Design of Karo Traditional Virtual Museum In Medan City

Jericco Aginta Purba*[1] iD , Andalucia[1]

[1]*Department of Architecture, Faculty Engineering, Universitas Sumatera Utara, Medan, 20155, Indonesia*

*Corresponding Author: jcopurba00@gmail.com

ARTICLE INFO	ABSTRACT
	One of the biggest cities in Indonesia is Medan, which serves as the provincial capital of North Sumatra and is growing pretty quickly. There are many different cultures ingrained in the city of Medan itself. The several varied tribes who call the city home demonstrate this. In Indonesia, diversity and cultural distinctions are highly valued. As a result, it is imperative to conserve the artistic traditions of the many ethnic groups that make up Medan. A museum is, broadly speaking, an organization or non-profit that works to educate and serve the public. Its open-minded approach is used in the gathering, preservation, study, sharing, and public display of actual and virtual artifacts for educational purposes. both learning and enjoyment. A museum's primary purpose is to gather, preserve, and periodically display artifacts for the general public or select guests. The primary issue is that there is now no Karo Museum in Medan City, despite the fact that it is one of the biggest cities in Indonesia and was founded by a member of the Karo Tribe. Consequently, it is anticipated that the layout of the Karo Traditional Virtual Museum would offer more thorough historical details regarding the history of Medan City and the Karo Culture. **Keywords:** design, Karo traditional, virtual Museum

1   Introduction

The need for traditional museums is a way to preserve traditional culture. The existence of a museum is one of the most important things at this time due to the responsibility and obligation to preserve, promote, and display culture, both material and intangible. Certain activities, exhibitions, and museums in Indonesia act as communication facilities and bridges that can free understanding and knowledge for citizens. The existence of a museum has a significant role where the museum not only plays a role in protecting cultural heritage items but also is a place for creating a sense of way of life, discipline, and the development of knowledge for residents.

The definition of a museum is a permanent organization that serves the needs of the public with an open meaning through the collection, preservation, research, communication, and presentation of facts to the public for research, education, and enjoyment purposes. Therefore, it can be used as a study tool, a record of the characteristics of a particular company, or a record of future thinking. Due to the ethnic diversity in Indonesia, more traditional museums are needed to preserve and preserve Indonesia's cultural heritage.

One of the tribes living in Medan is the Karo tribe. The Karo tribe is one of the tribes that especially inhabit the Karo highlands, Deli Serdang Regency, Binjai City, Langkat Regency, and several other areas [1]. The language used is Karo, which has a unique greeting, namely Middle Yua. One of the unique things about Karo culture that is not shared by other ethnic groups, including the Batak, is the meeting place or jambur called Los

Kuta [2]. Mutual assistance activities that occur in almost all village areas show a high level of cooperation. This tribe is also the largest in the city of Medan. One of the founders of the city of Medan was Guru Patimpus, from the Karo tribe. Due to ignorance of Karo culture, building a Karo Indigenous Museum in Medan is necessary.

According to its origin, the museum comes from the Greek word "mouseion", namely the temple for the nine goddesses of Muze, children of the god Zeus whose main task was to entertain [3]. A museum is defined as an organization that is "managed as a non-profit social and private establishment that has been in existence permanently and is primarily used for artistic and educational purposes" by the American Museum Association (AMA). This organization also includes organizations that "own and utilize objects - a tangible object, movable or immovable and exhibited regularly," have at least one full-time employee or professional staff member, and are open to the public regularly at least 120 days per year" [4]. In Indonesia, a museum is defined by Government Regulation No. 19 of 1995, which governs the Maintenance and Utilization of Cultural Heritage Objects in Museums. This government regulation defines a museum as an institution that stores, maintains, safeguards, and uses material evidence of human culture and its natural surroundings. The purpose of this rule is to encourage efforts to protect and preserve the nation's cultural wealth for the benefit of future generations [5].

By emphasizing the development of mutually beneficial ties between the museum and the community, new museology then serves as the foundation for the museum's position as an institution that serves the community [6]. The museum is a non-profit institution that serves the wider community [7]. Museums are ongoing non-profit institutions that serve the needs of the public and are open to the collection, storage, research, communication, and display of real-world objects for study, education, and general purposes. enjoyment. Therefore it can be used as teaching material for academics, documenting the peculiarities of a particular society, or documenting and imagining the future. Since 1977, 18 May has been observed annually as International Museum Day [8].

