



# The Implementation of Neo Vernacular Architecture on the Design of Information and Recreation Center of Lake Toba Tourism at Ambarita, Samosir Regency.

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**Abstract.** Tourism is one of the sectors that Indonesia relies on increasing state revenues. One of the tourist destinations that is still being developed is Lake Toba. This region has the potential to grow and compete to become world-class tourism. But in the process of development, there are still some obstacles. One of the obstacles is information services and promotion about tourism in the Lake Toba area that is still not maximized. Researchers identified the need for a facility that can accommodate promotional activities and tourism information through the design of the Tourism Information Center in the Lake Toba area, precisely in Ambarita Village, Samosir. Analysis and concept of design using an interpretation approach to Neo Vernacular Architecture. The result of this study is a design from the Lake Toba Tourism Information Center.

**Keywords:** Lake Toba, neo vernacular, tourism information center

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## 1 Introduction

The tourism sector is a reliable sector that can provide income for a country. The Indonesian state also exploits it with its potential, rich in its natural beauty, culture, and excitement to attract tourists to visit. Because of the potential, the government has defined the ten super-priority tourism destinations for development and is expected to increase the number of tourists. Among the destinations of such priorities is Lake Toba. Until now, Lake Toba, as one of the more ideal tourism destinations, has been developed to compete as a world-class tourist attraction. According to the Deputy Secretary for Infrastructure Coordination, Rahman Hidayat, one of The Primary High Officials of Foreign exchange for Economic Ministry and Investment, at least some of the problems at the Lake Toba tourist area. First, the promotion and information on Lake Toba tourism has not been done to a maximum, the minimum of connecting

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infrastructure with tourist. Mobility (accessibility) and investors who will work together to build up tools and public infrastructure for travelers are still scarce. The third question is on the quality of tourist products to be promoted and marketed. Untreated promotion and tourist products can be resolved if there are tools that can promote tourist attractions and tourist products integrated into one another. The design of a tourism information center (tourism information center) is a means to provide accurate, clear, and up to date about Lake Toba tourism for anyone in need. It will also be combined with recreational functions to attract the public and tourists who come for information and do recreational activities at the information center.

In the planning and developing the information and Recreation Center of Lake Toba Tourism, an approach is needed following the context of tourism, especially the Lake Toba tourist area, which offers natural beauty and presents the history and culture of Batak as a tourist attraction. With Neo Vernacular architecture, local wisdom values can be used as a design element to reinforce the image of the Lake Toba scenic area. Neo vernacular architecture can also be incorporated with modern systems and construction. With the Neo Vernacular approach, the characteristic of Batak culture can be highlighted in the shape and appearance of the building, with the design strategy applied referred to from the rules and forms of architecture Batak traditional house.

## **2 Literature Review**

### **Tourism Information Center**

Tourism is a form of tourism activities that become basic human needs, manifested in various activities carried out by tourists who come, supported by facilities and services provided by the community, entrepreneurs, and the government [1]. Tourism is a recreational activity that people outside of their residence do to get away from work routines or find an atmosphere different from usual [2]. Recreation is activities done at leisure, both individually and together, accessible and fun, so people tend to do it [3]. A tourism Information Center is a facility that provides specific information about the local area, tourist attractions, festivals, and services [4]. And according to PERMENPAR number 3 of 2018, the Operational Instructions for the Management of Physical Special Allocation Funds for Tourism explains the basic concept of developing a Tourism Information Center/TIC to provide accurate information and updated tourism information service facilities to anyone who needs it.

Along with the development of needs and the progress of the times, the function of the Tourist Information Center / TIC can be a place to promote a destination in increasing the number of visits and length of stay of visiting tourists. The functions and benefits of the Tourist Information Center or TIC include promotion. The Tourist Information Center/TIC actively

brings visitors to a destination through promotions and increasing the length of stay and tourist spending. Next is Travel Advice and Support. The Tourist Information Center/TIC plays an active role in conveying information related to tourism in a destination, such as Attractions, Amenities, Accessibility, and Tourism Activities. Lastly, as an educational medium. The Tourist Information Center/TIC plays an active role in educating tourists about the values of local wisdom and customs prevailing in the area [5].

### **Vernacular Architecture**

Vernacular is the local language. In architecture, local language refers to the forms that apply elements of culture, environment, and local climate, expressed in physical architectural forms (layout of floor plans, structures, details, parts, ornaments, etc.) [6]. Vernacular was born from a craftsman's work based on Knowledge accumulated from generation to generation, the opposite of architecture involving a planned design process [7]. Vernacular architecture is described as architecture without architects. Vernacular architecture refers to local traditions and reflects the evolution of structural types concerning the climate and lifestyle of individuals and available materials [8]. Vernacular architecture is a generalization derived from traditional architecture, which uses an architect's design skills to develop people's architecture [9].

