

## Application Of Neo Vernacular Architecture In Tongging Agrotourism Planning

D. Lindarto <sup>1</sup>, J. Pasaribu<sup>2</sup>

<sup>1,2</sup> Jurusan Arsitektur, Fakultas Teknik, Universitas Sumatera Utara  
Jl. Perpustakaan St. J07 Building, Medan, 20155, Indonesia

\*Email: [qwazyw@yahoo.com](mailto:qwazyw@yahoo.com)

Diterima: 25 Mei 2019 Direvisi: 20 Juni 2019 Online: 20 Juli 2019

### ABSTRACT

*Tongging is a village in the Lake Toba region that located in the District of Merek, Karo Regency. Tongging Village is famous for its panoramic beauty and the local potential of agriculture and fisheries. With various potentials owned by Tongging Village, a place is needed that can accommodate this potential. Tongging Agrotourism is a place to carry local potential in Tongging Village. Agrotourism is designed to attract more tourists while developing the local potential in Tongging Village. Design with Neo Vernacular Architecture approach to re-apply local cultural elements to optimize their potential. The neo vernacular architectural approach process uses transformation and modifications methods to the physical and non-physical aspects. The architectural aspect adopted as neo vernacular approach is the Karo settlement pattern, circulation, mass, and space program. Tongging Agrotourism has various facilities that support tourism activities at Tongging Village, including rice fields and fish cages, main buildings, cottages, restaurants, processing plants, and research and development areas.*

**Keywords:** agrotourism, neo vernacular architecture, tourism.

### INTRODUCTION

Tongging is a village in the Lake Toba region that located in the District of Merek, Karo Regency. Tongging Village is the closest location from Medan City to Lake Toba with a distance of about 105 km. Tongging Village is famous for its panoramic beauty, due to its location on the shores of Lake Toba with lined green hills. Based on data from the Karo Tourism Departement, the number of tourists that come to Tongging Village continued to increase, as many as 89,845 tourists in 2007 increased became as many as 150,450 tourists in 2013 (Dinas Pariwisata dan Kebudayaan Kabupaten Karo, 2018).

Tongging is a coastal area of Lake Toba whose majority of the population works as rice farmers and freshwater fish farmers. Tongging Village outperformed other villages in the district of Merek in the category of lowland rice production, namely 62.5% of the total harvested area in the District of Merek in 2017 and 60% of the total proceeds in the same year. In the category of freshwater fish production,

Tongging Village dominated 98% of freshwater fish in the District of Merek in 2017 (BPS, 2017).

The success of the agricultural sector lifts the economy of the community supported by the availability of adequate natural resources. Harvested area of land used for the development of various agricultural commodities reflects the magnitude role of natural resources in the development of the agricultural sector. In this case, Tongging has a great opportunity in the sector of agriculture that can attract the interest of domestic people and tourists to visit.

As a village that has a variety of tourist objects and well natural products, in Tongging Village there are tourist facilities in the form of five hotels, two family lodgings, various types of restaurants/cafés and family recreation areas. This facility is not enough; it is necessary to plan the Tongging Agrotourism which raises the potential of rice farming and fisheries. Agrotourism can attract more tourists while developing local potential found in Tongging Village.

The majority of buildings in Tongging are adapting Karo architecture. To further make agrotourism have an identity of Karo, the building was designed with the Karo architecture approach. Karo Architecture is a building art that contains various symbolic forms and meanings, as a place to live family functions based on kinship systems and belief systems (Singarimbun, 1975).

Design with Neo Vernacular Architecture approach to re-apply local cultural and architectural elements. Neo vernacular architecture applies to continue to preserve cultural elements even with the modernization layer.

Neo Vernacular Karo Architecture Approach in Tongging Agrotourism applies aspects of Karo architecture such as settlement patterns, building forms, and ornamental variations found in Karo culture.

**Agrotourism**

Agrotourism is an effort to create new tourism products (Reza Tirtawinata, M & Fachruddin, L., 1996). Agritourism activities are also tourism development activities that related to a rural and agricultural activity which can increase the value-added of agricultural and rural welfare (Khairul, 1997).

