

Expression of Building Form Based on Neo Vernacular Architecture in the Design of Wuna Trade Center in Raha, Muna Regency

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Abstract. The development of modern trade centers in urban areas requires a design approach that is not only functional but also able to express local identity. This study examines the building form approach in the design of the Wuna Trade Centre in Raha, Muna Regency, with the theme of Neo Vernacular Architecture. The design methodology is carried out through literature studies, observations of traditional Muna architecture, and analysis of form transformations during the design stage. The design results show that the adopted building mass form reflects the character of the Muna traditional house through a reinterpretation of the gable roof shape, the use of large columns (pilotis), and a façade with local woven motifs. The form transformation is carried out in four stages, from the basic rectangular mass to the formation of a commercial silhouette with local characteristics. This approach not only strengthens the visual image of the building as a city landmark but also creates a cultural relationship between architecture and local community. This study confirms that building form can be a medium for cultural preservation within the framework of adaptive and contextual contemporary design.

Keywords: Building form, Neo vernacular architecture, trade centre, local identity, Muna Regency

1. Introduction

Muna Regency is a strategic region in Southeast Sulawesi, developing its economy and trade. With Raha City as its capital, it has significant regional economic potential, particularly in the trade and services sectors. However, the lack of integrated and representative trade facilities hampers its development and leads to chaotic urban planning. Therefore, the development of the Wuna Trade Center is urgently needed to provide a modern, organized trade space, expected to become a new icon that empowers the local economy, creates jobs, and enhances regional competitiveness (Salibudkk, 2023). This plan adopts the theme of Neo-Vernacular Architecture to address the challenge of combining modern functions with Muna's local cultural roots (such as traditional roof shapes and carved motifs), ensuring that the building is not only efficient but also reflects cultural identity, while also serving as a means of preserving local wisdom through architecture. Neo-Vernacular Architecture is understood as an architectural approach that reinterprets traditional forms, local materials, and cultural values into contemporary architectural expressions while still responding to modern functional needs and technological developments (Hasibuan, 2022). In addition, Neo-Vernacular Architecture emphasizes harmony between buildings, climate, environment, and local socio-cultural contexts, making it highly relevant for tropical regions and cultural-based urban developments (Eka, 2020).

The rationale for selecting field study cases such as Ciputra World Surabaya, Grand City Mall, and Pakuwon Mall Surabaya. Literature case studies such as Beachwalk Shopping Center Bali, ICE BSD Tangerang, and Pantai Indah Kapuk North Jakarta are also used. These case studies demonstrate the importance of integrating functions (commerce, entertainment, and public space) to create a multifunctional center relevant to the Raha community. They also showcase a modern style while maintaining tropical elements through natural ventilation and open spaces. This approach is highly relevant for the design of the Wuna Trade Center in the tropical climate of Muna Regency, particularly in integrating modern functions with local wisdom through a Neo-Vernacular Architecture approach.

The purpose of this research is to examine and formulate a Neo-Vernacular architectural design that efficiently integrates commerce, entertainment, and public space, inspired by the case studies, to create a multifunctional activity center for the Raha community. This approach transforms traditional Muna architectural elements, particularly roof shapes, ornamentation, and local materials, into a modern building form, while maintaining tropical architectural principles such as natural ventilation and open spaces. This approach significantly contributes to urban planning, local economic empowerment, and cultural preservation through a meaningful and distinctive architectural work.

2. Literature Review

There are several definitions of Neo Vernacular Architecture, one of which is that Neo Vernacular Architecture can be interpreted as the original architecture of the region built by the local community using local materials, which have elements of customs or culture and are combined with modern touches to support and preserve the value of the vernacular itself or local uniqueness (Nurjaman dan Prayogi, 2022). The characteristics of Neo Vernacular Architecture are as follows, 1) Always using a ridge roof shape; 2) Use of local materials; 3) Adopting traditional forms; 4) Unity between open interiors and outdoor spaces; 5) Contrasting colors (Saidi dkk, 2019). In Neo Vernacular Architecture there are several principles including, 1) Adaptive through the integration of traditional elements with modern needs; 2) Harmonious integration between buildings and the surrounding environment; 3) Solution-oriented and relevant to changing times; 4) Expressing cultural traditions through modern interpretations by creating aesthetic and meaningful designs (Fariqih dkk, 2024).