Furthermore, Vernacular Architecture can also be understood as a category of architecture built on local needs, using locally available personnel and materials, without the help of professionals (architects). Vernacular architecture is always environmentally-oriented in which it is built, so it is tied to the availability of resources in the ward. [10]. Vernacular Architecture is a term used to categorize construction methods that use original local resources to meet local needs. Vernacular architecture is created by ordinary people based on Knowledge of traditions born in groups of people passed down from generation to generation.

### **Neo Vernacular Architecture**

Neo-vernacular architecture is a contemporary interpretation of vernacular buildings. The building's design was inspired by heirloom elements and vernacular expressions, the technological and aesthetic language of its time. Neo-vernacularism is usually based on two essentially opposite approaches: interpretive and conservative. The conservative approach is limited in its operation, and its current use is obtained from traditional materials and forms suitable for today. (The best example is the Egyptian architect Hassan Fatih). As for the physical interpretive design of the structure used in the architectural concept, it only follows the functional requirements of the present [11]. Neo vernacular architecture is part of Post Modern architecture, which aims to restore traditional elements to a design such as adopting local models bringing back aspects of detail in aesthetics but rarely adopting construction methods [12]. The architecture of neo vernacular is understood as a style of architecture that applies vernacular elements to building design forms such as mass, structure, and essence of buildings.

This approach stems from intellectual development in architecture so that the design of a building is no longer based on intuition or undergoes trial and error.

The style of Neo-Vernacular Architecture is straightforward to identify with its characteristics, which are almost always roofed with ridges, rich in aesthetic details, and using bricks. Brick is human, so the slogan is so human [13]. Architecture Neo-Vernacular in one place cannot be duplicated elsewhere. That matters because every home has its soul (spirit) or *Genius Loci*. *Genius Loci* is a Roman concept. According to ancient Roman belief, every creature 'independent' has its *Genius*, its protective spirit. This spirit gives life to people and places, accompanying them from birth to death, and determines their character or essence [14].

Based on this statement, the author concludes that the characteristics of neo-vernacular architecture include design forms that apply elements of culture, environment and climate that developed from local-vernacular architecture. Physical elements that can be applied include a simple roof shape with a triangular truss construction or what is known as a ridge. Furthermore, the use of bricks became a characteristic of neo vernacular architecture. The neo vernacular design principle does not necessarily apply the vernacular principle so that more modern brick materials are used to replace most of the wood material. Apart from the physical elements, the following characteristics can be seen from the application of non-physical elements. This element refers to a culture of mindset, belief, and layout based on a cosmological hierarchy trusted by the local community.

### **Batak Toba Architecture**

Each tribe and culture has its traditional architecture, likewise with the culture and ethnicity of the Toba Batak. Toba Batak has its traditional architecture consisting of Huta, Jabu, and Gorga/Ornament. Huta, known as the village, is a place or town. The area consists of Jabu (residential house), Sopo (rice barn), and family members. They occupy a region in groups. The region they will plow with bamboo to make a protective fence. The selected areas are usually at high altitudes. Election at the elevated location is also in line with the ideology of the Batak people to expect a high and better future for their lives. Groups of buildings in one village generally consist of two rows: the North and South ranks [15]. Jabu, or home for the Toba Batak people, is where members' families stay. Batak people think Jabu is not just a physical building, but Jabu is an embodiment or description of beliefs, ideals, hopes, and views of life. It can be seen from the philosophical meaning of Jabu, which consists of 3 parts. The first part, namely Banua Ginjang (sky) or the roof, is the sacred area with the highest cosmological meaning, namely as a place for the Gods. The second part is Banua Tonga (earth) or part of the body of the house where the family lives and activities, and the last part is Banua Toru (under the ground) or the legs of the house with the meaning of place death of humans who functioned as cattle pens. Gorga is a carving or ornament which also has a philosophical meaning in the form

of belief that has the power of life. Usually, Gorga is found in the inner and outer walls of the building are also on the front, which contains mystical elements of repellent reinforcements. Gorga in the form of decoration or decoration made by carving wood or boards and then painting them with three kinds of colors, namely: red, black, white. Three types of color are called the three-bolt 'three colors,' which is the hope of society. According to the beliefs of the Toba Batak people, the color black symbolizes a just and wise king. Red represents the maintenance of the prosperity of the country and society. Color white as a filler for carving lines, telling good workers.

### **3 Methodology**

The method used in this research is a descriptive method by conducting literature studies and site surveys. The selection of the design location is by considering the elements or the suitability of the requirements with predetermined design conditions such as; spatial plans, reviewing government regulations for urban structures, ways of entry or access, environment, land use, land ownership status, scenery, land area, and city utilities. After determining the exact design location, the author's following method is to conduct a field survey and collect all the necessary information and data. Then the author connects these theories with the interpretation and architectural approach chosen to produce essential points that can be used as guidelines in designing a Tourism Information Center.

