



North Nias Traditional Round House

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Abstract. North Nias' traditional house is the only oval-shaped traditional house in the whole world. The oval floor plan that is not commonly found in other traditional buildings is analyzed based on anthropological (non-physical) and functional (physical) backgrounds of North Nias and other community groups in various regions whose traditional house forms resemble, which aims to compare and find similarities between them. The method used in this research is comparative, which is a type of descriptive research that aims to find a fundamental answer about cause and effect by analyzing the factors that cause a particular phenomenon. It was found that the process of forming an oval floor plan in a traditional house in North Nias was caused by several factors, including the functional aspect of North Nias community requiring a large oval-shaped space to gather among villagers, and also as a war strategy wherein an oval room, it is easier to observe around the building. From the anthropological aspect, the use of oval shape is related to the belief of the North Nias community. The benefit of this research is to add insight and public references about the use of architectural forms that are not commonly applied.

Keyword: floor plan, oval architecture, roundhouses, traditional house

Received 18 October 2021 | Revised 18 November 2021 | Accepted 19 November 2021

1. Introduction

In architecture, a form is one of the essential elements either separately or combined with some other results. The form is defined as the result of a thought process based on its function consider and by showing identity. Many forms such as geometric arranged well or organic form having each characteristic and not limited due to each form can indicate different messages. Seen from human required in space, the need itself comprising of two spaces physically and emotionally. Requiring space physically is a requirement as a sheltered place to carry out activities, while emotionally, the human may enjoy the beauty of form, texture, colour and others. Anthropologically, the form was influenced by the politic, economy, social and belief, architecture is also influenced by geographical in settlement and security as well as comforted in nature surroundings [1].

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One of the elements also influencing the basic form of buildings is the design of the plan itself. The floor plan is a horizontal section of the building cut from below. In general, the floor plan shows the position and space arrangement, circulation, dimension, openings location, up to the contents of the room inside the building.

North Nias' traditional house as the main object of research has its own uniqueness, which is a round plan that not commonly applied to other traditional buildings. The design of this traditional house is the result of cultures that are inherited from generation to generation for a long time with various adaptation processes to many conditions (Figure 1) [2].



Figure 1. North Nias Traditional House

(Source : www.museum-nias.org [2])

2. Literature Review

Climatic determinism has been widely accepted in architecture as well as in cultural geography, although in the latter, it has recently found somewhat less favorable. One need not deny the importance of climate to question its determining role in the creation form. Examining the extreme differences in urban patterns and house types within one area show to be much more related to culture than to climate [1]. Architecture has a much broader scope than just a building technique. The scope of the conception of architecture varies greatly. Every interpretation that was raised was strongly influenced by the background of someone's thoughts about the environment and experiences that have been passed. Architectural anthropology can be defined as a study of how humans build relationships of form-function-values based on their culture to meet their daily needs [2]. Guidance and limitation of anthropologic studying architecture are with some aspects such as politics, social, cultures, trust, and economy. In politics, it affects power, as seen in the form of architecture. The forms of castle and wall displays show the existence of defence, and the distance shows an honour. The social side examines various human behaviours in a society specifically interactions with other humans, with a powerful force, and also upon himself. Belief and culture influencing rules such as instruction or prohibition that has been made and done generation to generation, so the form of building

adapted to the belief values or culture. In the economy, a society consists of diverse financial levels, so choosing the form and material of building becomes varied [3].

3. Methodology

This study was carried out by several stages include collecting kinds of literature about physical aspect such as typology of a traditional house and environmental condition and also non-physical aspect (anthropology) such as social system or, belief, and economy of the North Nias community and also several other social groups in various areas there also has a traditional rounded house. Both aspects will then be analyzed and compared to each other between North Nias society with other social groups to obtain the results, namely factors of forming a round plan on North Nias' traditional house.

4. Result and Discussion

The North Nias' traditional house has its basic form that is a combination of square and half-round at both ends, which can be simplified into oval form. According to indigenous elders, an oval form presenting an open and spacious impression and also to facilitate observation to the outside of the house, with openings in almost all parts of the wall in order to anticipate enemy attacks from outside (Figure 2) [4].

