

The Socio-Cultural Factors Influencing the Built Form of Nias Island, North Sumatera, Indonesia

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ABSTRACT

Indonesia is a vast country with diverse cultures and rich traditions. Architecture was observed to be one of the national heritage artifacts preserved over time in the country. The preservation of traditional architecture is not only for tourism but more importantly to develop its potential to meet the needs and vision of the society. Moreover, the ever-changing urban space of the country is growing and developing in line with the increase in population thereby making the traditional architecture of the natives disappear slowly. Architecture is not just an assembly of the building materials on a plot of land but also the manifestation of a complex milieu comprising of culture, social and technological aspects required to meet human needs and facilitate their activities. This research was, therefore, conducted to discuss the potentials of Nias architecture elements as an appreciation of traditional architecture. Nias is a small island located on the North-West coast of Sumatra. This remote location distinctly creates unique cultural procedures, customs, and beliefs which influence the socio-culture of its inhabitants and have become the significant cultural practice and customs on the island. It has also been argued that the influence of local culture, especially in the formation of Nias traditional houses, has an impact on the construction of the dominating style of buildings between the North and South Nias. Meanwhile, the Nias culture is generally said to be relatively similar between the two regions but the configuration of the buildings is distinctively different due to the building materials available, the tradition of the people, and the surrounding environment.

Keywords: *traditional architecture, tropical design, architectural typology, Nias Traditional Houses.*

1. Introduction

It is rather iniquitous to reject the fact that classical architecture has no potential in ensuring the quick physical development of a country. Few cultural geographers, anthropologists, and ethnologists have asserted that the evidence, strength, and potential of classical architecture are important to understanding cultural and community development. Some exposures have also been made among experts in understanding architecture from the local cultural context using existing built forms without focusing on ethnical patterns. Meanwhile, even though architectural scholars always reference cultural geographers, anthropologists, or ethnologists in studying the influence of culture on architecture, analyzing the existence of the building on site is one uncomplicated approach. This, therefore, inspired the conduct of this research to ascertain the product of culture and architecture as part of the cultural heritage.

Architecture was also observed to be an effort of the people to express their culture and society through the creation of buildings. It is, therefore, entirely a logical consequence of a culture which is similar to the analogy of a fruit tree, and an expert is expected to know when the 'tree' will bear fruit as well as the cycle of its seasonal productivity based on experience. Moreover, those with an understanding of architecture through traditional evolution have the right to explain the components according to their knowledge and it is also important to ask "what kind of architecture is suitable to understand the 'root' of culture? It, therefore, becomes clear at this juncture that the community is not the creator or the architect of the building but they are in the position to promote their culture through several efforts and daily activities. Different ethnic groups with diverse cultures in Indonesia have built series of traditional buildings ranging from simple structures to more complex shapes and forms, either as detached or clustered units, each with its own characteristics to visually appreciate their existence. This means a mere matrix of culture is not enough background to understand Indonesian classical architecture but serve as the essence and foreground which led to its creation. The elements are, however, evidently presented through the languages of technology, religion, and arts as well as the economic and social organizations of the people.

The traditional architecture of Indonesia is reflected through the personality of the people and this means it is infused in the social, material, and cultural aspects used as the splendor of North Sumatra as observed in the architecture of the Batak Toba, Batak Karo, Pak - Pak Dairi Batak Simelungun, AngkolaMandailing, Malay, and Nias. Each of these has its distinct characteristics which differ from others mainly due to the environmental features embraced by the culture and lifestyle associated with the region. Moreover, the practices are consistent with the idea of the customs and culture channeled to preserve and maintain buildings, especially" rumahadat" which is known as the customized house. However, the disappearance of traditional architecture in most of the previously mentioned places is quite obvious and necessary steps are expected to be taken in order to record the technological advancement of the people in the past showing their passion to promote culture.

Traditional architecture is also a reflection of the social and public realm of a region as well as the participation of the community in the public building. Nias communities, however, have more different cultures compared to the neighboring region of Sumatera Island such as Batak, Mandailing, Karo, Minangkabau, and Mentawai. Moreover, the indigenous practice of the Nias is not similar to those of other indigenous groups in the country as observed in the cultural activities embedded in their architecture such as the several ancillary and residential buildings used by the community. One distinctive building is the customized house found on the island which serves as the legacy of history, culture, and heritage of the nation's architectural feats.

