JOSSEM

Analysis of Environmental Features on Traditional Housing based on its Indigenous Technology and Sustainable Practice

Kania Mustika Ariana[a], Muhammad Yusuf Al Ghifari[a], M Zainus Sholihin[a], Gabriela Emilly Xian[a], Didit Novianto[a*], Nur Endah Nuffida[a]

[a] *Department of Architecture, Faculty of Civil Engineering and Geo Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia*

Corresponding author's email: didit.novianto@its.ac.id

Received: 13 April 2025 **Revised: 14 May 2025** **Accepted: 30 July 2025**

Available Online: 30 August 2025

ABSTRACT

Memarong house is the traditional dwelling of the Lom tribe of Bangka Island in Indonesia. There has been found very little academic writings regarding the Memarong house as a traditional architecture. Acknowledging the need for indigenous knowledge discussion in regards to sustainable modern architecture practice, this paper aims to find the environmentally sustainable feature in Memarong's architectural aspects and to understand how traditional structures support sustainable indigenous living practice. Methods employed are field observation and interview with the tribe's chieftain specifically in Air Abik Village, where the previously extinct Memarong has been reconstructed, which then qualitative-descriptively analyzed. The result shows that Memarong in Air Abik Village was built using locally-sourced material from the district and architectural design that optimizes passive ventilating features hence supporting sustainable practice in traditional architecture construction. This research contributed to the enrichment of architecture and sustainability discussion regarding the indigenous heritage of Bangka Belitung Islands Province.

Keywords: Traditional architecture; Indigenous; sustainability; Lom tribe; Memarong house

1. Introduction

Discussion about indigenous architecture has been a rising topic among academics in the modern era. The global trend of considering sustainability in modern lifestyle has come to bring people to look back at principles that have been developed to suit its geographical and climatic context by their ancestors for generations, including in the sector of architecture and construction. The term indigenous is tied to a community of people including ethnic groups (Arfianti et al, 2017). Indonesia is one of the most ethnically diverse countries in the world with each ethnic group possessing their own cultural heritage including architecture which some are endangered to diminish soon. Indigenous architecture term is given to a building design that is built in the geographical place where it came from, by using local materials, and based on the building traditions of the indigenous community that builds it (Arfianti et al, 2017). An example of an indigenous architecture is the Memarong house of the Lom tribe.

The Lom tribe is one of the indigenous people of Indonesia who are still considered a part of the Malay customary law area of Bangka Belitung province (Koentjaraningrat, 2009; Soekanto, 2012). The tribe resides in the Mapur area in Belinyu district, mainly in the area of Tuing, Air Abik, and Pejam (Murtasidin, 2021). They are classified into two types of people: the Lom people who have not yet accepted any beliefs outside of their ancestral one and the Lah people who have converted or accepted one of the acknowledged religions in Indonesia (Murtasidin, 2021). Though some Mapur people still call themselves as a part of the Lom tribe despite having to accept a religion already. The tribe have their own unique language, social system, and cultural heritage that are different from the rest of the Bangka Malays including architecture (Janawi, 2016).

There have not been a lot of papers talking about the architectural aspects of Memarong, especially the one in Air Abik village, in the past 10 years compared to other vernacular and traditional architecture such as Joglo. This condition is due to the diminish of Memarong since the relocation program by the government to move the inland community into formal semi-permanent housing during 1974 to 1977 (Zulkarnain, 2019). After the continued expansion of palm oil farm, rubber farm, and tin mine in Air Abik area in the 1990s to 2000s, the Lom people are indirectly forced to move away from their forestry traditional environment (Sari & Indra, 2017 Zukarnain, 2018; Darmawan et al, 2024). Only in 2019 the Mapur customary institution, along with the remaining indigenous people who still possess the traditional knowledge required to build a Memarong and their sponsors, reconstructed a cluster of structures called Gebong Memarong in Air Abik village.

Similar to other traditional architectures in the Nusantara archipelago, the principles of form and space of Memarong was designed to fit the local environment by possessing tropical architecture characteristics (Herwindo, 2019; Xian et al, 2024). The materials used also aim to efficiently utilize local natural resources, reducing cost of delivery and keeping the knowledge about which material is suitable for which architectural elements alive in the community (Ariana et al, 2024).

The modernization of Memarong's architecture aspect itself is really limited to not allowed due to the strict traditions they required to retain (Sumanti et al, 2024). However, the tropical principles that it adapted to in its specific region and their ancestral indigenous knowledge holds a significant benefit for modern sustainable architecture practices. Given the consideration, this research aims to find the environmentally sustainable feature in Memarong's architectural aspects, understand how traditional structures support sustainable indigenous living practice, and identify potential integrations of indigenous architecture knowledge with modern sustainable architecture practices.