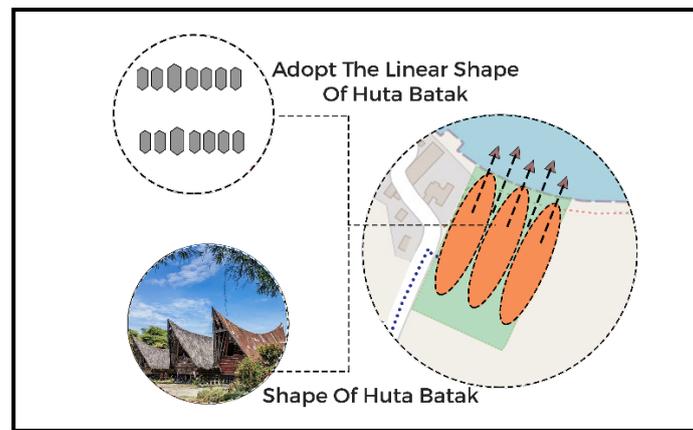
### **4 Result & Discussion Project Description**

The location of this project is on Jalan Pelabuhan Ambarita, Ambarita village, Simanindo subdistrict, Samosir district, North Sumatra province, Indonesia. The site of the project is located at the coordinates of 2 15,000 '49.31" n 98, 49'59.70" e with an area of 15,000 square feet [15,000 sq m]. The site bordered the port of Ambarita, a residential area, and Samosir island road.

#### **Baie Concept**

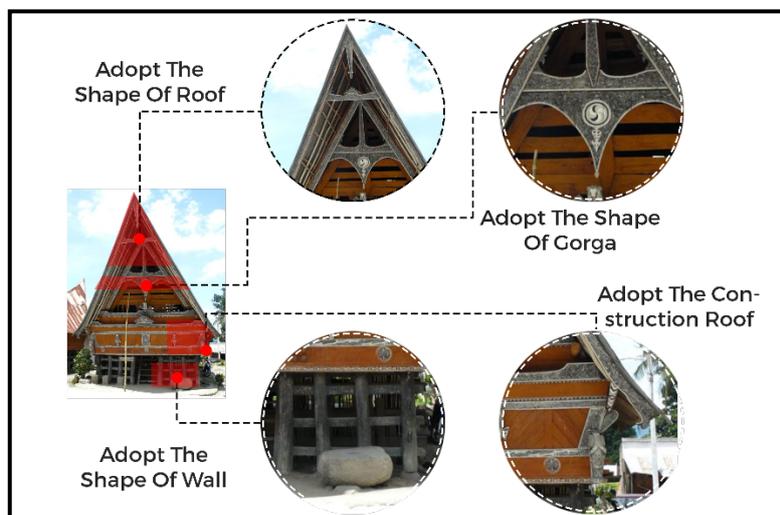
The basic concept of the Tourism Information Center is to apply the Batak architecture that refers to the physical shape of Batak homes and Bolons in conjunction with Batak village patterns and the shape of houses such as the legs and bodies, and the head of buildings.

These forms will be applied to site design and mass compositions at the Tourism Information and Recreation Center. The method used in this research is a descriptive method by conducting literature studies and site surveys. The selection of the design location is by considering the elements or the suitability of the requirements with predetermined design conditions such as; spatial plans, reviewing government regulations for urban structures, ways of entry or access, environment, land use, land ownership status, scenery, land area, and city utilities (Figure 1).



**Figure 1** Huta Batak Linear Pattern

The application of Neo Vernacular architecture can also be seen from the mass of designed buildings, adopting forms from local architecture, ranging from roofs, walls, and structures that were then developed by combining them with more modern designs (Figure 2).



**Figure 2** The Application From Huta Batak

Neo vernacular also emphasizes the use of local materials so that the design of the building creates a strong impression of the locality. The use of local materials is also based on energy and cost efficiency, which is an essential point in the design characteristics of the Neo Vernacular approach. In the area, Lake Toba and Samosir are natural materials often used as construction materials such as bamboo, Jior wood (johar), Ingul wood (surian), and clay. These raw materials can be used in restaurants and cottages to display a more realistic impression and atmosphere while using a modern structural system.

### **Activity System and Room Program Concept**

**Public Activities.** As a means of information and promotion of tourism in the Lake Toba area, public areas involve visitors (tourists) and managers. Visitors who visit to find information

about tourism in the Lake Toba area, tourist attractions, lodging facilities, culinary, and tour guide services to help tourists on vacation. The manager provides information related to tourism. The information supplied by the manager can be accessed through direct interaction with staff or accessed directly independently by tourists by visiting the gallery located at the Lake Toba Tourism Information Center. Not only providing information, but the Lake Toba Tourism Information Center also helps SMEs and activists for handicrafts and souvenirs typical of the Lake Toba region to be promoted and marketed to tourists. The following is a system of activities in the commercial section, namely gift shop. Supporting facilities are also available at the Information Center for Recreation and Recreation of Lake Toba Tourism to support additional activities such as recreation. Additional facilities available at the Tourism Information Center are Playground children's play facilities, BBQ area facilities, Camping Ground, endemic gardens, water recreation areas, gazebos, and waterfront dock areas. The following is a schematic of outdoor facilities activities at the Lake Toba Tourism Information Center.