Architectural buildings are the most tangible and visual creations of humankind. In design, building form plays a crucial role; its creation is not carried out haphazardly or freely, but rather through a process of analysis and in-depth thought that considers function, user needs, and the building's reciprocal impact on the surrounding environment. According to Francis D.K. Ching, in his book, "Form", the meaning of form is the result of a specific configuration of surfaces and edges (Utami, 2015). The creation of building form can be achieved through transformation of the basic form, which includes modifying size, adding or removing elements (additive/subtractive), and combining with other forms (Subekti, 2021).

In terms of form, the micro concept of form is serasi. The word "serasi" means "suitable" Click or tap here to enter text.. In the context of architectural form, "serasi" implies visual and symbolic conformity between a building and local identity, whether through form, materials, proportions, or ornamentation. With this approach, serasi represents visual and symbolic harmony in design. The building's form is not only pleasing to the eye but also conveys a cultural message that the local community can understand. This harmony strengthens the community's sense of connection to the place, transforming the building into more than just a foreign object, but a part of the developed heritage.

3. Methodology

The type of research method used in this study is a qualitative method with a descriptive method approach. The data collection technique used is primary data by collecting data directly from the research location, in order to understand the phenomenon in more depth and obtain a real picture of the conditions in the field. The techniques used in this field study are observation and documentation. The selected objects are Ciputra World Surabaya, Grand City Mall, and Pakuwon Mall Surabaya. Secondary data is obtained by searching for references that support the research object. This literature study was obtained from various sources relevant to the research topic, such as textbooks, scientific journals, research articles, reports, and other reliable sources. The selected objects are Beachwalk Shopping Center Bali, ICE BSD Tangerang, and Pantai Indah Kapuk North Jakarta.

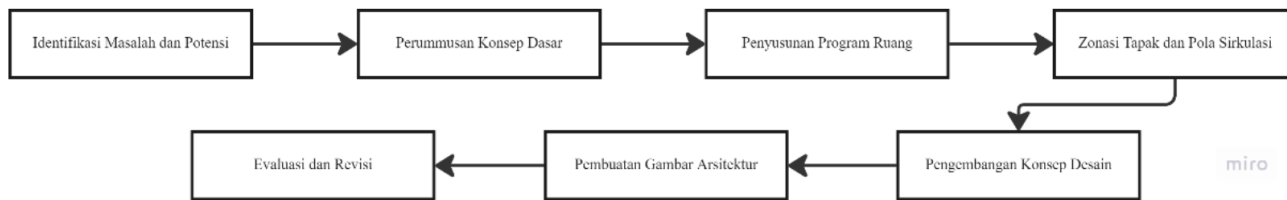


Figure 1. Methodology Diagram

4. Results and Discussions

a. Shape Transformation

The meaning of form transformation is making changes, adjustments that include the form, the external appearance of the architecture so that the appearance of the form still stems from the process of traditional thinking in changing its form. The final result of this form transformation should still be visible traces that originate from the values of traditional architectural forms (Susilo, 2015). The following is an image of the form transformation of the Wuna Trade Center Building.