2. Material and Methods

This research applies a qualitative approach, examining the environmental sustainability of the Memarong architecture of the Lom Tribe in Air Abik Village. Given that the architectural practices of the people of Lom Tribe are deeply rooted in centuries-old traditions and heavily rely on their interaction with the nature that brought its own context, qualitative methods are essential in capturing the tangible and intangible aspects of sustainability in this context.

2.1 Data Collection

Site visits, direct analysis of Memarong housing and in-depth interviews are the methods used in this study. Observations through direct visit to Gebong Memarong, located in Gunung Muda, Air Abik Village, Belinyu District, in Bangka Regency supplemented this research with on-site observation where the landscape, materials, and environmental performance of the buildings were analyzed and documented. The site visit gives real information concerning the actual situation of Lom Tribe housing and allows an evaluation of passive environmental strategies in the architectural design. Interview with the administrator of Gebong Memarong and the chieftain, which referred to as Abok Usang, becomes one of the main sources of data in understanding how their live experiences and traditional ecological knowledge provide information regarding the construction and utilization of Memarong house, as well as the values that influenced the architectural design of the house and its configuration in the community.

2.2 Data Analysis

A descriptive analysis of the data gathered will highlight the construction principles of the tribe in regards to sustainability. This will keep the research sensitive to the context and ensure comprehensive analysis regarding the environmental sustainability inherent in the Lom's housings, Memarong. Gathered information is analyzed by each architectural aspect. This consists of the geographical and climatic context of the district, house structure, roofing, building enclosure, flooring, and ornament/decorations. The result of this will be brought to the analytical study on the sustainability of the Memarong house.

2.3 Geographical and Climate Condition of Research Location

The research location, Air Abik Village, is located in Belinyu Subdistrict, Bangka Regency, Bangka island in Indonesia (Figure 1). Geographically it is located at 1°39'59.8" south latitude and 105°53'13.5" east longitude. The Gebong Memarong is located in the housing area close to the crop and palm farm. The local climate is tropical with high humidity and rainfall. Considering the lack of weather station in the province with the Class I Depati Amir station in Pangkalpinang as the closest one, the low difference between the elevation of Bangka Regency and Pangkalpinang City above sea water, and the fact that the village is still in the 100 km radius of the weather station, it can be concluded that the thermal condition provided is relatively valid (BPS-Statistics of Kepulauan Bangka Belitung Province, 2021).

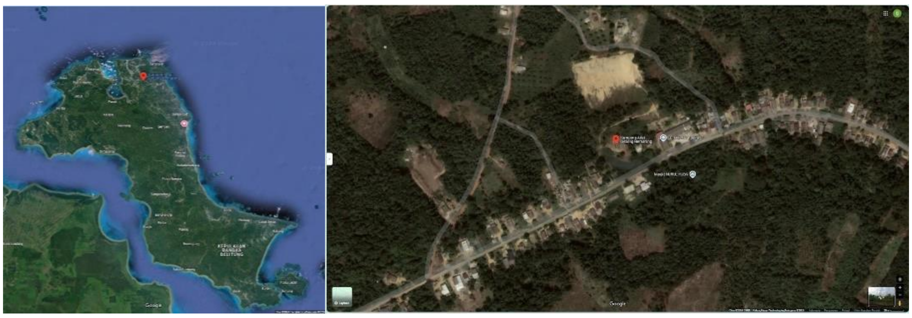


Figure 1. Bangka Island (left) and Gebong Memarong position at Air Abik Village (right)

Table 1 shows the average, highest, and lowest temperature trend that was obtained by the meteorological station in Pangkalpinang city, the capital city of the province, from 1991 to 2021 (Climate Data, 2021). There is only a 1°C difference between the highest and the lowest average temperature, concluding the stable temperature throughout the year. There are 3 categories of comfortable temperature in Indonesia: a) comfortable cool that is 20.5°C - 22.8°C; b) optimal comfort that is 22.8°C - 25.8°C; and c) comfortably warm that is 25.8°C - 27.1°C (Talarosha, 2005). Based on the indicator, the outdoor temperature on site at its highest point is all above the comfortable temperature standard. Aside from temperature, air humidity also affects the thermal condition and comfort of a place. Comfortable relative humidity is between 40% and 70% (Sitorus et al, 2023). The relative humidity is between 80% and 89% throughout the year, indicating that it would be uncomfortable for humans on average.