A computer-simulated world, an actual environment that is mimicked, or an environment that truly exists only in the user's imagination can all be interacted with through virtual reality technology [9]. The term "virtual reality" refers to a set of ideas, practices, and procedures utilized in the development of software products intended to support several multimedia computer systems and unique device configurations [10]. The existence of a museum is very meaningful because it has a responsibility and is to preserve, promote, and improve people who have intangible cultures. The Indonesian Museum functions as a communication facility, as a connecting bridge that can increase the understanding and knowledge of citizens through conveying messages through exhibition spaces.

Vernacular is the equivalent of regional tongue. Within the context of architecture, the term "vernacular" refers to forms that incorporate aspects of the local way of life and climate as reflected in both physical and non-physical architectural forms (zoning, block plans, structures, details, ornaments, etc) [11]. Neo-Vernacular architecture applies pre-existing architectural elements—both non-physical (concept, philosophy, and spatial planning) and physical (form, construction)—with the goal of maintaining locally formed elements that are subsequently undergoing a renewal process toward a more advanced or modern work while maintaining the local traditional values [12]. When creating a structure that incorporates both physical and non-physical components from old buildings into a modern or contemporary setting, there are four (four) methods that need to be taken into account in terms of form and meaning. Specifically: (1) The meaning and form are set in stone. (2) A fresh meaning in a fixed form. (3) A fresh form with a clear definition. (4) The meaning and form are fresh [13]. The term "traditional architecture" has multiple connotations; its origin is "tradition". Whereas traditional architecture is an item, tradition is an adjective. There is a cause-and-effect link between vernacular architecture and tradition. The "tradition of forming a vernacular architecture through the continuity of an architectural order using a system of perception of the space created, materials and types of construction," as articulated by philosopher Christopher Alexander, relates to the science of architecture and design. Since both traditional and vernacular architecture are things, they have similar purposes, yet they differ in other ways [14].

Neo Vernacular is an interpretation of vernacular architecture combined with modern architectural styles. Vernacular architecture is an architectural style designed by residents, using local materials and reflecting the local style of the area. However, the era continues to change, so the architectural style also grows from time to time. The typical architectural style began to fade. Preserving buildings or principles. We must include

vernacular language ourselves in the current modernization. Virtual reality (VR) is a technology that can later be used to create or develop simulations. This simulation is similar to the real world. Users can not only see the screen but also plunge into the 3D world. Imitate as many feelings as you can, such as sight, hearing, or touch. This can be done by using the media in the form of the Oculus Rift.

2   Method

The method used in this location option is to provide a survey and analyze several library sources. The data obtained from the survey are the park situation, access, circulation, activities, existing facilities, and the distribution of questionnaires to visitors to find out public opinion on open spaces. The survey data and data obtained from various written sources, namely books, scientific journals, architectural magazines, and others are then compared and used as answers to existing problems. The site selection process can be started by obtaining various information, which is then used to determine the specific specifications or uses of a particular building, house, or building to be designed, and then the related information is adjusted to the assigned role. things that are a concern in choosing a location, especially accessibility, existing functions (yes), and the local RDTR atmosphere. After obtaining a site that meets the criteria, the site that has the potential to be designed by the Karo Customary Museum is Gagak Hitam Street, Ring Road, Medan Sunggal District, Medan City, North Sumatra, with an estimated land area of ± 2.1 ha. The next step is to look directly at existing ones or get available physical data.

3   Results and Discussion

3.1   Project Description

The design of the Karo Traditional Virtual Museum in Medan is the title of this project, a design that contributes to teaching the history, culture, and customs of the Karo people. The goal is to instill in the next generation a love for the ethnic culture of the homeland in the soul of the nation. The project location is Gagak Hitam Street, Medan Sunggal sub-district, Medan City, North Sumatera (Figure 1). The selection of this place is based on the area by the main function of the building. This site analysis is free to choose a location according to the criteria used to determine the location of the museum. Basic consideration. The following are the basic considerations for determining the location of the selected site, including (1) Compatibility of land use in vertical residential areas. (2) The size of the location is suitable for all activities in the museum. (3) Strategically close to performance, highway traffic, and public facilities. (4) Have a good vision orientation and, a safe, comfortable environment.

Figure 1. Project Location

Source: Google Earth [15].

3.2   Basic Concept

The main idea in this design is based on the issue where the city of Medan is one of the most advanced cities in Indonesia whose inventors are from the Karo tribe, but there is no Karo museum in Medan so it is necessary to design a Karo Traditional Museum in Medan City with a Neo Vernacular approach. This can help people in Medan City to increase their knowledge and awareness about the Karo ethnic culture in Medan City. The Neo Vernacular approach is used to give a unique impression of the shape of the building and attract people to visit (Figure 2).

