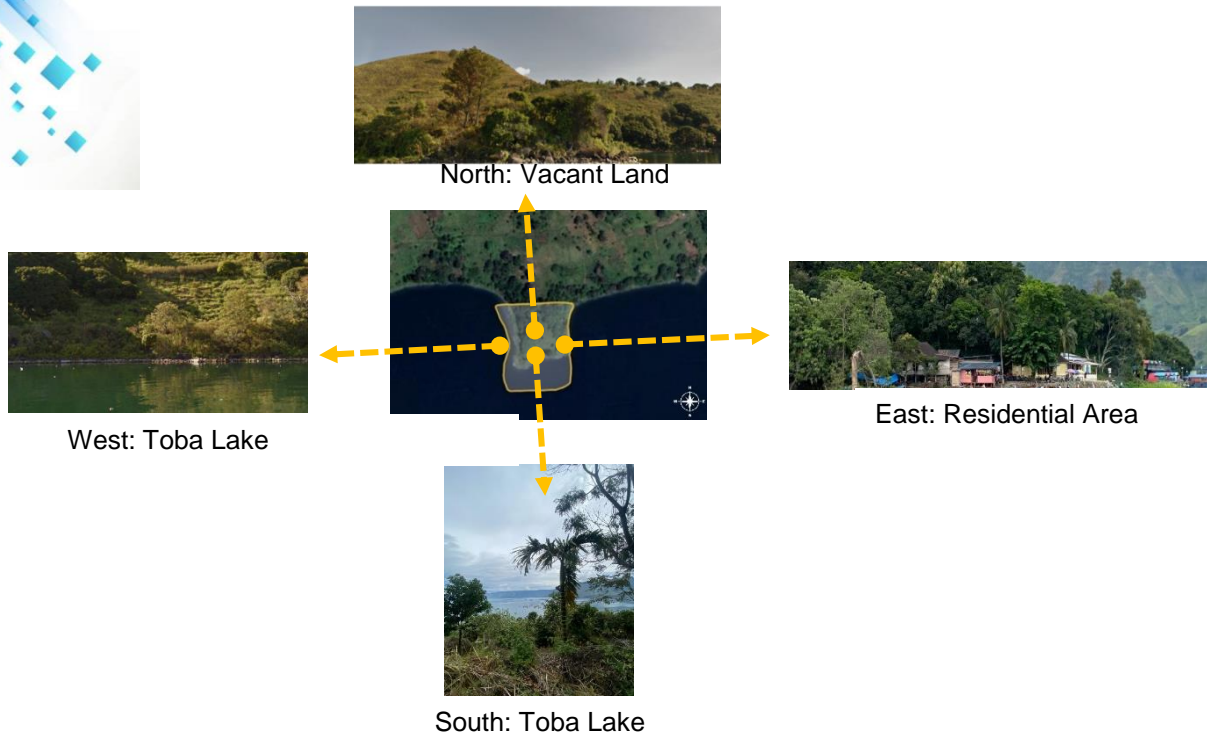
South: Toba Lake

Figure 2. *Region Boundaries*
Source: Personal Analysis

Basic Concept

Floating Resort is a tourism area designed in Tongging Village with site conditions directly adjacent to Lake Toba. This resort is designed with the aim of creating tourism facilities with a concept that has not existed before in this area, namely the concept of floating buildings. This resort also embraces the cultural values applied in its buildings so that people who visit are expected to enjoy nature with a touch of culture from the area.(Figure 3)
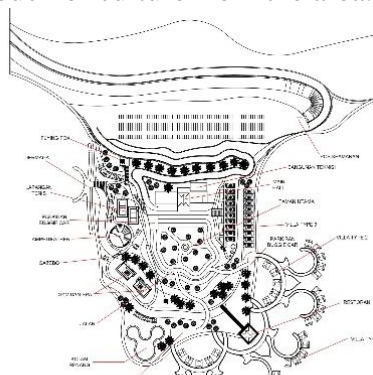
Figure 3. *Basic Concept*
Source:Personal Analysis