Tongging Agrotourism is a place of local agriculture and fisheries conservation, especially wetland rice and freshwater, as well as a place for research on cultivation, breeding, and seed propagation to be disseminated to local farmers and the general public. Located in the Tongging Village of Karo Regency, agrotourism covering an area of 2.5 hectares is equipped with tourist facilities for domestic and foreign tourists and is supported by the natural scenery of Lake Toba and the hills (Figure 1).



Figure 1. Tongging Agrotourism Location

Tongging Agrotourism has various facilities that support tourism activities, including rice paddies and fish cages as the primary object of agrotourism, the main building (facilitated with visitor center,

management room, auditorium, agrotourism market, food court, and lockers for visitors), cottages as facilities for overnight visitors, restaurants, processing factories and research and development areas as local agricultural and fishery cultivation sites (Figure 2).

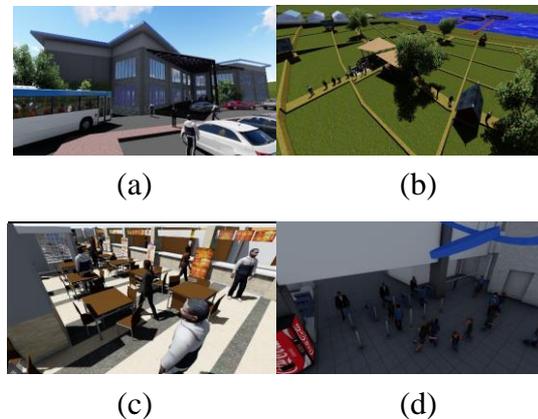


Figure 2. (a) Main building facilities, (b) paddy field exterior, (c) food court facilities, (d) and lobby

**Neo Vernacular Architecture**

Neo vernacular architecture is an understanding of the Post-Modern Architecture that was born as a response and criticism of modernism which prioritizes the value of rationalism and functionalism which are influenced by the development of industrial technology. Neo-vernacular architecture is an architecture whose concept in principle considers normative, cosmological, local cultural roles in people's lives and harmony between buildings, nature and the environment.

Neo vernacular architecture has the characteristics of always using a roof that covers the level of the wall to almost the ground so that more roofs are described as elements of shelter and greeting from the walls which are described as defense elements symbolizing hostility. Application of Victorian 19th-century bricks which are cultures of western architecture dominated the building. Restoring traditional forms that are environmentally friendly with more vertical proportions. Unity between interiors is open through modern elements with open spaces outside the building. Strong and contrasting colors (Rizolli, 1991).

The neo vernacular architectural design principles in detail, namely direct relationships include creative and adaptive development of

local architecture adapted to current building functions, abstract relationships include imaging of building forms, landscape relations include reflection of physical and environmental conditions, contemporary relationships include the use of relevant technology, and future relationships include consideration of future conditions.

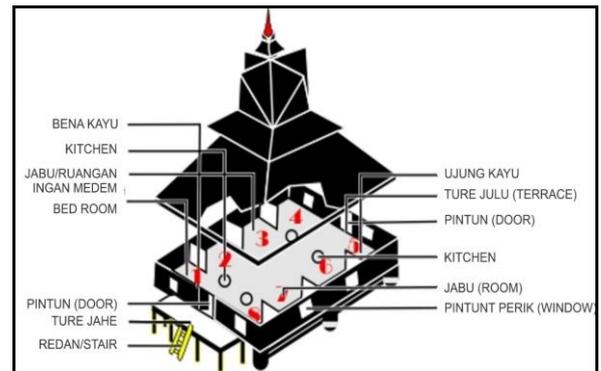
### Karo Architecture as a Neo Vernacular Approach

The basic concept in this design is to apply the neo vernacular architecture of Karo into agrotourism buildings and landscapes by adjusting to the environmental conditions, beliefs and community needs. Neo vernacular architecture is intended to continue to preserve the elements of Karo culture with a layer of modernization. In Neo Vernacular Karo Architecture, the ideas of forms are derived from the original vernacular ideas of Karo which were developed in a modern appearance.

