

REVITALIZING KELANTAN MALAY TRADITIONAL ARCHITECTURE: THE ADAPTATION OF MALAY TRADITIONAL ARCHITECTURE DESIGN FEATURES IN KELANTAN TO MODERN CONTEMPORARY ARCHITECTURAL SCHEME

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ABSTRACT

The highlighted issue in reforming traditional Malaysian architecture into modern contemporary architectural design is maintaining the cultural and historical integrity of traditional Malaysian architecture elements while adapting them to meet contemporary architecture's functional, aesthetic, and sustainability demands. This paper examines the possibility of adapting traditional Kelantanese Malay architectural elements into modern contemporary architectural design, emphasizing the preservation of key features that reflect the region's rich cultural and historical identity. Distinctive components such as entrance gates (*pintu gerbang*), decorative wall panels (*dinding janda berhias*), major pillars (*tiang seri*), and handcrafted details are highlighted, alongside the symbolic and aesthetic significance of *ekor itik* (duck tail end gables), *kayu tunjuk langit* (sky-pointing beams) and *buah butung* (beautiful finials). In terms of sustainable design approach, the features of *tebuk tembus* (pierced carvings) enhance ventilation and light penetration. The study's objectives involve documenting notable examples of traditional Kelantanese buildings, analysing their design features, and proposing a framework for incorporating these elements into modern architecture. Methodologically, the research employs case studies of selected buildings to examine their architectural features, spatial layouts, material choices, and cultural significance. The findings suggest that architectural elements like pierced carvings (*tebuk tembus*), decorative panels, and finials (*buah butung*) can seamlessly integrate into modern contemporary architectural design. Ultimately, the paper advocates revitalizing Kelantanese Malay architecture through a balanced synthesis of tradition and modernity.

Keywords: Traditional Kelantanese Malay architecture, modern contemporary architectural design, modern tradition.

1.0 INTRODUCTION

Malaysia's cultural legacy is closely linked to its traditional architecture, of which Kelantan is a prime example. Kelantanese Malay architecture is well-known for its rich cultural past. It is distinguished by elaborate woodcarvings and unique roof forms, which have historically been essential to the state's cultural identity. However, the use of these traditional patterns has significantly decreased as a result of fast urbanization and modernization, undermining their cultural value (Sabil, 2020). Nowadays, wood is infrequently utilised in modern construction, despite its historical importance in the construction of Malay homes, mosques, and palaces. Furthermore, abandoning traditional stilt structures, which is a defining feature of Malay

architecture, poses difficulties because contemporary building techniques frequently ignore these important architectural components (Abidin et. al., 2017).

Contemporary buildings in Kelantan increasingly diverge from the sustainable and culturally significant features of traditional Malay houses. The absence of architectural elements such as passive ventilation systems and intricate wood carvings diminishes the cultural depth and historical continuity that these structures once embodied (Ismail et. al., 2015). The preference for modern construction techniques further distances contemporary buildings from their cultural roots by neglecting traditional materials and design principles (Kinosyan & Bashirova, 2021). The decline in traditional Malay architectural elements not only affects the visual appeal of Kelantan but also undermines its cultural resilience. The abandonment of sustainable design characteristics found in vernacular Malay houses contributes to a disconnect from the past and a weakening of cultural sustainability (Zain et al., 2023). As a result, the unique identity and historical significance of traditional Malay architecture are increasingly overshadowed by modern trends. (Harun et. al., 2017)

The decline in traditional Malay architectural styles in contemporary Kelantan buildings signifies a loss of cultural identity and heritage. The neglect of traditional design elements and materials not only impacts the visual landscape but also diminishes the cultural resilience and historical continuity of Malay architecture. Efforts to reintroduce traditional architectural elements into modern constructions are essential to preserving Kelantan's rich cultural heritage and maintaining the unique identity of the Malay community.

2.0 LITERATURE REVIEW

2.1 Kelantanese Malay Traditional Architecture

Kelantan Malay traditional architecture is a unique and distinct form of architectural design that reflects the cultural and historical identity of the Kelantan Malay community. The architectural elements of traditional Malay Kelantan architecture are characterized by intricate wood carvings, decorative motifs, and specific spatial structures that are integral to the identity of the Malay Muslims in Kelantan (Noor & Nasir, 2019; Othman & Shuaib, 2013). The wood carvings and decorative elements play a significant role in signifying the characteristics and identity of Malay traditional architecture, contributing to the aesthetic and cultural values of the traditional Malay houses in Kelantan (Wahid et al., 2021; Said, 2012). Furthermore, the spatial structure found in traditional Malay houses in Kelantan is considered an important component in the architectural identity of the Malay Muslims (Othman & Shuaib, 2013).