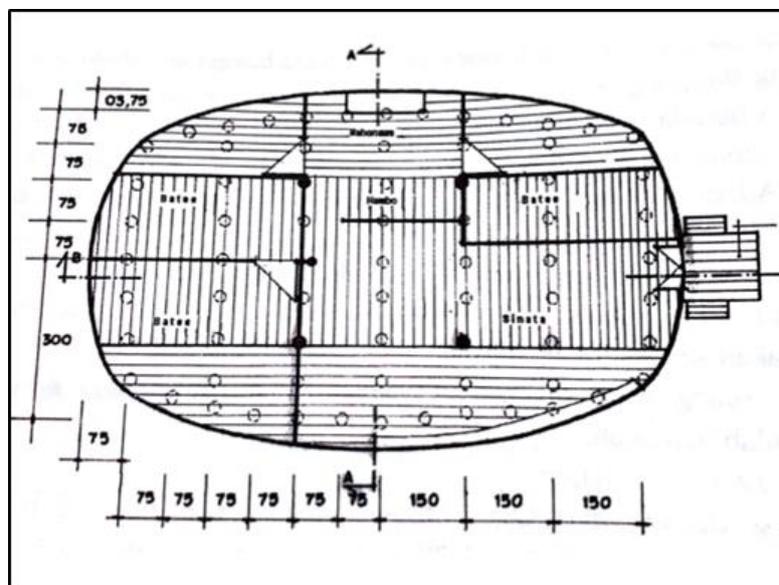


Figure 2. North Nias Traditional House Floor Plan

(Source : Alamsyah. *Tipologi Arsitektur Rumah Adat Nias Selatan & Rumah Adat Nias Utara*, 2012 [4])

All the size and solid parts of the building are provided in odd number according to their belief that even numbers correlated with negative energy which can have a harmful impact on the occupant [4]. On a North Nias' traditional house, there is an abstract division of rooms in high or lower floor level on the main room according to society caste. They are the first level for elders, second level for middle society, and the third for general society (Figure 3).

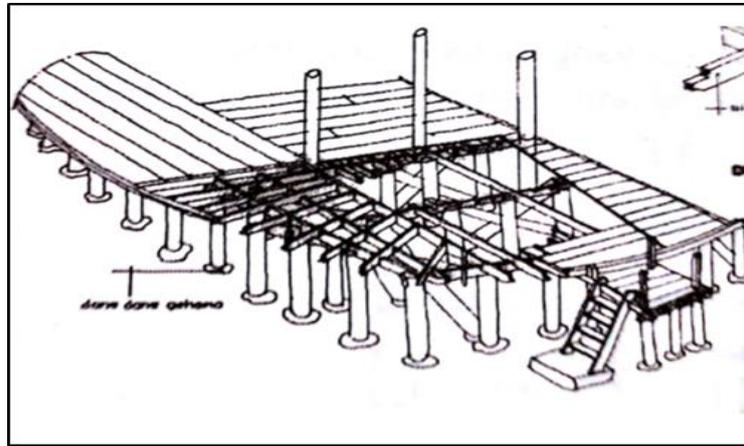


Figure 3. North Nias Traditional House Floor Section

(Source : Alamsyah. *Tipologi Arsitektur Rumah Adat Nias Selatan & Rumah Adat Nias Utara*, 2012 [4])

Seen from the social, the community follows the patrilineal lineage. The smallest kinship group is the nuclear family, but more important is the extended family living together and become a household. There is social stratification social in North Nias society such as nobleman (*Si'ulu*), religious leader (*Ere*), intellectual (*Si'ila*), ordinary people (*Ono Mbanua*), and slave (*Harakana*). The marriage system is monogamy which means one individual only has one partner. Marriage generally occurs on a cross-cousin to get a social position as a family in society and to inherit the position of parents in traditions. The North Nias society have a Polytheism system, the belief in more than one God. The society found some gods with their own different responsibilities on each aspect of life. The God to worship is the spirit of ancestors presented in a statue made of wood or stone. The society also has three worlds. They are the upper world (the ancestors), the human world, and the underworld that was presented in the architecture. In a traditional house, the upper part is considered as a highly respected place and be holy. The round plan of the building correlated with the picture of the universe that is believed to be round. In the economy side, the main livelihood of society living on the coastal is farming coconuts and the society in the hinterland conducting farms. The barren field shall be used for raising livestock. The other way of livelihood is hunting, catching fish, and make handicrafts. The handicrafts of North Nias society has been known since pre-history era, to produce various tools and weapon made of iron, gold jewelry, furniture of wood, the art of stone chisel, and carving [4].