Resort Concept

This resort has 3 types of rooms which is named as standard room, deluxe room and suite room, which can be seen as follows:
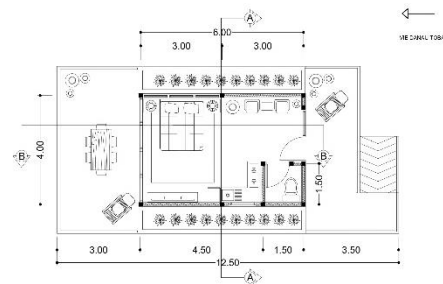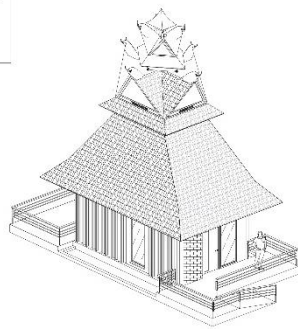
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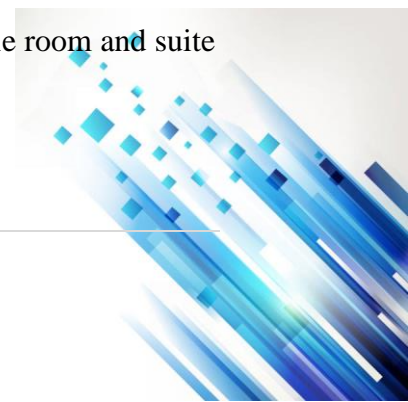
Figure 4. *Standart room*
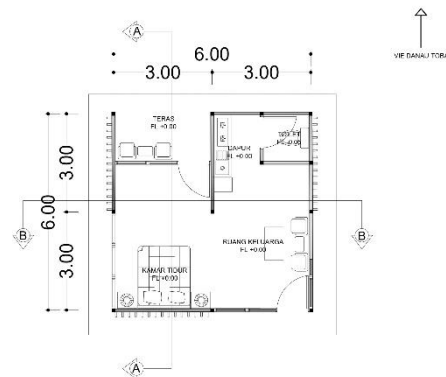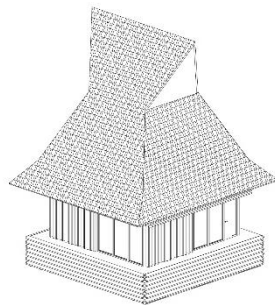
Figure 5. *Deluxe room*

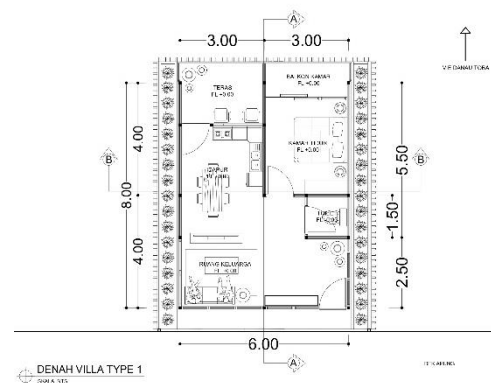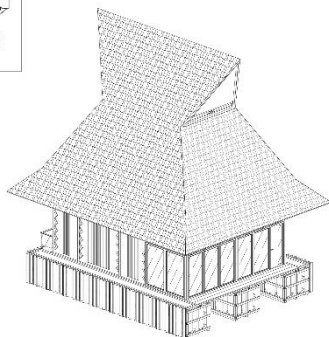**Figure 6**. *Suite room*

Structure

The structure used in building a floating building at this resort is ark modulam which is a foundation construction that can support the load of the building floating on the water. The building will be held using drums arranged in modules according to the required size. Can be seen in (Figure 7):

