



# Hotel Resort Approach to Cultural Value and The Principle of Local Architecture in Pangururan, Samosir.

Zahrah, W.<sup>1\*</sup>, Fransisca, J.<sup>1</sup>

<sup>1</sup>Department of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Medan, Indonesia

**Abstract.** The shift of local architecture to global architecture and the need for tourism and relaxation are the main reasons in designing a hotel resort at Pangururan, Samosir. The hotel resort development in this location aims to preserve the culture and provide recreation and lodging facilities with a beautiful natural landscape. the design of the hotel resort is the approach to Batak Toba culture with the neo-vernacular theme. Base on the research of local culture, five main concepts applied are local material, adaptive to climate, adaptive to site contour, space and structural flexibility by providing communal areas and the using of anti-earthquake system. This design can be used as a prototype in the development of the resort hotel in the Samosir to preserve their local culture.

**Keyword:** adaptive, culture, flexibility, local wisdom, neo-vernacular.

## 1. Introduction

The era of globalization in Indonesia requires us to compete with other countries. When other countries are competing through technological sophistication and modernity, Indonesia has advantages that are rarely possessed by other countries, which is cultural wealth that can be a unique character in the midst of globalization. Culture makes Indonesia unique, beautiful, characterized, and has a global appeal. Today, humans tend to live in a modern world accompanied by technological sophistication, living in the hustle and bustle of cities with dense activities every day. Culture and the need for tourism are the main reason for designing a hotel resort with a neo-vernacular theme.

Lake Toba is one of 10 national tourism areas that are prioritized to be developed by the Ministry of Tourism. Lake Toba has become a lodging destination for local and foreign tourists. This area has bonded with Batak Toba culture which is an attraction for tourists who visit.

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\*Corresponding author at : Departement of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Jalan Perpustakaan Building J07, Medan 20155, Indonesia

E-mail address: wahyuni1@usu.ac.id.

Tourists and visitors can enjoy the beautiful natural scenery. Also, it provides a strong local culture and experience.

The theme is neo-vernacular that represent culture, and neo-vernacular is the incorporation of modern architecture with the potential of local architecture. The design of the hotel resort will apply the tangible and intangible aspects of the Batak Toba culture. This design aims to dig deeper into the Batak Toba culture, and neo-vernacular architecture moreover applies the theory and concepts of Batak Toba culture to the design of the hotel resort.

## **2. Literature Review**

### **Neo-vernacular and local wisdom concept**

The main focus in designing a hotel resort is the local culture. According to Koentjaraningrat [1], culture is the ideas, feelings, actions, and works produced by humans in the life of a society that is made by their own by learning. The theme in the design is Neo-Vernacular, besides preserving culture but can follow the flow of globalization. Putra [2], in 'Understanding Neo-Vernacular Architecture' article, states that Neo originates from Greek means new. So neo-vernacular means local language spoken in a new way.

Neo-Vernacular architecture is an application of existing architectural elements, both physical (shape, construction) and non-physical (concept, philosophy, spatial) with the aim is to preserve the local culture that have been formed empirically by a tradition which then undergoes little or more renewal towards a more modern or advanced work without ignoring local traditional values.

One of Charles Jencks's [3] statement in his book "Language of Post-Modern Architecture" is about the characteristics of neo-vernacular architecture. Neo-vernacular architecture characteristics are the used of the rooftop, bricks material, restoring traditional forms, environmentally friendly. The use of more vertical proportions, unity between interior and exterior is through modern elements with open spaces outside the building, and contrasting colors are also the features of neo-vernacular.

Some works that apply neo vernacular principle are the work of architect Geoffrey Bawa who has an intrinsic understanding of the basis of vernacular architecture. He makes symbiosis to Western traditions with local needs and lifestyles that blend perfectly with the climate, landscape, and culture [4]. An example of Bawa's work is the Sri Lankan parliament building (1982) using sloping roofs and other elements of local architecture to show the characteristics of the government (Figure 1a). Ruhuna University (1988) shown in (Figure 1b), using traditional building materials and architectural elements adapt to the local climate and context [5].



**Figure 1.** (a) Sri Lanka Parliament building. (b) Ruhuna University.  
(Source: <https://www.archdaily.com/770481/spotlight-geoffrey-bawa>)

Balkrishna Doshi has an understanding and appreciation of Indian architectural tradition by combining fabrication materials with local crafts, then develops these components in the aspects of history, culture, local wisdom, and revolution in his country, India [6]. Doshi designed his Vastu-Shilpa studio in Ahmedabad (Figure 2) in 1981, which showed Doshi's efforts to combine modern trend with traditional Indian methods. He uses a local mosaic tradition made from recycled ceramics [7].



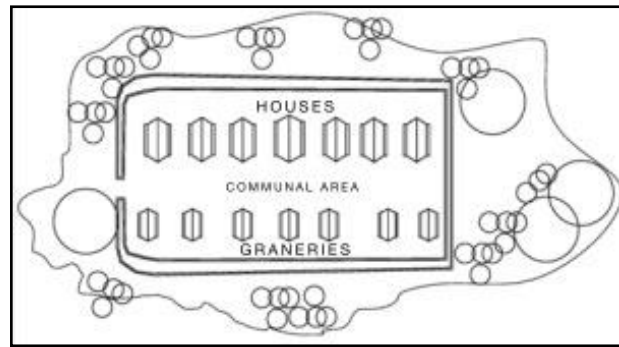
**Figure 2.** The roof of the local mosaic at Sangath Doshi.