The architectural significance of Kelantan is further exemplified by the presence of traditional mosques, such as the Kampung Laut Mosque, which is considered the oldest existing example of traditional Malay mosque architecture, reflecting the historical and cultural heritage of the region (Zekrgoo, 2017). Additionally, the implementation of Malay traditional architectural elements in mosques, such as Masjid Kampung Laut, showcases the preservation of the traditional Malay architectural identity in religious structures (Khalit, 2023).

The distinctiveness of Kelantan Malay traditional architecture is also influenced by the genetic and historical background of the Kelantan Malay population. Genetic studies have revealed

that the Melayu Kelantan forms a distinct genetic group, indicating their genetic differentiation from other Malay sub-ethnic groups and reflecting their unique ancestral history and geographical location in the north-eastern region of Peninsular Malaysia (Hatin et al., 2011; Juhari et al., 2014; Hatin et al., 2014). This historical and genetic divergence has contributed to the development of a unique architectural identity that is specific to the Kelantan Malay community.

In general, Kelantan Malay traditional architecture is characterized by its intricate wood carvings, decorative motifs, spatial structures, and the preservation of traditional architectural elements in religious structures, as shown in Fig. 1. The architectural identity of Kelantan Malay traditional houses and mosques reflects the cultural, historical, and genetic distinctiveness of the Kelantan Malay community, contributing to the rich tapestry of Malaysia's architectural heritage.



Fig. 1: An example of a traditional Kelantan Malay house, characterized by its extensive use of decorative ornamentation, serves as a significant representation of cultural heritage preservation.

(Source: Bernama, <https://www.bernama.com/bm/am/news.php?id=2076562>)

2.2 Key Characteristics of Kelantan Malay Traditional Architecture

The key characteristics of Kelantanese Malay traditional architecture encompass several distinctive elements that reflect the cultural and historical identity of the region. These characteristics are deeply rooted in the architectural heritage of the Kelantan Malay community and are integral to the traditional Malay houses and settlements in the region. The traditional Malay houses are characterized by intricate wood carvings, decorative motifs,

and specific spatial structures, which play a significant role in signifying the identity of Malay traditional architecture (Toe & Kubota, 2013; Hassin & Misni, 2019). Additionally, the traditional Malay fortification system is a notable characteristic that reflects the historical significance of the architectural design in Kelantan (Jaffar & Kunapalan, 2021).

Furthermore, the architectural design of traditional Malay houses in Kelantan incorporates passive thermal design strategies, such as natural ventilation and low thermal capacity materials, to ensure thermal comfort and sustainability (Hassin & Misni, 2019; Hassin & Misni, 2021; Hassin & Misni, 2022;). The close link between the vernacular aspect of old Malay architecture and its affinity with nature and the community further emphasizes the unique characteristics of Kelantanese Malay traditional architecture (Jaffar et al., 2020).

The study aims to explore and identify the key elements that define Kelantan traditional architecture, focusing on various distinctive features and ornamental details that shape the architectural identity of the region. Specific components such as the *pintu gerbang* (entrance gate), *dinding janda berhias* (decorative wall panels), *tiang seri* (main pillar), handcrafted ornamentation, *kayu tunjuk langit* (sky-pointing beams), *buah butung* (ornamental finials), *tebuk tembus* (pierced carvings), *pemelah & tebar layar* (gables and vented screens), and *ekor itik* (duck tail end gables) will be analysed for their architectural significance and cultural relevance (Noor & Nasir, 2019). Through this comprehensive examination, the research aims to provide a deeper understanding of the rich architectural heritage of Kelantan and the elements that make it unique.

The key characteristics of Kelantanese Malay traditional architecture encompass intricate wood carvings, decorative motifs, spatial structures, passive thermal design strategies, and the integration of Islamic and cultural elements. These features reflect the rich architectural heritage and cultural identity of the Kelantan Malay community, contributing to the unique and distinctive architectural landscape of the region. The study seeks to shed light on these elements to preserve and promote the traditional architectural legacy of Kelantan for future generations.

2.3 Approaches in Adapting Kelantanese Malay Traditional Architecture into Contemporary Modern Design

To propose a design framework for modern Malay Kelantan architecture, it is essential to integrate traditional architectural elements with modern design principles, sustainability, and cultural preservation. The framework should aim to blend traditional and contemporary architectural features harmoniously, ensuring the preservation of cultural identity while meeting the functional and environmental needs of modern society.