### Landscape Concept

The concept of landscape in the Lake Toba Tourism Information and Recreation Center design refers to the pattern of settlements or *Huta Batak*. The linear organization is a pattern found in Batak villages where each house is arranged in a row and facing each other to form a linear way. The liner also applies to site design. The outdoor spaces in creating the Tourism Information Center are positioned linearly so that the pattern of outdoor spaces can be seen and traversed clearly. The end of this linear pattern forms a vista centered on Lake Toba as a view object (Figure 3).

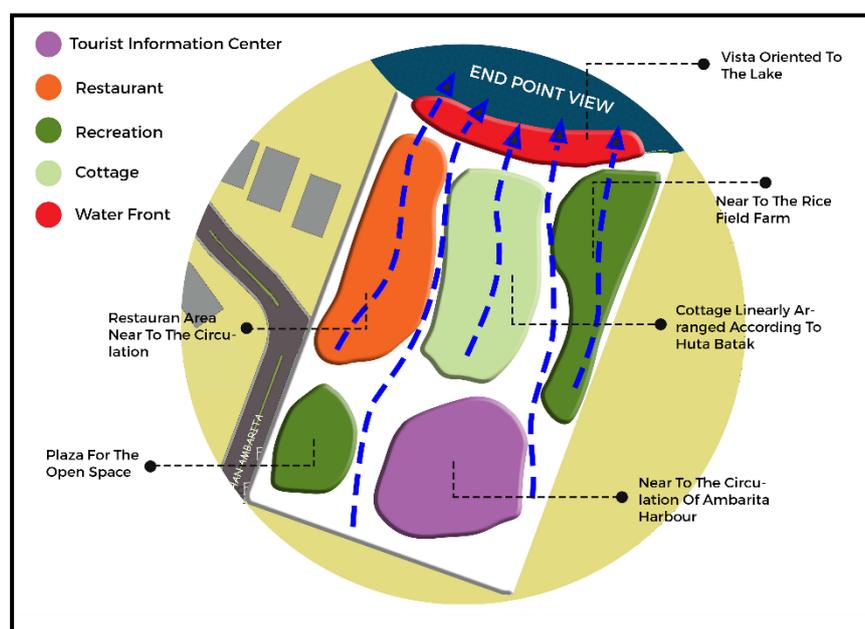


Figure 3 Zoning Site Plan

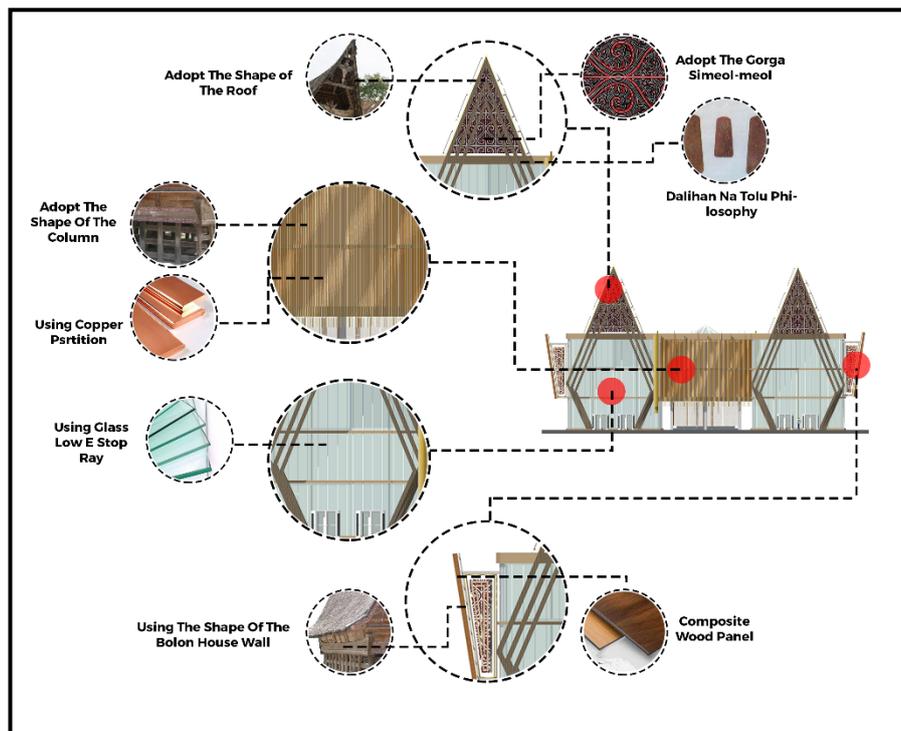
The design of the Tourism Information Center is divided into areas that are tourist information centers, restaurant areas, cottage areas, and outdoor recreation areas. The zoning for these areas is based on analysis made earlier, which was designed for multimass but is still connected to the website's circulation pattern. The tourist information center area is a major activity in this design. The position of tourist information centers is placed in areas close to the entrance to the site to facilitate the accomplishment of visitors to tourist information centers. This tourism information also tends to take time quickly. Visitors who come looking for information related to tourism such as tourist destinations, tourist fares, lodging facilities, and so on are obtained from the Tourism Information Center and will then depart again to continue their tourism activities. Based on this, the position of the Tourism Information Center area is placed in the southern region of the site, which is close to access to the site from Jalan Pelabuhan Ambarita. With this position, visitors who come can go directly to the Tourism Information Center building, and after getting the information needed, visitors can continue their journey. The following is a schematic of the position of the Tourism Information Center area in the design site (Figure 4).