Table 1. Average Monthly Weather Condition of Pangkalpinang City from 1991 to 2021

Weather Aspect	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg Temperature (°C)	25.8	26.1	26.4	26.5	26.7	26.5	26.3	26.6	26.8	26.7	26.2	25.9
Min Temperature (°C)	24.1	24.3	24.4	24.4	24.8	24.6	24.4	24.5	24.4	24.3	24.2	24.1
Max Temperature (°C)	28.4	28.7	29.2	29.4	29.4	29.1	28.8	29.5	29.9	29.8	29	28.4
Relative Humidity (%)	87	86	87	88	87	86	84	80	79	83	88	89

Outside of the thermal condition on Bangka Belitung, this province is also affected by seismic activity. Earthquakes are shocks that occur on the ground due to the collision of the tectonic plates, active faults, volcanic activity, or collapsed rocks (Badan Nasional Penanggulangan Bencana, 2021). Based on this definition of earthquake vulnerability, the earthquake risks are classified based on the following measurement parameters: a) Topographic class, b) Ground shaking intensity at the bedrock, and c) Ground shaking intensity at the surface (Badan Nasional Penanggulangan Bencana, 2021). Analysis of the potential extent and hazard classification of earthquakes using these parameters can be identified in districts/cities that have a potential area and hazard level for each Regency/City in Bangka Belitung Province shown in Table 2 below.

Table 2. Analysis Results of Earthquake Risk Level on Bangka Belitung Province

Location	Hazard Area (Ha)				Category
	Low	Mid	High	Total	
Bangka	295,068	0	0	295,068	LOW
West Bangka	282,061	0	0	282,061	LOW
South Bangka	360,708	0	0	360,708	LOW
Central Bangka	215,577	0	0	215,577	LOW
Belitung	229,361	0	0	229,361	LOW
East Belitung	250,691	0	0	250,691	LOW
Pangkalpinang	8,940	0	0	8,940	LOW
Bangka Belitung Islands Province	**1,642,406**	**0**	**0**	**1,642,406**	**LOW**

3. Results

This section answers the question of what the results or findings were, or what was found as a result of the research. The resulting data generated must be clearly stated in detail.

3.1 Structure Design

The design structure of the Memarong house is generally divided into three large parts, namely the stilt, the body, and the roof (Figure 2 and 3). Memarong Stilt as a whole is the foundation part of the building that is in direct contact with the ground and becomes the resistance of the building. Furthermore, the Memarong Body structure that forms the sloping part of the building consists of wood of different sizes, wooden column of the same size as the foundation is designed continuously up to the roof and is used as the main structure, meanwhile smaller wooden logs are used to make the frame that forms the walls of the building. Under the structure of the Memarong Roof, a ceiling space is formed and the roof frame consists of a rafter section and is covered by thatched palm leaves.

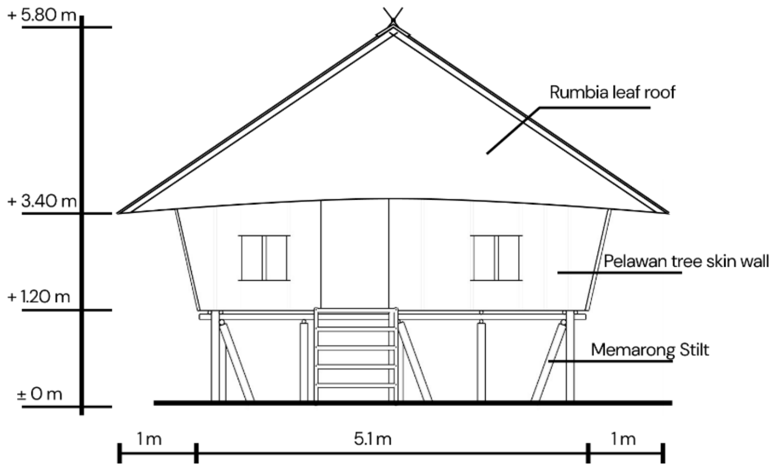


Figure 2. Memarong Facade (top)

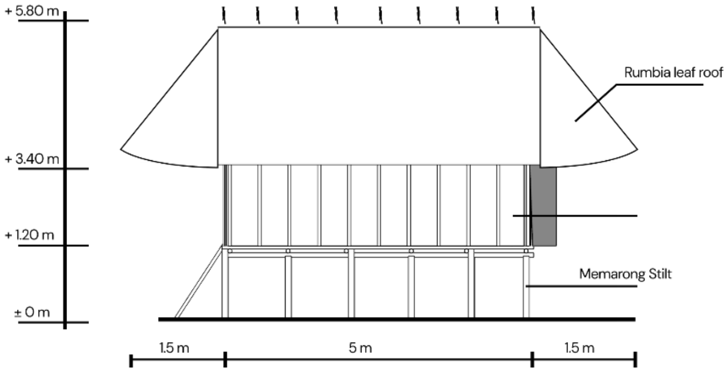


Figure 3. Memarong Right View (bottom)

The structural design of Memarong reflects a deep understanding of the local environment and materials. The house is typically built on stilts (Figure 4), which serve several sustainability functions. The stilt responds to the geographical condition of Indonesia that is prone to earthquakes (Rusyanti et al, 2023). This foundation design also reduces the risk of water damage by flood if the housing is built on the riverside (Wicaksono et al, 2019). The resilience towards natural disasters can help to extend the building's lifespan and reduce the need for frequent repairs or rebuilding that generates waste, which is one of the key aspects of sustainability (Thaheem & Marco, 2014). The elevation also allows for better air circulation underneath the house, which helps in creating a comfortable thermal condition by reducing humidity (Mufidah et al, 2024). This reduces the need for artificial cooling systems, lowering energy consumption, and the house's overall carbon footprint. The primary materials used in Memarong construction include timber and bamboo, locally sourced and renewable materials from the region that minimizes the environmental impact associated with the transportation of building materials (Adier, 2023).