(Source: <https://thearchiblog.wordpress.com/2012/04/07/sangath-ahmedabad-b-v-doshi/>)

The Lake Toba area is an area that has a strong bond with Batak Toba culture. The following is a study of the Batak Toba culture literature.

### **Batak Toba Relationship and Village Patterns**

The concept of kinship is a concept of the Batak Toba tradition illustrated into architectural elements such as the concept of *Huta* (village) and *Ruma* (residence). The settlement pattern of the Batak Toba community is in a group and linear [8] (Figure 3).

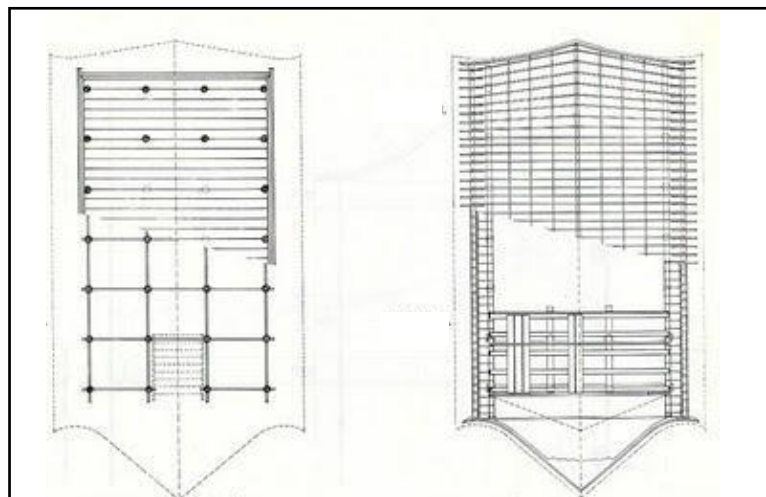


**Figure 3.** Batak Toba settlement pattern is in group and linear  
(Source: *Batak Toba Village layout* (Hanan 2012, p.801 [9])

### Function and organization of space

Batak Toba house has no physical barrier that divides space for each family. They have a boundary that are stronger than the wall, namely the cultural barrier, beliefs and traditions of the Batak Toba people. The function of space in the Batak Toba culture is flexible. They don't separate private with public space. All spaces in the house are for communal such as living room, dining room, lounge, and kitchen.

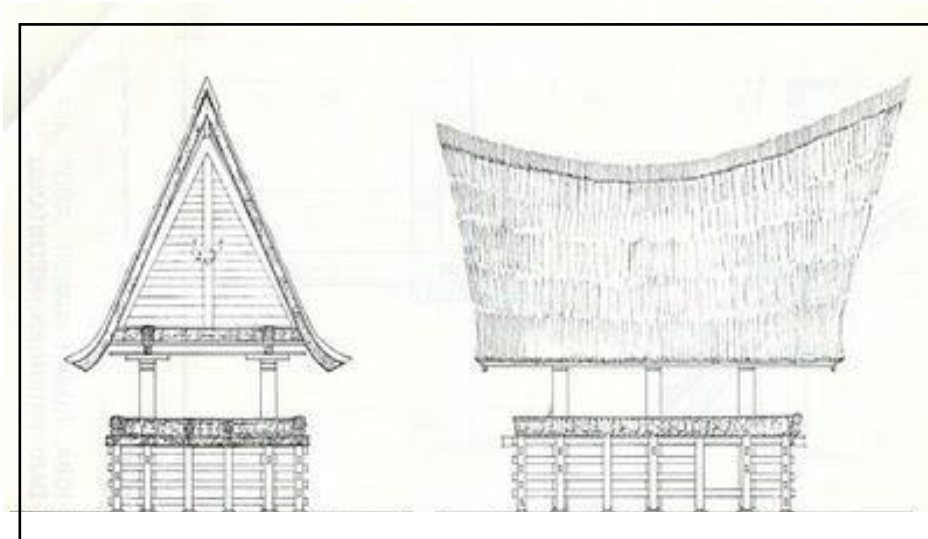
The function of the communal area is a symbol of kinship, energy, and cooperation are the characteristics of Batak Toba culture. The columns arrangement is in a modular structure (Figure 4). It shows the organization of grid-shaped space. The building is symmetry both from the floor plan and facade give building stability and to overcome the earthquake.



**Figure 4.** Column and roof pattern of *bolon* house.

(Source: (2012) is accessed July 14, 2018)

Upper, middle, and lower sections are the division of the anatomy of traditional Batak Toba house (Figure 5).



**Figure 5.** Side elevation of traditional *bolon* house that shows the division of 3 worlds

(Source: (2012) is accessed July 14, 2018)

Besides being spiritual, the anatomy of the Batak Toba house is a form of adaptation to the tropical climate. Traditional buildings can adapt with high rainfall, strong winds, and direct sunlight.

In addition to the spiritual meaning, the technology and physical form of the *bolon* house is a response to tropical climate conditions. Anatomy form of *bolon* house is adaptive to the tropical climate and environmentally friendly. The roof has a steep slope to adapt to high rainfall and symbolizes aerodynamics to overcome high wind speeds. A high building aims to allow cold air to be felt by humans in the room, and hot air can rise and diffuse out so air can be circulated to achieve thermal comfort.