The traditional house of Dani society is called *Honai*, which is a simple round building in narrow sized with minimal openings comprising one door without any windows. Its wall is made of a wildwood arranged in two layers to avoid gale and cold air. The roof of the building comprises a wood frame rounded arranged in a dome pattern then covered with straws. Its lightweight can protect from rain and heat. The middle of the room is used as a fireplace to heat the temperature inside [5]. The settlement of Dani society is also known as *Silimo* comprise of several *Honai* and also a building as other function. Seen from the social system, the smallest group in society is an extended family comprises of two or three nuclear families living together. However, adult males and females live in different *Honai*. Dani group was led by a chieftain (*Ap Kain*). Dani society group hold polygamy marriage, as male is allowed to have more than one wife which aims to multiply generation to add more workers and continue Dani society and also to show social status seen from numbers of the wife. From the belief aspect, the society believed that the ancestor spirit might grant a magical power to those males. They held a ritual of slaughter animals as offerings to the ancestors. The main livelihood of Dani society is to raise livestock and farming [6].

The traditional house of Wae Rebo society is named *Mbaru Niang*. It is a large conical building comprising of five floors with every function, either as a resident, to receive guests, to store heirloom and foods, and place to keep offerings to those ancestors to the top floor. A round plan is a representation of a spider nest, symbolized the unity of cultures persistently to keep, on the lower floor separated into two zones, namely a public area on the forepart and a private area on the back part as a resident of the family (Figure 4).

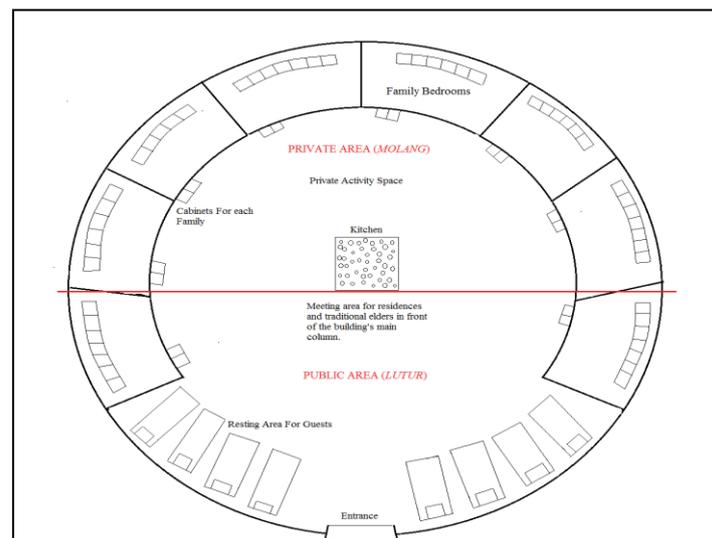


Figure 4. *Mbaru Niang* Floor Plan

From the social system, the primary kinship relation of society, namely extended family, comprised of eight prominent families living together in a house. This society also holds caste systems such as nobleman (*Kraeng*), ordinary people (*Ata Lehe*), and slave (*Azi Ana*). The marriage system of society holds monogamy, namely, each individual has only one partner.

Society believes that ancestors' spirit and ghost staying in another world to protect their village, house, and farming field. The prominent figure of the ancestor in their faith is *Mori Karaeng* as the creator of the universe. Their primary livelihood way is farming and also raising livestock, which the number of livestock shows social status [7].

The traditional house of Boti on Timor Island, called *Umebubu*, is a round building with a roof almost touched the ground. Its wall made of wood and bamboo arranged encircled with one main door small-sized so that an adult should hunch to pass the door. Each *Umebubu* is occupied by the main family. In Boti tradition, *Umebubu* is the first building should be first made before the build-up other building in the village as usually located in the peak of hill or mountain. From the social system side, it is found several kinships from the smallest namely the nuclear family, through the extended family, namely a clan as the combined of several extended families. It is also found a caste system in Boti society such as king (*Usif*), leader and chieftain (*Amaf*), ordinary people (*Too*), and slave (*Ate*). Marriage in Boti holds monogamy (each individual only has one partner). The traditional belief of Boti called *Halaika* is polytheism. Society believes in two rulers of the universe, namely *Uis Neno* and *Uis Pah* as father and mother. Their primary way of livelihood is farming and hunting for males and to weave traditional clothes as an obligation to females [8].