Figure 4. Memarong Stilt

Memarong's foundation varies depending on the type of soil where the house is built on. On sandy soil, a pile foundation is used, consisting of two types: *unjem* piles and *lantok* piles. *Unjem* piles are made by sticking wood into the ground 40-50 cm deep to provide stability (Figure 5). Meanwhile, *lantok* piles are not planted into the ground, but are placed on stones also without being embedded. On the other hand, if the soil is hard, an *umpak* foundation is used, where wood is placed on strong and durable stones as the base of the house without having to stick it into the ground. The use of this type of foundation is based on the earthquake-prone characteristic of Indonesia as it is able to adapt to land contour and isolate the rest of the building construction from the ground when earthquake occurs (Rusydy, 2020; Sudarwani et al, 2022, p. 123; Nabilunnuha et al, 2022).

Figure 5. Memarong Unjem piles (left) and Memarong Lantok piles (right)

3.2 Roof

The roof design of Memarong, has both aesthetic and functional roles in sustainability. The form of the roof is designed to efficiently channel rainwater away from the building. This design minimizes the risk of water infiltration and damage to the structure, which enhances durability—a critical component of sustainable architecture. The steepness of the roof also helps absorb the heat gain from solar radiation (Nugroho, 2022). The roof of the Memarong is made of layers of thatched palm leaves, which are tied or sewn together with the leaf ribs of the nipa plant. The palm leaves are arranged in overlapping layers on top of each other to ensure rainwater flows smoothly and to minimize leaks (Figure 6). The thatched roof has the characteristic of not transmitting heat or solar radiation, which makes the room underneath indirectly cooler compared to the space outside the house (Fatimah, 2019, pp. 728 and 729). However, in terms of humidity, the thatched roof may cause the room to have a relatively high humidity level above 60%, making the room feel more humid and less comfortable (Fatimah, 2019).

Figure 6. Memarong roof profile (left) and the roof details (right)

Overhang plays a significant role in passive cooling by providing shade that reduces direct solar radiation, helping to keep interiors cooler without relying on air conditioning (Valladares, 2014). This method lowers the cooling load, making buildings more energy-efficient, especially in warm climates. Studies have demonstrated that shading devices like overhangs and the material's selection may decrease indoor temperatures and reduce the energy required for mechanical cooling, contributing to overall energy savings in buildings designed with passive climate control strategies (Fatimah, 2019; Mohammed, 2022). The design of the roof also plays a significant role in the cultural sustainability of the local tribe. The communal living space beneath the large, sheltering roof fosters social cohesion and the transmission of cultural values across generations (Canrath et al, 2022). Cultural sustainability is an often overlooked but vital component of overall sustainability.

3.3 Wall

Memarong's enclosure material, same as the door and window, is made from thinly cut layers of *klukup* bark with a thickness of about 1 cm, which are then stacked on top of each other (Figure 7). To make the bark stand upright, nine pieces of *pelawan* wood (*Tristaniopsis merguensis*) with a diameter of 5 cm are applied at intervals of approximately 50 cm to serve as supporting frame as well as load distributor, transferring the force from the beam that support the roof to the one that support the floor. According to Heinz (2004) The application is done by making holes in the bark, which are then tied using pitcher plant roots, also known by the locals as ketakong, as it is strong enough to withstand vertical and horizontal forces (Lathifah, 2021).

Figure 7. Memarong wall's side view (left) and the wall shelf inside (right)

The *pelawan* wood used for the enclosure is one of the locally sourced woods with various benefits, including as firewood and building material (Akbarini, 2016). The use of local wood as one of the main building materials impacts the ease and proximity of obtaining materials for building new homes or repairing damage. This wood can be found in the Bangka island, making it a locally sourced material that can be renewed (Akbarini, 2016). These thin enclosures of horizontally stacked wood with gaps between planes ease the flow of fresh air inside. The sloping shape of the walls on the right and left sides of the building is not without reason. With the open space inside the building, one of the users' needs is a place to store items (Xian et al, 2024; Novianto et al, 2024). By shaping the walls to slope, the upper part of the wall that extends outward can function as a shelf (Figure 7), and the construction of the shelf becomes more efficient by minimizing the need for additional floor space and reducing the use of extra materials during the building process.

