

Hatinggian Eco-Park Hotel Resort (Ecological Architecture)

Masita Hanjayani^{1}, Nelson M. Siahaan¹*

¹Department of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Medan, Indonesia

Abstract. Tourism is a phenomenon based on health needs, conscious, and class assessment in human society as a result of the development of commerce, industry, trade, and the improvement of transportation equipment. Tourism development has a role in increasing employment, encouraging the distribution of business opportunities, encouraging the distribution of national and regional development, and contributing to the country's foreign exchange earnings resulting from the number of foreign tourists visits. North Sumatra Province is one of the 10 (ten) leading tourism destinations in Indonesia. Tourism objects on the market include natural potential, one of which is the Lake Toba region. The existence of Lake Toba, with its natural beauty, makes the surrounding area a priority object and tourist attraction (ODTW). Tourism activities do not always have a good impact. Irresponsible tourism activities will have a negative impact, especially on the environment. For this reason, tourism development requires an ecological architecture design and educates tourists. The goal of design is to make the Eco-Hotel Resort a marine tourism destination with an ecotourism understanding.

Keyword: ecological architecture, resort hotels, tourism

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1 Introduction

Tourism Development has a role in increasing employment, encouraging the opportunity for businesses, encouraging the distribution of regional and national development, and contributing to the country's foreign exchange earnings resulting from the number of foreign tourists visits.

In Indonesia, there are 10 (ten) leading tourism destinations, one of which is in North Sumatra Province, where 339 attractions are spreading across all regions in 33 regencies in North Sumatra Province. Currently, only 120 attractions have marketed, include natural potential, one of which is the Lake Toba region. The existence of Lake Toba, with its natural beauty, makes

*Corresponding author at: Department of Architecture, Faculty of Engineering, University of North Sumatera, Perpustakaan Street, J07 Building, Medan, 20155, Indonesia.

E-mail address: sitahanjayani@gmail.com

the surrounding area a priority object and tourist attraction (ODTW) in North Sumatra (North Sumatra Culture and Tourism Office, 2007).

Tourism activities do not always have a good impact, which is in line with the statement of Spillane (1987, p.138) that "Tourism will bring various advantages and disadvantages." Irresponsible tourism activities will be causing a negative impact, especially on the environment. Various pollution and unwise behavior cause environmental damage. For this reason, tourism development requires an ecological architecture design and educates tourists.

The goal of design is to make the Eco-Hotel Resort a marine tourism destination with an ecotourism understanding. The design of the resort applies ecological architecture. The application of ecological architecture has the intention of creating environmentally-friendly buildings, utilize natural potential to the maximum extent without damaging or reducing the aesthetics of nature itself.

2 Literature Review

The resort is a place to stay that has a variety of facilities that are used by tourists for leisure activities, sports, and traveling while enjoying the natural beauty around the resort [1]. The definition of a resort is accommodation facilities related to recreational activities [2].

Based on Decree No. KM.94 / HK103 / MPPT 1987 Minister of Tourism of the Republic of Indonesia, states that the hotel is a type of accommodation that uses parts or all of the parts for accommodation services, food, and beverage providers, and other services for the general public that is managing commercially. Meanwhile, according to Decree No. 241 / H70, the Minister of Transportation of the Republic of Indonesia said that resort hotels are hotels that are outside the city, mountain areas, lakes, beaches, and other recreation areas that provide lodging facilities for people visiting with family for a long time [3].

Ecology is the science of the interrelationships between living things and their environment [4]. Ecology comes from the Greek, Oikos, which means house, and logos, which means knowledge, so ecology means the science of the household of living things [5]. Ecology is an interdisciplinary science because to understand how the relationship between organisms and their environment, several definitions must be drawn from many related fields. Ecology, in particular, is closely related to physiology, evolution, genetics, and animal behavior [6].

Based on the knowledge of the basic ecology, the attention on architecture as an engineering science is a shift to humanitarian architecture, which also takes into account harmony with nature and the interests of the human inhabitants. The construction of a house or residence as a necessity of human life in a reciprocal relationship with the natural environment is called ecological architecture or eco-architecture [7]. Architecture has always used any opportunity to

express its regard for nature. Every single window tries to invite life in, and (even though conceptually) to unite with the infinity of our world. The fact that the same desire has frequently revived into different forms, different places, and different moments reaffirms that architecture's vocation in glorifying nature is eternal and universal [8]. The widespread issue of global warming has also become the basis for the application of the eco-architectural design concept. This design concept based on natural balance can reduce global warming so that the earth's temperature is maintained [9].