Malay architecture, distinguished by its unique design features, reflects the cultural, social, and environmental contexts of the Malay community. The proposed design framework should prioritize the incorporation of these traditional elements to create a seamless blend of the old and the new. Architectural styles such as the Rumah Tiang Dua Belas exemplify structures that are deeply rooted in local culture and the surrounding environment. The elements, such as intricate wood carvings and motifs, enhance the aesthetic appeal while also providing functional benefits, such as improved indoor climate conditions (Ismail et al., 2015).

The preservation of these elements is essential, as they represent the artistic heritage of the Malay community and contribute significantly to the overall architectural identity of Kelantan. Drawing inspiration from the thermal comfort and passive cooling techniques observed in traditional Malay houses, as studied by Toe & Kubota (2013), the framework can incorporate passive design strategies to enhance indoor thermal comfort in modern architectural designs, especially in Kelantan's tropical climate.

From the perspective of Islamic principles adaptation, the research conducted by Yusof et al. (2021) offers significant insights into the adaptation of Islamic principles within traditional Malay houses. These findings clarify the distinct architectural features and design elements that embody Islamic values, thereby fostering a connection between cultural heritage and spiritual beliefs. Such knowledge can be instrumental in the integration of Islamic elements into modern architectural frameworks, particularly concerning the design of mosques and public buildings in Kelantan. By leveraging these traditional principles, contemporary structures can successfully cultivate a sense of identity and community while paying homage to the region's rich Islamic architectural heritage.

In the context of architectural design for the Malay community in Kelantan, it is essential to consider the socio-cultural and religious needs of the local population. Architecture in a region transcends mere aesthetic preferences; it is deeply intertwined with the cultural identity, beliefs, and practices of its inhabitants. This is particularly notable within the Malay community, where traditional architecture serves as a representation of their cultural heritage and social values. The incorporation of traditional Malay architectural elements is vital for creating spaces that resonate with local identity. Hidayat (2011) highlights the necessity for traditional architecture to adapt to contemporary needs while preserving its cultural significance, suggesting that a balance between modernity and tradition is crucial for sustainable urban development. This view is supported by Faisal et al. (2021), who assert that architecture should reflect society's way of life, beliefs, and philosophies, thereby safeguarding the unique cultural components of the Malay community.

In essence, the proposed design framework for modern Malay Kelantan architecture should incorporate traditional architectural elements, passive design strategies, Islamic principles, conservation efforts, and cultural preservation. This approach aims to create a sustainable, culturally sensitive, and functional architectural approach that reflects the rich heritage of Kelantan.

Table 1 presents the key characteristics identified through a comprehensive review of the literature on traditional Kelantanese Malay architecture. Numerous frequently mentioned components are highlighted in the table, showcasing the salient features of this architectural style and emphasizing their significance. The most commonly cited characteristics, such as timber material, Kayu Tunjuk Langit (Sky-Pointing Timber), and Pemeleh, are noted six times, underscoring their crucial roles in durability, heritage identity, and decoration. Additionally, features like Ekor Itik, Handcraft Ornamentation, Dinding Janda Berhias, Pintu Gerbang, and Buah Butung, mentioned five and four times respectively, illustrate the complex workmanship and visual appeal that are essential to these buildings. The Tebar Layar (Gable End), referenced three times, further enhances the ornamental and functional aspects of the

structures. Lastly, the structural importance of the Tiang Seri (Main Pillar) is acknowledged, despite its less frequent mention.

Table 1: Key Characteristics of Kelantan Malay Traditional Architecture

Authors	Traditional Elements								Functional Features		Materials
	Ekor Itik	Kayu Tunjuk Langit	Pintu Gerbang	Dinding Janda Berhias	Tiang Seri	Handcraft Ornamentation	Pemeleh	Tebar Layar	Tebuk Tembus	Buah Butung	Timber Material
Che Mood, N. A., & Ramli, R. R. (2022)	/	/	/			/	/	/		/	/
Karim, N. (2021)						/			/		/
Nawayai, S. S. M., Denan, Z., & Abdul Majid, N. H. (2020).		/	/	/		/	/		/		/
Sojak, S. D. M. and Utaberta, N. (2013)	/	/			/	/	/			/	/
Shuaib, A. A., and Olalere, F. E., (2013)	/	/	/	/			/	/	/	/	/
Abdullah, A., Wahid, J., Nizam, W., Khairuddin, M., Luqman, I., & Hasim, A. (2021).	/	/	/	/			/	/	/	/	/
Noor, N. M., & Nasir, M. R. M. (2019).	/	/		/			/				
Total	5	6	4	4	1	4	6	3	4	4	6