Besides that, thin and light walls as a form of adaptation to high humidity levels. Sloping walls are useful for the wind to enter the room. The shape of the stage house allows the movement of air under the building. It is used to provide larger rainwater catchment areas. Opening at the wall is to maximize the light and wind to enter the room. The construction of traditional house of *Bolon* is using local material that is easy to obtain. Wood is the main local material for the building and palm fiber to cover the roof. All of its are the application of the principle of green architecture.

Conclusion Batak Toba culture studies are in Table 1.

**Table 1.** Conclusion Batak Toba philosophy and culture

NO	Socio-cultural conditions of the Batak Toba community	Batak Toba Society Tradition	Philosophy of Batak Toba Architecture
1	Symbol of the agrarian life of Batak Toba culture:  <i>Lesung</i> (a place to pound rice) and a granary (a place to store rice)	The concept of cooperation	Application of adaptive concepts to tropical climate: 1. Roof with a steep slope 2. Thin and light walls 3. Use of local materials 4. Form a stage house
2	Gathering	Private space can be converted into a public area (space flexibility)	The function of the communal space and cooperation are the characteristics of the Batak Toba culture.

### 3. Methodology

Understanding Hotel resort refers to lodging places that are in locations that have natural beauty is become the consideration in location selection. The site is an empty land in the Aek Rangat, Pangururan, Samosir. Located on the shores of Lake Toba with pine tropical rainforests being a natural potential that supports the design of resort hotels. In addition to the nature of the site, the contoured soil conditions have the potential for a view range.

The methods used to get information related to the design approach and problem-solving include primary and secondary data. Primary data is the data obtained directly according to the conditions in the site, such as field study, interview, and documentation. Secondary data are a literature review and comparative study. Analysis and concepts are the methods used in designing hotel resort. The analysis is the process of observation and assessment of problems, site potential, activities, and design space requirements refer to the design theme. Concept design starts from schematic design base on the results of the analysis of various aspects of design.

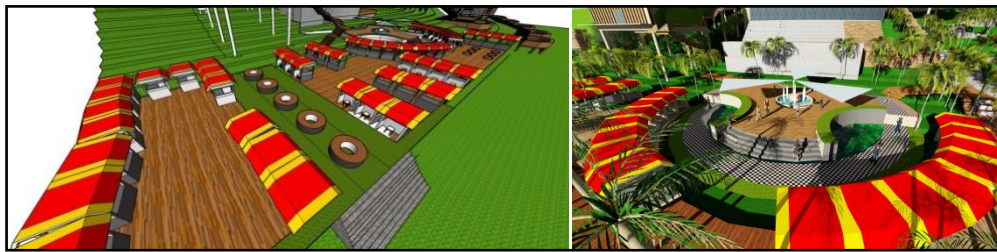
### 4. Results and Discussion

The location for hotel resort is on 2.5 ha of land in Aek Rangat, Pangururan, Samosir Regency, North Sumatra. It is on the lake side of Lake Toba and closes to hot spring. This area has unique Batak Toba culture, which is an attraction for tourists who visit. Local and foreign tourists can enjoy the beautiful natural scenery. It provides a strong local culture and experiences. The access to Pangururan are through the street that closes to the main Samosir bridge, Silangit airport, or using a ferry boat.

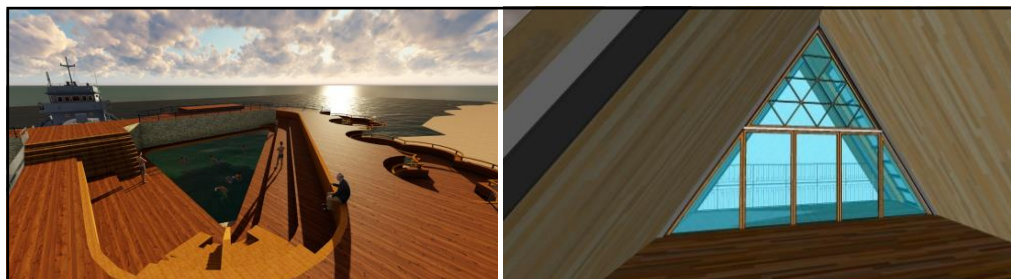
The design theme is neo-vernacular because it refers to the local culture of the site, Batak Toba culture. Neo-vernacular is the incorporation of modern architecture with the potential of local architecture. The design will apply tangible (physical) and intangible (nonphysical) aspects of Batak Toba culture. The application of neo-vernacular to the building will adapt to the existing site potential. Local material, space flexibility, structural flexibility, adaptive to contour, and climate are five cultural values that applied to the design. Cultural values indirectly respond to local and natural potential. Of many aspects of culture, the design of the hotel resort will focus on:

### Local Material

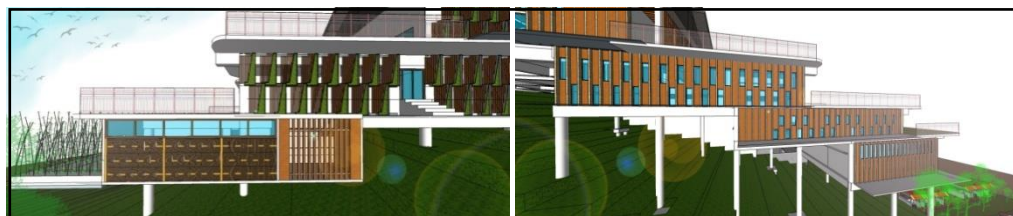
Wood is the dominant material used in buildings and site to represent local material of the *bolon* house. The building facade and fence are using bamboo and natural stones. The use of wood in the design (Figure 6-8).