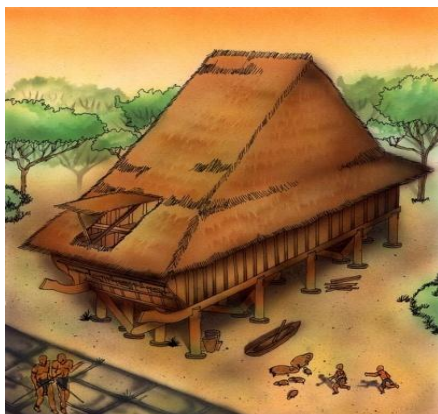


Figure 1.Traditional House on the South Nias (OmoNifolasara)



Figure 1.Sectional Perspective of the Interior

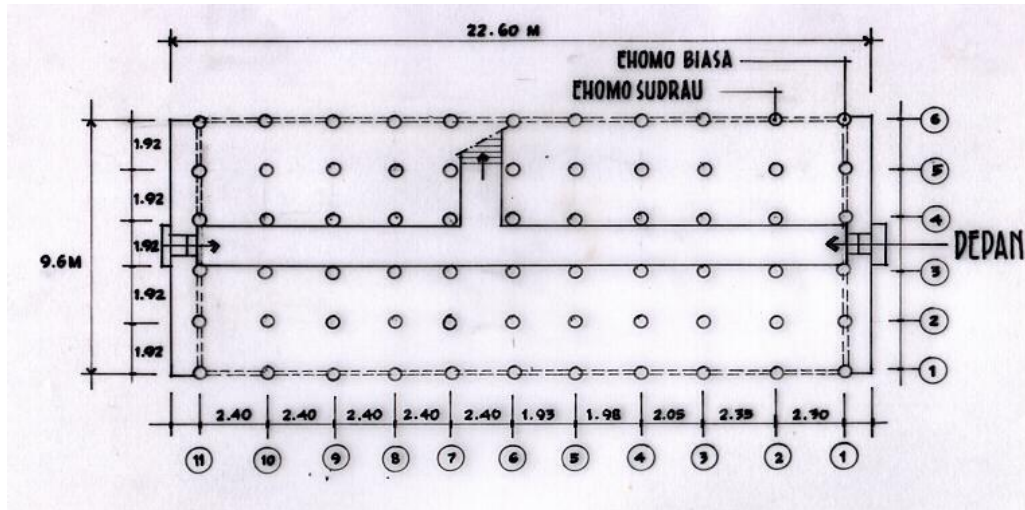


Figure 2. Layout of the columns in the South Nias House

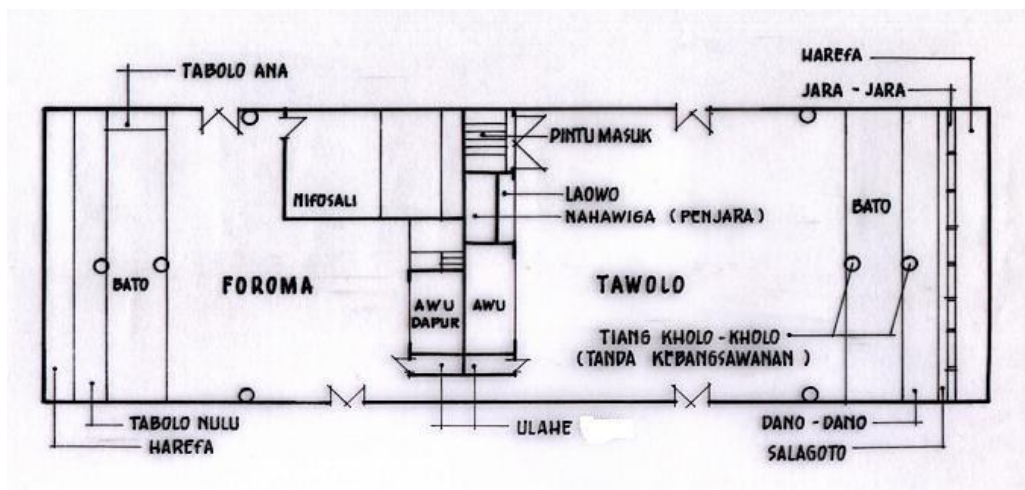


Figure 3. Floor Plan of The South Nias House

This research focused on the traditional houses in North and South Nias as shown in Figures 1.0 and 2.0 with the aims of understanding the elements of construction and spatial layout. There are several methods of analyzing typology and masterpiece of an existing building using some architectural values to comprehend a work of architecture. For example, the layout of the floor plan which is represented by the typology of the units differentiates the spatial distribution as observed in the Nias traditional architecture shown in Figures 1.2, 1.3, 2.2, and 2.3. Meanwhile, the scope of the element, according to the classification of the essential design of the floor plan, structure, and construction, is influenced by daily activities. Therefore, these activities were described and subsequently used to compare the two customized houses based on the available building materials and technology instead of cultural differences.

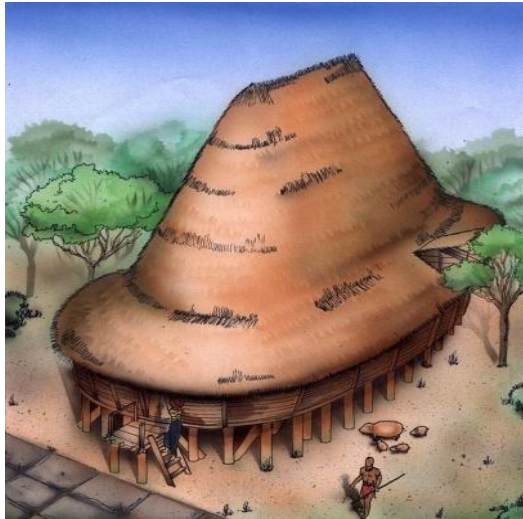


Figure 4.Traditional House of North Nias(OmoOsaliMbowo)