Figure 2. Mass Building

3.3   Outdoor Concept

This Karo Traditional Museum Design Project is located on Gagak Hitam Street, Medan which is a major road, and the area is dominated by trade and residential areas. Figure 3 is an illustration of zoning in regional design. The main entrance can only be passed via Gagak Hitam Street. The circulation of entrances and paths within the site is made wide enough so that visitors have no difficulty entering the site or creating congestion on the site. Parking is adjusted to the shape of the site. The parking lot is placed close to the entrance so that visitors have no trouble parking their vehicles. Access is provided for pedestrians right at the front of the site (Figure 4).
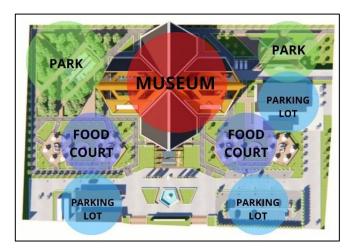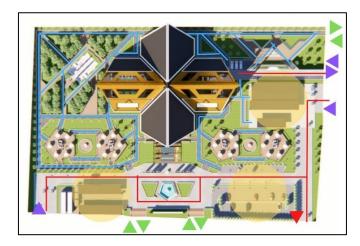

Figure 3. Zoning

Figure 4. Circulation

3.4   Interior Layout Concept

The existence of a grouping of certain areas which are divided into private, public, and services in buildings is very important. This is necessary to regulate the path or access that will be used by building users. Examples such as the back of the building which is a service zone that cannot be used by everyone. The placement of the inner space is also arranged in such a way that it does not interfere with each other. For example, a private zone can only be entered by certain people so that they are not too close to the public zone. Upon entering the museum, visitors will be immediately greeted by a hologram of the patimpus teacher (Figure 5). Exhibition halls, restaurants, and offices will be on the 1st floor. The Virtual History Room and library will be on the 2nd floor and the 3rd floor will be filled with R. Virtual Traditional Houses and virtual games (Figure 6).

Figure 5. Exhibition and History Space

Figure 6. Virtual Game Room

3.5   Mass Composition Design

This building takes the form of a transformation of the Karo traditional house. Certain parts are taken from the Karo traditional house to provide a new form such as a roof and the shape of the Karo traditional house is the Siwaluh Jabu house. The entrance is also given a uis gara symbol to show the identity of the Karo people. Giving sled ornaments around the building (Figure 7).

Figure 7. Mass Composition Design

(1) Red (Megara), the red color of the Karo tribe symbolizes the sun. It is a symbol of warmth, passion, blood, strength, power, etc. in the same sense. (2) White (Mbentar), the white color symbolizes light. It is a symbol of purity, cleanliness, divine nature, and so on which is meaningful. (3) Black (Mbiring), the black color symbolizes the earth. It can also be interpreted as a symbol of mourning, summoning ancestral spirits, and so on in a similar sense.

This building will be coated with Second Skin in certain parts to add a beautiful impression to the building and attract the attention of visitors. The use of a second skin can also be used to cover the outside of the building that looks less attractive (Figure 8).

Figure 8. Secondary Skin

3.6   Structure Concept

Building structures are various important parts of a building that will form the building itself. The use of foundations, beams, frames, arches, and walls are some of the important parts of the structure of the building. These parts are very instrumental in supporting and supporting the elements of building construction. The rame structure of the building has an important role in building construction. This building will use a pile foundation structure as the foundation. The building also uses column and beam structures to support the walls and floor slabs.

3.7   System Utilities

(1) Air circulation in this building applies the installation of ventilation, exhaust fans, and air conditioning. Ventilation or air circulation can use natural ventilation and the addition of air conditioning to increase the coolness and comfort in the building. (2) Adjusting the lighting using lights that are tailored to a particular room can form an artistic space that will later add to the attraction for visitors. In certain rooms, you can use downlights or lamps of different colors (Figure 9). (3) Method A plumbing or piping system can satisfy the air requirements of its occupants by routing air to the proper location without disrupting or polluting the area it passes through (Figure 10).
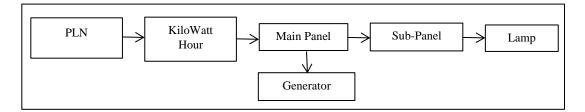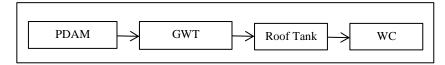
Figure 9. The Concept of Electrical System

Figure 10. The Concept of Clean Water Supply System.