**Figure 6.** Carnival floor material made from wood and aquatic center using wood as the floor material



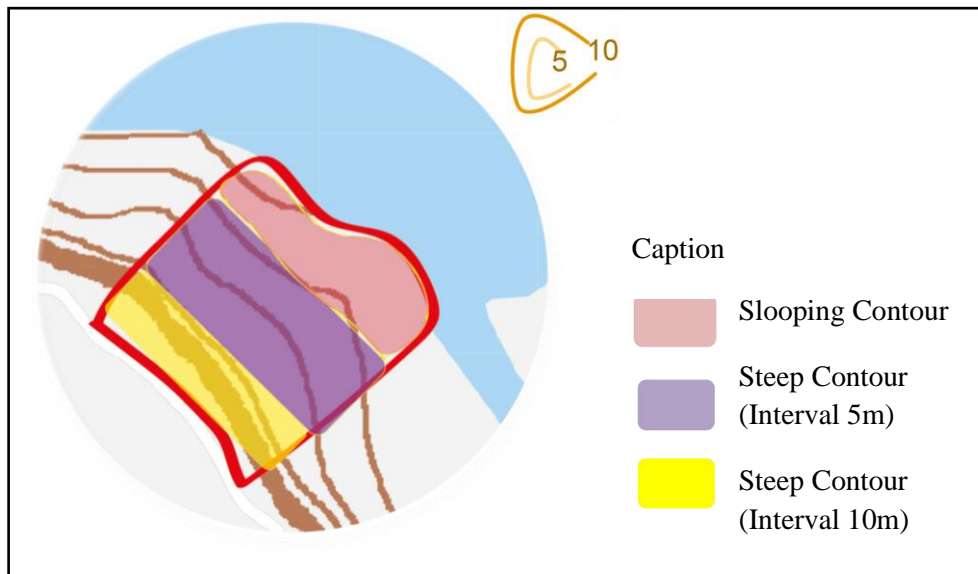
**Figure 7.** Wood material of dock and interior



**Figure 8.** Wood Facade for facility building

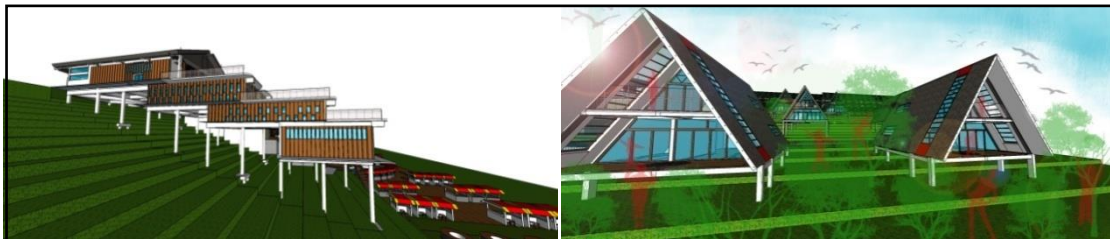
### Adaptive to contours

The contour on the design site is quite steep (Figure 9).

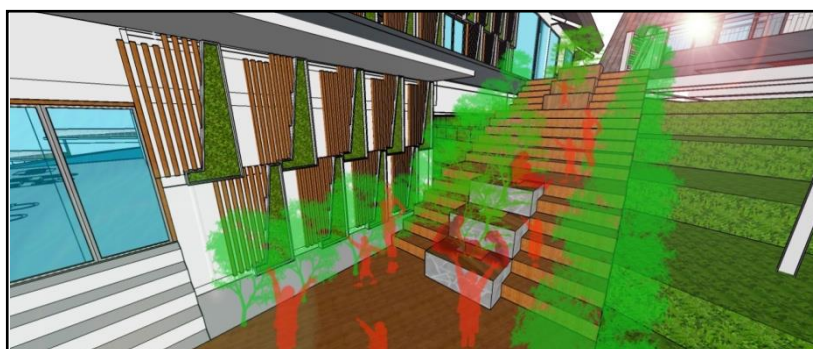


**Figure 9.** Site Contour

The concept of adaptive to the site contour is all buildings are using a stage house system to adapt with steep contour. The resorts arrangement is on three different contour levels (Figure 10). Pedestrian with many stairs is very comfortable (Figure 11).



**Figure 10.** Adaptation of buildings on steep contoured land



**Figure 11.** Pedestrian

### Adaptive to climate

Adaptive to climate is one of Batak Toba house concept. The design applies a triangular shape as the shape of the roof and the shape of the building because the shape of the triangle is very suitable to deal with high rainfall in tropical climate countries (Figure 12). Natural lighting and ventilation into the room using skylights (Figure 13 and Figure 14), doors, and large glass windows (Figure 15). Public buildings have minimal walls and facades (Figure 16). The concept



of the stage house will help the air circulation in the buildings to reduce humidity. Hot winds will be filtered by vegetation around the site before entering the room.