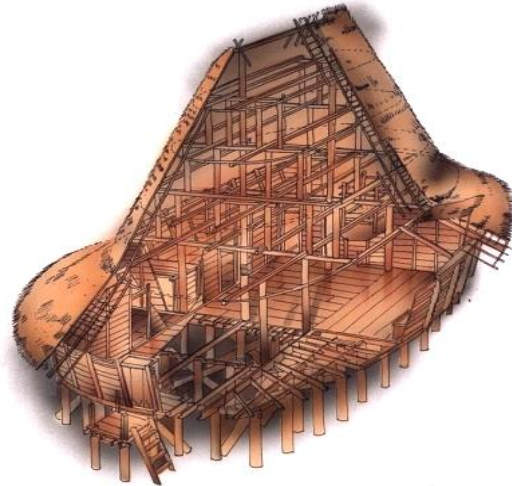


Figure 5. Sectional Perspective of the Interior

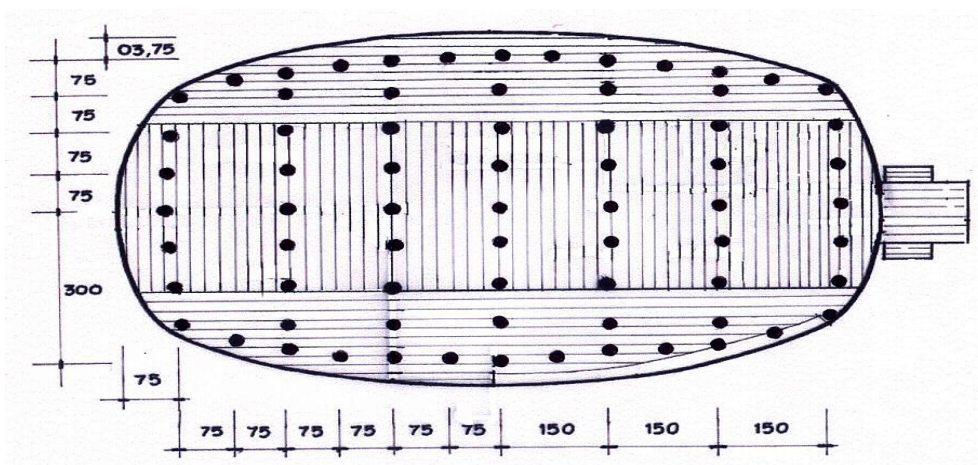


Figure 6.Layout of the columns

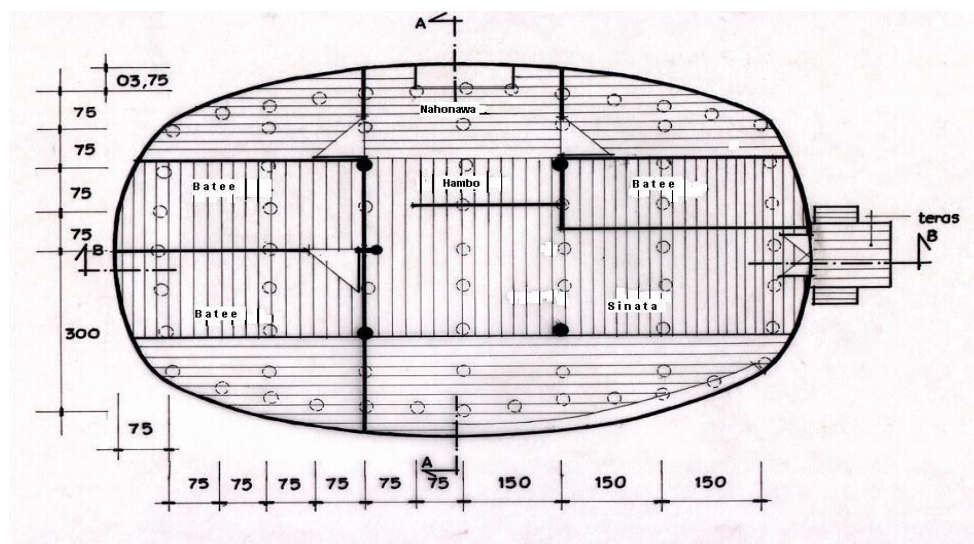


Figure 7.Floor Plan of The North Nias House

2. Methodology

A longitudinal exploration was used in this study and this involved the application of observation and understanding of architectural elements of a housing typology as a basis to evaluate the objective with the emphasis on the literature that elaborates the culture and traditional architecture (Alamsyah 2012). It is also prudent to understand the typology, descriptions, and vocabulary used by the locals in identifying the elements and components of the North and South Nias traditional house before conducting the survey. Therefore, this research was conducted in two stages to achieve the objectives and the first include the application of criticism in architecture by discussing the critical rules commonly used compared to depictive, biographic, or contextual criticism. Descriptive criticism, however, has several purposes and one of these is its ability to aid the deployment of facts to ensure more understandability for the readers and, subsequently, to enrich discussion and build an experience based on the variations in the built form. It does not recognize the existence of a decision or judgment but its interpretation is more important as evaluated in this kind of research. Moreover, the reference to descriptive critiques based on the available information on materials, shapes, texture, orientation, and views enables a researcher to understand a house built by the builder. The typology used also served as a parameter to analyze the Nias traditional architecture. Meanwhile, the second stage involved the presentation of the results obtained from the two different forms of Nias traditional house including the North and South and these were further used as a guide for future research on building preservation and development of Nias architectural construction. The process of understanding