3.4 Floor

Due to Memarong's stilt house design, the floor of the building does not come into direct contact with the ground. The surface material is cut *ibul* wood (*Oncosperma tigillarium)* that resembles split bamboo arranged on the floor structure and reinforced with binding joints made from *ketakong* (Figure 8).

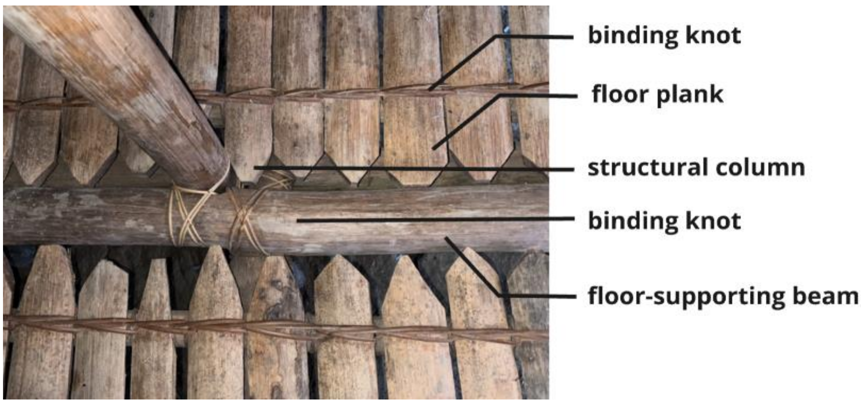


Figure 8. Ibul wood arrangement as the floor of the Memarong

Raising the floor elevation, creating a space beneath the building (Figure 9), using renewable material, and the arrangement of the plank, indicates that passive cooling strategy is applied on the house design. This allows for efficient ventilation where the space beneath the house and the gaps between the wooden planks enable air to flow and adapt to high temperatures and humidity during the day (Mari, 2023).

Figure 9. Space beneath building the raised floor surface

In addition, some advantages of the stilt-house design include minimizing environmental impact, as the only part of the building that comes into direct contact with the ground is the posts or *umpak*. This allows the land to remain free from construction and still capable of absorbing water (Mari, 2023). One of its benefits is that the community can use the land area around the Memarong building to plant medicinal plants.

3.5 Interior Layout

The space in the Memarong housing area is divided into two: outer space and the inner space. The outer space is an area for activities such as farming, hunting, and ceremonies, while the inner space is for resting and cooking.

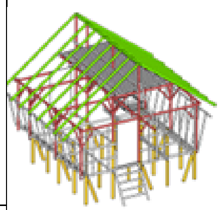
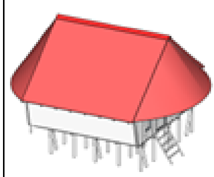
Figure 10. View of Memarong Interior Facing Outdoor Space

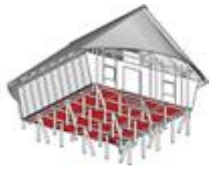
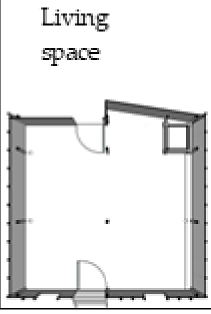
The layout of the Memarong house is a response to the tropical climate, one of the goals being to maximize air circulation and lighting, even though the light source comes only from the front (Figure 10). The interior of the Memarong follows an open space plan concept, with no partition walls or tightly enclosed ceilings, allowing ventilation and incoming light to easily reach all sides of the building (Nursaniah, 2019). In addition to comfort, the stilt-house design of the Memarong is also a response to the need for safety from dangers such as wild animals. The kitchen is located in the inner space, a place for cooking and preserving food (Figure 11). Smoke from the combustion is released through the gap between the roof and the wall on the building's side.

Figure 11. Memarong Open-Space Perspective Highlighting the Furnace (Left) And The Kitchen's Furnace In The Corner (Right)

4. Discussion

Table 3. Architectural Aspect Analysis Overview Table

Analysis Overview Table					
Aspect	**Material**	**Sourced from Belinyu**	**Renewable**	**Form**	**Assessment**
Structure	Pelawan wood	Yes	Yes		A strong wood that is easily found in the area, has various sizes, and applicable to lots of building parts
	Stone	Yes	No		Used as a replacement if the soil is hard
Roof	Rumbia leaves	Yes	Yes		Tight replaceable stacked leaves protects from rain and the gable shape suits the tropical climate.
Wall	Klukup bark	Yes	Yes		The thin layer makes it easy to be attached to the frame and also acts as a breathing wall

Analysis Overview Table					
Aspect	**Material**	**Sourced from Belinyu**	**Renewable**	**Form**	**Assessment**
Floor	Ibul wood	Yes	Yes		The plank arrangement give enough space for ventilation and is detachable for easier replacement
Layout	-	-	-		Allows undisturbed wind flow and natural light penetration.