The application of the neo vernacular architecture of Karo in the Tongging Agrotourism Planning is interpreted through the architectural characteristics applied through the site plan and circulation that adapts the Karo settlement pattern, the facade of the main building and the supporting building adapted from the Karo house architectural features.

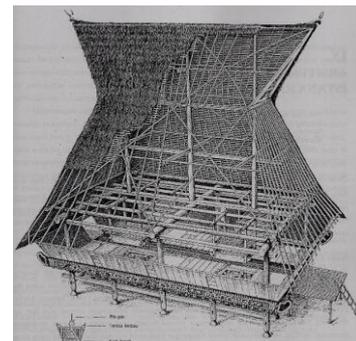
The zone of each Karo residence consists of several groups of houses, and each group has its own public space. Access to the Karo village is in the middle with generally irregular circulation, but there are special provisions with the distribution pattern of each cluster building mass and usually supports every activity carried out on buildings (Depdikbud, 1997).

Siwaluh Jabu has the meaning of being a house inhabited by eight families where each family has its own role in the house. Karo tradition determines the placement of families in the Karo traditional house. Generally, this house consists of Jabu Jahe (downstream) and Jabu Julu (upstream). Jabu Jahe divided into two parts, namely Jabu Ujung Kayu and Jabu Rumah Sendipar Ujung Kayu (Bangun, 2006). While the division of the Karo traditional house vertically is divided into the lower part which serves as a place to store agricultural goods or livestock, the middle as a place to live, and the upper as a place to store objects of family needs (Loebis, 2004) (Figure 3).



**Figure 3.** Division of Karo houses Space  
(Source: <https://dailyvoyagers.com>)

The main characteristic of the Karo traditional house is that it is always made using the concept of a high stilt house. Using shallow foundation and construction pillars that are quite high and large and made of wood material and bamboo. The walls of the Karo traditional house tilt out a few degrees so that it looks spacious from inside and in its construction without using nails, but is tied with palm fiber. The roofs of some Karo traditional houses consist of several levels and are made of dried straw or weeds (Kementrian P. U., 1973) (Figure 4).



**Figure 4.** Traditional House Structure  
(Source: <https://arisarchitect.wordpress.com>)

## METHOD

The neo-vernacular architecture approach process is carried out by making a transformation and modification the appearance of the physical and non-physical elements. By combining, integrating, or mixing two types or more aspects of different architectural appearances to create something new (Yulianti, 2016).

The stages of the neo-vernacular architectural approach are to explore aspects of the Karo architecture that have been previously

considered potential including the Karo settlement pattern, circulation of outer space, mass composition, and the program of outer and inner space. Karo architecture is only used as a starting point, not as an ideal model. The next step is to modify the architectural aspects that have been selected in the previous process. As for its application to the design object, it includes reduced size, replaced material, replaced color, split, moved, refined, disorientated, and unified.

## RESULTS AND DISCUSSION

### Exterior/Siteplan

The applied zone in agrotourism planning adapts the Karo village zone. Every building in Karo village is divided into several clusters organized in clusters based on their function (Kementrian P. U., 1973). The Karo settlement site is oriented upstream with access in the middle of the site. The Karo settlement site is closed to outside access indicated by the presence of a mound of soil or bamboo clumps which are tightly closed at the site boundary for the concept of defense (Depdikbud, 1997) (Figure 5).