The traditional house of Eskimo (Inuit) is called *Igloo*, namely a dome building made of ice block arranged to prop each other without frame structure with one entrance door in the path. *Igloo* functions as a resident and place to carry out various activities to protect them from cold air and wild animal attacks. In the *Igloo* room, a higher level is used as a place that needs warm temperature such as sleeping room because cold air may be trapped on a lower level because cold air will be trapped in a low level due to higher density so that the heat with a lower specific gravity will flow upwards (Figure 5) [9].

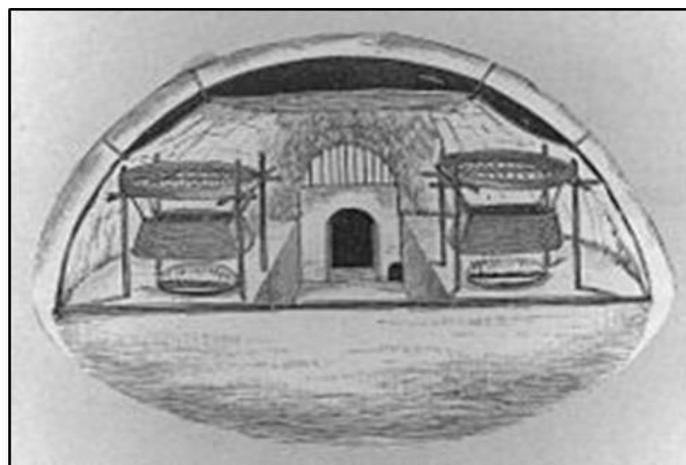


Figure 5. Higher Bedroom Level in *Igloo*
(Source : www.louisiana.jurnal-budaya.com)

Some Eskimo society lives nomads, but most of them already settled in one region. In Eskimo's belief, the primary spirit is the sea God called that governs the universe. The marriage system of Eskimo was rarely found in general society, namely the Polyandri system (a woman is allowed to have more than one husband). The main way of livelihood of Eskimo society such as farming, to raise livestock, hunting, and fishing [9].

Darai society is one of the ethnic groups in Nepal with the traditional house named *Ghumaune Ghar* means a rounded house. The society lives in remote mountains and hard to reach. The material of the wall was made of wood layered mud on both sides, while the roof is made of thicket bushes called *Ghar* arranged in an umbrella form. From the social side, Darai society is known with caste system holds from old Hindu social systems such as *Brahmana*, *Ksatria*, *Vaisya*, *Sudra*, and *Pariya* caste. The primary kinship relation is an extended family comprising of several nuclear families from patrilineal lineage living together in a house. Marriage generally occurs between communities themselves (endogamy), and marriage between different castes is not allowed. Most societies adhere to Hindu but also still hold their traditional belief inherited from an ancestor that the spirit of goodness and badness controlling human activities and hold power from natural or universe. Their way of life depending on natural condition, namely to farm and hunting done by males, while females make their own traditional handcraft [10].

The traditional house of Celts is a round building with a conical roof without windows. There is only a main door opening separated to the main structure of the building by a path to avoid cold air from outside directly entering the room. There is only a single room to do various activities. The roof comprising of straws layered with mud to protect and keep room temperature be warm, while the wall was made of weaved wood or stone and a mixture of mud. The middle of the room is used as a fireplace to provide food and to keep the room temperature warm. From the social system, Celts was led by a chieftain (*Druid*) chosen from the intellectual. In the society is also found that the caste system consists of various levels, from the highest leader to slaves. Their marriage system is monogamy but is occurs temporarily under individual agreements. Society belief is polytheism with many Gods in their mythology. Each God has a different responsibility in each aspect of life. Society held rituals by presenting offerings in animals, things, even man to those Gods. Their way of living in general is farming and raising livestock. Celts who often fights are also known as craftsmen, various weapons and war equipment made from iron [11].

