

VERNACULAR ARCHITECTURE IMPLEMENTATION ON SHOPPING CENTER BUILDINGS DESIGN IN THE CITY OF PEKANBARU

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Abstract. The existence of Riau Malay vernacular architecture is one of Indonesia's regional cultural heritage and identity. However, rapid flow of globalization can drown out the characteristics and characters of the local culture to obscure the architectural identity of the locality. Therefore, some architects have tried to encourage the preservation of cultural heritage in Pekanbaru City through a physical combination of architectural elements of Malay vernacular to buildings with modern designs. So that visually, it is clear that there is a mixture of both government and private buildings. This paper examines the various applications of Riau Malay vernacular architecture in modern architectural buildings today, especially in the shopping center buildings designed in the City of Pekanbaru. Literature studies are needed to find practical theories in applying verbal elements to contemporary functions or modern architecture. Then understand the philosophical values contained in these vernacular elements. Meanwhile, field observations are needed to visualize the cases encountered to obtain primary data.

Keywords: *Malay vernacular architecture, neo vernacular, local identity, image of vernacular, Indonesian architecture.*

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1. Introduction

Civilization reflects a culture and has its own time, binding, influencing, and developing according to human needs. Architectural products signify a society and part of a culture, reflecting its continuity from time to time: past, present, and future. Generally, a civilization's cultural heritage is passed down from generation to generation through oral, written, or action. This cultural heritage results from physical construction and people's habits in everyday life to become the identity of a people or nation.

The physical development of the city of Pekanbaru is presently expanding at a rapid rate. It is a tremendous change that has affected many sectors, including the economy, government, religion, and culture (Riza *et al.*, 2017). The result of local culture into an identity is a long process of civilization. It is also related to the political policies of the local government in a particular area where a government regime uses architecture as a "tool" that has the potential to influence the local community. This situation causes the generalization of local cultural identities and the emergence of identity politics in a society that is the legacy of a regime rather than concerned with developing local cultural identities in people's social life (Kurniawan, 2018).

Raising the Reform Order rule in 1998, every region in Indonesia has had autonomy. Each region has the authority to build and develop its area based on local

potential, including the design of the building. This momentum has encouraged Pekanbaru City as the capital city and a benchmark for development in Riau Province (Figure 1), located on the Indonesian island of Sumatra, to develop Riau Malay vernacular architecture as a local identity.



Figure 1. Location of Pekanbaru City and Riau Province on Sumatra Island

In addition, the vision of the Province of Riau in 2020 and the vision of Pekanbaru City in 2021 confirm this momentum where Pekanbaru City will become the epicentrum of Malay culture in the Southeast Asian region. On the other hand, this situation also causes a misunderstanding of applying local cultural identity in building design in Pekanbaru by generalizing a formation to the buildings in Pekanbaru.

The history of Pekanbaru City begins with a small village called Senapelan on the banks of the Siak River, founded by Sultan Abdul Jalil Alamudin Syah, the Sultanate of Siak. Senapelan was officially inaugurated by Sultan Muhammad Ali Abdul Jalil Muazzamsyah on 23rd July 1784 and was called Pekan Baharu or Pekan Bahru and is known as Pekanbaru until now. Since that year, Pekanbaru has been the busiest port on Sumatera Island. Its geographical location made Pekanbaru link trading routes between east-west and north-south through the Siak River.



Figure 2. House of the Judge (*Rumah Tuan Kadi*) on the Siak riverbank at Kampung Bandar, Pekanbaru City

Many physical facilities were built and developed in Pekanbaru, such as housing, government, commercial and other facilities, and infrastructures to support community

(residence and non-residence) activities in Pekanbaru. Some traces of the construction of these physical facilities can be seen to date. One example is the judge's residence (*Rumah Tuan Kadi*), a local architectural heritage that can be seen today (Figure 2). It is a physical reference for Riau Malay vernacular architecture in the city of Pekanbaru. This study aims to find the implementation of Riau Malay vernacular elements in modern-designed shopping center buildings appearance in Pekanbaru city.

2. Methodology

This study is supported by some of literature study-books and journals- regarding Malay vernacular architecture in general and Riau Malay, particularly, to understand the local context regarding Riau Malay vernacular architecture practically.