The theory of ecological architecture approaches according to Zbigniew Bromberek; in his book *Eco-Resort Planning and Design for the Tropics*, there are several ecological principles, namely reducing the flow of energy and material use, thinking about creative ways to harmonize the relationship between culture and nature. Let nature work naturally, maintain critical aspects such as soil, vegetation, animals, climate, topography, water flow, and humans [10].

3 Methodology

The stages of the study in the selection of design locations and the idea of "Hatinggian Eco-Park Hotel Resort " can be described in several stages, (1) Location Selection, Location of the design area for the selected resort hotel is located in Hatinggian Village, Lumban Julu District, Toba Samosir Regency. There are several considerations in choosing a location, which is the land is close to the Situmurun Waterfall tourist area. (2) Data Collection, data is collected in two ways, namely by observation and literature study. Observation is the collection of data which is done by surveying the field, observing the problems and the potential on the site, recording site data, and taking pictures needed. While the literature study is a method of data collection by taking the data needed from the related literature. (3) Design analysis, after collecting data obtained from the field or through literature studies, the next step is to analyze the raw data using theories in design following the theme of Ecological Architecture.

4 Result and Discussion

The design location is in the village of Hatinggian, District of Lumban Julu. Toba Samosir Regency, North Sumatra Province. The area of approximately 1.2 hectares. The boundary of the design site is Siarsam village on the south side, hills on the east side, and lakes on the north and west sides. To reach the location can be done in two ways, by land using vehicles via local roads for 58 minutes from the city of Parapat and by water using ships from the port of Ajibata for 20 minutes (Figure 1).

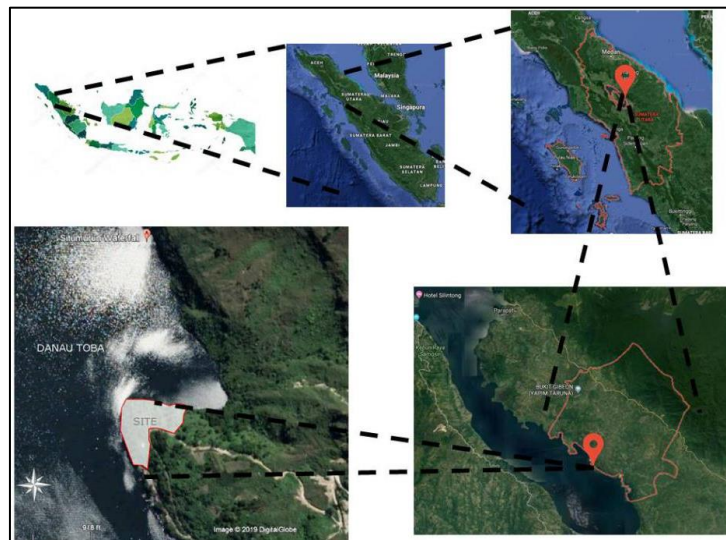


Figure 1 Project Location

This area has beautiful natural potential where the site is bordered directly by Lake Toba and close to tourist destination areas such as Bidadari waterfalls and Situmurun waterfalls, where the Situmurun waterfalls can be seen directly from the design area (Figure 2).



Figure 2 Natural Potential on Site

The basic concept in the design of this resort hotel applies the concept of ecological architecture, wherein its application applies the concept of being friendly to the environment in the sense of an effort (design decision) to minimize negative impacts on the environment. Also, given the location of the design, which is close to the tourist area of Situmurun waterfall.

The concept of Ecological Architecture applied in the design is a concept put forward by Zbigniew Bromberek through his book *Eco-Resort Planning and Design for the tropics* (1)

Reducing the flow of energy and material usage. (2) Thinking about creative ways to harmonize the relationship between culture and nature. (3) Maintain critical aspects such as soil, vegetation, animals, climate, topography, water flow, and humans.

The zone is divide into several functions, namely the receiving zone (Porte chocore, lobby), the lodging zone (cottage, hotel), the supporting zone (restaurant, café, garden, deck plaza, lakeside promenade), and the service zone (back of the house, manager office) (Figure 3).

The placement of the accommodation area is adjusting to the natural condition and the topography of the land to maximize the view, the cottage area is placed near the lake. The hotel building due to its larger building mass, is placed in the area with higher ground contour so that it does not obstruct the view. As supporting facilities, this Resort Hotel provides a green open space area (Figure 4), a plaza deck, and a lakeside promenade (Figure 5).