4   Conclusion

The city of Medan is one of the largest cities in Indonesia, the capital of the province of North Sumatra, where the city is undergoing considerable development. Certain activities, exhibitions, and museums in Indonesia act as communication facilities and bridges that can free understanding and knowledge for citizens. A museum is a permanent organization that serves the needs of the public in an open sense through the collection, preservation, research, communication, and presentation of facts to the public for research, education, and enjoyment purposes. Virtual reality (VR) is a technology that can later be used to create or develop simulations. This simulation is similar to the real world. Users can not only look at the screen but also plunge into the 3D world. Imitate as many feelings as possible, such as sight, hearing, or touch. Neo Vernacular is the interpretation of vernacular architecture combined with modern architectural style. Vernacular architecture is an architectural style that designed by residents, using local materials and reflecting the local style of the region. However, eras keep changing, and so does the architectural style grow over time. The typical architectural style began to fade. Preserving buildings or principles. We must enter the vernacular language itself in the current of modernization. By designing the Karo Traditional Museum in Medan City, the community of Medan City has a forum that provides more in-depth information about the traditional culture of the Karo tribe in the city of Medan. Based on the Analysis and the design concept that has been carried out, the building can provide more convenience for visitors who want to learn about Karo customs.

5   Acknowledgment

6   Conflict of Interest

The authors whose names are listed below certify that the manuscript does not have a conflict of interest.

Jericcco Aginta Purba

This statement is signed by all the authors to indicate agreement that the above information is true and correct (a photocopy of this form may be used if there are more than 10 authors):

Author's name (typed)   Author's signature

Jericcco Aginta Purba

References

[1] "WIKIPEDIA Ensiklopedia Bebas," Suku Karo, 18 Oktober 2023. [Online]. Available: https://id.wikipedia.org/wiki/Suku_Karo. [Diakses 20 Oktober 2023].

[2] A. Ginting, "KATMOSFIR.COM," Inilah 10 Keunikan Sumber Keunggulan Suku Karo, 20 Juli 2017. [Online]. Available: https://www.katmospir.com/2017/07/inilah-10-keunikan-sumber-keunggulan.html. [Diakses 20 Oktober 2023].

[3] Direktorat Museum, Pedoman Museum Indonesia, Jakarta: Departemen Kebudayaan dan Pariwisata, 2008.

[4] P. Kotler, Manajemen Pemasaran, Analisis Perencanaan, Implementasi dan Kontrol, Jilid 2 (Edisi Revisi), Jakarta: PT. Prehallindo, 1998.

[5] Peraturan Pemerintah Republik Indonesia No.19 Tahun 1995 tentang Pemeliharaan dan Pemanfaatan Benda Cagar Budaya di Museum, 1995.

[6] N. Magetsari, Perspektif Arkeologi Masa Kini dalam Konteks Indonesia, Jakarta : Kompas Media Nusantara, 2016.

[7] ICOM, Running a Museum : A Parctical Handbook, International Council of Museum, France: UNESCO, 2004.

[8] F. N. Qonita, "detikNews," Hari Museum Internasional 18 Mei 2023, 16 Mei 2023. [Online]. Available: https://news.detik.com/berita/d-6723396/hari-museum-internasional-18-mei-2023-sejarah-dan-tema-peringatannya. [Diakses 2023 Oktober 2023].

[9] Daud, F. R., Tulenan, V., & Najoan, X. B. N, "Virtual Tour Panorama 360 Derajat Kampus Universitas Sam Ratulangi Manado," *Jurnal Teknik Informatika,* vol. 1, no. 8, p. 1–7, 2016.

[10] D. Lacrama, "Virtual Reality," *Journal Anale Seria Informatika,* 2007.

[11] Y. Sumalyo, Arsitektur Modern: Akhir Abad XIX dan Abad XX (2 ed.)., Yogyakarta: Gadjah Mada University Press, 2005.

[12] T. P. Putra, Pengertian Arsitektur Neo-Vernakular, .ULI - The Urban Land Institute, 2014.

[13] D. Erdiono, "ARSITEKTUR 'MODERN' (NEO) VERNAKULAR diINDONESIA," *Jurnal Sabua,* vol. 3, no. 3, pp. 35-37, 2011.

[14] G. Suharjanto, "Membandingkan Istilah Arsitektur Vernakular versus Arsitektur Tradisional," *ComTech,* vol. 2, no. 2, p. 593, 2011.

[15] "Google Earth," [Online]. Available: https://earth.google.com/web/search/Jalan+Gagak+Hitam,+Kecamatan+Medan+Sunggal,+kota+Medan,+Sumatera+Utara. [Diakses 20 Oktober 2023].