The field survey methodology to obtain primary data in the form of ten samples of modern shopping centre buildings in Pekanbaru City. These samples chosen based on several criteria, namely (1) sale of various products; (2) the large size of the building, (3) single-mass; (4) providing vehicle parking facilities and (5) the building appearance has Malay element such as ornaments on façade and/or roof.

3. Vernacular Architecture

Vernacular architecture is the result of an evolutionary process of self-correction. It is commonly linked with mud huts and thatch roofs, although it is far from being a "primitive form of design devoid of intelligence," as was long believed. Vernacular architecture evolves and is influenced by the times, according to Umar (2021) in his article titled Local Wisdom of Builders on The Quality of Making Concrete in Kendari City Southeast Sulawesi Province.

The characteristics of the Malay house are not merely of the carvings but it also covers the aspects of neighbourhood, spirit of the community, ties with nature, relationships with the Creator, construction techniques and builders, planning and host economic factors. The combination of all these aspects makes the Malay house a refined home architecture of reflection to its culture (Halim & Teh, 1996).

More interestingly, the process of building a house is to involve the homeowner from the design stage, site selection and construction orientation, selection of materials until the house is ready to be built (Misnat *et al.*, 2018).

The concept of measurement in the construction of the Malay House refers to the size of the owner's human body. Measurements refer to male limbs (Husband) for the height of the home and women (wives) for the size of the home (Noor, 2014). Rationally based on the size of the limbs make it meet the size of the human anthropometric and ergonomics. The suitability of this measure is well translated into Malay housing space planning. For example, the size of the Serambi size is appropriate to its function as a space for performing prayer and relaxation activities such as sleeping at night times. The design of this intelligent and unique traditional Malay space house is a priority for the comforts of its inhabitants, including its surroundings, functions, social, cultural and religious backgrounds (Misnat *et al.*, 2018)

Locality and vernacular architecture are identical. Vernacular architecture investigates the environment's personality in accordance with the needs of locals. On this basis, vernacular architecture must be created. It aims to create a domestic atmosphere with the surrounding landscape. Therefore, Indonesian vernacular architecture should be

protected and designated as a source for innovative architecture in contemporary architectural design. Vernacular architecture is the property of those born and raised in accordance with tradition. Vernacular architecture expresses community ideas, identity, and singularity (Umar, 2021).

3.1. Riau Malay Vernacular Architecture

Geographically and administratively, the Riau region divides into two parts, namely Riau Mainland (called Province of Riau) and Riau Islands (called Province of Riau Islands). The traditional architecture of these two regions can mention that they have no very striking differences. This study focuses on the facade of modern building designs that use or apply Malay vernacular architectural elements located in the Province of Riau and Pekanbaru as its capital city.

The existence of Malay Vernacular Architecture is significantly strong enough to influence the city's image in Pekanbaru. The community awaits his presence as a legacy that will not be damaged by modern times. The merging of vernacular architectural elements with modern architecture is considered an architect's creativity.

A vernacular house in Kampar Regency represents the typology architecture of Riau Mainland in the book of Traditional Riau Regional Architecture (*Arsitektur Tradisional Daerah Riau*) published by the Ministry of Education and Culture of the Republic of Indonesia (Wahyuningsih & Abu, 1987); the house impression is elevated, and the building mass shape is a rectangle. This form is possibly a result of the local natural environment (protected from wild animals, natural disasters such as a flood, and utilized for a cage such as chickens and goats). Also, the below part of the house is used for air circulation to release the heat inside the house, integrate with the tropical climate and use local resources (Hamid *et al.*, 2017).

Furthermore, as mentioned in the book of Riau Vernacular Architecture (*Arsitektur Tradisional Daerah Riau*) in 1987, the Riau Malay traditional house uses wood as the primary material and has several building elements in general as follows:

- a. Stairs as access to the building consisting of five steps that reflect the number of pillars of Islam as shown in Figure 3-a.
- b. The pole (Figure 3-b) has the primary function of supporting the building. The shape of this pole is round and sided, namely a quadrangle (reflecting the direction of the wind), a hexagon (representing the number of pillars of faith), a seven-sided (symbolizing the number of levels of heaven and hell), an octagon (indicating the winds) and a ninth (representing the social status of the owner as a rich person).
- c. The wall (Figure 3-c) divides into exterior and interior walls, where exterior walls incline outside. The house's inner walls remain perpendicular, like the walls in general.
- d. The floor uses wood as the primary material.
- e. The door's dimensions are between 1,500 to 1,750mm for height and an ornament above the doorway.
- f. There are two forms for windows: the same shape as the door and an elongated rectangular shape. Its size is not much different from the size of the door and has an ornament.
- g. The roof is a triangle (gable) with an upward curvature, with carvings on both ends of the top.
- h. Ornament. The ornaments attach to the building according to the shapes and names of the local flora and fauna (Figure 4). The ornaments attached to the

building have a specific name and form according to the level of the social status of the building owner.