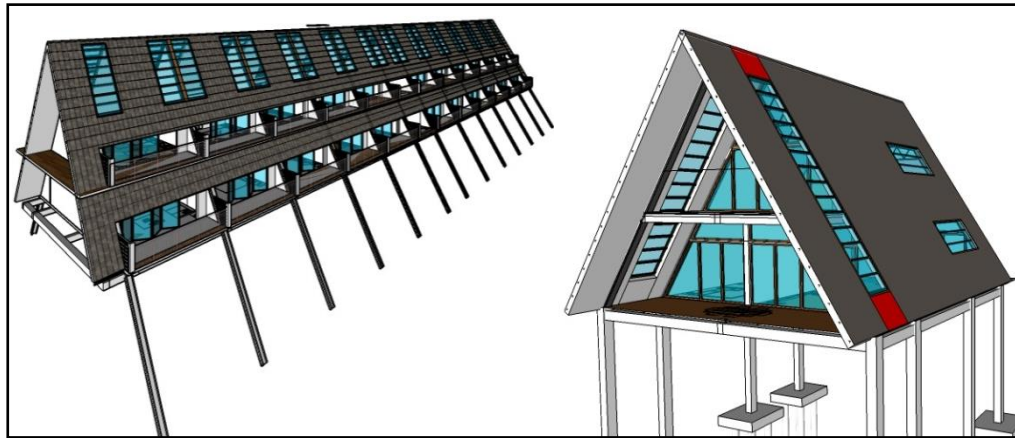


Figure 12. Triangle Shape building as a response to climate

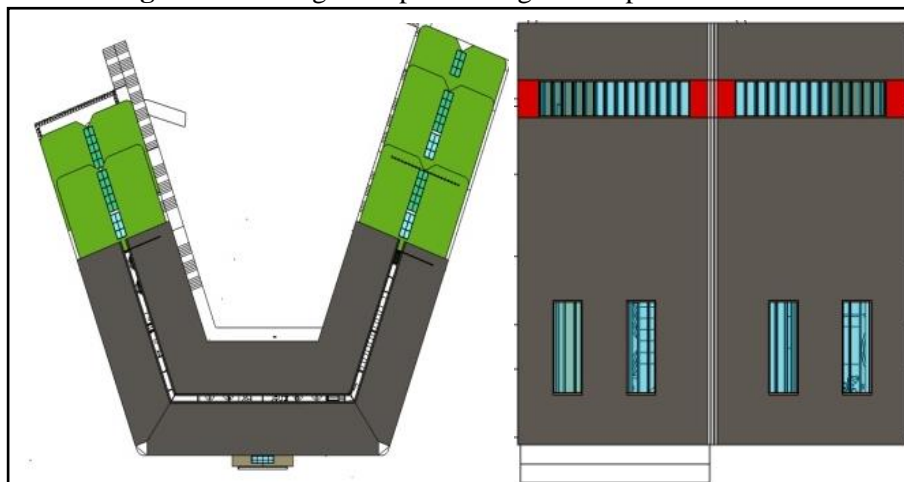


Figure 13. Skylights in building facilities and resorts

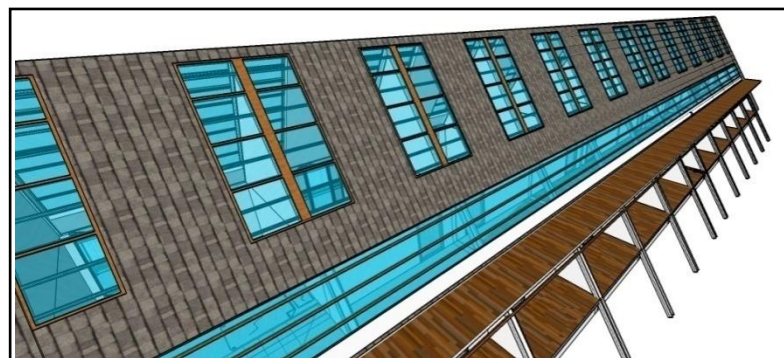


Figure 14. Skylights at hotel

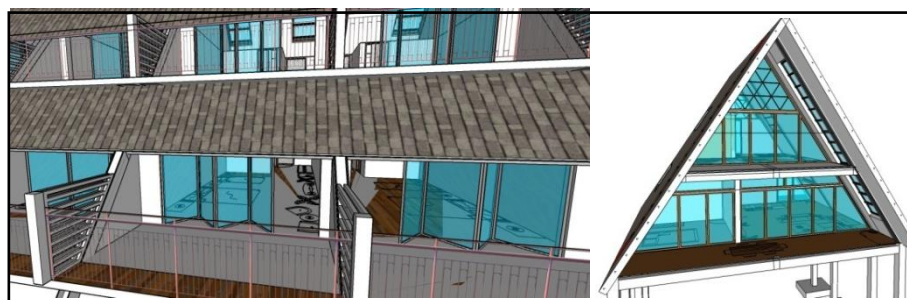


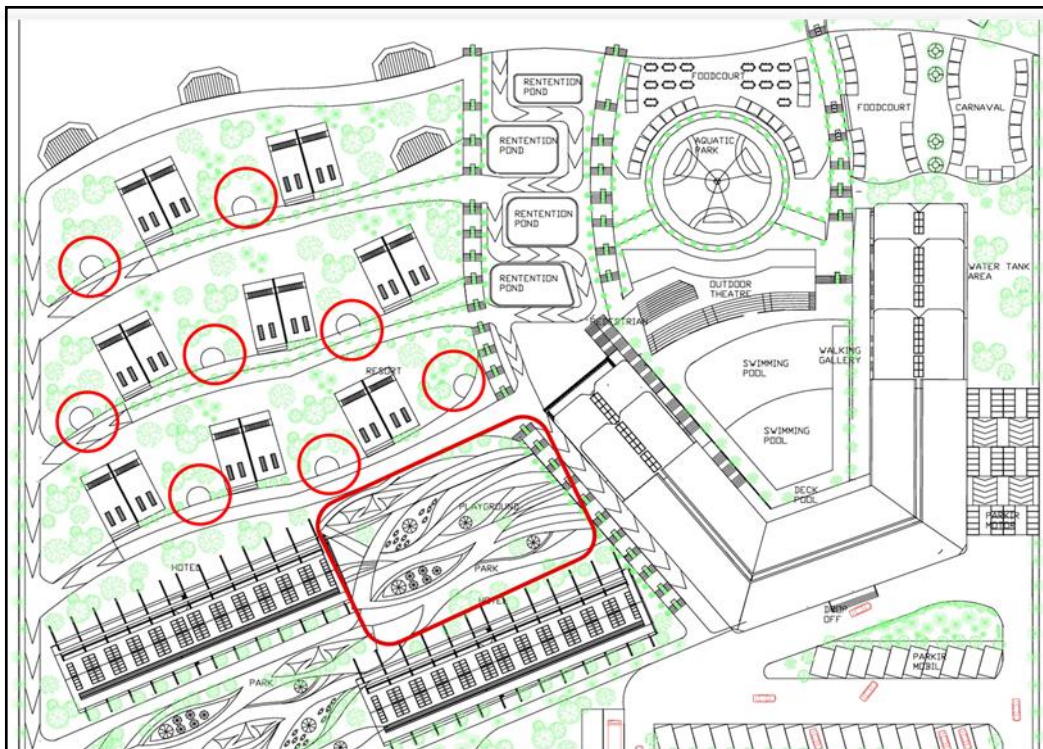
Figure 15. Large doors and windows on buildings



**Figure 16.** Dynamic façade for natural light and air

### Space Flexibility

In Batak Toba culture, private space share function with public space. Flexible function is