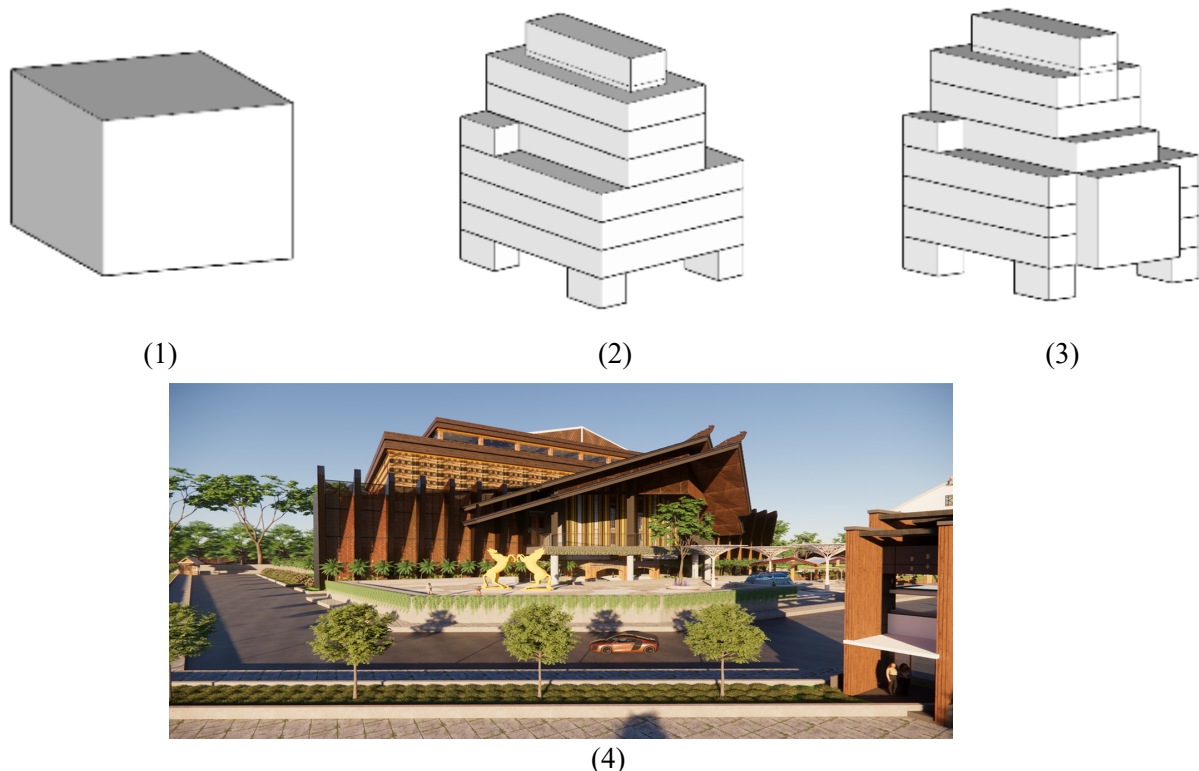


Figure 2. Shape Transformation

In phase 1, the building's initial form was a pure geometric mass, a simple cube, representing a neutral architectural form devoid of local character. This form served as a conceptual starting point lacking a cultural context or distinctive Muna form.

Then, in phase 2, the mass was gradually transformed into a tiered form, resembling the structure of a stilt house or the multi-story structure of a traditional house. This basic form was modified by adding mass such as canopies, terraces, or facades, as well as subtracting certain parts to create circulation areas and entrances. Each addition/subtraction of volume was carried out based on the principles of balance and proportion between forms, ensuring that the entire building mass remained cohesive. This form conveys the impression of a layered hierarchy of spaces and functions, reflecting the local community's philosophy of recognizing spatial levels (private-public).

Next, in phase 3, the mass was expanded laterally and reinforced to the building's base structure, similar to the stilt houses in Muna. Each floor formed distinct zones according to their function, including retail, entertainment, food courts, and so on. The form was also rotated or adjusted to orient itself to circulation and wind direction. Although the masses are separated, a close visual and spatial relationship remains through lines, grids, and materials, creating harmony between functions.

Finally, in stage 4, the masses are presented in adaptive form with local cultural touches, such as the use of a gable roof resembling the roof of a traditional Muna house. Vertical elements on the facade resemble fins resembling weaving or local motifs. The building's structure adopts the principle of a stilt house, with elevations. This transformation reflects the "harmony of form" between tradition and innovation, local cultural heritage and modern needs. The final form of the Wuna Trade Center building can be seen in Figure (2).

b. Building View (Head, Body, and Legs)

In general, the appearance of a building consists of a head, body, and feet. This concept applies architectural design principles that adopt the analogy of human anatomy or cosmological concepts (such as Tri Angga in traditional Indonesian architecture), which aims to create a harmonious and proportional vertical composition. The Head represents the uppermost part, usually the roof or crown of the building, which often symbolizes spiritual elements, protection, or identity. Below it, the Body is the core of the building - the walls, windows, and main floors that function as human activity spaces, reflecting life in the middle realm. Finally, the Feet are the base or foundation that supports the entire structure, provides stability, and connects the building to the ground, often interpreted as a foundation or the underworld. The application of this three-part concept helps in the visual processing of the facade, ensuring that each element has a clear role within the design unity (Hamka dan Winarni, 2023). The following is an image of the Wuna Trade Center Building.

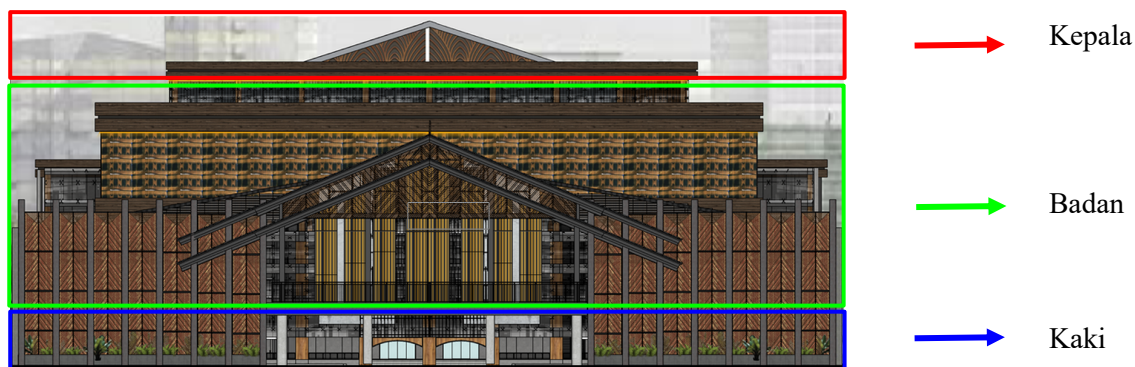


Figure 3. Building View (Head, Body, and Legs)