Based on information shown in table 3, comparison can be made between timber houses like Memarong and brick houses with concrete structures which are now more commonly built in the regency. The construction of Memarong house in Air Abik village relies entirely on local, renewable materials, with the exception of stones used in the foundation. The wooden materials can naturally regenerate, making the environmental impact of the construction is lower than using brick or concrete as the non-renewable energy usage and carbon emission for the manufacture and production phase of timber is lower than that of brick (Tighnavard & Marsono, 2013). The construction process of the timber materials mainly uses frames and binding techniques, making repairs to damaged parts easier, both in terms of sourcing materials and replacing sections. This also reduces the need for large-area maintenance and resources thus also reducing the energy needed and carbon emission. Aside from the building process, the house also requires less energy to condition its thermal environment. Microclimate inside Memarong is conditioned by gaps on the floor planks, elevated floor, high roof, open-space, gap between the wall and the roof, and the thin bark wall material. However, despite the idea that air flow can cool the indoor space off, wood material tends to retain humidity (Hermawan & Svajlenka, 2022). Therefore, considering the current outdoor air temperature and humidity, modification on the house is needed, especially in the implementation of an active cooling system, to provide better thermal comfort. Nonetheless, according to the tribe elder, the original traditional structure, materials, and techniques used still needs to be strictly implemented for a house to be called a Memarong. Memarong's architecture emphasizes on the integration of built form with user lifestyles to foster sustainability. Memarong's passive design strategies and traditional construction can be used as a reference for the development of sustainable housing in Bangka island. However, considering the current climate condition of the island amidst global warming and technological development, especially in the Belinyu regency, the principles of using local renewable materials and traditional structural systems require further adaptation. Still, the key principles are still applicable to modern tropical architecture including passive cooling features and open-space layouts.

5. Conclusion

The architecture of the Memarong house in Air Abik Village is constructed using locally sourced materials, which are also renewable. These local materials are comprehensively applied throughout all aspects of the building, from the roof to the foundation and from the form to function, demonstrating a complete reliance on local resources. From a practical sustainability perspective, the use of such materials not only minimizes carbon emissions during construction and subsequent maintenance, but also fosters local creativity in utilizing available resources to shape architectural identity. In addition to the use of local materials, the architectural features of the Memarong house are designed to enhance occupant comfort, which is inherently part of sustainable practice. This sustainability is evident in the way the building responds to the local climate, as seen in the design of natural ventilation, elevated flooring that creates underfloor space, strategies for food and goods storage, effective daylighting, and protection from heat and rain. The open plan helps to reduce humidity, caused by the tightly enclosed roofing, through airflow conditioning that passes through small gaps in the walls and flooring. The lack of interior wall in the building layout also allows air circulation to reach every corner of the house. The slanted wall design not only contributes to the building's distinctive character, but also serves a functional purpose by creating additional storage space and separating walking areas from storage zones. This approach reflects a compelling strategy, where spatial function is enhanced without excessive material usage, thereby contributing further to sustainability. However, the adaptation of Memarong house features into contemporary construction requires careful consideration. Differences in material availability and geographic conditions necessitate technical adjustments. While the core concepts behind the building's form may be adopted in contemporary design, the exact replication of materials or forms may not be feasible or appropriate. For instance, if such concepts are applied to multi-story buildings, structural reinforcement becomes essential, potentially affecting the building's overall sustainability and long-term maintenance. Research regarding the structural strength and resilience of Memarong needs to be further studied to understand how this indigenous knowledge can help the development of modern structure in the local region.

Acknowledgments. NA

Declaration of Generative AI and AI-assisted technologies in the writing process. During the preparation of this work, the author(s) used Chat GPT-3.0 to improve readability and language understanding. After utilizing this AI technology, the author(s) meticulously reviewed and amended the content as required, ensuring its accuracy and completeness. The author(s) assume(s) complete accountability for the content of the publication.

Conflict-of-Interest Statement. This research has no conflict of interest whenever.

Funding. This research would not be able to be conducted without the support of many parties, notably the Lom Tribe representative and chieftain in Air Abik Village. The authors also gratefully acknowledge the financial support given by Institut Teknologi Sepuluh Nopember upon this work under the project scheme of the Publication Writing and IPR Incentive Program (PPHKI) 2025.

References

Adier, M. F. V., Sevilla, M. E. P., Valerio, D. N. R., & Ongpeng, J. M. C. 2023. Bamboo as sustainable building materials: A systematic review of properties, treatment methods, and standards. Buildings, 13, 2449.