Figure 3 Site Configuration



Figure 4 Green Open Space

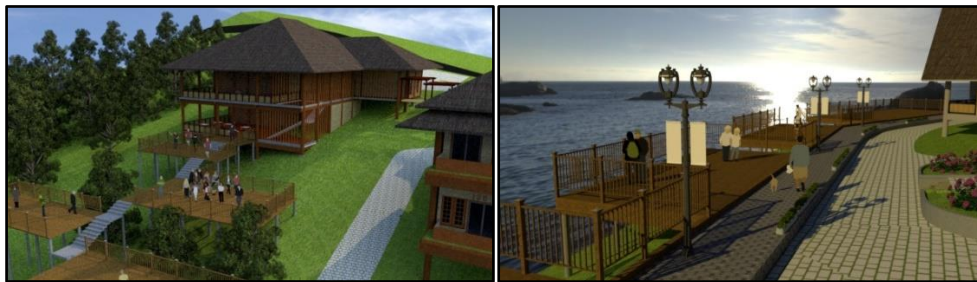


Figure 5 Deck Plaza and Promenade Lakeside

Landscape Circulation

People can access this area through two routes: land and water. On the land route, the entrance to the location is design further so that visitors who come can see the Situmurun waterfall before entering the area. While the waterway for visitors who come using the ship will anchor to the location via the pier provided. Visitors who come by boat from the city of Parapat will present with views of the Situmurun waterfall before finally arriving in this area. Both accesses are aiming at the same receiving area in the Porte chocore that connects to the lobby (Figure 6).

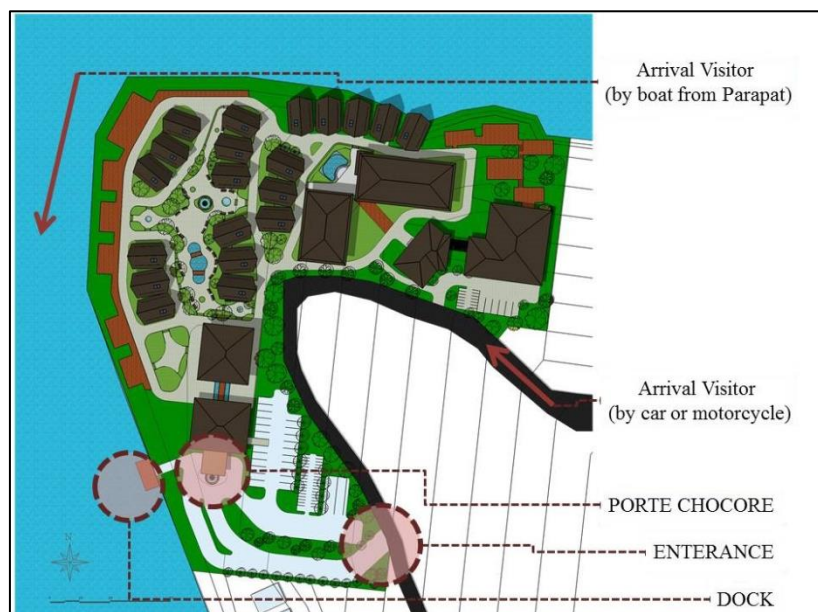


Figure 6 Landscape Circulation

Exterior Building Concept

The exterior of Resort Hotels generally takes the form and local materials that are commonly using around locations, especially in the Batak Toba rural areas. The forms of the Toba Batak house not only to show its cultural character but also because the building is good, and it responds to the environment. For example, high roofs and ceilings are for natural airs, as well as the application of stilt houses so that they can respond to the contour topography (Figure 7).



Figure 7 Exterior Building

Material concept

We are designing this resort hotel using local materials or environmentally friendly materials as much as possible. Selected local materials such as palm fiber and bamboo are materials that are often found around the area and have many benefits. By using environmentally friendly material, efficient use of energy, and to reduce adverse effects on the environment (Figure 8).