a form of the kinship system. The outdoor spaces of the hotel and resort are communal areas where the pedestrian area has interaction spots. It shows the flexibility between private and public functions in this area (Figure 18). The park of the hotel resort is provided for visitors and residents of the hotel resort so they can use it together and interact with each other (Figure 17).



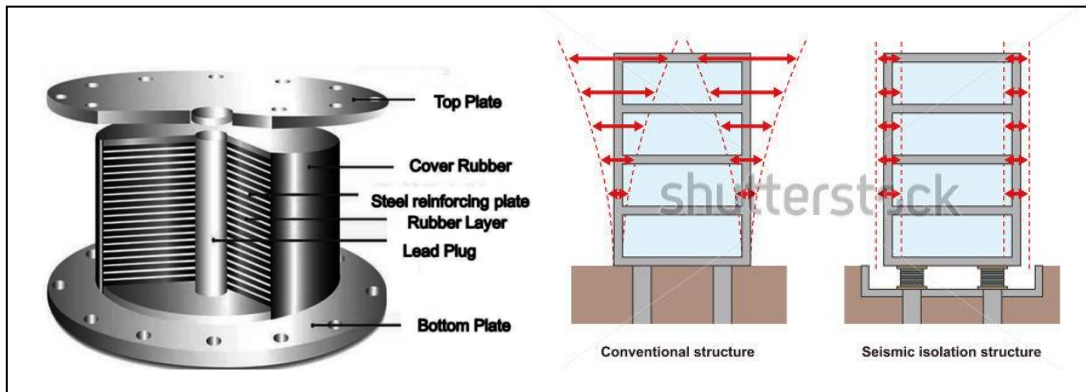
**Figure 17.** Communal Areas at Hotel Resort (Circle)



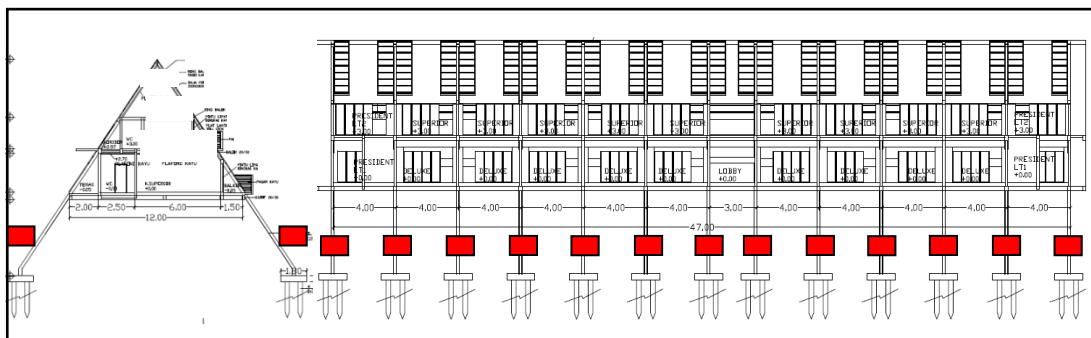
**Figure 18.** Interaction spot as a communal space