**Figure 4** Site Plan

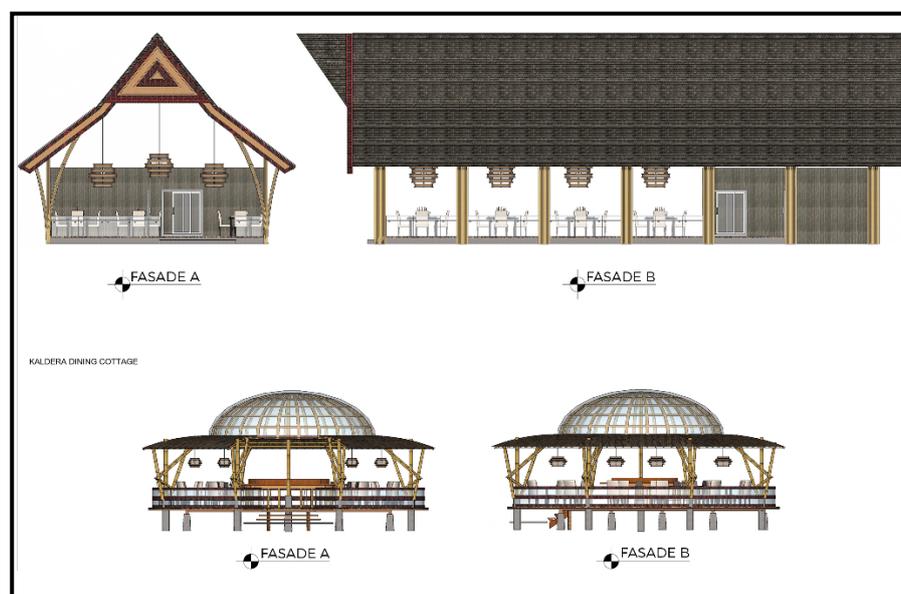
### Forming & Massing

The Neo Vernacular theme applied in the design is by prioritizing local architectural principles, which refers to the style and characteristics of Batak architecture. The process of taking the primary forms of the buildings at the Lake Toba Tourism Information & Recreation Center results from analysis and abstraction from local architecture, namely the traditional Batak house Bolon house. The application of the conception includes physical elements such as the basic shape, color of the building, the materials used, and non-physical aspects adopted from the philosophical and cultural values that developed in the Batak community (Figure 5).



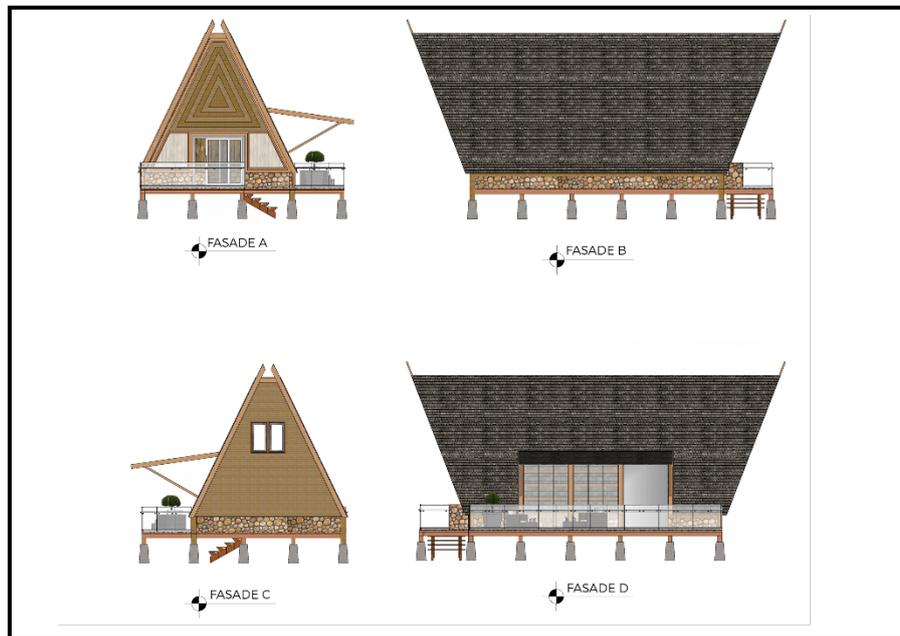
**Figure 5** Form and Mass

The mass and facade design of Caldera Resto applies a Neo Vernacular approach which refers to Batak architecture and then adopts the form and structural system. Furthermore, building materials are designed using local materials around the design site area. It aims to respond to the vernacular approach based on local architectural styles and materials used in the region. While adding to the distinctiveness of local materials, it also aims for cost efficiency and energy. The bamboo used around the design site can be used as a building material on the roof, truss, and columns of the Caldera Resto building (Figure 6).