was not passive but involved recognition and reconstructive interpretation of the experienced world. This research is expected to contribute to the ease of understanding and overall meaning in the discourses surrounding the traditional architecture of Indonesia, especially in and around Sumatera regions. As the locals said – "It does not come from us but it is a part of us".

Nias traditional architecture was assessed using the following processes:

1. Studying the basic shapes and geometry of the building with the focus on dimensional shapes, proportions, and origin.
2. Studying the plan through the sketches of the internal and external parts of the building to obtain the height, internal spatial distribution, and surrounding context.
3. Investigating the construction techniques, terminologies, and elements used by the locals in the architecture of the North and South Nias.

The results were in the form of discussions related to the objectives of the study. At the initial stage, there was a theoretical overview of the literature, collection of data, selection of case study, and cross-examination with previous works conducted by other anthropologist sand socio-cultural experts such as Viaro (1980), Feldman (1977), Hammerle (1990), and Alamsyah (1998). Therefore, the objectives of the study were re-examined according to the analysis of the data with the focus on some of the scope based on the theory, typology, and limitation. The following steps were, however, covered in the process of conducting the research:

- Documenting information on both North and South Nias as the research objects.
- Classifying the orientations, basic shapes, and unit forms.
- Examining the geometry of the building according to the three - dimensional form.
- Sketching the plan layout and spatial distribution by examining the divisional space, height, and perimeter of the building.
- Identifying the elements with their geometry and proportion.
- Examining the basic form of the typology of the North and South Nias except some aspects such as the style, usage, and meaning.

