



# Application of Cosmology Concepts to Nias Cultural Park Planning

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**Abstract.** Nias tribe has a variety of cultures that are the heritage of their ancestors. One of them is the belief in cosmologists, namely that the world is divided into the underworld and the upper world. This cosmological conception was applied to the design of cultural parks in Nias. The goal is to create a cultural park architecture that can reflect the art and culture of Nias itself. Cosmological concepts in this design are applied from selecting building sites that are a more macro thing to the organization of space, forming the mass of buildings, to building materials that are more micro things. The data collection method used is a qualitative descriptive method. This cultural park will be one of the cultural preservation containers that can characterize the richness of Nias culture from the image of its architecture.

**Keywords:** cosmology, cultural park, Nias

Received 11 September 2022 | Revised 29 October 2022 | Accepted 11 November 2022

## 1 Introduction

Indonesia is a country with the most ethnic groups globally that give birth to various cultures with their peculiarities. Culture itself was born from indigenous peoples in Indonesia, which became their lifestyle. The definition of culture is broad, but according to Koentjaraningrat in Sumarto [1], one element of culture is a religious system or belief that develops in a cultural community group.

In Indonesia, every tribe or group of indigenous peoples has confidence in supernatural forces or certain conceptions or philosophies. The belief system is inseparable from the culture of indigenous peoples. The belief system is the essence of socio-culture that will last longer than the volatile physical elements [2].

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Nias tribe has a very distinctive and varied cultural wealth [3]. As an indigenous tribe living in the Nias Islands, Nias believe in cosmologists understanding the conception of the upper world, the middle world, and the underworld. This belief in cosmologists affects every area of life of the Nias tribe, ranging from traditions, and rituals, to the factors in the process of building, form, and the spatial organization of its ancestral homes (traditional architecture).

Planning Nias Cultural Park located in Gunungsitoli City as a forum for preserving traditional Nias culture adopts the understanding of Nias people regarding its cosmological conception. The architectural approach used in planning this cultural garden is the neo-vernacular architectural approach. Neo-vernacular architecture is a new, more modern improvement to the vernacular architecture of an area. The vernacular architecture itself is architecture that is built on needs and uses local materials without the help of architects [4]. Neo-vernacular comes from the prominent aspects of specific vernacular that easily accommodate contemporary needs with technical awareness [5]. This application aims to enrich the design concept of North Nias Cultural Park to become a cultural facility in terms of mass form, zoning, outdoor space organization, and the inner space that can represent the local identity of the Nias tribe.

## **2 Literature Review**

### **2.1 Cultural Park**

According to Eppink [6], culture is the intellectual and artistic statement that characterizes a society. Local culture (regional culture) is an asset of the nation that must be considered [7]. Cultural diversity is an essential wealth for Indonesia, so there is a need for cultural preservation efforts. Cultural parks are also a forum for developing a regional culture in every region in Indonesia [8]. Taman Budaya facilitates all cultural arts implementation among artistic people, artists, students, and other general public [9].

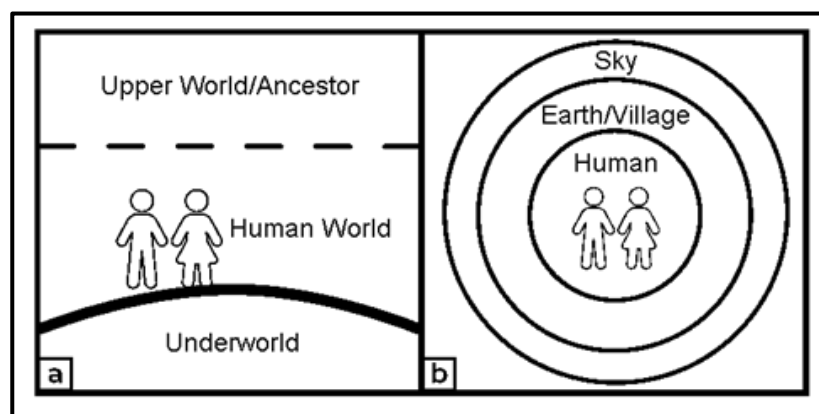
According to the Decree of the Minister of Education and Culture of the Republic of Indonesia No. 0221/0/1991, cultural parks protect, develop, utilize, and foster regional culture. In practice, cultural parks are focused as regional arts centers instead of culture in a broad sense. At the beginning of its establishment, cultural parks in Indonesia were intended as "art storefronts" to accommodate all regional arts. Art itself is one of the seven elements of culture conveyed by Koentjaraningrat. Furthermore, the regulation of the Minister of Education and Culture No. 85 of 2013 concerning Minimum Service Standards in the Field of Arts states that cultural parks have a duty in handling provincial and district/cities in Indonesia. So, the cultural park is a forum for the cultural arts community and regional *sanggars* in working and holding art performances.