**Figure 6** Form and Mass Restaurant

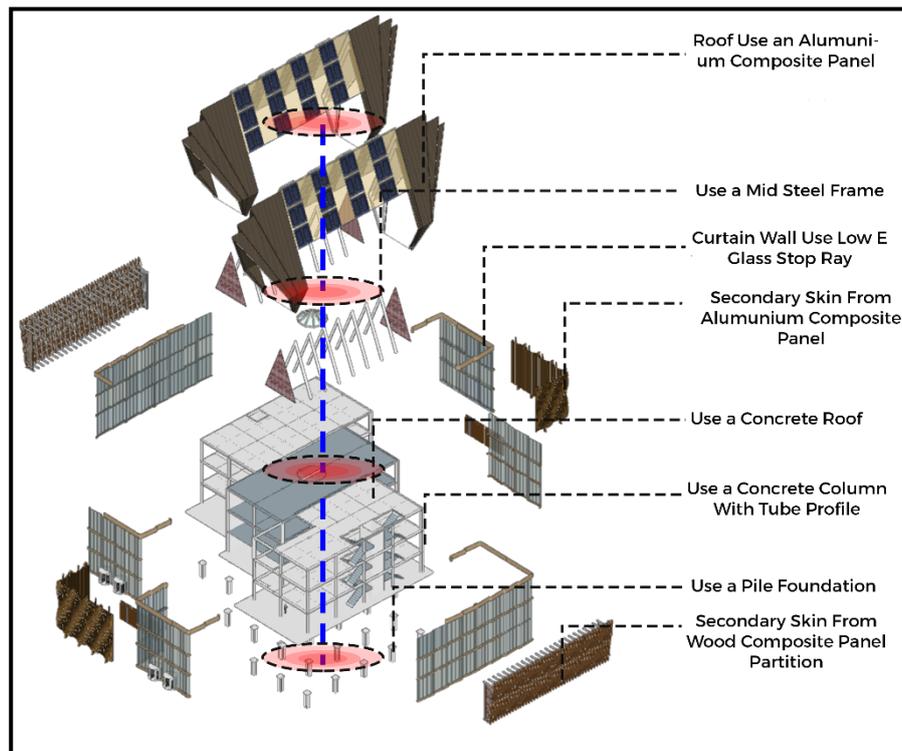
The following is a view of the Caldera Cottage building. The design of Caldera Cottage is based on the Neo Vernacular approach, which makes Batak architecture, in this case, the Bolon house as a reference in designing. It can be seen that the abstraction of the Caldera Cottage building adopts the primary form of the Bolon House. It can be seen from the use of roof shapes, building materials, and structural designs that also use stage construction by replacing the wooden foundations and columns of the Bolon house with pedestal foundations (Figure 7).