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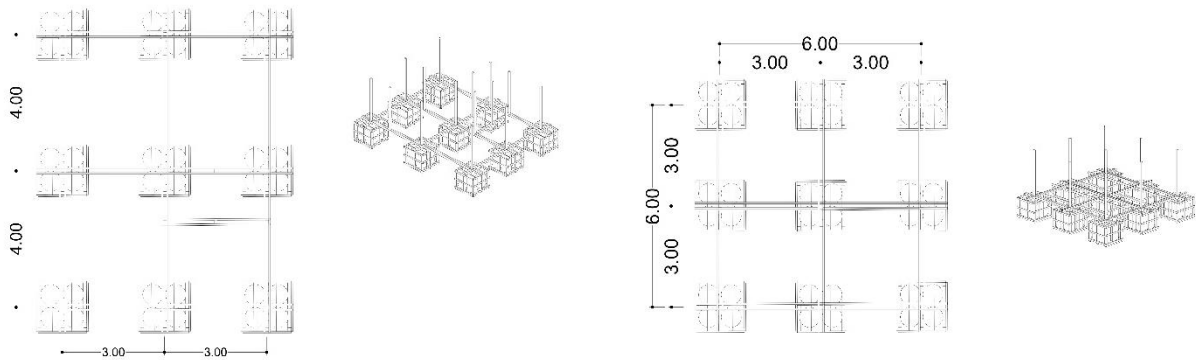
Drums are arranged in modules with 2 types of sizes according to the function of the building in the resort.

Figure 7. Ark Modulam

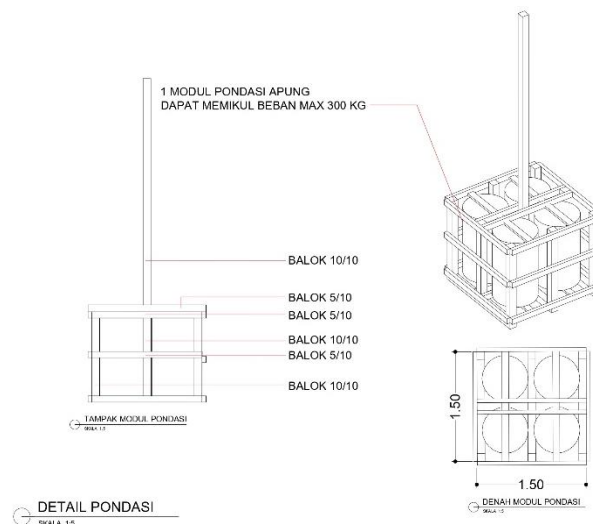The detail of the modules can be seen ini (Figure 8):

Figure 8. Foundation Detail

Theme Implemantation

The application of the vernacular concept in this resort area can be seen from buildings that use karo traditional house roofs as the roof of the building and karo cultural carvings on the walls of the building. The rooms are also arranged in a gathering manner that adapts the karo traditional house in the karo village arranged centrally. The resort design integrates Karo vernacular architecture, focusing on community-based construction methods and preservation of cultural practices to ensure the project is in line with local values and contemporary tourism demands (Figure 9).

Figure 9. Theme Implemantation

Conclusion

The design of this floating resort in Tongging Village is a tourist facility and lodging facility that provides accommodation with a floating concept in some parts. The floating resort offers a sustainable model for integrating local cultural heritage with modern tourism infrastructure, demonstrating how vernacular architecture can be a tool for cultural preservation amidst the pressures of tourism globalization. The design of the resort integrates Karo vernacular architecture, focusing on community-based construction methods and the preservation of cultural practices to ensure the project is in line with local values and contemporary tourism demands. This concept is applied with the aim that visitors can enjoy the nature and culture of the area so that the culture and customs in this area do not become extinct and can be passed on from generation to generation. The 20,000 m2 area also consists of commercial facilities such as restaurants, cafes, salons, spas, halls, karaoke, games and residential facilities with 3 types of rooms namely standard room, deluxe room, and suite room which have different views.

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