The Basotho society in South Africa has a traditional house named *Mokhoro*, namely a cylinder building with a domed roof. A thick wall of the house was aimed to keep stabilized temperature, made of stone glued with a mixture of sand with soil and dirt of animal, while the roof made of straw sewn up to the top of the building [12]. The opening on the house is only a window with small-sized door to reduce sunlight directly into the room and to avoid wild animals from

entering the house. In certain areas, the wall of the building was coloured with a bright traditional patterns. From a social view, the smallest kinship in society is the nuclear family. The society also holds a clan system, namely a combined of some extended families, to inherit the family name. There is no caste, but the influence of ethnicity positively plays a role. Their marriage system holds polygamy, even this system correlated with cultures and belief, they assumed that lots of children show their prosperity. The society belief is polytheism with God named *Modimo* and several ancestor spirits under *Modimo*. Their way of living is farming, to raise livestock, hunting, and blacksmith [13].

The following table is a comparison of several other social groups with North Nias society anthropologically (Table 1).

Table 1. Anthropological Comparison

| Society Group | Social System | Marriage System | Belief | Livelihood |
|------------------------|--|--|--|---|
| Dani (Papua) | Have equal kinship relation without a caste system. | Different in the marriage system, hold a polygamy system. | The same belief in their ancestor and polytheism | Have equal in livelihood to farming and livestock. |
| Wae (Flores) | Rebo Equals in kinship relation and hold a caste system | Have equal in the marriage system, hold monogamy | Equals to the belief in ancestor and polytheism | Equals in livelihood by farming and raising livestock |
| Boti (Timor) | Equals in kinship relation and hold a caste system | Equals in the marriage system, hold monogamy. | Equals to the belief in ancestor and polytheism | Equals of livelihood by farming and raising livestock |
| Eskimo | Equals in kinship relation and live together in the extended family. | Different in the marriage system, hold the polyandry system. | Equals to the belief by polytheism. | Equals in way of livelihood with farming and livestock, but different processing method. |
| Darai (Nepal) | Equals in kinship relation and hold caste system. | Hold the endogamy system. | Differently in believe due to hold Hindu. | Equals in livelihood by farming and raising livestock. |
| Society Group | Social System | Marriage System | Belief | Livelihood |
| Basotho (South Africa) | Equals in kinship relation without a caste system. | Different in the marriage system, hold polygamy. | Equals in the belief of ancestor and polytheism. | Equals in the way of livelihood with farming and raising livestock and produce metal handcraft. |

Comparison of physical aspect or function between North Nias society and to most other social groups, have a very closed kinship relation so with tradition to live together as an extended family and gathered, so the society needs a wide space to do various activities. Nias society also

identical with the culture of war as other social group, especially with Celts so the society needs a safe and strategic place if a war suddenly occurs. The village's location of other social groups and the villages in Nias island generally in hills and mountains with their belief assumed that the higher the village is, the closer it will be to the upper world, then the air around will be cold. Therefore, it takes a warmer space for the comfort of its residents [14].

By comparing anthropological aspect (non-physical) with the physical aspect is found such as, in North Nias' cosmology, they believe that the universe is round, which was applied to the primary form of the traditional house [15]. This form is also representing all creatures and all things found in nature. Each domain in Nias Island tries to show its influence by distinguishing its cultural characteristic from other domains. In this case, North Nias' traditional house is different from other areas that are square formed. From the function of the building, Nias society needs an open and comfortable space to live together and to gather, so the oval plan can be presenting an open and spacious impression. The round plan can also be used as a strategy during the war. For comfortable temperatures, a round plan can make the room warmer.

5. Conclusion

The forming process of the round plan on North Nias' traditional house caused by several factors which are the results of analysis and comparison of anthropological (non-physical) and function aspects of North Nias society with some other social group there also applied round plan. The cosmology of North Nias believes that the universe and its contents are round to be applied as a basic form for the traditional house. North Nias society also tries to distinguish their cultures from other society in the same territory, so that round form for the traditional house was chosen, which were not found in other regions. From the function aspect, North Nias society needs comfort and strategic place to gather and to anticipate any attack from outside, so this can be supported by the shape of a rounded house. A rounded house can also support the temperature comfort by reducing cold air from outside.

Acknowledgement

This literature was prepared as a part of funding by Universitas Sumatera Utara to contribute scientifically to the study of North Nias' traditional house, which must be preserved and to add references to community backgrounds and the application of architectural forms relations.

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