- i. Colours. The use of colours is also different and has a meaning for each. The paint used is green which symbolizes fertility. However, the other colours are available and have philosophical implications, such as yellow (symbol of glory), white (the sign of cleanliness, grit, and a sense of brotherhood), red symbolizes courage, blue (maturity), black (sincerity), and the colour gold (glory and power).

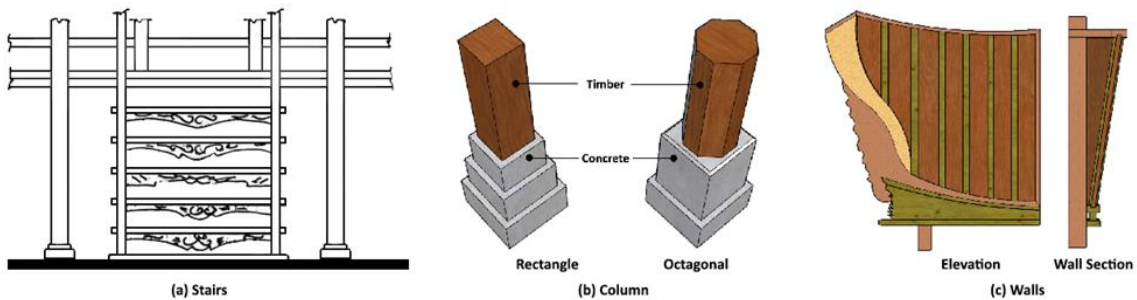


Figure 3. The elements of the Riau Malay traditional house: (a) Entrance stairs, (b) Pole forms, and (c) Walls in traditional houses



Figure 4. Examples of several ornaments in Riau Malay vernacular architecture house

For space organization, a vernacular Riau Malay house is generally divided into three zones and has the following functions as mentioned in the book of Riau Vernacular Architecture (*Arsitektur Tradisional Daerah Riau*, 1987) as well:

- a. The front space, which has a lower floor than the living room, functions as a living room and is a public zone.
- b. The middle space is a room directly adjacent to the lower chamber. The function of this space is where the owner's daily activities, such as sleeping. In other words, this living room is a private zone for homeowners.
- c. A kitchen, dining room, and living room for women are located in the rear part of the house (services zone).

The Islamic values influence the zoning of these spaces. In Islamic law, such separation is essential and can accommodate all owner activities (Samra, 2017). However, whenever additional funding or the family grows, the house can grow, not only in configuration and appearance but also in response to a clear need by adapting to a wide variety of environments: use and household types (Hamid *et al.*, 2017).

The roof elements of traditional Riau Malay houses are widely used as research objects. It causes the roof to be a focal point of the building and can be seen from a distance. The roof shape of the Riau Malay vernacular house is divided into several types, namely 1) *lipat kajang/pelana* (folding awnings/saddles), 2) *limas* (pyramids), and 3) *lontik*, which is shown in figure 5 (Firzal, 2011), and 4) a combination of a pyramid roof and a folding awning roof (Ramadissa *et al.*, 2017). The fourth roof form is a transformation of the basic shape of the roof based on the creativity of a designer based on the function and composition of a building design.



Figure 5. The types of roof shapes on the Riau Malay vernacular house:
(1) Gable/folding awning roof, (2) Pyramid, (3) *Lontik*

Another issue highlighted in the Riau Malay vernacular architecture is the carving on the top of the roof called *selembayung* (Figure 6) that states the identity of the building in Pekanbaru City (Faisal & Wihardyanto, 2013). Although still in debate, it cannot deny that many buildings or main gates located in Pekanbaru City use *selembayung* ornaments on the building roof. It is on the roofs of public and private facilities such as houses.