**Figure 7** Form and Mass Cottage

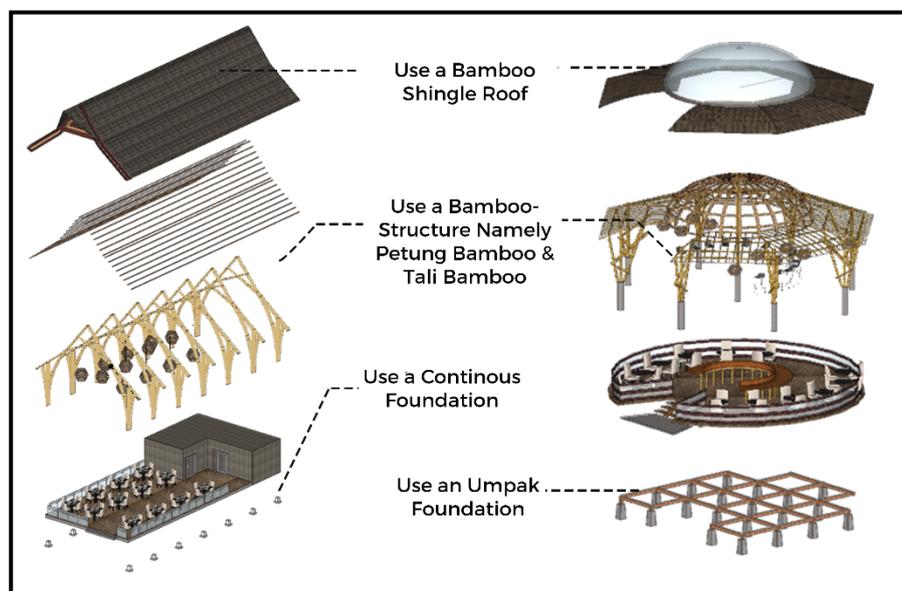
### Structure System

The structure of this building uses a rigid frame structure system consisting of an arrangement of columns and beams that bind to each other. The columns and beams used are arranged in a grid pattern with a span between columns of 6 meters. The foundation structure of the Tourism Information Center building uses a pile foundation which will continue the vertical load of the building, which is channeled through the building columns. The column used in the design of this building uses a circular profile with a diameter of 40cm. The roof structure used in creating this building uses a non-concrete roof combined with a skylight roof which will form an abstraction from the shape of the top of the Bolon house (Figure 8).

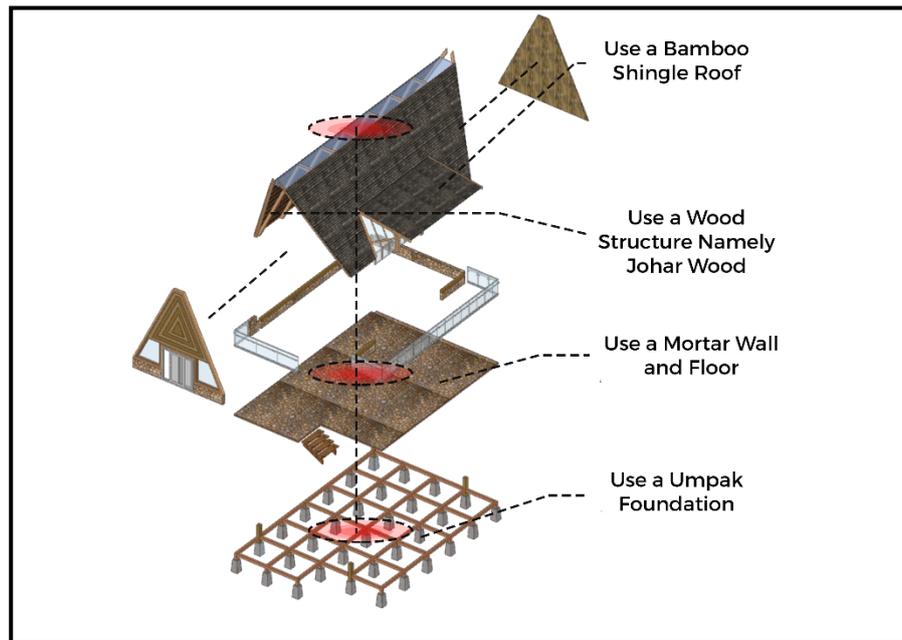


**Figure 8** Structure Explode TIC

The structural system used in the Caldera Resto and Caldera Cottage buildings is a structural system for the 1st-floor building. The structural materials used are mostly natural materials easily found in the design site area. It supports the Neo vernacular approach that uses local materials and finds innovative alternatives from factory-produced materials. The roof will use a structural system with bamboo and wood truss materials and a bamboo shingle roof covering. After that, on the column structure using wood and bamboo and on the foundation using a continuous foundation and pedestal foundation (Figure 9) and Caldera Cottage (Figure 10).



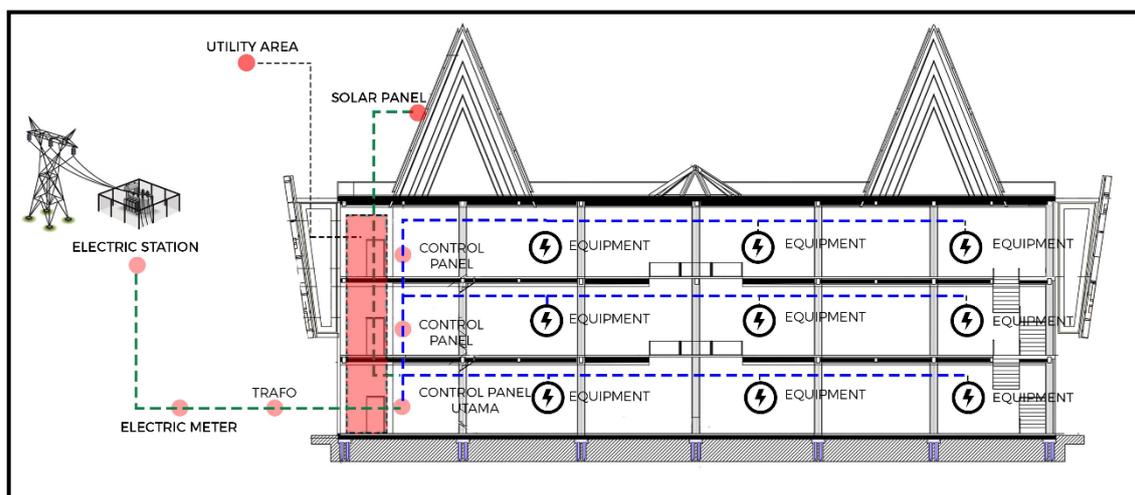
**Figure 9** Structure Explode Restaurant