Akbarini, D., 2016. Pohon pelawan (Tristaniopsis merguensis): Spesies kunci keberlanjutan hutan taman keanekaragaman hayati Namang–Bangka Tengah. AL-Kauniyah: Jurnal Biologi, 9,

Arfianti, A., Prijotomo, J., Setijanti, P., 2017. Arsitektur Vernakular: Penelusuran Pengaruh Tradisi atas Lingkung Bina. Seminar Ikatan Peneliti Lingkungan Binaan Indonesia.

Ariana, K.M., Tiarawati, R.A., Hamsjah, F.A., Radhiyya, R.N., Novianto, D., Nuffida, N.E., Sumanti, A.E., 2024. Investigation of colonial architecture's influence on the resilience and sustainability of the limasan house in Ndalem Ngabean. IOP Conf. Ser.: Earth Environ. Sci. 1351, 012023.

Badan Nasional Penanggulangan Bencana. 2021. Kajian risiko bencana nasional Provinsi Kepulauan Bangka Belitung 2022–2026. Kedeputian Bidang Sistem dan Strategi Direktorat Pemetaan dan Evaluasi Risiko Bencana.

BPS. 2021. Provinsi Kepulauan Bangka Belitung dalam angka 2021 / Kepulauan Bangka Belitung provinces in figures 2021. BPS Provinsi Kepulauan Bangka Belitung.

Canrath, G. A., Widyarko, W., & Salsabila, N. D. 2022. Rumah Gadang transformation: Assessment on sustainable building materials. Local Wisdom: Jurnal Ilmiah Kajian Kearifan Lokal.

Climate Data. 2021. Pangkalpinang climate: Weather Pangkalpinang & temperature by month. Climate Data. Retrieved from https://en.climate-data.org/asia/indonesia/kepulauan-bangka-belitung/pangkalpinang-6043/#temperature-graph

Darmawan, B., Saputra, P., Hidayat, N. 2024. Tergerusnya kearifan lokal orang Mapur di tengah ekspansi Perkebunan Kelapa Sawit PT. GPL di Dusun Air Abik, Kabupaten Bangka. Academy of Education Journal 15, 121–135.

Fatimah, F., Juanda, J., Santoso, I., 2019. enis atap, suhu dan kelembaban dalam rumah. Jurnal Kesehatan Lingkungan. Jurnal dan Aplikasi Teknik Kesehatan Lingkungan 16, 727–732.

Hermawan, H., Švajlenka, J., 2022. Building Envelope and the Outdoor Microclimate Variable of Vernacular Houses: Analysis on the Environmental Elements in Tropical Coastal and Mountain Areas of Indonesia. Sustainability 14, 1818.

Herwindo, R.P., 2019. The Strong Architectonic Elements of Traditional Vernacular Architecture in Indonesia. Journal of Basic and Applied Scientific Research 9, 14–21.