In light of the components outlined in this table, a comprehensive case study is planned. The focus will be on exploring the applicability and significance of key elements such as Kayu Tunjuk Langit (Sky-Pointing Timber), Timber Chengal Woods, Pemeleh (Roof Ridge), and Handcrafted Ornamentation within the context of Kelantanese Malay traditional architecture. The analysis will examine the structural and aesthetic roles of features like Ekor Itik (Duck Tail), Pintu Gerbang (Gateway), Tebar Layar (Gable End), Dinding Janda Berhias (Decorative Widow's Wall), and Tiang Seri (Main Pillar), drawing on numerous references from the literature. This in-depth examination aims to deepen the understanding of how these components interact to shape and preserve the architectural heritage of Kelantan.

3.0 METHODOLOGY

This research explores the integration of traditional Kelantanese Malay architectural elements into contemporary designs by examining key traditional buildings in Kelantan, particularly two mosques constructed after 2010: Masjid Mukim Sabak and Masjid Ar-Rahman Pulau Gajah. The evaluation models established from the review (Table 1) were used to evaluate both mosques. Masjid Mukim Sabak, as analysed by Noor and Nasir (2019), exemplifies incorporating traditional Malay architecture into modern design, reflecting the cultural heritage of Kelantan. In contrast, Masjid Ar-Rahman Pulau Gajah, studied by Bahauddin (2021) and Zakaria (2022), emphasizes architectural simplicity influenced by Hindu-Buddhist syncretism, illustrating how various cultural influences shape modern mosque design in the region.

By examining these mosques, researchers can gain valuable insights into how traditional elements and cultural contexts are woven into contemporary mosque construction in Kelantan. These case studies showcase diverse architectural approaches and contribute to a richer understanding of contemporary mosque design in the area.

3.1 Masjid Mukim Sabak

The Mukim Sabak Mosque (Fig. 2), originally near Pantai Sabak in Kota Bharu and established in 1983, was relocated due to wave erosion. Construction began in 2011 and was completed in 2012. The mosque's design incorporates traditional architectural elements in the roof and utilizes new materials to enhance its appearance while maintaining traditional aesthetics. Featuring pillars and stages, it reflects traditional Kelantan Malay houses. The mosque serves as a model for future developments in the Kota Bharu 2020 Local Plan, demonstrating how traditional architectural elements can be integrated into contemporary structures. This successful incorporation of Malay traditional architecture showcases the potential for regional styles to influence modern developments and highlights the collaboration between designers and developers in preserving local heritage.



Fig. 2: Masjid Mukim Sabak Kota Bharu

(Source: Portal Masjid Malaysia,

<https://masjid.islam.gov.my/maklumatMasjidSurau?carian=&jenis=&negeri=&daerah=&masjidSurau=&page=390>)

3.2 Masjid Ar-Rahman, Pulau Gajah

Masjid Ar-Rahman (Fig. 3) was constructed in Kampung Pulau Gajah, inspired by Masjid Kampung Laut; the mosque reflects a blend of Malay Kelantan, Nusantara, Turkish, Yemeni, and Moroccan architectural influences. The columns for the imam's prayer area are crafted from palm trees imported from the Middle East, with two entrance columns from Yemen. The Quranic drawings on the ceiling are from Turkey, and an Indonesian beduk is present in the courtyard. Intricate carvings, mostly by foreign woodcarvers from Jepara, Central Java, Indonesia, adorn the mosque's interior, exterior, and surroundings.




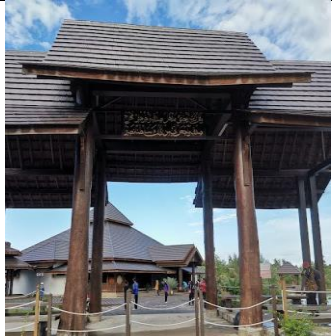




Fig. 3: Masjid Ar-Rahman, Pulau Gajah








(Source: Majlis Perbandaran Kota Bharu, <https://info.mpkb.gov.my/masjid-ar-rahman/index.html>)

4.0 ANALYSIS, RESULTS AND FINDING

This case study examined Masjid Mukim Sabak and Masjid Ar-Rahman, focusing on their integration of traditional Kelantanese Malay architectural elements within contemporary designs. A comprehensive table outlined key characteristics, including structural elements, decorative patterns, materials, and construction methods. By comparing these features, the study emphasized how both mosques preserved and adapted traditional principles, providing valuable insights into the fusion of cultural heritage with modern architecture.