**Structure Flexibility**

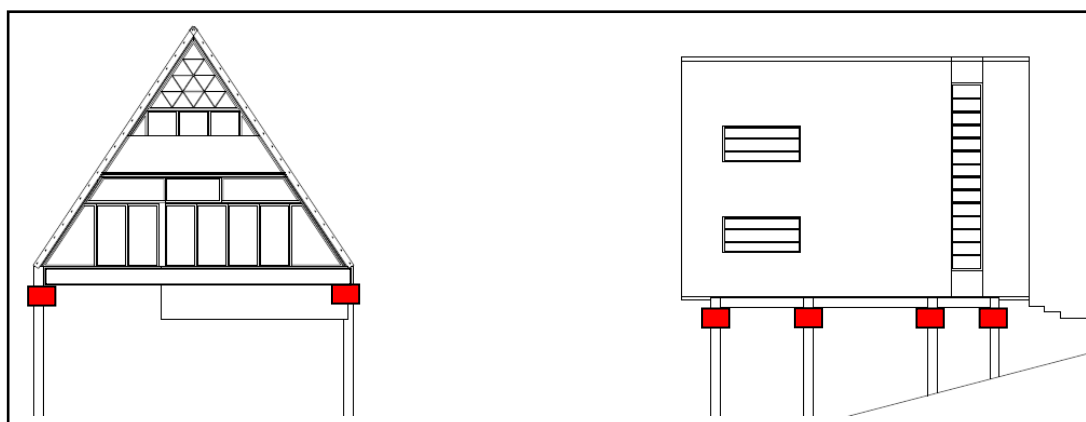
The structure of *bolon* house can overcome earthquake because the structure is flexible and moveable. The organization of the buildings is a grid with modular columns. The symmetrical building shape of the plan give balance to the building. The structure system of all buildings in design is using the anti-earthquake system. The use of base isolation systems (Figure 19) is the best system for earthquake-resistant structures. The stage house is applying base isolator between the column and foundation (Figure 20-22). The foundation used is pile foundation because this foundation can withstand the soil load in steep soil contours.