## 2.2 Cosmological Understanding

According to astronomy, cosmology is a branch that discusses the origin of the universe's history from the Big-Bang theory to the present. However, the notion of cosmology is not limited to the idea of the universe's origin. Apart from an astronomical perspective, cosmology also allows it to be discussed from various perspectives such as history, philosophy, or archaeology. Cosmology is closely related to metaphysics and macrocosm [10]. Cosmology is the study of the concept of the relationship between the universe (macrocosm) and the human world (microcosm) [11]. Cultural societies in Indonesia have an attachment to this cosmological concept. Most regional cultures in Indonesia believe in cosmologists and apply the concepts of macrocosm and microcosm to every area of life. Cosmology can also be a forming factor of inner space in architecture [12]. The area is one of the earliest concepts that man understood when he realized his existence in the universe. Understanding cosmological and universe space plays an important role in the formation of regions in the architecture of the archipelago.

## 2.3 Cosmological Understanding in Nias Architecture

Nias tribe is a tribe with megalithic culture. According to cosmologists, this megalithic culture can be found in the concept of architecture and space organization. Nias megalithic culture believes in macrocosm and microcosm reflected in Nias people's understanding of the division of the universe space, namely the upper world, the underworld, and the middle world [13] (Figure 1).



**Figure 1** Nias Belief in Cosmology

The division of space is applied in macrocosm and microcosm. The macrocosm is reflected in traditional Nias villages or so-called banua. This understanding of macrocosm can be seen in the process of regional elections to establish villages and their village patterns. The village or banua Nias tribe was established on a higher plane because the higher plains are believed to be sacred places. The higher the village, the higher the social strata and power in the rural hierarchy that exists in Nias society, which is in South Nias, while housing in North Nias tends to have a

distance between houses but still face to face. They were looking at the pattern of traditional Nias' village settlements. There seems to be a link between the building laying system between dwellings so that the order guarantees a smooth and consistent relationship between the residence (community) and the village leadership (king) [14] (Figure 2).



**Figure 2** Cosmology in Nias Traditional House

Nias culture believes in three space macrocosm divisions: the upper world, the middle world, and the underworld. The upper world is a world that is believed to be the residence of the supreme god according to the beliefs of the Megalithic culture of the Nias Tribe, namely *Lowalangi*. The middle world is a world for human habitation inhabited by *Silewe Nazarata*, the god of connection between the upper world and the underworld. And the underworld is the residence of the lord god of the underworld, namely *Lature Dano*. The bottom of this Nias traditional house is a stilted structure that forms *kolong*. This *kolong* itself has many functions, including responding to the environment, as a manifestation of cosmology, as a protector, as a respect for the earth, and as place storage [15]. This *kolong* has many functions, one of which is as a place for livestock. In traditional houses, Nias people put the top of the building as the most respected (sanctified) place. Traditional houses located in North Nias and South Nias, although structurally different but cosmologically, have the same sacred space. In addition, Nias people also have great respect for their ancestors and interpreted the ornamentation of the house in the form of writing on the roof support pole of their traditional house.

The cosmological beliefs of Nias people are also reflected in their culture, which values nature very much. They believe that the relationship between man and nature must be harmoniously established. So traditional Nias architecture also uses materials available in Nias nature, namely local wood and stone. Breeding of nature and local materials is also a very authentic Nias architecture. Nias traditional house architecture, such as *Omo Hada* and *Omo Sebua*, uses wood to have a unique and striking architectural background [16].