Table 2: List of the Key Characteristics of Kelantan Malay Traditional Architecture in Masjid Ar-Rahman and Mukim Sabak

	Key Characteristics	Masjid Mukim Sabak	Masjid Ar-Rahman
1.	Pintu Gerbang (Gateway)		
2.	Dinding Janda Berhias		
3.	Tiang Seri	-	
4.	Handcraft Ornamentation	-	
5.	Tunjuk Langit	-	-

	Key Characteristics	Masjid Mukim Sabak	Masjid Ar-Rahman
6.	Buah Butung		
7.	Tebuk Tembus	-	
8.	Pemeleh		-
9.	Tebar Layar		-
10.	Ekor Itik	-	
11.	Timber as Building Material		

Based on Table 2, Masjid Mukim Sabak and Masjid Ar-Rahman present distinct architectural differences, emblematic of their varying degrees of integration with traditional Malay design principles. Masjid Ar-Rahman showcases an array of traditional features, including the *Tiang Seri*, Handcraft Ornamentation, *Tebuk Tembus*, *Pemeleh*, and *Tebar Layar*. These elements not only highlight traditional craftsmanship but also enhance aesthetic appeal and functional

qualities, such as improved ventilation. In contrast, Masjid Mukim Sabak is characterized by a more straightforward, modern design that lacks these specific features.

While both mosques incorporate a *Pintu Gerbang* as a common element, neither includes the *Tunjuk Langit* or *Ekor Itik*. The absence of these characteristics suggests a deliberate departure from architectural styles that emphasize vertical ornamentation or intricate roofline details. This trend towards a more grounded and horizontal design is apparent in both buildings, albeit with differing degrees of traditional embellishment.

Overall, the architecture of Masjid Ar-Rahman reflects a strong commitment to traditional Malay aesthetics, embracing decorative craftsmanship and cultural authenticity. Its use of timber further reinforces its connection to traditional materials, aligning with local environmental considerations. Conversely, Masjid Mukim Sabak's more streamlined design appears to prioritize functionality and modern efficiency over-elaborate decoration. This contrast underscores two distinct approaches to mosque architecture—one that preserves and showcases traditional elements and another that embraces a minimalist, potentially contemporary, design.

5.0 DISCUSSIONS

Masjid Mukim Sabak and Masjid Ar-Rahman exemplify the integration of Kelantanese Malay traditional architecture within contemporary contexts. These mosques serve not only as places of worship but also as significant architectural heritage sites that reflect the cultural richness of Kelantanese design. Each mosque features unique elements that blend tradition with modernity, demonstrating how historical architectural principles can be harmonized with contemporary needs.

Masjid Mukim Sabak is notable for its fusion of traditional Malay and contemporary design. Features such as the *Pintu Gerbang* and *Dinding Janda Berhias* highlight both aesthetic and functional aspects of traditional Malay architecture. The mosque employs modern construction methods, illustrating the coexistence of traditional and contemporary design while maintaining cultural relevance.

In contrast, Masjid Ar-Rahman emphasizes traditional timber materials and retains the ideals of traditional architecture characteristic in the smaller building components. This mosque showcases intricate wood carvings and incorporates passive thermal design strategies, signifying a commitment to sustainability. The use of natural materials reflects respect for traditional craftsmanship, ensuring the mosque is aesthetically appealing and environmentally harmonious.

Both mosques embody distinct strategies to represent Kelantanese Malay architectural traditions. The examination of these mosques contributed to the development of a framework for modernizing Kelantanese Malay architecture, encompassing Cultural Integration, Sustainable Practices, Architectural Education and Preservation, and Community Engagement. This approach fosters a sense of ownership and appreciation for traditional architectural values, ensuring their continuity in the modern era.

6.0 CONCLUSION

In conclusion, the study of Masjid Mukim Sabak and Masjid Ar-Rahman illustrates the potential for integrating traditional Kelantanese Malay architectural elements into modern designs. These mosques show how traditional principles can be adapted to meet contemporary needs while preserving cultural heritage. By analyzing significant Kelantanese traditional buildings and their design traits, a fundamental framework was developed to integrate the traditional characteristics of Kelantanese traditional architecture into modern contemporary design, emphasizing cultural integration, sustainable practices, and community engagement. The findings of this study provide essential guidance for future projects, promoting the creation of structures that honour the past while embracing innovation, thus fostering a deeper appreciation for Kelantan's architectural heritage.

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