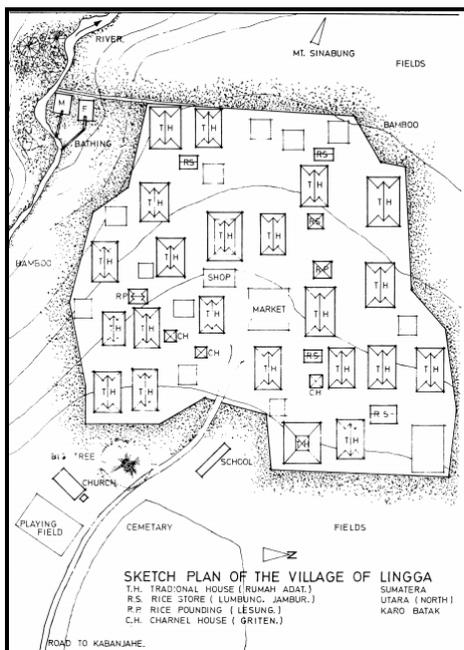


Figure 5. Karo Settlement Pattern

Based on the concept of the Karo settlement, agrotourism planning was designed with several zoning organized in clusters according to their functions and relationships.

The agrotourism zone is located in the middle of the site with the main building and productive rice fields as the primary object. Research and development zones along the north side of the site with laboratories, experiment rice fields and fish cages as the primary object. The lodging zone on the southeast side of the site with cottages as the primary object. The site is closed to the north, west, and south zones with vegetation as a barrier, while the east is open to being oriented towards Lake Toba (Figure 6).



Figure 6. Zoning on the Site

The Public Zone (green) includes visitor centers, retail centers, and restaurants are supporting facilities of agrotourism. The semi-public (blue) zone covers the coastal area and rice fields are the primary objects in agrotourism, where the rice field area the concept of rice fields in the local area is presented with supporting buildings designed according to the Karo farming.

The private zone (red) includes research and development in the north that serves as a place to research and to seek new knowledge in agriculture and fisheries. The private zone includes a cottage in the south which is intended as a means of supporting agrotourism for tourists who want to stay in the agrotourism area, designed with the concept of the local custom building.

The service zone (yellow) includes parking spaces and vehicle circulation areas as supporting facilities for tourists or managers who use vehicles.

### Circulation

Circulation in agrotourism starts from the main entrance; then circulation is divided linearly into each zone according to the function cluster by the Karo village. A separate exit path with an entrance lane to facilitate movement while the linear circulation branch has each one access in and out. There are two types of

circulation provided, namely the pedestrian and motorized vehicle lanes. Pedestrian paths are at the entrance, rice fields, research and development, and at the cottage path. Motorized vehicle lanes are on the main line and the management lane (Figure 7).



Figure 7. Circulation on the Site

**Mass Composition**

The facade of the main building was designed based on the shape of the stage of the Karo Traditional House. The concept of the pillar on the stilt house was applied to the columns of the main building, while the shape of the terrace on the stilt house was applied to the canopy on the main building. As well as the use of Karo ornamental motifs on massive walls to create a characteristic Karo ornamental motif on building design (Figure 8).

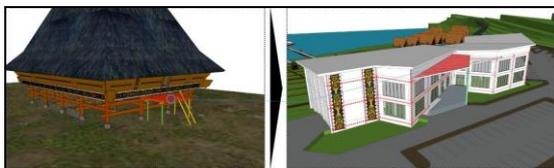


Figure 8. Mass Concept of Main Building

Cottage mass is designed to adapt the roof form of a traditional Karo house using a pedestal foundation structure and a steel stage column so that it does not interfere with the contour on the site (Figure 9).



Figure 9. Mass Concept of Cottages

**Inner Spatial Layout**

The inner space in the design of the main agrotourism building with the neo vernacular

architectural approach is on the principle of the Karo traditional house. Based on its function, the main building is divided into two main parts, namely the market function and the visitor center function. The market is designed on the left side of the building while the visitor center is on the right side with a different entrance. The transition is placed in the middle of both functions to facilitate internal circulation.

The Karo traditional house has three main parts, namely the bottom, middle and top. In the design of the main agrotourism building, the section was designed with the lower ground floor, ground floor, and 2nd floor. Entrance to the main building of agrotourism is through the ground floor, adapted like a Karo stilts in general which enter through the 2nd floor then the second floor becomes a transition between the lower ground floor and the 2nd floor (Figure 10).