Figure (3) shows the Wuna Trade Center building, which consists of the head, body, and legs. The head shows the roof structure, inspired by the architecture of traditional Muna houses, particularly the striking saddle-shaped roof (a typical pyramid-shaped roof in Muna traditional houses) that supports part of the main area of the building. The roof of the building is designed to be stacked with a sharp slope, resembling the Joguno Walanda, a traditional Muna house that reflects the values of hierarchy and protection against the tropical climate. This roof structure adapts the principles of the Kaombo traditional house, which has the characteristics of a high roof and sharp angles in response to the tropical climate and high rainfall. The use of a light steel or I-profile steel roof frame supported by exposed columns reflects the reinterpretation of traditional elements within a modern structural framework. This structure not only supports the dead and live loads of the building, but also serves as a vehicle for the expression of local values. The roof design is not only formed based on aesthetics, but also fulfills performative needs such as natural air circulation and optimal lighting, in accordance with the principles of tropical architecture that developed in local vernacular culture.

The body of the building exhibits a consistent vertical structural rhythm through the arrangement of concrete or steel columns supporting the secondary skin. These vertical elements create visual order and a dynamic rhythm reminiscent of the traditional stilt houses commonly found in Southeast Sulawesi. This scheme also lends a monumental and powerful impression to the building's facade. This section houses the main activity area, housing the retail area, food court, entertainment area, exhibitions, and offices.

Furthermore, the footing represents the building's primary foundation. Vertical support columns extend directly from the building's foundation system. The foundations used are deep-seated bored piles, adapting to the soft soil conditions in the Raha region, which require high bearing capacity. The use of deep-seated bored piles reflects sensitivity to local geotechnical conditions and demonstrates the integration of modern technology with the specific needs of the site. The regular and modular configuration of columns and beams provides spatial flexibility and structural efficiency, supporting the concept of a modern commercial center.

c. Integration of Neo-Vernacular Architecture in the Design of Wuna Trade Center

The Neo-Vernacular Architectural approach in architecture is a concept that aims to integrate local traditional elements (vernacular) with technology and the demands of modernity. This term is a combination of "Neo" (new) and "Vernacular" reflecting the effort to adapt traditional values to remain relevant with the times, instead of simply maintaining their original form. In the context of the Wuna Trade Center design, the Neo-Vernacular approach offers a solution that is not only aesthetic, but also functional and sustainable.

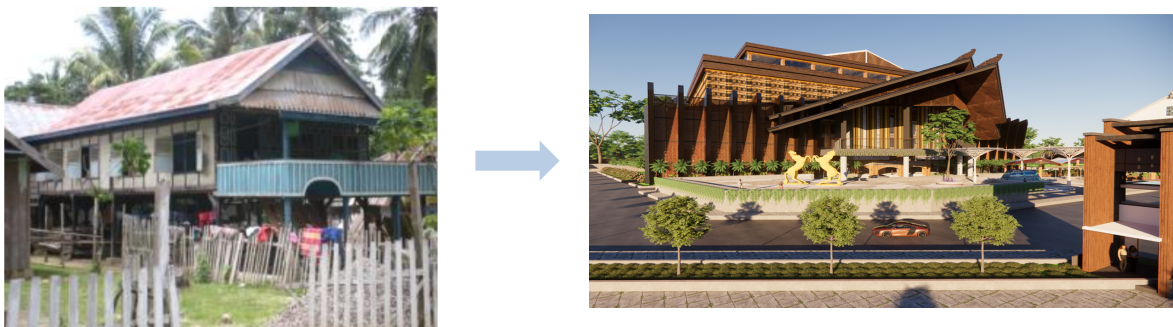


Figure 4. Integration of Neo-Vernacular Architecture in the Design of Wuna Trade Center

Figure (4) shows the evolution and adaptation of traditional Muna architectural forms into the design of the Wuna Trade Center. The image on the left depicts a typical traditional Muna house, typically built on stilts with natural materials such as wood and a zinc or leaf roof. Its main characteristics lie in the roof's shape, latticework pattern, and elevated structure, reflecting local wisdom in dealing with the tropical climate and environmental conditions.