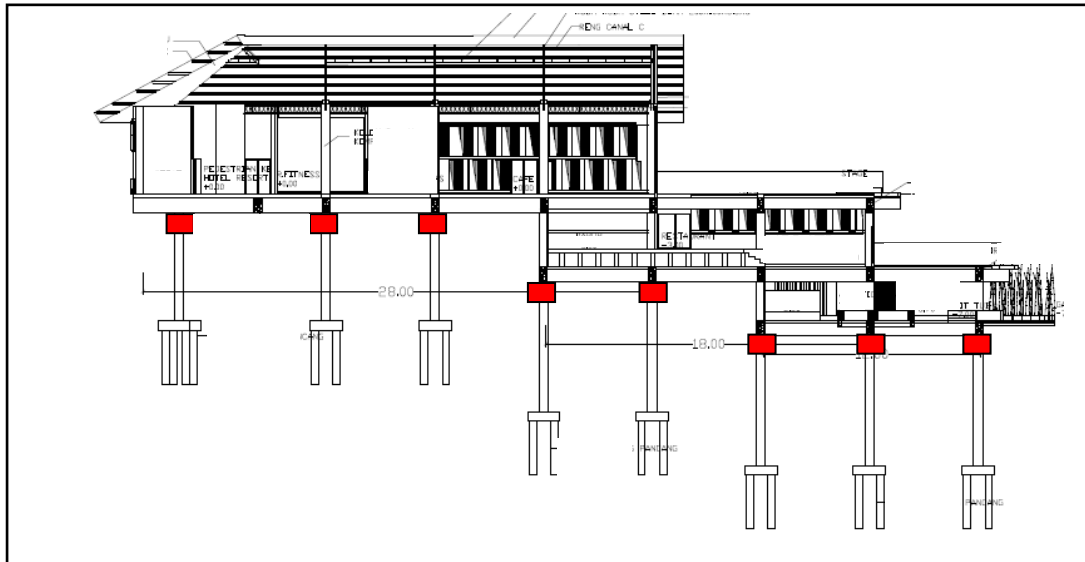
**Figure 19.** Base isolation system



**Figure 20.** Base isolator at hotel



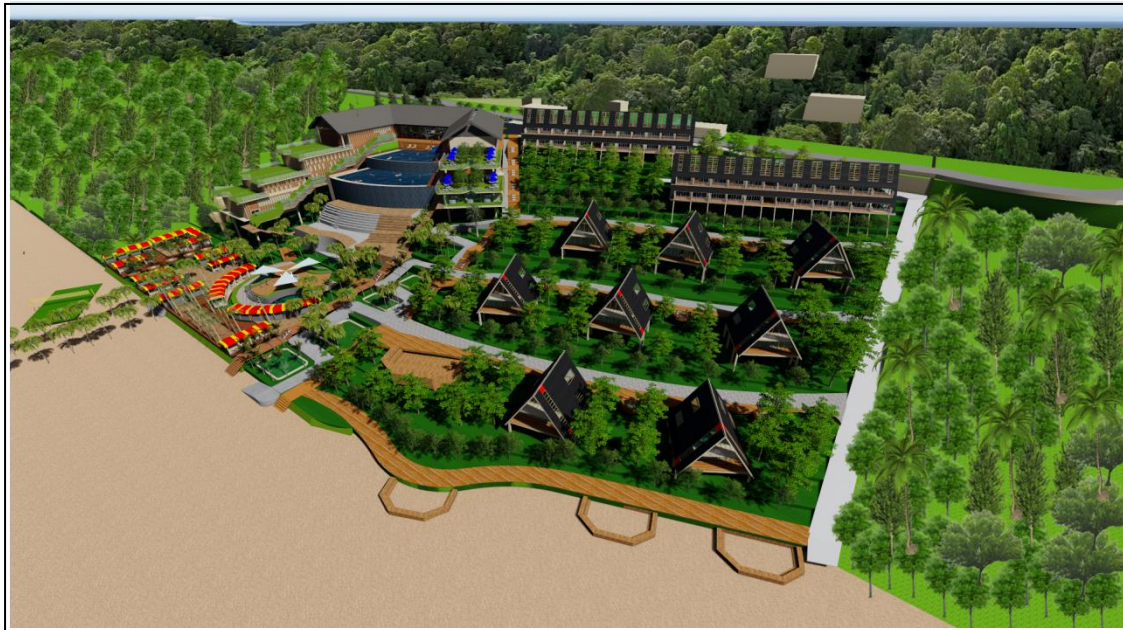
**Figure 21.** Base isolator at the resort



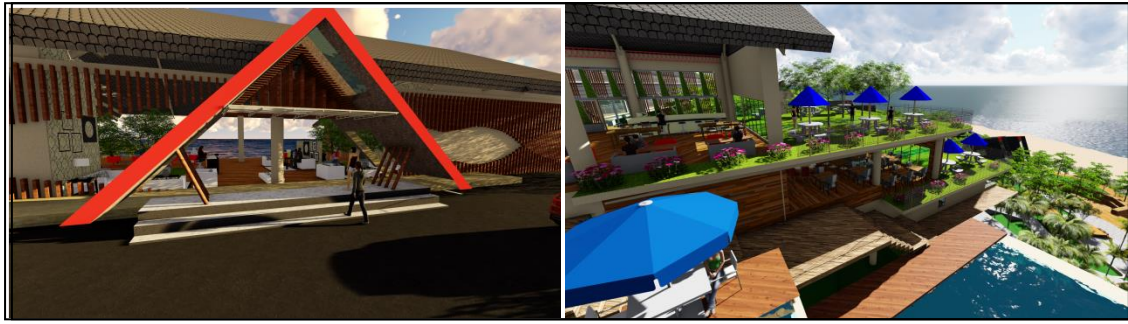
**Figure 22.** Base isolator at facility building

### 3D Impression

Hotel resort provides a strong Batak Toba culture and beautiful landscape. Exterior and interior design of hotel resort apply tangible and intangible aspects of Batak Toba culture (Figure 23-26).



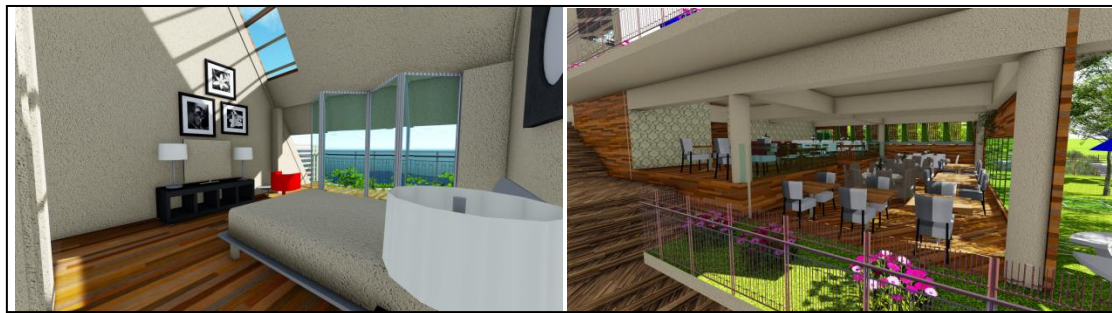
**Figure 23.** Perspective Siteplan



**Figure 24.** (a) Entrance (b) Pool perspective



**Figure 25.** Interior Lobby



**Figure 26.** (a) Bedroom interior (b) Café interior

## 5. Conclusion

The application of neo-vernacular themes in the design of hotel resort emphasizes the aspects of culture that indirectly adapted to nature and the local potential. Modification of forms and building structures are modern but still in the touch of cultural elements. In general, design applies physical aspects and non-physical aspects of the local culture of the Lake Toba region, which is Batak Toba culture. Critically consider the culture of Batak Toba in the design of buildings and site such as the use of the local materials as the building facade material, interior and exterior material. The opening and building shape as adaptive to climate and contours.

Space flexibility provides a lot of communal space in the site. The building structure system is using the anti-earthquake system as the concept of structure flexibility. These five concepts become the main concepts in designing all the buildings and site of the hotel resort.

### Acknowledgment

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