Janawi, M., 2016. Agama Adat Suku Mapur Bangka: Studi Tentang Sistem Kepercayaan Dan Budaya Orang Lom. Doctoral dissertation, UIN Sunan Kalijaga Yogyakarta.
Koentjaraningrat, P., 2020. Pengantar Ilmu Antropologi (Edisi Revisi 2009). Jakarta. Rineka Cipta
Lathifah, H.N., Anggraini, S.P., Lestari, T.A., 2021. Perbedaan konstruksi sambungan bambu pada bangunan The Bamboo Garden dan Dragon Palace Pavilion. Sakapari. Retrieved from
Mari, T., Liew, J., Ng, V., 2023. Re-establishing traditional stilt structures in contemporary architecture–The possibilities. ARCH 17, 88–108.
Mohammed, A., Tariq, M.A.U.R., Ng, A.W.M., Zaheer, Z., Sadeq, S., Mohammed, M., Mehdizadeh-Rad, H., 2022. Reducing the Cooling Loads of Buildings Using Shading Devices: A Case Study in Darwin. Sustainability 14, 3775.
Mufidah, M., Satwiko, P., Ardiyanto, A., 2024. Enhancing Airflow in Row Houses: The Impact of Stilt Floors on Ventilation Efficiency in Humid Tropical Climates. Civil Engineering and Architecture 12, 4018–4030.
Murtasidin, B., Sinabutar, M.J., Sigalingging, B.M., 2021. Politics Of Recognition: A Relationship Between Orang Lom And State For Civil Rights Services (Study In Air Abik, Belinyu District, Bangka Belitung Islands). Berumpun 4, 127–142.
Nabilunnuha, M.B., Hervanda, S., Xian, G.E., Tjong, A., Indarti, F.R., Nuffida, N.E., Ardhyanto, A., Novianto, D., 2022. Sustainability principle in Nusantara architecture: Case study of the Tongkonan house, the Betawi stage house, the Gadang house, and Lamin house. IOP Conf. Ser.: Earth Environ. Sci. 1007, 012015.
Novianto, D., Hidayat, R.T., Sumanti, A.E., Yao, W., Jaya, A.M., 2024. Adapting Modernization Towards Sustainable Vernacular Architecture: Investigation of Taneyan Lanjhang House. IOP Conf. Ser.: Earth Environ. Sci. 1404, 012044.
Nugroho, A.M., 2022. Bioclimatic Wisdom in Minangkabau Houses: Case Study of Gadang Jopang Manganti House. Local Wisdom: Jurnal Ilmiah Kajian Kearifan Lokal 14, 61–72.
Nursaniah, C., Machdar, I., Munir, A., Sawab, H., Qadri, L., 2019. Principles Of Vernacular House Design For The Sustainability Of Coastal Settlements. Presented at the ICRP 2019 - 4th International Conference on Rebuilding Place, pp. 767–776.
Rusyanti, Purwoarminta, A., Iqbal, P., Prasetyo, S.E., Setiawan, T., Laili, N., Hindarto, I., 2023. Unearthing the Local Wisdom of Disaster Mitigation Based on Geoarchaeological Records in the Mainland of Sumatra, Indonesia, in: Panda, G.K., Chatterjee, U., Bandyopadhyay, N., Setiawati, M.D., Banerjee, D. (Eds.), Indigenous Knowledge and Disaster Risk Reduction: Insight Towards Perception, Response, Adaptation and Sustainability. Springer International Publishing, Cham, pp. 515–537.
Rusydy, I., Idris, Y., Mulkal, Muksin, U., Cummins, P., Akram, M.N., Syamsidik, 2020. Shallow Crustal Earthquake Models, Damage, and Loss Predictions in Banda Aceh, Indonesia. Geoenviron Disasters 7, 8.
Sari, P., Indra, C.A., 2017. Hegemoni Pemerintah Terhadap Pedagang Pasar: (Analisis Dominasi Pemerintah Pasca Revitalisasi Pasar Kite Sungailiat Menurut Antonio Gramsci). Society 5, 1–11.
Sitorus, A., Sembiring, D., Abdillah, W., Harisdani, D., 2023. Thermal Comfort in Humid Tropical Climate Areas (Case Study on Open Spaces and Shaded Spaces in Medan City). International Journal of Architecture and Urbanism 7, 294–318.
Soekanto, S. 2012. Hukum adat Indonesia. Raja Grafindo Persada.
Sudarwani, M.M., Widati, G., Bintang, S.L., Simanjuntak, F.S., 2022. The beauty of Toba architecture living in harmony with the surrounding natural environment. Local Wisdom: Jurnal Ilmiah Kajian Kearifan Lokal 14, 116–130.
Sumanti, A.E., Xian, G.E., Hidayat, R.T., Julian, T.C., Novianto, D., 2024. The energy use and living behavior in urban retrofit vernacular architecture. IOP Conf. Ser.: Earth Environ. Sci. 1361, 012016.
Talarosha, B., 2005. Menciptakan kenyamanan thermal dalam bangunan. Jurnal Sistem Teknik Industri 6, 148–158.
Thaheem, M.J., De Marco, A., 2014. Sustainable repair & maintenance of buildings in the developing countries: A risk management perspective and proposal of customized framework. Journal of Civil Engineering and Architecture Research 1, 14–23.
Tighnavard Balasbaneh, A., Marsono, A., 2013. Life cycle assessment of brick and timber house and effects on climate change in Malaysia. Journal of Basic and Applied Research International 3, 305–310.
Valladares-Rendón, L.G., Lo, S.-L., 2014. Passive shading strategies to reduce outdoor insolation and indoor cooling loads by using overhang devices on a building. Build. Simul. 7, 671–681.
Wicaksono, B., Siswanto, A., Kusdiwanggo, S., Anwar, W.F.F., 2019. The identification of the existence of stilt houses at Musi riverside settlement in Palembang. IOP Conf. Ser.: Mater. Sci. Eng. 620, 012001.
Xian, G.E., Novianto, D., Defiana, I., 2024. Investigate Sustainability Aspect in Spatial Configurations of Javanese Vernacular Architecture: Case Study of Joglo House. IOP Conf. Ser.: Earth Environ. Sci. 1404, 012018.
Xian, G.E., Sumanti, A.E., Hidayat, R.T., Novianto, D., 2024. From Traditional to Contemporary: Evaluating Environment Condition and Living Behaviour in Joglo House. IOP Conf. Ser.: Earth Environ. Sci. 1351, 012025.
Zulkarnain, I., Soetarto, E., Sunito, S., Adiwibowo, S., 2019. Stifling of Customary People Political Voice of Recognition in Political Economy Perspective (Case Study on Mapur Tribe Lom Bangka Belitung). Sodality 6.