- The concepts or meanings of ornaments and cosmology were not covered while the values were emphasized based on the premise of anthropology.

3. Understanding The Typology Of Architecture

Typology is the study of all things pertaining to type (Frank 1994) and the discussion is usually extended to multiple perspectives associated with architectural context. It, however, varies in architecture based on the interpretations and connotations of the meaning of the word "type". Therefore, the discussion of Nias typology as a basis of configuration, characteristics, and relationship of the buildings was the main objective of the study. This also means the basic form and usage of typology by some scholars to have a clearer picture of its meaning in the field of architecture is rather extensive. For example, Lawrence (1994) posited the definition based on social assessments as evidenced by the establishment of the principle of typology as derived from the contextual act between the types of people and buildings. Meanwhile, both types are expressed and transmitted by the structures depicted using human activities with respect to the spatial distribution and daily usage of the space in the buildings. Lawrence continued the definition based on the notion of social classification conveyed through the arrangements of elements to distinguish between the types of buildings and the people inhabiting them. This interpretation, however, has the ability to illustrate how social classification is implicitly or explicitly used to convey ideas, values, and purpose of the building and construction process generally and the residential buildings in particular. For example, the developments in an urban environment can lead to increased interest in the classification of certain buildings with respect to aesthetics, functions, materials, and several other criteria (Lawrence 1994). This scholar further added a row of houses located in some parts of urban areas is another enrich context of building typology in urban environments.

Another research by Francescatto (1994) propounded geometrical typology to be useful to the understanding of the historical texts which are usable as a reference in architectural layout, geometry, appearance, and space. This means typology is also used as a tool for analyzing objects such as architectural styles which are complemented by variables from the natural surroundings or other useful processes for developments. Moreover, it is also possible to use typology to explain the changes in type based on certain distinct characteristics and this further eases the recognition of the geometry in architectural design. The determination of a type of building is expected to depict its past and origin which are possibly different from the current type using a specific measuring device. A form of certain norms has, however, been developed to test the function and ability of designs of a particular object towards using the type to ascertain its authenticity. Furthermore, the typology developed by Francescatto (Frank 1994) was built on the notion presented by Rossi (1991), Krier (2013), and Quatremere de Quincy (Frank 1994). This researcher provided an understanding of typology as a discourse to disseminate knowledge with the ability to serve as an architectural masterpiece, formula, and development guidelines in construction and architecture. Therefore, understanding this perspective is very related to the use of type as a guide in designing a new form oriented towards thinking generated using the basic shapes of the past historical forms. The emphasis of Francescatto's discussion on typology involves placing the type of architecture as a classification as well as an architectural concept to ensure efficiency. The use of typology as a tool to categorize the development of a building is usually in relation to the function, structure, and technology of its forms and historical past. This means the idea proposed by Francescatto in the context of understanding the history and origins of an architectural form is in line with criticism and also established a new type which is required to be further developed in a future discourse on typology.

The typology concepts conveyed by these experts are achieved through the understanding of the theory previously described. The process of referencing the foundation of the built form before architectural typology involves studying the types of architectural objects and grouping them based on category. There is, however, the possibility of similarities in the basic forms, functions, origins, and development of the buildings with respect to the social backgrounds. This study used some types of architectural objects with certain criteria such as form, nature, functions, and origins. Therefore, it was not possible to generalize the analysis or inquiry in this study on global architectural objects. This clarification showed this research focused on the typology applied in the architectural objects of the studied area as summarized in the following points:

- Identification of social influences such as similarities from customs, social order patterns, and building layout in the environment.
- Identification of construction technique including the history, origin, and its initial formation of the object.
- Identification of the basic form, influential natural factors, architectural object functions, and structure.

Therefore, the traditional house of Nias used as a case study was analyzed using the surrounding, layout, process, materials, and structures of the buildings which are used to form the entire indulgent of the physical typology. Meanwhile, two different houses in the north and South were used to identify the non-physical factors such as the customs, social patterns as well as the layout, history, and origins of the building.