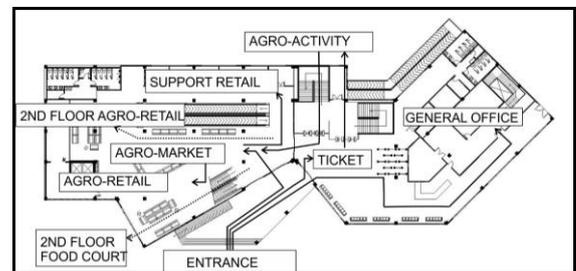


Figure 10. Inner Spatial Planning in the Main Building of Agro Tourism

**Structure**

The structure concept of the Karo traditional house is applied to several buildings in agrotourism planning including cottages, restaurants and rest areas. The building will be planned to use different materials to adjust the space requirements needed to accommodate an activity function. While for the main building that requires a large enough area of the structure such as agrotourism will apply a modern wide-span building structure system.

Foundation structures in cottages and restaurants use pedestal foundations for the concept of stilt houses using modern materials such as steel and concrete. Whereas the foundation used in the main building and laboratory is the foundation of the pile.

The floor structure of cottages and restaurants uses wood with steel beams, while the main building uses reinforced concrete which is coated with exterior materials

according to the needs of each room. The walls used are wooden walls for cottages while the main building uses brick and glass walls.

Roof structure in the main building uses the structure of the space truss to get the appropriate width span shape. Whereas for supporting buildings using the structure of steel and wood horses follow the form of mass composition used.



**Figure 11.** Neo Vernacular Architecture Approach in Tongging Agrotourism

## CONCLUSION

Tongging Agrotourism is a new form of tourism to accommodate local potential including the potential of agriculture, fisheries, and tourism of Lake Toba. Design with Neo Vernacular Architecture approach to preserving local cultural elements to optimize their potential.

The neo vernacular architectural theme is applied to the site by transforming the physical and non-physical aspects of Karo architecture. The architectural aspect adopted as a neo vernacular approach is the Karo settlement system and pattern, the circulation of the site of the Karo village, the composition of the outer mass and the facade of the building, and the space program in the Karo building.

## Acknowledgment

This article is the result of studies from researchers whose part of their funding needs were financed by the Universitas Sumatera Utara to be donated to the city government. This article in the form of applied research produces a form of planning and design that approach to local wisdom and culture.

## REFERENCE

- Badan Pusat Statistik Kabupaten Karo, 2017. (<https://karokab.bps.go.id>) diakses 6 April 2018.
- Bangun, R (2006) *Mengenal Suku Karo*. Jakarta: PT. Gramedia Pustaka Utama.
- Depdikbud (1997) *Arsitektur Tradisional Sumatera Utara*. Jakarta: CV. Eka Dharma.
- Dinas Pariwisata dan Kebudayaan Kabupaten Karo, 2018. (<http://pariwisata.karokab.go.id>) diakses 15 Oktober 2018.
- Kementrian P. U. (1973) *Traditional Buildings of Indonesia Vol. 2 Batak Karo*. Bandung.
- Khairul, (1997) *Sistem Koordinasi Dalam Pengembangan Wisata Agro. Perencanaan Lanskap Agrowisata Cilantung, Parung, Bogor, Jawa Barat*. Bogor: Program Studi Arsitektur Pertamanan, Jurusan Budi Daya Pertanian Fakultas Pertanian, Institut Pertanian Bogor.
- Loebis, N (2004) *Raibnya Para Dewa-Kajian Arsitektur Karo*. Medan: Bina Teknik Press.
- Reza Tirtawinata, M & Fachruddin, L (1996) *Daya Tarik dan Pengelolaan Agrowisata*. Jakarta: Penebar Swadaya.
- Rizolli, (1991) *Languange of Post Modern Architecture 6*.
- Singarimbun, M (1975) *The Adat House, Descent and Alliance Among the Karo Batak*. Angeles: Berkley.
- Yulianti, R (2016) *Eksplorasi Desain Arsitektur Nusantara 35 Karya Pilihan Propan Sayembara Desain Arsitektur Nusantara*. Jakarta: Kompas Gramedia.