The image on the right shows the design of the Wuna Trade Center, a modern building that integrates traditional Muna architectural values with a modern approach adaptive to the local context, as advocated by the Neo-Vernacular Architecture theme. This design implementation is clearly visible in the roof elements, which adopt the distinctive slope and shape of traditional Muna houses. The focus is then placed on the building's facade elements, particularly the secondary skin system and shading details, which serve both aesthetic and functional purposes. Several distinctive local architectural elements, such as lattices, perforated panels (roster), and louvers, are used not only for aesthetic purposes but also as passive ventilation systems. The use of these elements reflects local wisdom in addressing the tropical climate and the need for natural ventilation, while still providing a modern feel befitting the building's function as a trade center.

The application of Neo-Vernacular Architecture to the Wuna Trade Center demonstrates that design can preserve local culture while meeting modern needs. By integrating traditional elements into a broader context, this approach not only adds aesthetic and functional value to the tourist area but also supports the principle of sustainability. Sustainability, at the heart of this design, ensures that the area is environmentally friendly and maintains a balanced ecosystem, creating harmony between tradition, modernity, and the environment.

d. The Uniqueness of The Building

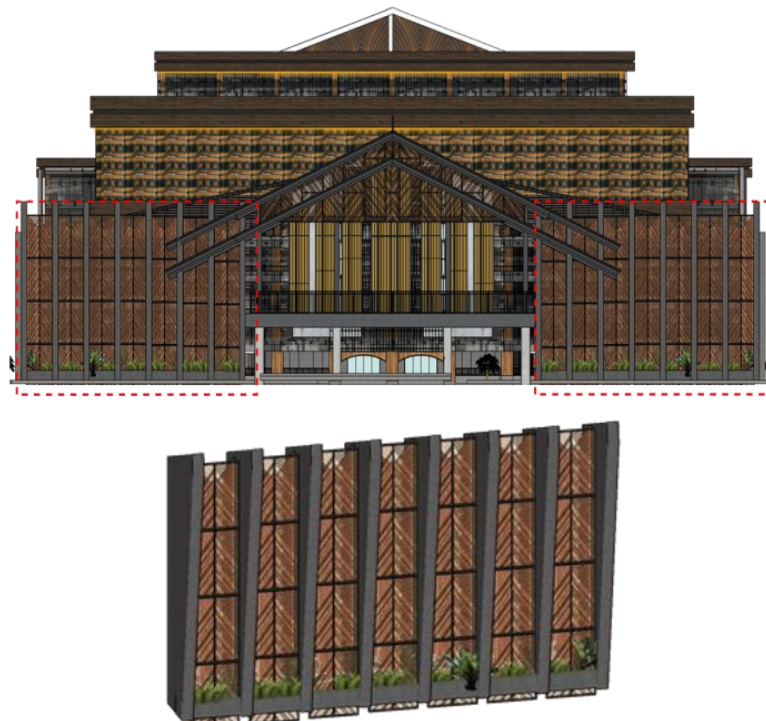


Figure 5. The Uniqueness of The Building

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In figure (5) the uniqueness of the Wuna Trade Center building can be seen on the main facade which is visible in the middle of the building showing a tiered gable roof shape that resembles the structure of a local traditional house, as well as on the secondary skin which is designed using vertical panels with traditional woven motifs typical of Muna which resemble the pattern of woven pandan leaves or rattan. This motif not only represents local culture, but also functions as a shading element that reduces the intensity of direct sunlight on the facade area, creating thermal comfort inside the building. The use of local materials such as wood and woven bamboo which are produced in modern modular forms is the main characteristic of this Neo-Vernacular Architecture approach. Thus, the Wuna Trade Center creates a unique and contextual design, which functionally answers the challenges of the tropical climate while emphasizing the cultural identity of Muna through a harmonious integration of tradition and modern technology.

5. Conclusion

The Neo-Vernacular Architecture approach applied to the design of the Wuna Trade Center demonstrates that adaptive design can address the challenges of modernity while simultaneously strengthening cultural preservation. Through the integration of traditional Muna elements that are functionally and aesthetically adaptive, the architecture of this building is not only a physical structure, but also serves as a means of sustainable local cultural expression. This concept demonstrates the design's ability to create a harmonious synthesis, provide a strong identity to the building, and meet today's functional and environmental demands.

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