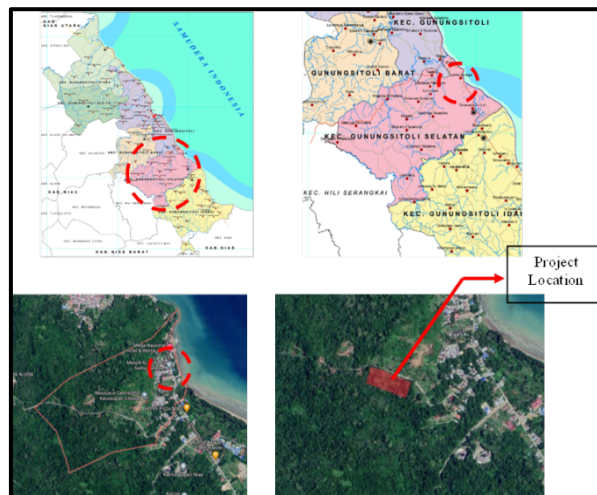
### 3 Methodology

Data were collected using descriptive qualitative methods to obtain relevant data about the relevant literature on the Nias tribe, such as culture, philosophy, and cosmological application. Standard on Nias architecture which is then analyzed to strengthen design preferences. The data analysis results from this literature are then used to build a design concept in this design.

## 4 Result and Discussion

### 4.1 Project Description

This architectural project that was designed serves as a cultural park located in Gunungsitoli City. The project is titled "Design of North Nias Cultural Park in Gunungsitoli." This project offers an art and culture facility in Gunungsitoli where facilities like this can hardly be found in Gunungsitoli (Figure 3).



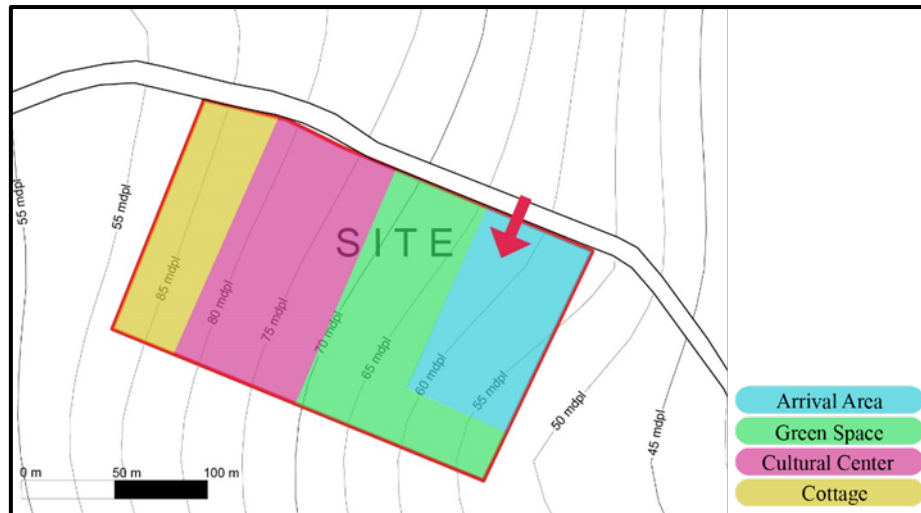
**Figure 3** Project Location Map

This cultural park is used to accommodate all Nias cultural arts activities, in this case, focused on dance, music, and preservation of ancestral heritage. The design approach used is the neo-vernacular architectural approach. Furthermore, the design concept was developed by applying Nias's cosmologists to the design of this cultural park. This cultural park design site is located explicitly in *Luaha Laraga* Village, Gunungsitoli Selatan District, Gunungsitoli. The site is on a hill and close to coastal areas. The site is close to the city center, socio-cultural center, and tourism area. The selection of sites above higher areas is also an application of the architectural cosmologists of traditional Nias people, namely building villages in hilly areas because they are believed to be closer to their ancestral spirits.

### 4.2 Zoning and Hierarchy of Outer Spaces

The zoning settings within the site follow the site's existing conditions. The area inside the site is grouped into four zonings, namely the recipient area, green area, arts and culture center, and

amenity area (lodging). The amenity function is crucial because it is one of the main components forming tourism [17]. This grouping is based on functions and activities connected with the macrocosm concept of the beliefs of the Nias people. The existence of green open space and efforts to minimize interventions in the site's existing conditions into a concept of breeding nature (Figure 4).