4. The Context of the Traditional House in Nias

Nias architecture has a variety of forms which has become part of the traditional heritage of the people and this is one of the problems formulated as a basis for the research. It is, however, in two types as previously mentioned with each region including the North and South having specific characteristics and features. The customized houses generally represent a distinct typology even though the people are from the same culture. Meanwhile, the outline of the technique used for the purpose of this section is summarized as follows:

- The plan formed the basis for the study of the customized house in Nias.
- The survey of the socio-cultural factors for the traditional houses forms at different locations examined.
- To determine the occurrence of diversity in both types of customized house induced by geography, technology, materials, and others.
- To clarify the definition of architectural typology in relation to the grading context of the architectural form of the building used as an object.

The comparisons made with the architectural typology context explained different types of architecture categorized based on social influences such as customs, social order patterns, and building layouts. Moreover, basic form, natural surroundings, architectural functions, structure, constructions, and technology also contribute significantly to development. These are further aligned with the notion of building and architectural typologies which are related to:

1. Social influences such as customs, social order patterns as well as the layout and location of the buildings within the environment.
2. Information on the history and origin of the early formation of the house as a guide in planning subsequent buildings.
3. Cosmology which involves the information generated from basic form, environment, architectural object functions, structure, construction, and technology.

The North and South Nias traditional houses were examined using the similarities based on environment and social background, basic form, natural surroundings, structures, construction, and development of houses as the main factors. Moreover, each house represents the king of the respective region as observed with the representation of the South Nias by King OmoNifolasara and North Nias by King OmoOsaliMbowo as indicated in Figure 3.0.

5. Conclusion

The North and South Nias show similarities and differences as reflected through the understanding of arts and crafts in housing typology as observed in certain peculiarities in the traditional houses despite the similarities. The analysis showed the socio-cultural factors influencing the formation of the building shape with both houses generally discovered not to be similar even though have the same fundamental shapes. Moreover, the desire to understand the equivalence in the typology based on the assumption that both houses are from the same culture, customs and belief led to the following conclusions:

1. Typology is an activity which involves learning the art of building types rather than the objects with the similarities found to either be in physical or non-physical form.
2. The understanding of the typology provided an overview of the origins for different objects of arts in the same culture but its appearance is capable of providing meaning to a building based on equality and distinction of its existence.
3. The study of the typology context helps to make a statement on the type of Nias traditional houses through the analysis of both buildings with the series of characteristics expressed using customized houses as a separate entity of the type of buildings in the culture.
4. The traditional houses in Nias essentially have physical differences but built using the same mechanism due to similar culture which covers cosmology, social, and cultural processes.
5. The typology of building formed a merger rather than dissimilarities in the study.
6. The similarities between the traditional houses in North and South Nias are indicated by the use of the same term for a specific portion in the structure and form despite the difference in the built form.
7. The traditional houses in both areas were constructed with good building materials while the size and dimension of the system were made in reference to human dimensions.
8. The inquiry also confirmed the similarities and differences in the typology of the building despite the similar culture.
9. The findings demonstrated there is no distinction in the factors related to the geographical location apart from the building itself.
10. The main factors that causing differences between the traditional houses in the two areas are not technical but the mobility of the inhabitants which indirectly leads to a slight modification of the customs and also affects their forms of arts. A new community usually tries to show its capability in assimilating previous customs and show the new image through buildings and settlements rather than copying previous forms.
11. The traditional houses in the two areas of Nias demonstrated the understanding of the tropical arts as observed with the very wide discourse of the design issues on tropical arts and cultural association with the procedure.
12. The building in the tropics need to be developed to solve the hot tropical climate problems such as high temperatures, rainfall, and high humidity and this means the traditional houses are a living laboratory to learn design principles.

13. The traditional houses in North and South Nias are added to the list of traditional buildings with unique characteristics in Indonesia.
14. There is a clear relationship between the socio-culture of the people and the technique of building construction process and this means community or social structure has a great influence on the built environment.
15. The buildings are evidence for the future generation to learn jointing and timber technology of the tropical architecture involved in traditional buildings. The materials are to be sustained or preserved to pass the lesson from this technology to the next generation.
16. The social-culture system of the Nias people has an impact on the art and craft development. This was observed from the wide use of timber, thereby leading to its scarcity, therefore, composite wood with similar materials should be developed for the continuation of artworks.

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