Figure 6. Selembayung

In the book *Malay Architecture: Traditional Houses in Sketches and Lenses* (Faisal & Firzal, 2020), it is stated that *selembayung* has several philosophical meanings as follows to evoke the light of the house, a symbol of harmony, self-awareness, the descent of a god, nobility, brings good luck, the might, and authority of the house's owner. The *selembayung* design development has various variations, but the placement is still at the roof's edge. The product of the *selembayung* design is due to the social status of the building owner and perhaps the development of technology, skills and creativity of the Malay community itself.

4. Vernacular Architecture in Design of Shopping Center Buildings in Pekanbaru City

The infrastructure and structural facilities in Pekanbaru city increased to accommodate activities of the local community or visitors from outside the city of Pekanbaru. One of the facilities built is a shopping centre (modern market). Many people (residents and non-residence) visit these modern shopping centers building. The people see the building not only caused by economic activities and existing facilities but also the building's facade design, designed to attract attention and be easily recognized by the people. In addition, indirectly, the building facades' appearance can educate and promote Riau Malay vernacular architecture to the people in Pekanbaru City. Table 1 shows the selected shopping center in Pekanbaru city that sells various community needs.

The building elements that form the character of the building are the front wall (facade), doors, windows, gables, ventilation, poles, roofs, canopies, terraces, and ornaments/carvings. The function of the building itself largely determines the use of shape, size, and style. The larger the space will require a large window size. Vice versa, a small room will also need a small window (Cheris *et al.*, 2021).

The impression of stilt or high building has transformed definition-if it may be said by exposing the structural columns' appearance on the building's facade. In addition, the ground floor's size is smaller than the upper floor, which can provide the impression of elevated building mass by exposed columns on the ground floor or cantilever systems.

The economic factor also influences the building's shape. The underground area can sell or rent by a vendor. This area will benefit the building management more than the place for vehicle parking.

Regarding the gable roof implementation, most shopping center buildings do not apply it or build it. The top roof of the building can use as a place for making services equipment. Some shopping centers provide a gable roof to emphasize the main entrance. On the other hand, using the Malay roof typology in the shopping center building consider ineffective. It is a waste of budget while being invisible from close human sight. As for several shopping center buildings that use Malay roofs, one of them is Pekanbaru Mall, but it does not seem to change the character of the existing buildings, which places the Malay roof typology on the 5th floor of the building.

Using perpendicular walls is more economical compared use incline walls for exterior walls. Provide steps as building elements are applied to most shopping centers because it emphasizes the main entrance to the building. Also, the steps make the ground floor raised and avoid floods that sometimes happen in Pekanbaru city during the rainy season.

One of the characteristics of a modern-designed building is that form follows function. It can be seen in the entrance doors and windows found on the facade of the shopping center building in Pekanbaru City with a rectangular or square shape. The existence of additional forms such as arches can strengthen the character of the building's appearance. In addition, the use of the latest materials such as aluminum and glass also gives the impression that the building has a modern design and attracts people to visit the shopping centre.

Using ornaments on building's appearance in Pekanbaru is mainly caused as a patch element without understanding the philosophical meaning of these elements (Faisal *et al.*, 2012). Some elements symbolize the high level of the social status of building occupants but are placed in buildings that are not following their functions, for example,

selembayung. The use of *selembayung* finds in shopping center buildings. The local government's policy generalizes Riau Malay vernacular architecture as outlined in the Pekanbaru city regulations. It is appropriate or not appropriate to be followed by all components of the Pekanbaru community.



Figure 7. Shopping Centre Buildings in Pekanbaru City

Table 1. Shopping Center Building Design in Pekanbaru City

Building Name	Malay Vernacular Architecture Elements							
	Building Impression	Has Gable Roof?	Exterior Walls	Steps (≥ 5)	Entrance Door	Windows	Ornament	Colour
Plaza Citra	Elevated	None	Perpendicular	Yes	Rectangular & Arch	Rectangular + Arch	Flora	Terracotta & Peach
Mall Sukaramai	Elevated	None	Perpendicular	Yes	Rectangular	Rectangular	Flora	Peach & Brown
Mall Pekanbaru	Elevated	Yes	Perpendicular	Yes	Arch	Arch	Fauna	White & Grey
Mall Ciputra	Elevated	Yes	Perpendicular	Yes	Rectangular	Rectangular	Flora	Blue & Yellow
SKA Mall	Elevated	None	Perpendicular	Yes	Rectangular & Arch	Rectangular	None	Peach, Orange, & Green
Transmart	None	None	Perpendicular	None	Rectangular	Rectangular	None	Grey, White & Red
Living World	Elevated	None	Perpendicular	Yes	Rectangular	Rectangular	None	Grey & Green
Plaza Senapelan	None	Yes	Perpendicular	None	Rectangular	Rectangular	Flora, Fauna	White
Lotte Mart	None	None	Perpendicular	None	Rectangular	Rectangular	None	Brown & Peach
Indo Grosir	None	None	Perpendicular	None	Rectangular	Rectangular	None	Red, Blue & White