**Figure 10** Structure Explode Cottage

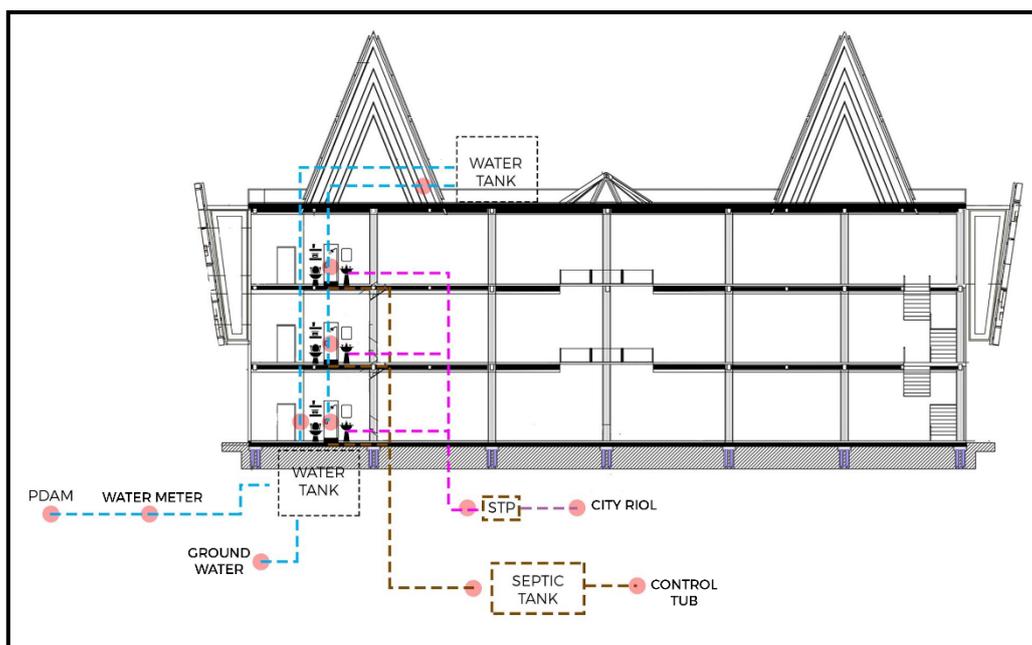
**Utility System**

The electricity network supplies electricity and regulates its distribution to serve all electricity needs for artificial lighting, servicing, and building operations. The primary source of electrical energy is from PLN and a generator set (generator) if the electricity supply from PLN is interrupted. Electrical control panels are placed in the control panel room, coordinating the electricity distribution in each building unit. As an alternative electrical energy supplier to the main building, the Information Center also implements a solar panel system as a provider of electricity for activities in building design. The schematic description of the electricity network is as follows (Figure 11).



**Figure 11** Electric Utility System

The plumbing system is related to the supply and treatment of the water cycle in buildings. Clean Water Supply System (SPAB). In this design, several sources of clean water are used. It is to cover the lack of water in the building. The clean water supply system in the area is obtained from two sources: Groundwater (bore well) and PDAM, where the network covers all roads, all main streets (primary channels), and environmental roads. Clean water supply from wells and PDAM will be stored in a water storage area, namely the Groundwater Tank, and pumped to the Roof Water Tank, which will then be distributed to all parts of the building that use water. And then, the sewage treatment system from the Toilet is connected to the shaft to the septic tank and enters the infiltration well. The wastewater from the floor drain sink is attached to the post to the control basin to be filtered and then channeled to the infiltration well and the municipal drain (Figure 12).



**Figure 12** Plumbing Utility System

## 5 Result & Discussion Project Description

Tourism is one sector that must be developed to increase state income. Lake Toba is one of the tourist destinations that are still in the process of being developed. In the development of tourism, adequate facilities and infrastructure are needed. For that, we need a forum that can support Lake Toba's tourism facilities and infrastructure, especially in Ambarita Village, Samosir, by providing an Information Center that can accommodate tourism promotion and information. The Information Center design has a recreation area that can complement and support the function of the building. Its location is in a room with solid cultural characteristics, namely the culture of the Batak Toba tribe. The design of this Information Center applies a neo vernacular theme to its design. It can also introduce Toba Batak culture for tourists who come. Neo vernacular designs from Batak Toba are applied to acquaint Batak culture at the center of parliament through physical and non-physical aspects. The physical application takes the main

form of traditional Batak Batak homels and non-physically takes the cultural concepts and customs of Batak people. It is hoped that the presence of this information center will enhance the means and infrastructure for tourism in Lake Toba, especially in the village of ambarita, samosir, and it will also fill the needs of visitors to Lake Toba.

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