**Figure 4** Zoning Arrangement Concept

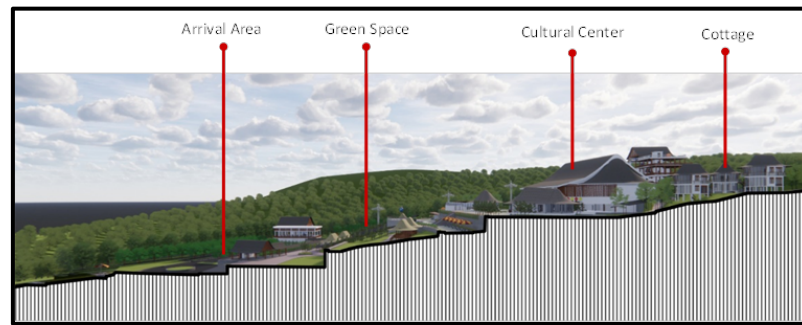
#### 4.3 Zoning and Hierarchy of Outer Spaces

Accommodating the functions of cultural parks and other supporting functions is organized in several masses of buildings. Mass sequencing of the central mass on a large scale is fragmented into a small mass spread to various areas within site. This aims to avoid intervention against the existing condition of the site (which is contoured). Masses on a small scale allow the laying of these masses on areas that tend to be contoured. So that breeding of the soil is achieved following the cosmological beliefs of the Nias community (Figure 5-6).



**Figure 5** Mass Placement on The Site

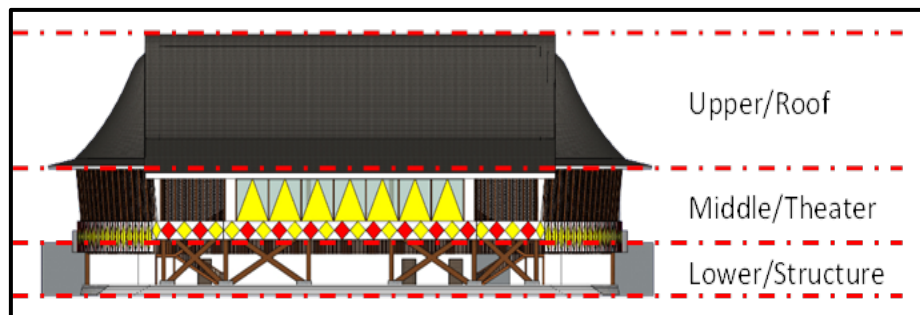




**Figure 6** Site Section

#### 4.4 Cosmological Mass

In general, the masses of buildings in this cultural park are composed of 3 parts: the legs (support poles), the body, and the head (roof). The mass of the building is lifted from the ground, thus forming a kolong from the stilt structure of the building. The part is called the leg part and has structural functions. Human activity in the inner space is accommodated in the body. The functions of inner space are organized in this section. This section is closely related to the user's activities within those spaces. The top or head is a large roof of the building. The monumental scale of the roof symbolizes the exclusivity and distinctiveness of the building as an interpretation of Nias's cosmological architecture and culture (Figure 7).



**Figure 7** The Concept of Cosmology in Mass Theater

#### 4.5 Material Cosmology

Material selection is based on materials closely related to the culture and traditions of Nias people formed from cosmological beliefs. The architecture of the archipelago is architecture influenced by the environment and local circumstances [18]. So the use of local materials is one important thing. The materials used in this design are wood and stone, local materials. The design of buildings in this cultural park also uses wood and concrete materials as a reinterpretation of stone. Buildings are generally built of concrete, both in the structure and architecture, as for the elements and architectural details using local wood.

## 5 Conclusion

Nias culture is a culture rooted in the ancestors way of life. Belief in cosmologists impacts many aspects of the life of the Nias people, including architecture and village patterns. This is a unique and exciting precedent to be applied to the design of the cultural park in Gunungsitoli. This cultural park functions as a container for the preservation of Nias art and culture. Nias's cosmological architectural approach to the design of this cultural garden is reflected in the organization of its indoor and outdoor spaces, which are based on the hierarchy of the underworld, the middle world, and the upper world, on the zoning division of space functions. And finally, also reflected in the use of materials, which optimizes the use of wood and stone, which are local.

## Acknowledgment

This research is a study on applying the cosmological concept of traditional Nias people to the design of Nias Cultural Park in Gunungsitoli, which is intended to be a recommendation for local government to preserve Nias culture through architecture. The author would also like to thank the Department of Architecture, Faculty of Engineering, University of North Sumatra, and those who have assisted in this research and design.

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