Colour has a vital role in the building impression. Appropriate colours (composition and tone) make the building easily recognizable because colour influences human psychology as a product user. Vice versa, the use of colour without a concept and design will produce a composition that can damage the appearance of the building and the atmosphere of the environment around the building. The use and arrangement of colours in shopping centre buildings in Pekanbaru have used the colour tones found in the Riau Malay vernacular architecture. Indeed, this follows the local government's spirit, namely a building with a Riau Malay sense.

5. Discussion

The use of vernacular elements in buildings with a modern architectural style is a challenge for architects. Several architectural factors are considered vital and well known by the designers, such as stairs, windows, and roofs, meanwhile, for ornaments, namely the use of *selembayung* and several types of carvings. Furthermore, it should also realize that the Malay architecture has raised the building with columns or pillars to prevent residents from flooding and disturbances from wild and vicious animals. Besides that, the

ground floor level of the vernacular building, which is higher than the outer courtyard, will make the impression that the building looks magnificent.

In contextually, the emphasis on a combination of Malay vernacular architecture with modern architecture is efficient, such as construction cost and effectiveness implementation, primarily in commercial buildings. Several things need to consider in combining the architectural elements as follows:

- a. Size or scale. The building's size and height affect the elements of the facade. Adjustment of the form of vernacular architectural elements to the size of the building will experience definite changes in shape. Architectural ornaments in carvings and other symbols must be adjusted to create a proper scale and composition.
- b. Malay vernacular architectural ornaments. The use of vernacular ornaments recommends using the original form. The necessary transformation of vernacular flourishes forms in building design; then, scientific studies need to encourage the development of Malay architecture.
- c. The shallowing of cultural values. This situation happens due to generalizing these vernacular elements in terms of placement without understanding the philosophy attached to these elements, especially in carving ornaments. In addition, improper building shapes, such as the use of stairs, the placement of *selembayung* and other carvings ornaments, and the condition of the roof, also contribute to creating this issue in Malay vernacular architecture. Therefore, a designer must understand the values or meanings of these vernacular elements. Each element has its purpose and placement in the building design.
- d. Finishing materials. In neo-vernacular applications, many uses modern materials available in the market and can withstand climate influences, such as copper for the interior and aluminum for the exterior. However, it is necessary to develop natural, popular materials in the community, such as wood and bamboo. These raw materials will add to the neo-vernacular's impression to have more aesthetic value and quality.

The presence of Neo Vernacular architecture is an excellent opportunity for architects to be creative. In addition, this also encourages the development of vernacular architecture in the present context and indeed cannot be separated from the philosophical values contained in the vernacular architecture.

6. Conclusion

The design of shopping center buildings in Pekanbaru City has raised the concept of Riau Malay architecture as local identity in generally. This identity can see significantly through the implementation of vernacular elements that available in the Riau Malay vernacular houses. Through the Neo Vernacular approach which using the current materials such as concrete and metal, these vernacular ornaments has transformed in term of dimensions, shape, and placement in the building. The economics of construction cost took influence the transformation of these ornaments as well. Furthermore, the digital technology in design processes also contribute on these ornaments' transformation practically.

Unfortunately, the lack of understanding of the architect or designer of the philosophical values in the local vernacular architecture context causes a misperception and misunderstandings of elements in Riau Malay vernacular architecture on the

appearance of these commercial buildings. The embodiment of a local euphoria by the generalization of the Riau Malay vernacular architectural form and details by the local authority has made the application of Riau Malay vernacular architecture chaotic in its implementation in modern buildings design in Pekanbaru City.

Furthermore, studies and research on ornaments transformation of Riau Malay vernacular architecture need to be improved and considered in academic and professional circles. It will help and support the development of Riau Malay vernacular architecture following the times in the framework of Indonesian architecture development. Addition, the future research is not only limited to the *selembayung* ornament as ornament on the roof, but vernacular ornament as a whole identity of Riau Malay vernacular architecture.

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