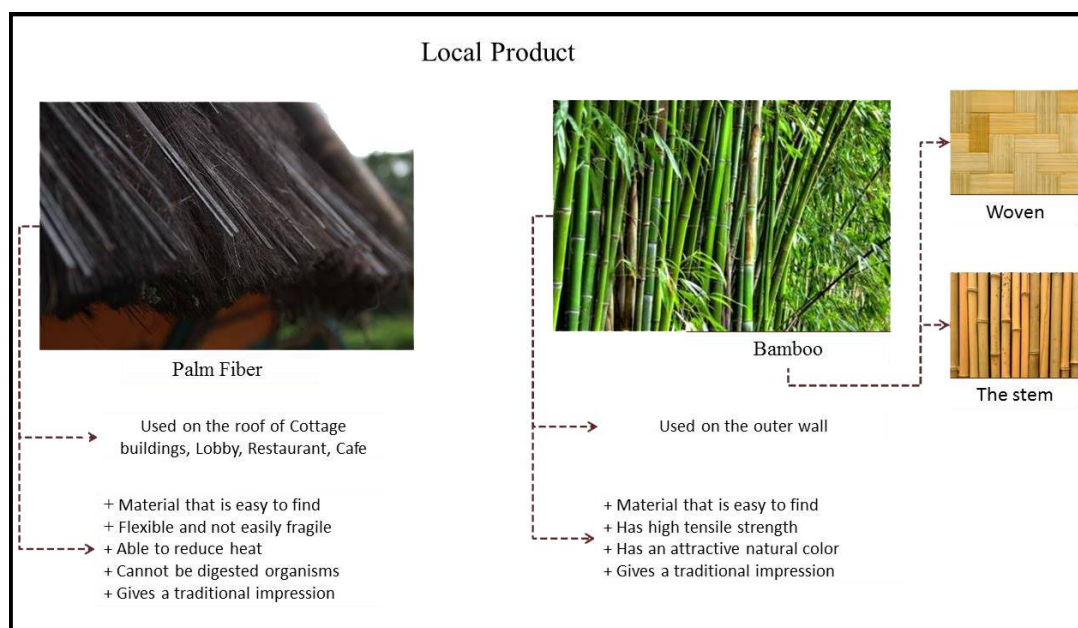


Figure 8 Material Concept (Local Product)

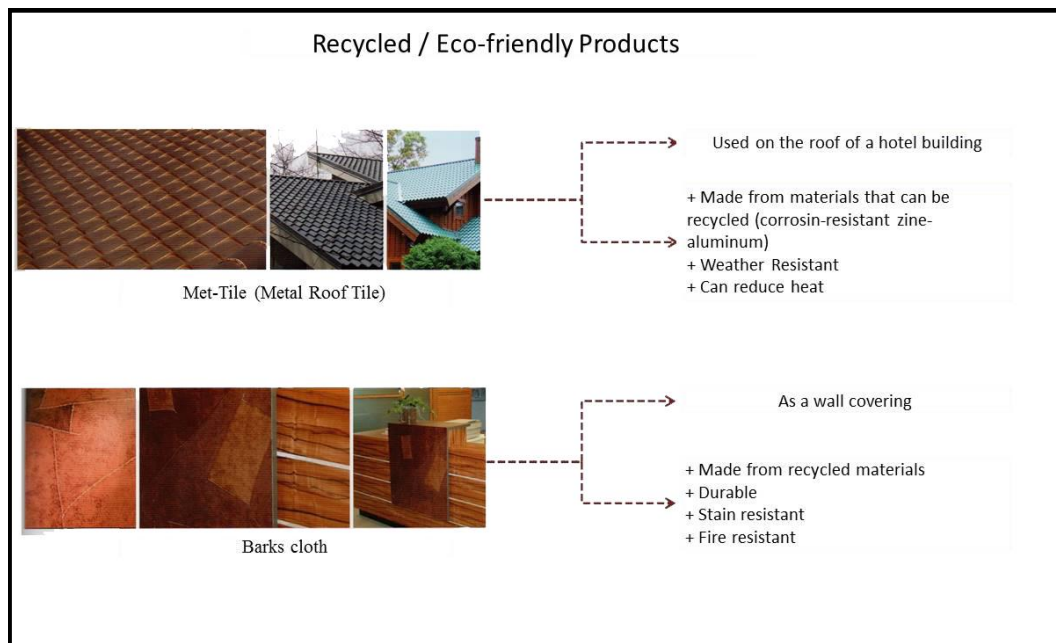


Figure 9 Material Concept (Recycled/Eco-Friendly Products)

5 Conclusion

The design of the Hatinggian Eco-Park Hotel Resort, located in Hatinggian Village, Lumban Julu District, was designed to support the development of tourism by building accommodation facilities that are expecting to attract tourists. This area location is close to the tourist area of the Toba caldera attraction, the Situmurun waterfall, which is expecting to have an integrated resort hotel. The principle of ecological architecture is applied in the design of Resort Hotels as a solution to reduce the adverse impact of buildings and tourism activities on the environment around the design area.

Acknowledgment

This research is a study of Hotel Resort with the application of the concept of ecological architecture, which is expecting to be a recommendation to the local government, the tourism office, to develop the tourism sector and introduce the Caldera Geopark area.

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